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RESTRUCTURING THE FEDERAL SCIENTIFIC ESTABLISHMENT:
DISMANTLING OF THE DEPARTMENT OF COMMERCE

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HEARING
BEFORE THE
COMMITTEE ON SCIENCE
HOUSE OF REPRESENTATIVES
ONE HUNDRED FOURTH CONGRESS
FIRST SESSION
SEPTEMBER 12, 1995
[No. 24]

Printed for the use of the Committee on Science



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RESTRUCTURING THE FEDERAL SCIENTIFIC ESTABLISHMENT: DISMANTLING OF THE DEPARTMENT OF COMMERCE

TUESDAY, SEPTEMBER 12, 1995

HOUSE OF REPRESENTATIVES,
COMMITTEE ON SCIENCE,
Washington, DC.

The committee met at 9:30 a.m., in room 2318 of the Rayburn House Office Building, the Honorable Robert S. Walker, Chairman of the committee, presiding.

The CHAIRMAN. The hearing will come to order.

I am going to go ahead and get the hearing started and take some opening statements. Secretary Brown has not yet come.

I want to tell Members from the outset we have time constraints on us today, and I must move the Committee along because our next witness will have to leave here at a time certain. So I want to make certain that we do have an opportunity to hear witnesses and get an opportunity to get in our questions.

Bearing that in mind, I am going to forego an opening statement at this point and submit it for the record, without objection.

[The statement follows:]

The Honorable Robert S. Walker
Opening Statement
Hearing on Restructuring the Federal Scientific Establishment:
Dismantling the Department of Commerce

September 12, 1995

Good Morning. This hearing is a continuation of a series of hearings being held by the Committee to address the restructuring of the Federal Scientific Establishment. Today's hearing will focus on dismantling the Department of Commerce, specifically Representative Dick Chrysler's (R-MI) bill, H.R. 1756.

The Department of Commerce and Labor was established in 1903 to "foster, promote, and develop the foreign and domestic commerce." Pulled together from diverse government sources, the new Department contained the National Bureau of Standards, the Bureaus of Statistics, Corporations, and Manufacturers, the Census Office, and the Bureau of Foreign Commerce, among others. After the recreation of the Department of Labor as an independent entity in 1913, the Department of Commerce had basically the same framework as it does today. After eight decades of subsequent governmental growth, the responsibilities of the Department are quite varied and the question arises as to how synergistic they are to the original mission of the agency. According to DOC's home page on the Internet, "... there is an overarching mandate that unifies them to work with the business community to foster economic growth and the creation of new American jobs." This brings us to the key question -- What is the proper role of the Federal government in promoting commerce and creating jobs, and is the Department of Commerce, which was established for this very reason, effectively fulfilling that role? I, and many of my colleagues in Congress, unequivocally say no it is not. Advocates for dismantling the Department argue that it -- "is an unwieldy conglomeration of marginally related programs, nearly all of which duplicate those performed elsewhere in the Federal Government." As most of you know, H. Con. Res. 67, which passed both Houses of Congress in June, expresses the sense of Congress that this Department should be eliminated.

We have four panels of witnesses with us today. On the first panel we have the Honorable Ronald H. Brown, Secretary of Commerce. On the second panel we have the Honorable Barbara Hackman Franklin, former Secretary of Commerce under President Bush and now President and CEO of Barbara Franklin Enterprises in Washington, DC.

The third panel shall address issues concerning the National Oceanic and Atmospheric Administration and shall consist of Admiral James D. Watkins, former Secretary of Energy under President Bush and now president of the Consortium for Oceanographic Research and Education (CORE) in Washington, DC; Mr. Paul Wolff, former Assistant Administrator for Ocean Services at NOAA and now residing in Pebble Beach, CA,

Dr. John Knauss, former Administrator of NOAA and now Professor and Dean Emeritus for the Graduate School of Oceanography at the University of Rhode Island in Narragansett, Dr. Richard Hallgren, former Director of the National Weather Service and now Executive Director for the American Meteorological Society in Washington, DC; and Mr. Mike Smith, president of WeatherData, Inc. in Wichita, Kansas.

Our forth panel shall address issues concerning the Technology Administration within the Department and shall consist of Mr. Anthony O'Neill, Vice President of Government Affairs for the National Fire Protection Association in Arlington, Virginia. Mr. O'Neill is the immediate past Chairman of the Board of the American National Standards Institute and will be testifying on their behalf. We also have with us Mr. John F. Walrad, who is Director of Licensing and Patents for Vickers, Inc. of Rochester Hills, Michigan; Dr. Robert Jay Hermann, Senior Vice President for Science and Technology at United Technologies in Hanford, Connecticut, Dr. Harold K. Forsen, Vice President and Director at Bechtel Hanford, Inc. in Richland, Washington; Mr. Samuel D. Cheatham, Vice President for Corporate Strategic Initiatives for Storage Technology Corporation in Louisville, Colorado; Mrs. Jean G. Mayhew, Chairman of the National Technical Information Services Advisory Board, and Director of Information Services for United Technologies Research Center in East Hartford, Connecticut; and Mr. Daniel C. Duncan, Vice President of Government Relations for the Information Industry Association in Washington, DC.

Welcome to you all and I look forward to your testimony. Before proceeding with the hearing, I would like to recognize Mr. Brown for any comments he would like to make.

The CHAIRMAN. I would be happy to recognize the gentleman from California, the Ranking Member, Mr. Brown.

Mr. BROWN. Mr. Chairman, thank you.

I understand the time pressures before us, and I do not want to belabor the matter of opening statements. I will ask unanimous consent that my own opening statement be put in the record at this point.

Mr. Chairman, I would also like to request unanimous consent that a number of letters received in connection with this hearing in response to my request for comment—obviously too many different sources to be called as witnesses, but whose views are important—be included in the record; and that the statement by our distinguished colleague, Mr. Dingell, who wanted to testify but was unable to do so, also be included in the record.

I will even go back and request that the statement of a former distinguished Secretary of Commerce in the Reagan Administration supporting the Department of Commerce and the technology programs, be included in the record as a part of the material which I will supply.

The CHAIRMAN. Without objection.

[The above-referenced letters and statements are contained in the Appendix.]

The CHAIRMAN. Mr. Weldon had indicated to me that he wanted to briefly be recognized at the outset of the hearing. Mr. Weldon of Pennsylvania.

Mr. WELDON of Pennsylvania. Thank you, Mr. Chairman.

Just a few brief remarks to open this session. While I generally support and am very interested in the progress of the Chrysler bill, I have deep concerns about the impact that this legislation will have on NOAA and its functions.

Mr. Chairman, over the August break I had the occasion to read a book that I would commend to every Member of this Committee written by Dr. Sylvia Earl called "Sea Change".

Dr. Earl, as we all know, was the chief scientist at NOAA under President Bush. She draws some startling conclusions in terms of her concern for the commitment of this country and our government to continue exploration and research in the oceans.

Over the many occasions I have had to interact with her and listen to her, she draws the comparisons between the amount of commitment that we put into space with our public dollars versus what we put into the sea and the oceans.

While I support our NASA programs aggressively and voted for, and consistently for, NASA programs, I am well aware of the dramatic short changes that come about in terms of ocean research.

We need to make sure in this process, Mr. Chairman, that we protect NOAA and its functions. It is a vital agency and one that I am prepared to go to the wall for and on behalf of.

We are going to have a distinguished panelist today, Admiral Watkins, who also served in a republican administration in the cabinet whose testimony I think will focus right on the key issues relative to NOAA and its functions. I encourage all of our colleagues to listen intently—and to the staffs that are here—to Admiral Watkins' message.

I would say, Mr. Chairman, as the National Security Committee's chairman of the Research and Development Subcommittee which oversees all of our military research and development, I am committed to opening up dual-use opportunities where the military is currently doing work in the oceans, especially the Navy, and having that work be shared in the public sector.

But still that is not going to provide the amount of focus that we need on our oceans. Now is the time of great global change. We have an Oceans' Task Force, which I am chairman of, which includes members of the Japanese Diet, the Russian Duma, the European Parliament, and the U.S. Congress.

We do not now need to back out of our commitment to work with countries around the world to protect the oceans and deal with the issues of declining fish stocks, ocean dumping, and the other major concerns that we have in the waters of this planet.

So I would just ask for your support. You have been extremely cooperative up until now, Mr. Chairman, in expressing a willingness to work with us in finding an appropriate place for NOAA to be located, if in fact this bill moves forward and Commerce is dismantled.

So I thank you for that. I look forward to working with you, and I also commend to our colleagues the *Time Magazine* issue dated August the 14th which focused on "Mysteries of the Deep." It also has Dr. Earl in that. But it talks about how we have not yet taken full advantage of all the opportunities available to us in more fully understanding the oceans of the world.

I thank you.

The CHAIRMAN. Thank you, Mr. Weldon.

Since we are still awaiting Secretary Brown, are there other additional Members who wish to be heard in an opening statement?

[No response.]

The CHAIRMAN. The Chair would point out to the Members that this is a hearing, of course, pursuant to trying to report a bill that would then go to the Government Reform Committee in an attempt to deal with the budget obligation to dismantle the Department of Commerce.

We, of course, have to find the votes to report a bill out of this Committee in order to do that, but the Chair would remind Members that he hopes that they would question intently the witnesses before us today and discover as much information as possible; because if this Committee does not report a bill and does not send down our ideas of what should be done, the Department of Commerce is still going to be dismantled, except it will be done by the Budget Committee and will not be done with our input.

So the bottom line is: The dismantling of the Department of Commerce is going to happen. The question is whether it happens with the committees of jurisdiction involved in the process, or whether or not it happens with the Budget Committee making its own decisions somewhere along the line.

So I think this is a very important hearing for Members to establish what the right things are to do as we go about that dismantling so that if there are valuable efforts that need to be preserved, we have the opportunity to do so.

Since we are still awaiting Secretary Brown, I will at this point recess the Committee for the arrival of the Secretary.

[Recess.]

The CHAIRMAN. Mr. Secretary, we welcome you this morning. We went ahead and got opening statements out of the way so that we can go immediately to your testimony. I have indicated to the Committee that we are under some time restraints, so we would ask you to summarize your remarks, if you could, so that Members will have an opportunity to ask questions.

We are going to try to hold this particular session to an hour so that former Secretary Franklin has an opportunity to testify before she has to catch an airplane.

So we will be very happy to receive your testimony and again welcome you to the Science Committee.

**STATEMENT OF THE HONORABLE RONALD H. BROWN,
SECRETARY, UNITED STATES DEPARTMENT OF COMMERCE**

Secretary BROWN. Thank you very much, Mr. Chairman.

I am very pleased, as usual, to appear before you and Members of this Committee. I apologize for my tardiness, and I will make every attempt to make my opening remarks as brief as possible, and obviously ask that my full statement be included in the record.

The CHAIRMAN. Without objection.

Secretary BROWN. Mr. Chairman, and Members of this Committee:

As I appear before you today, I have the opportunity to discuss the role that the Commerce Department plays in enhancing the economic competitiveness of American firms and American workers in today's global marketplace, and how that relates to your consideration of H.R. 1756, legislation which would seek to dismantle the United States Department of Commerce.

Such action, in my view, if taken would be tantamount to unilateral disarmament in the global marketplace. You and this Committee, Mr. Chairman, as well as your predecessor, former Chairman Brown, have always taken very seriously your role of overseeing a crucial component of our competitiveness, policies that stimulate and ensure continued scientific exploration and technological innovation.

As you know, the President believes strongly that investments in science and technology are investments in the Nation's economic future, but I must tell you that we differ significantly on what is needed to stimulate that investment and to assure that United States' businesses and workers innovate and create new technologies that are internationally competitive both in foreign markets and our markets here at home.

I am aware of your proposal, Mr. Chairman, to move Commerce, Science and Technology programs into a new Department of Science or, failing that, to transfer some of those functions to the Department of Energy.

We believe, Mr. Chairman, I say respectfully, that that would be a mistake. It would in effect be a solution in search of a problem.

Further, we strenuously reject the notion that this country would be well served by eliminating the Department of Commerce or its key technology programs.

You and I, Mr. Chairman, have had a number of discussions on these matters in the past, and you will not be at all surprised by the position that I take. I want to reassure you of my respect for the fact that you have spent a lot of time on these issues, and have spent a lot of time studying them and paying attention to them and reading about them and thinking about them, and talking about them; but I do think that you can come to different conclusions about what is best for the future of the Nation as far as science and technology is concerned.

I would like to use my time before the Committee to describe some of the differences that we have with some of the proposals that have been made.

Commerce's technology programs, we believe, must not only survive but must remain housed with the other trade and competitiveness programs in the Department of Commerce if this Nation is to excel in the global economy.

The existing synergy should not be disturbed. The confluence between trade and technology is absolutely critical to our Nation's economic future.

Our foreign competitors understand this. Our globally competitive companies understand this. And I am confident that ultimately Congress, too, will understand this and the Department of Commerce will continue its vital mission.

It is becoming increasingly apparent that the so-called "Chrysler bill" is unworkable. It is fatally flawed. It is merely box-shuffling and would save the taxpayers no money.

If enacted, it would hurt American companies, American workers, and the American people both immediately and, we believe, well into the future. That is why the President has indicated he would veto the Chrysler bill or any other legislation which seeks to dismantle the Department of Commerce and scatter its critical functions to the wind.

As we balance the budget—and balance it we must—it is important to keep in mind that more than ever before United States economic growth and prosperity depend on technology.

For countries and companies alike, technological leadership means the difference between success and failure in the new global economy. Indeed, over the past 50 years innovation has been responsible for as much as 50 percent of the Nation's economic growth.

That is why the President's balanced budget program maintains investment in science and technology and continues a proud 50-year tradition of unwavering bipartisan—"bipartisan" I might add—commitment to United States' technological leadership, a commitment that has paid our Nation and our people rich dividends.

This stands in stark contrast, we believe, to the record of the 104th Congress. Despite historical bipartisan support for a strong role for the Federal Government in building the Nation's scientific and technical capabilities, the Congressional Majority rejected its own history of support for science and, according to the American Association of the Advancement of Science, has called for a one-third decrease in federal R&D spending through the year 2002.

On the way here, to this hearing here this morning, Mr. Chairman and Members of the Committee, I had an opportunity to read a piece in *The Washington Post* about another group of Nobel Laureates and scientists raising very serious questions about some of the proposals being made, about some of the reductions in R&D spending, and what impact those reductions would have on our Nation's economic future, on our productivity, and on our competitiveness.

Appropriations bills passed in the House and under consideration in the Senate include such things as elimination of the Commerce Department's ADP program, and elimination or drastic cuts to the Department of Defense's Technology Reinvestment Project, NASA's Mission to Planet Earth, the Energy Department's Cooperative Research Agreements, and EPA's Environmental Technology Initiatives.

We do not believe that this makes any sense. At best, it is penny wise and pound foolish.

They also include cuts that would dismantle the Commerce Department's Technology Administration, and curtail the activities of our Manufacturing Extension Program, even though a new GAO Report which I believe the Committee is familiar with confirms what we have known for a long time. That is, Manufacturing Extension Programs are helping small and medium-sized manufacturers.

They are helping America maintain its manufacturing base, which I know all the Members of this Committee agree is terribly important to our economic future.

These bills also sharply reduce NOAA's R&D budget, a budget that funds research in marine biology, global change, and weather forecasting, all of which I know are priority items of importance for the Chairman and other Members of this Committee.

There is no question that our public and private investment in science and technology have created a technology base that is the envy of the world—generating new industries, millions of jobs, and higher standards of living for the American people.

It was federal investments and creative partnerships with the private sector in agriculture, in aeronautics, in computers, and biotechnology, just to name a few, that created industries that today dominate world markets.

Congressional attacks on the federal R&D budget could not, we believe, come at a worse time. To meet foreign competition and stockholder expectations, many American companies have frontloaded R&D investments.

Today they invest less than 5 percent of their R&D expenditures in long-term, high-risk projects, the very projects which have the potential of creating whole new sectors of our economy, and tens of thousands, in fact hundreds of thousands of jobs for the American people.

Meanwhile, our competitors consistently invest a higher percentage of their resources in non-defense R&D than the United States does—with Japan investing 35 percent more than we do per capita, and Germany investing 30 percent more.

In addition, emerging economic powers like China and India and Taiwan and Singapore and South Korea are aggressively promoting investment in R&D and deployment of technology.

As the President has made clear, he will fight to preserve our investments in science and technology because in a global economy they mean jobs, they mean economic growth, they mean increased standards of living for the American people.

Let me finally take just a moment, Mr. Chairman and Members of the Committee to outline more specifically why technology programs at the Department of Commerce are critical to our Nation's economic future, and why the President is engaged in this debate and this effort to preserve and retain them in the Department of Commerce.

As I testified last month, the truth is that trade and technology are inextricably linked. The equation that unites trade and technology is straightforward: to keep up with foreign competitiveness, to generate stable, high-paying jobs for Americans, we need to take advantage of world markets, both domestic and foreign markets, while ensuring that the United States leads the world in technology.

The Department of Commerce is central to this strategy as the only place in government where trade and technology and information work together.

The Department works in partnership with businesses, workers, and communities to increase exports, to advance technology, and to enhance our global competitiveness, not as distinct and unrelated tasks, but as interlocking elements to achieve the Department's and our Nation's overall mission, the mission to ensure and enhance economic opportunity for the American people.

The work of the Department to integrate trade and technology has the following basic components:

Number one, opening global markets to United States' business: trade policy is now dedicated to creating opportunities for American companies in global markets, as demonstrated by our National export strategy.

We have a plan. We have a strategy. We are implementing it, and it is clearly working.

Number two, facilitating the technology and information infrastructure for the 21st Century. NIST labs are working with industry in a variety of high technology fields to develop the underlying infrastructure, measurement technologies, and standards necessary to make quality products for global competition.

Mr. Chairman and Members of the Committee, we have got to have something to export. Part of our ability to lead the world is to have new and creative products that the rest of the world seeks and desires.

Number three, facilitating the rapid deployment and commercialization of civilian technologies. The Manufacturing Extension Partnership, MEP, consists of 41 manufacturing centers in 31 states and is helping our Nation's 381,000 smaller manufacturers battle foreign competition by adopting modern technologies and modern production techniques.

Number four, promoting the development of future civilian technologies. We know that the Advanced Technology Program is help-

ing to fill the gap between the government's basic and mission-oriented R&D, and the private sector's short-term commercial research. The ATP program provides cost-shared awards to companies and consortia for competitively selected projects to develop high-risk, pre-commercial, enabling technologies—not "products," Mr. Chairman—that have huge economic potential but whose prospects are too uncertain to attract investment capital.

I might say, Mr. Chairman, I have heard a number of people say, well, why doesn't the private sector just go out to see their nearest venture capitalist or their nearest investment banker. That is the way to deal with this issue.

We all know that there is very little of that kind of capital in America, very little patient capital Mr. Chairman, and what we are suggesting is that the average venture capitalist wants to find something that he can create a product within six months, or nine months, or a year and put it to market and sell it.

That is perfectly understandable, but that does not deal with these four, and six, and eight, and ten-year projects that have the potential of creating tremendous new opportunities in the future for American workers. We believe that is a very important investment.

Number five, and finally, Mr. Chairman, ensuring the foundations for global competitiveness, public safety, and vibrant communities. In recognition that economic growth must go hand in hand with environmental stewardship, the National Oceanic and Atmospheric Administration conducts programs designed to provide a better understanding of the connections between environmental health, economics, and national security.

Commerce does this, and more, to ensure and enhance economic opportunity for the American people. That is because, in today's global economy, economic competitiveness is indeed seamless.

Trade policy opens opportunities for technology and information intensive products and services, while innovation and technological leadership builds global competitiveness to compete and win in domestic and overseas markets. The Department of Commerce is where these connections are made.

The Administration believes Commerce programs are essential for the long-term health of the economy and are a sound and proven investment in the future.

I thank you very much, Mr. Chairman, and Members of the Committee.

[The prepared statement of Mr. Brown follows:]

STATEMENT OF RONALD H. BROWN
Secretary of Commerce
before the
House Science Committee
on Commerce Department Technology Programs
September 12, 1995

Mr. Chairman, Members of the Committee: I appreciate the opportunity to appear before you today to discuss the role that the Commerce Department plays in enhancing the economic competitiveness of U.S. firms and workers in today's global marketplace. You and this Committee have always taken seriously your role overseeing a crucial component of our competitiveness -- ensuring that the United States has adopted policies conducive to scientific exploration and technological innovation. Mr. Chairman, you in particular are to be commended for the level of commitment and thoughtfulness with which you have addressed these issues over the years. With technology increasingly important to our nation's economic growth, it is imperative that we get these policies right. Continued prosperity and economic opportunity for all Americans depends on U.S. businesses and workers innovating and adopting new technologies to be internationally competitive both in foreign markets and here at home.

But I must also admit that I am chagrined that the reason for calling this hearing arises out of the Committee's consideration of H.R. 1756, the Department of Commerce Dismantling Act. This bill ignores Commerce's many contributions to the Nation, out of a reckless desire to put a cleaver to Government, without regard to whether the bill is cutting fat or muscle, and without heed to the costs to our future competitiveness.

Before discussing that bill, we need to place it in perspective. This attempt to eliminate Commerce is not merely an effort to disband the department with the smallest budget in the Cabinet. It is an unfortunate undermining of the President's competitiveness agenda, in my judgment, that ignores the realities of competition in the global marketplace and turns back the clock at least 15 years.

In testimony last Winter before this Committee, I outlined the President's vision of a United States economy sustained by growth, creating economic opportunities for all the American people. It is a vision of an economy bolstered by dynamic American businesses and highly skilled workforce using advanced technologies to produce the goods and services that consumers will demand here and all around the world.

The President's plan employs each ingredient of sustainable national economic growth: investment, a skilled workforce, open markets and innovation. Together, they form the basic equation of international competitiveness.

First, investment. Private investment drives competition and growth. It is critical to support private investment through sustained progress on budget deficits. That is why President Clinton fought so hard last year for a deficit reduction package that got government out of businesses' way in our capital markets. But deficit reduction, important as it is, must

be done in a way that preserves today's investment's in a bright tomorrow. It is important to keep in mind that more than ever before, U.S. economic growth and prosperity depend on technology. That is why the President's balanced-budget proposal, which makes tough cuts and hard choices, but in a way that provides for investments in technology and education, will best sustain the future of this nation.

Second, a skilled workforce. For firms to succeed in the economy, however, it is necessary that we have an educated, well-trained workforce. With the publication of Vannevar Bush's seminal report in 1945, "Science: The Endless Frontier," the Federal government undertook the mission of ensuring that the Nation maintained a cadre of scientists and engineers by funding advanced research at colleges and universities across the Nation. While a large percentage of the Federal R&D budget is currently directed to university research underpinning such training, proposed Congressional budget cuts could have a severe adverse impact on this source of highly trained technologists. In today's information-based economy, the prowess of our workforce is increasingly bound to the success of education and training. We cannot capitalize on advances in science and technology without a workforce able to harness these innovations. That is why the President's middle class tax cut is focused on education and training. It is also why proposed cuts to the Goals 2000, the Telecommunications Information Infrastructure Assistance Program and other education and training-related initiatives are so ill-advised.

Third, open markets -- both foreign and domestic. Opening foreign markets to the effective participation of U.S. businesses has been a priority of this Administration, of the Department of Commerce and of my own activities. With NAFTA, GATT and the recent U.S.-Japan Automotive Agreement, we have demonstrated that we will be aggressive when it comes to opening markets. Our leadership in science and technology will only bear fruit if we have markets open to our innovative products. Inasmuch as the United States faces a declining balance of trade in high technology, the Federal government should be seeking to develop incentives and support private sector efforts to develop new technologies and incorporate them into competitive products and services for the global marketplace.

Fourth, innovation. U.S. economic growth and prosperity depend increasingly on technology. It underpins America's fastest growing industries and high wage jobs. Technology provides the tools necessary to compete in every business today, and drives growth in every major industrial nation. For countries and companies alike, technological leadership means the difference between success and failure in the new global economy.

Advances in technology account for as much as 50 percent of all productivity growth in the United States during the last five decades -- and higher productivity is the key to economic growth, job creation, higher real wages, a rising standard of living, and a higher quality of life for all our citizens.

The President's support for science and technology continues a proud 50-year tradition of unwavering bipartisan commitment to U.S. technological leadership -- a

commitment that has paid rich dividends. Our public and private investment in science and technology have created a technology base that is the envy of the world, generating new industries, millions of jobs and higher living standards. In fact, American ingenuity has spurred economic growth and job creation that has helped our nation double the size of its workforce to more than 130 million since 1950.

In the course of pursuing a range of missions, the Federal government has long played a central role in building our nation's scientific and technological capabilities. Public health research has generated a flow of blockbuster drugs and medical therapies, propelling the U.S. pharmaceutical industry to world leadership and giving birth to the biotechnology industry. From our defense and space missions emerged advanced electronics, computers, and satellite communications. A small Federal investment in a computer network capable of withstanding a nuclear war resulted in the Internet, which today serves as a global communications network that provides a platform for the delivery of a wide range of services and may one day become the Nation's premiere economic tool. We must sustain our national investments in longer-term civilian R&D to ensure that we continue to enjoy such benefits in the future.

Today, the Department of Commerce, and its Technology Administration in particular, play a pivotal role in maximizing technology's contribution to economic growth, job creation, and economic competitiveness, serving as a forceful advocate for American industry within the Federal government and in negotiations with other nations.

- o The Under Secretary for Technology directs the operations of the Administration and its three component agencies and chairs the President's Civilian Industrial Technology Committee which links industry's needs and government technology efforts. The Under Secretary also leads the Federal government's participation with U.S. automobile manufacturers in the Partnership for a New Generation of Vehicles, a ten-year technical collaborative effort aimed at achieving groundbreaking improvements in fuel efficiency, emissions and safety. In addition, the Under Secretary advises senior Administration trade officials on the impact of international trade agreements, such as GATT and NAFTA, on America's high technology firms, Federal technology programs, and the innovation process.
- o Through the Office of Technology Policy, the Technology Administration develops and advocates national policies that foster technological innovation. This small office is industry's only advocate in the Federal government for policies that maximize technology's contribution to industrial competitiveness, high-wage job creation, and economic growth. OTP promotes policies that create an environment in which the private sector's technology efforts can flourish and works to eliminate unnecessary legal and regulatory barriers that inhibit innovation. In addition, this office also translates foreign science and technology literature for use by American industry and manages the U.S.-Japan Manufacturing Technology Fellowship program in which mid-level engineers from American companies are placed on the shop floor of

Japanese manufacturing facilities for up to one year, gaining critical insights into Japanese best-practices and the realities of foreign competition.

- o The measurement and standards functions of the Technology Administration's National Institute of Standards and Technology (NIST) provide a fundamental infrastructure for national and global commerce. The NIST laboratories ensure that everything from x-ray dosages to the purity of steel and the fit of automotive parts can be measured accurately.
- o NIST also conducts an array of extramural programs that are essential to U.S. competitiveness. The Advanced Technology Program is a cost-shared industry-government partnership that is sowing the seeds of future economic growth and job creation. ATP competitively awards funds, matched by industry, for developing promising technologies that would not otherwise be pursued in a competitive time frame, if at all, due to their high cost, high risk, and delayed returns. These characteristics make such research an unattractive investment for venture capitalists and for individual firms that must address more immediate business concerns and meet stockholder demands.
- o The NIST Manufacturing Extension Program provides critical aid to our nation's 380,000 small- and medium-sized manufacturers. These companies form the backbone of the U.S. industrial base, provide millions of jobs for American workers, and serve as hubs for many local and regional economies. Yet, the very existence of many of these companies is threatened by a failure to modernize their operations quickly. The MEP helps these firms become more competitive by providing technical assistance with new manufacturing technologies and approaches that lead to improvements in product quality, cost, and time-to-market. From metalworking job shops to apparel makers, some 30,000 manufacturers have tapped the once hard-to-find services now available through 41 locally run manufacturing extension centers located in 31 states. An August 1995 GAO study confirms that firms that had tapped into manufacturing extension programs report that the assistance they received had positively affected their use of technology, the quality of their product, the productivity of their workers, their customers' satisfaction, their profits and their ability to meet production schedules.
- o The National Technical Information Service helps American firms to compete by collecting and disseminating scientific, technical, engineering and related business information produced by the U.S. government and foreign sources. While NTIS is a self-supporting Federal agency, with revenues of more than \$31 million in 1993, it is not an appropriate target for privatization as has been proposed. NTIS's responsibility for ensuring that the public has access to the scientific and technological data generated by the U.S. government at taxpayer expense requires that the Federal government maintain responsibility for the agency's policy direction. Nonetheless, as part of our reinvention efforts, we will seek to provide NTIS with increased flexibility

to use commercial business practices, be granted waivers, and be accountable for agreed-upon performance gains.

The activities of the Technology Administration are not simply about laboratories, testbeds or new technology: they are about business. More to the point, they are about competing and winning in world markets, about creating American jobs, building national prosperity, and improving the quality of life for all Americans.

The record of the 104th Congress, however, stands in stark contrast to this Administration's accomplishments in the areas of science and technology. Despite bipartisan support for a strong role for the Federal government in building the nation's scientific and technical capabilities over the last 50 years, the Congressional majority rejected its own history of support for science, and has called for a one-third decrease in Federal R&D spending through 2002. The House appropriations bill includes large cuts in technology programs, including elimination of the ATP program, curtailment of the MEP program, and sharp reductions in the NOAA R&D budget which funds research in marine biology, global change, and weather forecasting. Other appropriations measures would curtail important R&D programs at the Department of Energy, at NASA, and at EPA.

These attacks on the Federal R&D budget are dangerous to our future competitiveness. Japan already invests 35 percent more than the United States on R&D on a per capita basis in civilian technology, and Germany invest 30 percent more. Moreover, Japan plans to double its R&D spending by 2000. That is one reason why the President's balanced-budget proposal, which provides room for critical investments, will best sustain our future.

On top of these measures, Congress is considering legislation like H.R. 1756 which seeks to dismantle Commerce and eliminate the crucial commercial perspective it brings to scores of issues. It would eliminate Commerce's pivotal role in both stimulating technological innovation, and in boosting exports and ensuring that American businesses can compete on a level playing field.

Before discussing this legislation with respect to its impact on Commerce's many technology programs in greater detail, Mr. Chairman, I would note that proposals to establish a Department of Science, while understandable insofar as they highlight the problems with treatment of Commerce technology functions in H.R. 1756, are no answer. Similar to calls by many to establish a Department of Trade, such proposals are basically positive, growing out of a recognition that advancement of science and technology is a vital national goal, essential for our economic well-being. They also recognize that the best way to ensure that important issues receive the attention they deserve is to provide a Cabinet-level voice that can bring them to the attention of the President and his senior advisers.

But, as I testified at a hearing before the House International Relations Committee last month, the truth is that trade and technology are inextricably linked. High technology goods are driving national economic growth in every major industrial country -- accounting for

35 percent of their output, nearly double the 1980 figure. In addition, R&D-intensive industries now account for 25 percent of world trade, compared with only 11 percent 30 years ago. High-technology firms are also associated with high value-added manufacturing and success in foreign markets which help support worker compensation that is 20 percent higher than the average for manufacturing. In 1992, U.S. exports of high technology goods supported more than 2.3 million American jobs. And American technological leadership in aircraft, pharmaceuticals and scientific instruments enable these industries to achieve a trade surplus for the United States. The aerospace industry is the Nation's leading net exporter of manufactured goods with net sales in excess of \$40 billion in 1993.

America's trading partners recognize the critical linkage between technological leadership and national prosperity and are moving forward with a full head of steam. Both industrialized nations, such as Japan, Germany and France, and rapidly industrializing nations, such as Korea, Singapore, and Taiwan, are pursuing policies aimed at giving their nations' corporations a competitive edge in world markets against U.S. firms.

My activities as Secretary of Commerce over the course of the last 3 years have also made it abundantly clear that issues critical to exporting increasingly involve technology -- issues such as international standards and accreditation, liberalization of telecommunications and information markets, protection of intellectual property rights abroad, and environmental matters. Breaking Commerce apart is a step in the wrong direction because it fragments programs critical to our competitiveness in different departments, leading inevitably to a call a few years down the road to re-combining them.

H.R. 1756, is a badly flawed bill, and many of its drawbacks relate to Commerce's science and technology programs. The Chrysler bill would:

- o Silence the business voice at the Cabinet table.
- o Roll back the gains we have made in civilian technology by abolishing the Technology Administration and terminating the Office of Technology Policy, thereby eliminating the unique and critical role they play in creating an environment in which U.S. industry can flourish, and by eliminating other vital technology programs, such as the Advanced Technology Program and the Manufacturing Extension Partnership. The bill attempts to sell off the NIST laboratories and the National Technical Information Service without regard to the important governmental functions these agencies perform. It would then transfer standards and measurement functions to the National Science Foundation, ignoring the fact that this function is performed by the laboratories which the bill requires to be sold, and ignoring the fact that the function is not consistent with the NSF's mission and capabilities.
- o Destroy the organizational integrity of the National Oceanic and Atmospheric Administration (NOAA) by scattering its functions to the four winds, sending charting

to Defense, the seafood inspection function to Agriculture, geodesy, weather service, fishery service and marine sanctuary functions to Interior, and enforcement to Transportation. Ocean and atmospheric research programs would be abolished, along with the NOAA Corps and numerous grant programs critical to the functions of fishery science and management. Such a scattering of related functions would destroy the synergy among NOAA's services, as well as the critical linkage between the economy and the environment. No other agency working in the natural environment has NOAA's unique capabilities to measure, monitor, manage and gain understanding of our atmospheric and marine systems.

- o Eliminate the National Telecommunications and Information Administration (NTIA) as the Executive Branch's voice on telecommunications matters and transfer management of the Federal spectrum to the Federal Communications Commission (FCC), an independent, regulatory agency. With the massive size of the world's telecommunications and information sector -- over \$590 billion in annual domestic revenues -- it is no time to eliminate the Cabinet voice for telecommunications policy. Given the sensitive nature of a number of spectrum management and other telecommunications issues -- NTIA manages, for example, the Federal government's use of the radio spectrum for national defense and national security purposes -- we cannot afford to shunt this function to an independent agency. Because the FCC is an independent agency, transferring Federal spectrum management could raise concerns regarding interference with the President's constitutional authority over national defense.

While the Chrysler bill's treatment of the science and technology functions is bad enough, equally short-sighted is the bill's treatment of Commerce's trade and other functions. The bill would eliminate the commercial perspective on export control matters by sending the functions to the State Department and to the Treasury Department. It shatters the organizational structure of the International Trade Administration (ITA) by eliminating essential international economic policy, trade development, and domestic field office export promotion functions, while placing other parts at USTR, Treasury, and the International Trade Commission. It would destroy the synergy already achieved by unifying programs with a commercial focus in a single department. For these reasons, the President has advised he will veto any legislation that dismantles the Commerce Department.

Before discussing Commerce's science and technology functions, there are two additional points that you should consider about H.R. 1756. First, the deficiencies in the Chrysler bill will not be "fixed" by substituting the text of H.R. 2124 (Representative Mica's bill) for the trade provisions of H.R. 1756. Second, dismantlement of Commerce as prescribed by H.R. 1756 will not save money apart from the program reductions, many of which the Department opposes strenuously. Moreover, these reductions could be accomplished through the appropriations process.

TRADE REORGANIZATION PROPOSAL (H.R. 2124)

Representative Mica's bill would establish a new United States Trade Administration that would be created by taking pieces of the Commerce Department and combining them with USTR and the Trade and Development Agency. In reality, this approach is little improvement over H.R. 1756:

- o As Ambassador Kantor noted in his testimony last month, USTR benefits enormously from its position within the Executive Office of the President as the President's chief trade negotiator and principal spokesperson on trade policy. USTR will not be well served if the office becomes immersed in thousands of administrative details currently within Commerce's purview.
- o The Mica bill presumes that consolidation of U.S. government trade functions is needed to "unify" and "coordinate" Federal trade-related activities. On the contrary: U.S. trade policy has never been better coordinated. For the first time, we have a National Export Strategy, which is well on its way to achieving its goal of increasing U.S. exports to \$1.2 trillion by the year 2000, thus supporting over 6 million jobs. We have a focused, Administration-wide trade advocacy strategy, with an Advocacy Center here at Commerce, in which the U.S. government "goes to bat" for American firms -- large and small -- as they battle for major overseas projects. We have energized the Trade Promotion Coordinating Committee under Commerce's chairmanship and brought under one umbrella all Federal export promotion efforts.
- o The Mica bill transfers only Commerce's most obvious "trade" functions, completely missing the vital trade functions performed by other components of the Department. As a result, the bill shares the problem of the Chrysler bill in that it destroys the synergy created by unifying commercial programs in one department. While ITA and the Bureau of Export Administration (BXA) are Commerce's two chief trade agencies, we also provide support critical to international competitiveness through other bureaus, such as NIST (regarding international negotiations on product standards, conformity assessment practices, and standards infrastructure), NTIA (international discussions to liberalize telecommunications services), the Patent and Trademark Office (PTO) (international negotiations on intellectual property issues), NOAA (international discussions regarding environmental matters and international fishing agreements), and the United States Travel and Tourism Administration (USTTA) (international discussions on travel and tourism matters and agreements).
- o Finally, the underlying reason many admit to the need for a trade agency is the recognition that playing fields are not level in the global marketplace. The Government has a duty to protect its commercial interests and make sure that United States businesses have every opportunity to win contracts abroad that mean jobs at home. At bottom, this concern is one which goes to the need to ensure that government does its part to promote the economic competitiveness of our businesses.

But international trade is only one part of the competitiveness equation. "Trade" is also a domestic concern because if you are not competitive abroad, you will not be competitive at home in light of today's intensely global competition. That's why we have reinvented all of Commerce's programs around a competitiveness theme. Commerce already has in place programs that enhance that ability, including programs that relate to business counseling, advanced technology, intellectual property protection, quality management, and the economic data and environmental information on which business depends.

BUDGET SAVINGS UNRELATED TO DISMANTLEMENT

It is also important to understand the true budgetary impact of dismantling Commerce. The \$7.8 billion estimate for the bill does not represent the cost savings of "dismantling" Commerce. Most of the savings relate not to terminating the Department of Commerce, but to terminating grants and other programs within Commerce's various bureaus and reducing funding for all transferred functions by 25 percent. Of course you save money by not funding grant programs. I do not think these funding reductions are wise, but they have nothing to do with eliminating a Cabinet Department. In truth, the bulk of Commerce's historical functions are continued in one form or another through dispersal to 16 other agencies. Census functions performed at Treasury will cost just as much as they do at Commerce.

Indeed, as OMB Director Rivlin noted when the Chrysler Bill was introduced, it is doubtful that any savings would occur strictly from dismantling Commerce. Moreover, by using the FY 1995 CBO baseline from which to calculate savings, the Department estimates that the Chrysler bill is in fact more than \$5 billion *short* of minimum expenditures that must be made for continuing programs.

- ▶ *NOAA*: Within NOAA, the estimates omit funds to pay for continuation of weather satellite systems and completion of the Congressionally approved Weather Service Modernization program. The costs for procuring additional satellites and Weather Service contracts alone are approximately \$1.5 billion above the Chrysler estimates (\$785 million above the CBO baseline) for the modernization program. These costs are required to ensure protection of lives and property through future continuity of weather warnings and forecasts nationally.
- ▶ *Census*: The largest omission is that the CBO baseline does not include an estimate for the decennial census in the year 2000. The five year total decennial shortfall from 1996 to 2000 is \$3.6 billion, and for all Census programs exceeds \$4.3 billion. Also the Chrysler bill had claimed \$.8 billion from decennial census improvements within the \$7.765 billion saving estimate. However, since no funds are in the CBO baseline for the decennial, the funds cannot be saved.

In addition, the Chrysler bill estimates incorrectly treat PTO fees, omits the cost of the establishment of a Commerce Programs Resolution Agency (CPRA), and fails to account for terminations costs as follows:

- ▶ *PTO:* The Chrysler bill makes two substantial errors in its treatment of the Patent and Trademark Office. The Omnibus Budget Reconciliation Act of 1993 requires \$325 million to be appropriated from the PTO Surcharge Fund. The Chrysler bill would make those funds directly available to PTO, but does not identify an offset. Therefore, in terms of the deficit, the savings are overstated by \$325 million. Further, PTO collects 100 percent of costs in fees now. If PTO must reduce costs 25 percent as called for in the Chrysler bill, no reduction will accrue to the deficit because PTO already obtains these fees directly.
- ▶ *CPRA:* Establishment of a Commerce Programs Resolution Agency (CPRA) is assumed in the Chrysler bill, and would operate for three years. We believe that it would cost approximately \$150 million for that period, about the same as the Office of the Secretary and Inspector General currently cost.
- ▶ *Termination costs:* A total of 12,685 FTEs would be eliminated under the Chrysler bill assumptions, 35 percent of existing staff, in the first year after enactment. The closeout costs, RIF costs and dislocation costs would total \$1.526 billion for all of Commerce.

Finally, a significant portion of the "savings" is attributable to the ability to achieve an across the board 25 percent reduction in the cost of remaining functions. The basis, however, for the 25 percent cut below FY 1994 funding totals is not stated in the legislation or the press release. Representative Chrysler indicated on July 24 that the cut was related, at least in the case of PTO, to an overhead rate Commerce now charges bureaus.

- ▶ *Overhead rate:* Commerce does not charge its bureaus any overhead rate. While Commerce sells services through the Working Capital Fund, bureaus purchase an average of 1.4 percent of their available funding in services. All Commerce oversight is funded through the general administration account, \$36 million in FY 1995 or about 0.7 percent of the Commerce total appropriation.
- ▶ *Seventy-five percent ceiling:* In fact, the Chrysler bill would employ a meat-axe approach to downsizing by mandating across-the-board cuts of one-quarter, regardless of priorities and regardless of need. It is important to note that this limit is a permanent ceiling on expenditures, freezing funding levels at 75 percent of the FY '94 level.
 - To take one egregious example, this limit would devastate our ability to conduct the *decennial census* given the cyclical nature of its funding needs -- gearing up over the course of the decade and culminating at the turn of each

decade in the conduct of a new decennial census. To make matters worse, H.R. 1756 freezes Census funding levels at 75 percent of the FY 1994 rate, which of course is the low point in the cycle (the cycle would be from 1993 to 2003, reflecting the time spent on delivering the diverse decennial census data products). Although GAO estimates the 2000 decennial at a cost of \$4.8 billion over 10 years, there are *no decennial preparation costs* in the FY 1994 budget. While we anticipate saving approximately \$1 billion and 200,000 temporary census employees as a result of our reinvention efforts at Census, counting hundreds of millions of people is an expensive proposition. The Chrysler bill ignores the reality of the census cycle and would preclude us from carrying out the Constitutional responsibility to conduct an "actual enumeration" of our people.

- A second egregious example is the impact on providing *timely weather warnings and forecasts* for the protection of life and property of U.S. citizens. The provision of warnings is a universal public good -- no questions asked. At the 75 percent funding level for future operations: (i) no money would be available to operate 62 of the 118 new Doppler radars already agreed to by Congress as part of Weather Service modernization and more than one third of the \$1.4 billion already invested in these radars would be wasted; (ii) NOAA would lose one-half of its satellite capability, creating the potential for a satellite blackout in either the GOES or polar satellite program. Such a loss would dramatically reduce NOAA's capability to monitor severe weather over the United States (such as tornadoes, thunderstorms, flash floods, winter storms, and fog). The elimination of one GOES would prevent early warning of Atlantic and Gulf storms, most importantly, early warning of hurricanes. At the 75 percent funding level, the interagency agreement to merge the polar-orbiting satellites of NOAA and DOD would be jeopardized because NOAA could not fully fund its share of the converged program.

When you recognize that the reductions called for by H.R. 1756 relate more to program reductions wholly apart from the dismantling of a Cabinet Department and then correct for the errors and other omissions in the cost estimates, it is clear that dismantling Commerce is not a money saver. But more importantly, the bill completely ignores the real costs to the economy. Commerce is an investment in the competitiveness of American business. Trade advocacy will suffer under the bill, and that will mean fewer exports as our trading partners will gleefully capitalize on our weakness. Technological advances will be delayed, and that will make our products less competitive. Enforcement of the unfair trade laws will be undermined, and that will threaten U.S. jobs. The bill is a classic example of "penny-wise and pound-foolish" -- it doesn't address the deficit problem, it exacerbates it by imposing hidden costs that will result in lower economic growth and fewer jobs and, therefore, lower incomes and lower tax receipts. While our views about this bill are clear and unalterable, the Administration would be more sympathetic to proposals to establish a

Commission to review government organization on a comprehensive basis than to proposals that prejudge outcomes before completion of any serious review.

COMMERCE SCIENCE AND TECHNOLOGY PROGRAMS

Proposals to consolidate Government science functions, including NOAA, NIST, NTIS, NTIA and PTO, at least avoid some of the pitfalls of H.R. 1756: for example, those created by scattering related functions to diverse agencies as proposed by that bill. Nonetheless, as this testimony makes clear, we believe Commerce's focus on competitiveness is a better organizational framework because it responds to economic trends and prescribes the right solutions.

Recent Trends

Trade and technology functions are the keys to economic growth. Our economic well-being increasingly depends on U.S. businesses and workers innovating and adopting new technologies to be internationally competitive both in foreign markets and here at home.

This new reality reflects an economy that is dramatically changing -- the result of two historic developments: the increasing globalization of the world economy, and the accelerating pace of technological change.

This new economy poses new challenges for American businesses and workers. It means that growth and competitive success more than ever depend on providing constantly improving products and services that meet market needs -- the product of continuous innovation and its handmaiden, technology. And it means that American businesses, whether they ship around the world or to the next county, increasingly are face to face with foreign competitors.

The equation which unites trade and technology is straightforward: to keep up with foreign competitors, and to generate stable high paying jobs for Americans, we need to take advantage of world markets (domestic and foreign), while ensuring that the United States leads the world in technology.

Three factors shape this equation:

- o *Success in global markets is increasingly important to the U.S. economy:* American workers depend on the ability of our companies to sell their goods and services in foreign markets -- and to compete successfully against foreign products and services domestically. Over the last seven years, U.S. exports of goods and services accounted for over one-third of our economic growth -- while export-related jobs grew six times faster than total employment. By 1994, exports of goods and services

supported over 11 million jobs in the United States. Within five years, that number could rise to 16 million.

This strong growth in U.S. exports benefits U.S. workers through higher real wages. In 1992, wage rates in jobs supported by goods exports averaged 13 percent more than the national average.

The ability to compete globally is critical for another reason -- because of the importance of U.S. businesses competing against foreign products and services in the domestic market. About one-fifth of our economy is now linked to foreign trade. In industries ranging from motorcycles to computers, the global market doesn't start in Europe or Asia -- it starts in the United States.

- o *Innovation and technology increasingly drive economic growth -- and U.S. competitiveness:* By some estimates, more than half of our economic growth since World War II has been fueled by advancing technology. Software, which hardly existed as an industry two decades ago, now employs over 500,000 highly paid people.

Innovation and technology not only create jobs -- they create good, sustainable jobs, exactly the ones that we want to create. The average annual compensation in high technology sectors, for example, exceeds the average of all manufacturing by 20 percent.

Furthermore, technology drives U.S. competitiveness. A recent study demonstrates specifically what a difference technology makes to U.S. competitiveness -- companies that use advanced technologies are more productive, pay higher wages, offer more secure jobs, and increase employment more rapidly than firms that do not. They are, in short, more competitive.

- o *Technology and exports work together for competitiveness and good jobs:* While both exporting and the use of technology by themselves create better and more jobs, recent analysis demonstrates that technology and exporting reinforce each other -- that companies that use both advanced technologies, and demonstrate their international competitiveness through exports, increase employment, pay higher wages, and offer more secure jobs than those that do not. *Technology and trade work together for economic opportunity.*

And the economic stakes are increasing. By 2010 world imports of our trading partners are expected to exceed \$5 trillion -- an increase in real terms of more than 65% from today's level, with much of the growth driven by demand for technology based products and services. Technology intensive products will be an increasing slice of this rapidly expanding pie -- exports of technology intensive

manufactured products in the OECD grew from 18% of total exports in 1981 to 33% in 1992.

These aggregate trends mirror the rapid growth of individual industries that employ thousands of Americans. U.S. information technologies markets are expected to grow at an average rate of seven percent in real terms per year -- reaching \$275 billion by 2010. Infrastructure development projects are estimated to be at least \$1 trillion in Asia by the year 2000, and to approach \$500 billion in Latin America over the next decade. In markets as diverse as environmental technologies, aerospace, autos, health technologies, telecommunications, and financial services, innovation and technology will be at the heart of expanding commercial opportunities for U.S. companies -- or our foreign competitors.

The Need for Partnerships

While economic studies confirm what many of our trading partners have known for years -- that using technology and innovation to compete and win in global markets is the future for any advanced economy -- other factors point to the need for new forms of partnerships in order to succeed in the global economy:

- o *The expanding role of other governments in trade:* In today's economy, it is not just companies, but nations, that compete.

For many years, our foreign competitors have worked hard to get their companies contracts from other governments and in other markets around the world. The United States, however, ranks last among six major foreign competitors (United Kingdom, France, Canada, Italy, Germany, and Japan) in the percentage of national resources devoted to foreign export promotion. In critical foreign markets, leading foreign competitors actually have more export assistance personnel in the field than we do.

Our economic competitors recognize what previous Administrations have been slow to respond to -- that overseas market opportunities in the most promising markets are significantly shaped by host government wishes. In many key technology markets -- like telecommunications -- host governments often are the owners. And even in the private sector, in many of the most promising and highest growth "Big Emerging Markets" the government has a say in the outcome of major projects.

In these circumstances, U.S. companies, standing by themselves, face a tilted playing field against the industry-government teams of our competitors. It is to level the playing field -- in order to give U.S. companies a fair opportunity to compete -- that this Administration is acting vigorously to support U.S. companies overseas.

- o *Chronic under-investment in long-term civilian research and development:* Just as the products and services we sell now in many cases reflect R&D efforts from 10 to

25 years ago, so our future competitiveness depends on the investments being made now.

As a nation the United States devotes about 43% of our total R&D effort towards defense, space, health, and other national 'mission-driven' expenditures. The balance -- 57% -- is devoted to civilian technologies. Thus, there are two questions: How are we doing in our civilian technology investments compared to our trading competitors? And, how likely is it that mission-driven R&D will produce civilian spinoffs?

The future payoff from investments in civilian R&D depends in part on the serendipity of innovation, but leadership also depends on factors that are more quantifiable -- in particular the level of civilian R&D compared to our competitors (declining), and the time frame from civilian R&D (short and getting shorter). Specifically:

- For industry funded R&D (55% of total national R&D):
 - For the past decade, spending by U.S. firms on R&D has remained flat, while that of our competitors continues to rise. Among major high-tech firms, *The Wall Street Journal* reports that overseas major high-tech companies increased R&D spending by 23% from 1988 to 1993, while U.S. spending was flat. And some of the leaders in basic civilian technology research -- AT&T, General Electric, IBM, Kodak, Texaco, and Xerox -- have dramatically reduced their R&D spending.
 - Furthermore, U.S. companies have for the last decade *emphasized short-term commercialization* projects in favor of longer term research. In aggregate, U.S. companies invest less than 5 percent of their R&D expenditures in long-term projects.

- For Federal R&D for civilian industrial technologies (2% of the national total):
 - This year the United States ranks 28th in the world (just ahead of the Czech Republic) in the percentage of public sector R&D dedicated to civilian research.
 - In aggregate, the U.S. consistently invests a lower percentage of our resources in non-defense R&D than do our competitors. As noted above, Japan invests 35% more on a per capita basis in civilian R&D than does the United States; Germany invests 30% more.

- o *The shifting relevance of defense and other mission-related Federal R&D (43% of total) to civilian competitiveness:* For years the United States has benefitted from a steady flow of new commercial technologies emerging from science and research in key national missions -- defense of the Nation, health, space, and the quest for new knowledge.

Times and technologies have altered the relevance of this model as the primary means of benefiting civilian technology. Several factors help explain why this model -- which was so successful in the past -- is less relevant now.

First, our mission oriented agencies -- the Defense Department, the Department of Energy, and NASA -- are no longer the dominant customers for most high technology. In computers and semiconductors, for example, DoD consumes less than five percent of the market. Nor are they technological leaders to the commercial sector. In fact, the new technologies that are most critical to our military advantage -- software, computers, semiconductors, telecommunications, advanced materials, and manufacturing technologies -- are being driven by commercial, not government mission related, demand.

Furthermore, the competitive dynamic between overseas and U.S. companies has shifted over the years. Foreign companies are increasingly skilled at taking basic research findings from whatever source -- including Federal research -- and adapting them to commercial needs. Cycle times -- the elapsed time from idea till market -- have and will continue to shorten.

This means that i) increasingly technological breakthroughs spurred by a national security or mission need will be brought first to market by a non-U.S. company; and ii) for an increasing number of technologies, advancements in civilian applications are subsequently driving the mission work.

This lack of adequate investment in civilian R&D already is taking its toll on the United States. Based on OECD designations, the United States trade balance in 'high tech' manufacturing industries has steadily eroded for the past 15 years -- and has been negative for the last decade. In 'advanced technology products' -- including advanced materials, biotechnology, aerospace, electronics, flexible manufacturing, information and communications, and optical electronics -- the U.S. trade surplus has eroded by more than 20 percent from 1990 to 1993.

The loss of overseas markets means lost American jobs. In aerospace products, for example, the decline in U.S. share worldwide -- from 79% in 1970 to 62% in 1988 -- is equivalent to about 300,000 lost American jobs at today's operating rates.

Consequently, today we need a different technology model -- one that focuses explicitly on civilian industrial technology and better connects the federal basic research mission to real-world private sector commercialization.

- o *The expanding role of standards and frameworks in shaping competitiveness:* Domestically and overseas, standards and frameworks that shape private investment play an increasingly important role.

With reductions in tariffs and quotas from GATT and other trade agreements, product standards are the most significant barriers to many exports. Foreign product standards and certification requirements affect about half of all U.S. exports -- approximately \$300 billion in 1993. Meeting these product standards and specifications dictated by foreign governments can be a costly -- a typical U.S. machine manufacturer may spend as much as \$100,000 a year in compliance, a burden especially onerous for small- and medium-sized businesses.

Individual companies by themselves can have only limited impact in influencing other nations and regional and international groups to adopt standards consistent with U.S. practice. Government, in partnership with industry, needs to play its part in shaping these standards.

The laws and regulations which create the framework for markets here at home also shape competitive success. In a global economy, success at home will often translate into success abroad, while conversely, failure to achieve success domestically will leave U.S. firms at risk here and at a competitive disadvantage abroad.

That is why, for example, the Administration has placed such emphasis on the passage of telecommunications legislation that will deregulate and open new markets. The economic benefits -- domestically and internationally -- are enormous. A report by the Council of Economic Advisers predicts that reform will drive a boom in the telecommunications and information sectors over the next ten years, doubling its share of GDP, adding more than \$100 billion to the economy, and employing another 1.4 million workers.

- o *The need for information by small and medium businesses:* Technology and information is only useful if it gets to those who can use it. And -- although often a simplifying assumption made by economists -- information is not equally available to everyone. Small and medium-sized businesses, in particular, often lack the resources to learn about new technologies, products, or market opportunities.

The goal of bringing technology and information to users who can make it work for our country is longstanding -- and exemplified in the agricultural extension

service, perhaps the most successful governmental technology program in our history.

Today the need continues -- in ensuring that knowledge about new technologies for competitiveness, and new opportunities in overseas markets reach small and medium-sized manufacturers.

The National Economic Strategy and the Department of Commerce

The challenge is clear -- success in the new global economy requires us to take advantage of foreign markets and to ensure that the United States leads the world in advanced technologies.

But the private sector -- by itself -- cannot respond to the intervention of other governments on behalf of competitors, negotiate to change international standards, or compete against the national research efforts of our economic competitors. Government too has a role in maximizing the opportunities for private business to innovate and to succeed in world markets.

That is why the President has put forward a national economic strategy, which includes tools to boost exports and advance technology -- including the need for our government to respond to foreign governmental actions; the need to remedy under-investment in long-term R&D that threatens our long-term competitiveness; and the need to reduce the difficulties faced by small and medium-sized business in obtaining easy access to both foreign markets and needed technologies.

While innovation must continue to come from the private sector, government must work to maximize opportunities for private business to innovate -- by reducing export controls, reforming regulations to give companies room to compete, by opening markets, and by creating incentives for private industry to invest in long-range, high-risk research.

And while the push to global markets must also come from the private sector, government must work to knock down the barriers and ensure that U.S. firms have a level playing field wherever they compete -- by providing information on overseas opportunities, eliminating unnecessary regulations, and working as a partner with business when other governments seek to tilt the playing field.

The Department of Commerce is central to this strategy -- as the place in government where trade and technology and information work together. Central to the Department's mission is the recognition that we live in an increasingly global economy in which all aspects of economic competitiveness are integrally connected. The Department of Commerce works in partnership with businesses, workers, and communities to increase exports, advance U.S. technology, and enhance our global competitiveness -- not as distinct and unrelated tasks,

but as interlocking elements to achieve the Department's overall mission -- to ensure and enhance economic opportunity for all Americans.

Trade and Technology Working Together at Commerce

The work of the Department of Commerce to integrate trade and technology has the following basic components:

(1) *Opening global markets to U.S. business:* Trade policy is now dedicated to creating opportunities for U.S. companies in global markets. For the first time in our history, this Administration has created a National Export Strategy -- the means for government and business to work together to increase U.S. exports.

These efforts produce results. Through export promotion and advocacy efforts -- about 80% of which are devoted to small and medium-sized businesses -- Commerce helped to produce about \$45 billion in foreign business deals in 1994, with \$20 billion in U.S. export content, supporting about 300,000 person years of employment in America. This on a budget of about \$250 million per year.

But Commerce's work goes beyond advocacy and information. In expanding exports, Commerce works to create a global environment conducive to U.S. technology and innovation. Consider:

-- The *National Institute of Standards and Technology* (NIST) provides critical technical support for international negotiations regarding product standards, conformity assessment practices, and standards infrastructure. Recently, the NIST laboratories have expanded their standards activity to help industry avoid or overcome technical barriers to trade. For example:

- o NIST is working to eliminate non-tariff-related barriers to trade -- producing an additional \$20-40 billion in U.S. exports. In 1994 alone, NIST participated in and provided technical support to more than 800 national and international standards committees. In addition, on behalf of the U.S. industry, NIST is involved in implementing technical standards that support the GATT and the NAFTA.
- o NIST labs are helping to keep open markets by helping to develop Mutual Recognition Agreements (MRAs) -- agreements which can eliminate costly delays that result when products must be returned to the United States after failing conformance testing in a foreign market.

-- The *National Oceanic and Atmospheric Administration* (NOAA) provides key expertise to support international negotiations concerning environmental issues. In addition, NOAA's expertise in environmental technologies provided essential support to export promotion efforts. For example:

- o Hewlett-Packard and Riverside Technology, Inc., have won contracts to furnish the hardware, software and systems -- based on technology development funded by NOAA -- needed to operate the Water Resources Forecasting System in China.
- o NOAA provided critical support to ITA in connection with a \$1.4 billion Brazilian government contract with a consortium led by the Raytheon Company for the construction of the Amazon Surveillance System. It will result in an estimated \$700 million in U.S. exports.

-- The *National Telecommunications and Information Administration* (NTIA) works to liberalize foreign telecommunications services. With over \$590 billion in annual domestic revenues, the telecommunications and information sectors are massive. By the year 2000, telecommunications and information-related industries could account for approximately 20 percent of the entire U.S. economy.

With the United States standing virtually alone among countries that have private sector telecommunications markets, government-to-government relationships are critical for access by U.S. companies. We will not be able to compete if other countries continue to protect their monopoly telecommunications providers.

Combining trade and technology concerns into the same Department facilitates a "one-two" punch in support of American telecommunications firms. NTIA lays the groundwork for opening global telecommunications markets so that ITA can help U.S. businesses as they pursue specific ventures in those markets. For example:

- o Recently NTIA participated in bilateral discussions in Brussels regarding liberalizing European telecommunications services. The day after the meeting, the European Commission adopted an accelerated telecommunications liberalization timetable -- directly benefiting U.S. companies who are eager to compete and invest abroad.
- o Through the combined efforts of ITA and NTIA, Commerce helped NYNEX win a complex bid to install a global telecommunications system known as FLAG (the Fiberoptic Link Around the Globe) which, when complete will be the longest undersea telecommunications cable, connecting Southeast Asia, the Middle East, and Europe. The project's value has been estimated at \$1.4 billion with \$900 million in U.S. content, supporting 10,000 U.S. jobs.

-- The *Patent and Trademark Office* (PTO) plays a central role in the Administration's efforts to provide better protection of intellectual property -- an essential element to international competitiveness. Strong intellectual property protection enables American inventors to gain the full benefits of their creations, stimulates more innovation, and protects businesses and consumers from unfair trade practices. For example, PTO has helped produce:

- o The Trade-Related Aspects of Intellectual Property Rights (TRIP's) agreement in GATT, which establishes intellectual property protection standards for more than 110 countries;
- o A U.S.-Japan Agreement eliminating dependent patent compulsory licensing in Japan; and
- o A series of negotiations, including the Trademark Law Treaty and Protocol to the Berne Convention for the Protection of Literary and Artistic Works, to protect all forms of intellectual property around the world.

(2) Promoting the development of future civilian technologies: The Advanced Technology Program (ATP) helps fill the gap between basic and mission-oriented R&D -- which accounts for the great majority of the U.S. Government's R&D spending -- and short-term commercial research, which accounts for almost all of the private-sector spending. The ATP provides cost-shared awards to companies and consortia for competitively selected projects to develop high-risk, enabling technologies -- not products -- that have huge economic potential but whose prospects are too uncertain to attract investment capital and whose benefits disperse too widely to permit a single firm to capture the resulting economic benefit.

The early results of an analysis of ATP awards to date finds important new technical capabilities, creation of new jobs, new commercial opportunities -- and some early growth -- for U.S. firms and our technology base. Although the major benefits of the ATP will take years to realize, preliminary data from 34 small firms indicate that over 90 percent expect to add new employees within five years; of these, half expect to add more than 25 employees.

(3) Facilitating the rapid deployment and commercialization of civilian technologies: In the global economy, being competitive globally starts with being competitive in the United States.

The Manufacturing Extension Partnership (MEP) whose 41 manufacturing centers in 31 states are helping the Nation's 381,000 smaller manufacturers battle foreign competition by adopting modern technologies and production techniques. In 1994, the staff made more than 10,000 site visits to smaller companies, during which they assessed company operations and recommended ways to improve efficiency. Anticipated impacts from the MEP translate into a conservatively estimated benefit of \$8 to the private sector on each \$1 that the Federal government invested in the MEP.

(4) Facilitating the technology and information infrastructure for the 21st century: NIST labs are focused on working with industry to develop the technical infrastructure that U.S. companies and workers need to compete and win in worldwide economic competition.

Without sustained efforts by the NIST labs, U.S. firms in many emerging high-technology fields -- such as biotechnology, optical electronics, advanced manufacturing and materials, and high-performance computing and communications -- will lack the underlying measurement technologies and standards necessary to make quality products for future global competition.

Just as telecommunications and information is an extremely important export market, we also must promote policies that ensure the competitive health of this sector within the United States. The National Telecommunications and Information Administration, consulting closely with the private sector, has taken a strong leadership role within the Administration on all issues involved in advancing the National Information Infrastructure (NII) and the Global Information Infrastructure (GII). NOAA is also leading a G-7 project to demonstrate the potential of the GII in the area of infrastructure and information management technologies for the environment and natural resources.

NTIA has worked with the private sector to set forth blueprints for the NII and GII and implemented a grant program to demonstrate the potential of the NII in local communities across the Nation, focusing on applications in the areas of education, medicine, and community networks.

NTIA was at the forefront of efforts to create legislation authorizing the FCC to auction radio spectrum licenses. These auctions will not only expedite the provision of the next generation of cellular phone service to the public, they will yield directly or indirectly approximately \$9 billion to the U.S. treasury. NTIA also developed a plan for release of 235 MHz of Federal radio spectrum to the Federal Communications Commission (FCC) for assignment to the private sector, which is expected to spawn a new generation of wireless telecommunications and information services.

NTIA often advocates the introduction of competition into, and the deregulation of, the provision of telecommunications and information services to the public. For example, NTIA developed policies to help guide the FCC in its decisions establishing the market structure and licensing of new personal communications services.

Just as decisions regarding international trade opportunities demand accurate data, the ability of decisionmakers in both the private sector and the Government to promote economic opportunity and growth at home depends on the quality of the data available. The *Census Bureau* and the *Bureau of Economic Analysis* generate economic and demographic data that are critical to business' ability to measure economic performance and make sound investments.

(5) Ensuring the foundations for global competitiveness -- public safety and vibrant communities: In recognition that economic growth must go hand-in-hand with environmental stewardship, the National Oceanic and Atmospheric Administration conducts programs

designed to provide a better understanding of the connections between environmental health, economics, and national security.

- o NOAA protects life and property and helps to predict and ameliorate man-made causes of longer-term climate change by improving environmental monitoring, prediction and assessment. NOAA weather research and monitoring has resulted in improvements that enhance the accuracy of hurricane track models. These models have reduced the size of the warning area, resulting in savings of \$1 million for each mile of coastline that is not needlessly evacuated.
- o The National Ocean Service provides direct services that aid the competitiveness of U.S. exports and the ports and harbors that move the more than \$500 billion worth of U.S. goods bound for overseas every year. Modernization of NOAA's nautical charting and the installation of real-time water level, tide and current stations are providing more accurate data on actual conditions in our ports and harbors.
- o NOAA's ocean and coastal management efforts have resulted in the establishment of estuarine research reserves, national marine sanctuaries and federally approved state coastal management programs. These management efforts successfully balance competing needs of resource protection and economic development. Further, these efforts create appropriate Federal-state partnerships in ocean and coastal management.
- o NOAA's Aeronomy Laboratory is leading the search for an "ozone solution" by studying the atmospheric fate and lifetime of substances that are proposed as substitutes for ozone-depleting chlorofluorocarbons (CFCs). The Montreal Protocol on Substances that Deplete the Ozone Layer has set a strict timetable for the elimination of CFCs and halons, and industry is active in the search for alternatives for use as refrigerants, propellants, commercial solvents, and so on. The suitability of any given alternative compound depends on determining its potential effects on the ozone layer. NOAA research on the atmospheric chemistry of CFC substitutes has had a major impact on both the international policy and industry decisions regarding the selection of suitable replacements for the ozone-destroying compounds. This research can result in considerable cost-savings to industry and help mitigate damage to the stratospheric ozone layer.

Conclusion

In today's global economy, economic competitiveness is seamless: trade policy opens opportunities for technology- and information-intensive products and services, while innovation and technological leadership builds global competitiveness to compete and win in domestic and overseas markets. The Department of Commerce is where these connections are made. If we are to examine how best to organize the work of the Department, it is critical to understand exactly how Commerce programs help make the Nation more

competitive. The Administration believes Commerce programs are essential for the long-term health of the economy and are a sound and proven investment in the future.

The Committee's letter of invitation to the hearing states that the key focus today will be to explore the disposition of science programs under H.R. 1756 as a result of termination of the Department of Commerce. One proposal under the Committee's review would be to salvage the programs through a Department of Science, and alternative proposals would transfer some functions to other research agencies, establish stand-alone agencies, and outright eliminate other functions.

I would encourage the Committee to broaden its horizons. It only makes sense to consider consolidating Commerce's science and technology programs in a Department of Science or elsewhere if you have determined first that keeping them at Commerce is not better. Since that is patently not the case, we urge you to reject the false economies of dismantling Commerce and preserve its ability to represent the interests of American business both here and abroad.

Thank you.

The CHAIRMAN. Thank you, Mr. Secretary.

The Chair intends to go for about 35 minutes here recognizing Members for 5 minutes in the order that they arrived in the room.

Then what I will do is, when we have run out of time for this session, with the exception of Mr. Brown, I will then come back and start the list for the next witness with the people who did not get a chance to ask questions on this round.

The first person I will recognize is Mr. Brown.

Mr. BROWN. Mr. Chairman, in deference to the need for the junior Members to have an opportunity to question the Secretary, I would like to relinquish my time at this point.

The CHAIRMAN. Thank you, Mr. Brown.

Mr. Weldon?

Mr. WELDON of Pennsylvania. Thank you, Mr. Chairman.

Let me say at the outset, Mr. Secretary, that I appreciate you coming over and hearing your testimony.

In spite of the effort to totally dismantle Commerce, I would be one, as I said in my opening statement before you arrived, to acknowledge the many vital programs that are in fact a part of Commerce.

I, for one, am a strong supporter of NOAA and the operations of that agency. I think that both the Administration and the Congress has in fact short-changed our commitment to the ocean ecosystem and the potential that we could benefit from in terms of additional work there.

I also have seen first hand the work that Commerce has done in the business program, which I think has become a very successful operation in reaching out to the former Soviet Republics, and I want to acknowledge that publicly because I think that has been a vital part of a new effort to reach out to the former Soviet states and extend a cooperative working relationship as Russia attempts to develop its economy.

Certainly working on issues involving fire and life safety, I have to mention the work that is being done by the Bureau of Standards. Later on we will hear from the distinguished panelist Tony O'Neill from the National Fire Protection Association and the good work that Commerce has done in that area relative to life safety and building safety and reducing the loss of life and property from fires and disasters in this country.

But the overriding concern here is that we have to find a way to do things more effectively, more efficiently, and because Commerce gives one the appearance of being such a diverse entity with so many different functions, where oftentimes you cannot find the connection between one and the other—and I think we will hear that from the testimony of Barbara Franklin today when she comes before us, that there is a natural tendency on the part of Members of Congress to want to attack this agency first.

So perhaps I could let you speak to that issue, of the disparity of the operations within the agency and the overall attempt by us to try to find ways to streamline the Federal Government. Unfortunately, you are the primary target for that right now.

Secretary BROWN. Well let me say, Mr. Weldon, first I very much appreciate the complimentary remarks you made about many of the programs of the Commerce Department.

I think one of our problems is that not enough people know what the Commerce Department does and why we do it, and how important it is to our Nation's economic future.

We believe, contrary to the views that my predecessor might have, that over the last two-and-a-half years we have created the kind of synergy that I described in my opening remarks where trade, and technology, and telecommunications really do fit together—and they should fit together. There should be that kind of synergy.

I do not think it is wise to separate them.

I know that there are proposals being made that we hear a lot about to dismantle or eliminate the Commerce Department. I think they are ludicrous. I think they are absolutely ludicrous in a time of intense global competition.

We are trying to compete and win in a new, and difficult, and tough global competitive environment. We know what our global competitors are doing. We know the kinds of resources that they are investing.

We have taken a very pragmatic approach by developing a national export strategy that recognizes the need for this kind of synergy, by standing shoulder to shoulder with American business and industry with a clear understanding that it is the private sector that must lead; that, as I often say, it is the private sector that fuels the engine that pulls the train of economic growth and job creation in America.

But we believe that we in government have a responsibility to help clear the track so that that train can run smoothly.

We think it is difficult to contemplate, Mr. Weldon, that the United States of America would consider being the only country in the world where the private sector has no seat at the Cabinet table in a time of a global economy. It just makes no sense.

Now let's talk about saving money, because that was the purpose of the original proposal. This was a way to save taxpayer money.

I submit to you, Mr. Weldon, that the proposals offered in the Chrysler bill would cost the taxpayers money. I am not talking about counting the kind of leveraging of federal dollars; I am talking about in straight, direct costs.

There has been a claim, for example, that the Chrysler bill would save about \$7 billion over five years. That is not a good figure, Mr. Weldon. It is a phony figure.

We believe the cost to the taxpayer for dismantling the Commerce Department would be in excess of \$2 billion, and let me just take one moment to tell you why, because that is one of the principal pieces of rationale used.

The baseline that has been used in the Chrysler numbers excludes about \$5 billion in costs that the Congress has already agreed to. One of those is the ramp-up for the year 2000 Census.

You cannot use a 1994 baseline for the Census when you know that most of the money is spent in 1999 and 2000 in order to conduct the Census. Under these criteria, we could not have a Census in the year 2000.

Secondly, we know that we are modernizing the Weather Service, something which you care deeply about, using Doppler radar, using

satellites. None of the costs for the satellites are in the Chrysler proposal.

So \$5 billion of the \$7 billion is eliminated outright.

We believe that the other figures, including some of the overhead figures used, are just pulled out of thin air. They are not anything that we know anything about at all.

We would like to submit to the Committee what we think the actual costs are.

So the question becomes. If you are not saving money, why are you doing it?

Well some would answer. We are doing it to create government efficiency.

I do not know, Mr. Weldon, very respectfully, how you create government efficiency by taking an agency and creating a bunch of independent entities that are all going to have to go out and have their own IGs, their own legislative departments, their own public affairs departments, all adding to taxpayers' expenditures and creating much less efficiency than we have now.

So I think those arguments are specious arguments. I do not think they are grounded in any logical foundation, Mr. Weldon.

The CHAIRMAN. The time of the gentleman has expired.

Mr. Boehlert?

Mr. BOEHLERT. Mr. Secretary, it is said that a rose by any other name smells just as sweet. Perhaps Commerce by another name might not appear quite as sour. [Laughter.]

Mr. BOEHLERT. My thought is this. There appears to be a determined effort to get rid of Commerce, the name. The message of the last election was clearly that the American people want smaller, less costly government. I do not think we can dispute that. There is no sense in arguing it; I think that is indisputable.

Where is the Administration's plan for reorganization? That is the point. I am not enamored with the Chrysler bill, quite frankly. I think NOAA does magnificent work. I think NIST does magnificent work. I refuse to accept the proposition that the Manufacturing Extension Partnership is high-tech pork. I think it creates jobs. It is good for America.

But, having said those good things about components of your agency, I recognize that it is sort of a hybrid, and there is some inefficiency in there. There is some excess spending.

Why not, instead of fighting this plan, why don't you come up with an alternative plan that accomplishes what the taxpayers want: smaller, less costly yet more efficient government?

Secretary BROWN. Let me say, respectfully, that that is exactly what we are doing. That is what Vice President Gore's Reinventing Government project has been about.

We have a plan on the table right now where we are taking Commerce employment by the year 2000 down by 20 percent. That is a part of our plan. The plan is in place. We are reinventing ourselves every day. That, I believe, is one of the things that makes some of these proposals so foolhardy.

They assume that nothing is going on.

We are doing privatization. We are creating government-owned corporations. We are doing it with PTO. We are doing it with NIST.

We are doing it with agencies within the Department of Commerce that it makes sense to do it with.

We are looking at very specialized parts of NOAA to see whether it does not make sense to privatize those. So that kind of thinking, that kind of work is going on as we speak.

When you look at what has happened over the last several years, you know one of the things that we are doing is reducing federal employment by almost 300,000 people, making the Federal Government smaller than at any time since the presidency of John Kennedy.

So it is not like these are new, fresh ideas that we are ignoring. We believe in reinvention. We believe in right-sizing. We believe in down-sizing.

Mr. BOEHLERT. Mr. Secretary, my colleague from Pennsylvania is chomping at the bit.

Mr. WELDON of Pennsylvania. Would the gentleman yield?

Mr. BOEHLERT. Yes, I will yield.

Mr. WELDON of Pennsylvania. Mr. Secretary, I have to raise an issue that I saw, and I will provide for the record, Mr. Chairman, a report that was released within the last week showing federal employment since President Clinton took office is up by 43,000 workers.

In fact, the only decrease in federal workers is in the Department of Defense where the number has dropped by 107,000.

Now this was a document provided by one of our government agencies, which I will submit, Mr. Chairman, for the record. But I think that is the frustration we deal with.

We hear the idea and the notion that we want to downsize, and Mr. Boehlert and I have both said we support many of the good things you are doing, but when it comes to substantive decrease in the size of the work force, that is just not there, where the latest report showing federal employment is actually up by 43,000. I mean, it just doesn't jive, except for DoD, which I am well aware of because I am on the National Security Committee. I am well aware of those cuts.

I thank my colleague for yielding.

Secretary BROWN. I appreciate your comment, and I would love to see the report that you have seen. I would like to submit for the record our reports on whether the federal employment—

Mr. BOEHLERT. Good. I will make arrangements on my time to have you exchange information.

Mr. WELDON of Pennsylvania. We will bring it right down.

The CHAIRMAN. We will include them all, without objection.

[The information follows:]

All numbers represent the most recent (June 1995) report of the Bureau of Labor Statistics. No numbers are seasonally adjusted.

January 1993	DoD civilian employees:	897,000
June 1995	DoD civilian employees:	789,000
Difference		-107,800

* Representing a reduction in the civilian DoD workforce by 107,800, or 12%.

January 1993	Total Federal Employment:	2,922,000
June 1995	Total Federal Employment:	2,854,500*
Difference		-67,500

* BLS table round its total Federal employment number. To receive a more precise number, take:

Federal, Except postal:	2,015,100
Postal Service:	+ 839,400
Total:	2,854,500

Change in total Federal Employment:	-67,500
Change in DoD Employment:	-107,800
Total	+40,300*

* Representing an increase in non-defense federal employment by 40,300 since January 1993.

January 1993	Total Executive Employment:	2,856,000
June 1995	Total Executive Employment:	2,791,500
Difference		-64,500

Change in total Executive Employment	-64,500
Change in total DoD Employment	-107,800
Total	+43,300*

* Representing an increase in non-defense executive employment by 43,300 since January of 1993.

UNITED STATES DEPARTMENT OF LABOR
 BUREAU OF LABOR STATISTICS
 LABORER EMPLOYMENT REPORT

SERIES	SIC FEDERAL - ALL EMPLOYERS SEASONALLY ADJUSTED, IN THOUSANDS												
	7	7	7	7	7	7	7	7	7	7	7	7	7
7	JANUARY?	FEBRUARY?	MARCH?	APRIL?	MAY?	JUNE?	JULY?	AUGUST?	SEPTEMBER?	OCTOBER?	NOVEMBER?	DECEMBER?	ANNUAL AVERAGE?
82	2842	2838	2833	2822	2817	2812	2807	2809	2801	2801	2800	2800	2801
94	2896	2882	2884	2881	2873	2866	2864	2861	2863	2858	2854	2853	2853
95	2828	2831	2828	2826	2831	2838	2844	2822	2812	2797	2789	2785	2785
SERIES RES1100001 FEDERAL, EXCEPT POSTAL SERVICE - ALL EMPLOYERS SEASONALLY ADJUSTED, IN THOUSANDS													
7	7	7	7	7	7	7	7	7	7	7	7	7	7
7	JANUARY?	FEBRUARY?	MARCH?	APRIL?	MAY?	JUNE?	JULY?	AUGUST?	SEPTEMBER?	OCTOBER?	NOVEMBER?	DECEMBER?	ANNUAL AVERAGE?
83	2161	2161	2155	2149	2137	2128	2119	2119	2110	2104	2099	2093	2093
94	2029	2086	2079	2075	2062	2051	2045	2041	2039	2031	2022	2014	2014
95	2004	1997	1992	1987	1985	1993	1990	1982	1966	1948	1936	1936	1936
SERIES RES9100001 SIC FEDERAL - ALL EMPLOYERS NOT SEASONALLY ADJUSTED, IN THOUSANDS													
7	7	7	7	7	7	7	7	7	7	7	7	7	7
7	JANUARY?	FEBRUARY?	MARCH?	APRIL?	MAY?	JUNE?	JULY?	AUGUST?	SEPTEMBER?	OCTOBER?	NOVEMBER?	DECEMBER?	ANNUAL AVERAGE?
91	2922	2878	2926	2917	2918	2933	2928	2923	2901	2886	2892	2918	2915
94	2877	2883	2878	2876	2873	2885	2882	2875	2863	2844	2837	2872	2870
95	2820	2823	2822	2820	2831	2855	2851	2839	2812	2783	2772	2772	2772
SERIES RES9100001 FEDERAL, EXCEPT POSTAL SERVICE - ALL EMPLOYERS NOT SEASONALLY ADJUSTED, IN THOUSANDS													
7	7	7	7	7	7	7	7	7	7	7	7	7	7
7	JANUARY?	FEBRUARY?	MARCH?	APRIL?	MAY?	JUNE?	JULY?	AUGUST?	SEPTEMBER?	OCTOBER?	NOVEMBER?	DECEMBER?	ANNUAL AVERAGE?
91	2147.7	2151.8	2148.0	2143.1	2142.5	2153.5	2144.8	2136.9	2114.4	2093.1	2084.3	2076.3	2127.5
94	2068.9	2078.6	2073.9	2072.1	2067.1	2078.1	2068.8	2058.7	2044.1	2030.7	2008.4	1998.1	2052.8
95	1905.3	1900.8	1908.4	1905.3	1909.4	1915.1	1911.7	1908.2	1970.3	1938.2	1922.1	1922.1	1922.1

3) PRELIMINARY DATA

SOURCE: CURRENT EMPLOYMENT STATISTICS (CES) SURVEY, FORMS 202-806-8555

Mr. BOEHLERT. All right, but let me get to something.

We all can agree, I think, that NOAA is magnificent and no one in their right mind would suggest that we eliminate NOAA from the Federal Government, but let us talk about something that is less glamorous but I think is very effective and one that is near and dear to my heart, the Manufacturing Extension Program.

I refuse to accept the proposition that that is high-tech pork. I notice my colleague, Mr. Chrysler, says this is the type of activity that simply interferes with what should be left to the very capable hands of the private sector.

Address that, if you will, the Manufacturing Extension Program.

Secretary BROWN. Let me say what has been happening in the very capable hands of the private sector.

We have been losing our manufacturing base in America.

Mr. BOEHLERT. That is exactly right.

Secretary BROWN. We have been losing it dramatically over the past 30 years. We are trying to redress that. We are trying to change it.

That is why we are dealing with almost 400,000 small manufacturers trying to put technology in their hands, not just high technology, any technology.

Mr. BOEHLERT. How many centers do we have now?

Secretary BROWN. We have 41. There were 7 when President Clinton was elected. We had intended to ramp up to 100. We think it is one of the most important investments we can make in America's future.

Mr. BOEHLERT. We started this under the Bush Administration. I do want to give it a plug.

Secretary BROWN. It was a Bush Administration Program, just as the ATP program was a Reagan and Bush Administration program. There is no question about that. We built upon it because we think it is right for America's future.

Mr. BOEHLERT. Would you also, one more question before the bell rings, comment on the State Technology Extension Program. That is a very modest expenditure, but would you address that for a moment, Mr. Secretary?

Secretary BROWN. Yes. Let me, if I could, put it in the context of ATP because I think it is very important.

The Federal Government spends about \$75 billion a year in federal R&D. The private sector spends a little over \$80 billion a year.

What we are asking is that we take less than 1 percent of the federal expenditure and put it in a program that we know is key to our economic competitiveness in the future.

It catches that which will fall between the cracks. Because of the way the private sector is handling R&D now, and because of the way the Federal Government is handling R&D now, we are not going to have these breakthroughs. We are not going to be number one technologically unless we make this relatively small investment.

And it is not a giveaway.

These are matched funds.

The private sector matches on a one-for-one basis what we put up. The private sector companies that apply for participation in

these programs have already spent millions of dollars just getting ready to be able to apply for the programs.

We think they are critical to America's economic future.

The CHAIRMAN. The time of the gentleman has expired.

Mr. BOEHLERT. I must say, Mr. Chairman, that was a nice finesse. He put in a plug for ATP and ignored State Technology Extension, but we will get to that later.

Thank you. [Laughter.]

The CHAIRMAN. The time of the gentleman has expired.

Mr. Rohrabacher.

Mr. ROHRABACHER. Thank you very much, Mr. Chairman.

Secretary Brown, first of all just a basic question. If the Administration does believe in downsizing and your Department is absolutely essential, what Cabinet Department is less essential and should be eliminated?

Secretary BROWN. Well I am sure, Mr. Rohrabacher, you do not expect me to attack the Departments of other members of the President's Cabinet.

Mr. ROHRABACHER. Perhaps you could tell us what the Administration's position is, then, maybe what Departments the Administration is looking to phase out.

Secretary BROWN. Well let me say it this way, if I could, Mr. Rohrabacher, as you know Vice President Gore is taking very seriously this effort to redefine and reinvent government.

We have been through two phases of that effort, and it has borne real fruit. It has certainly borne real fruit in the Energy Department. It has borne real fruit, as we have seen, in the Defense Department. It has borne real fruit in a number of departments.

Now I know the question is often asked. Well, if the private sector can right-size and down-size, why can't a particular department—let us in this case say the Department of Commerce?

I think that is an improper analogy. The analogy should be a private company compared to the Federal Government as a whole. What is the Federal Government doing?

There are three things a private company does when it chooses to right-size.

First, it identifies those things that are no longer good functions, and it gets rid of them. We ought to do that in the Federal Government.

Secondly, it identifies things that still are important functions but have a lot of fat. It cuts the fat. We have got to do that in the Federal Government.

And third, it makes determinations of what things we need more investment in to ensure our economic future.

Mr. ROHRABACHER. Mr. Secretary—

Secretary BROWN. That is what this Administration has done, and one of the dilemmas—

Mr. ROHRABACHER [continuing]. Some of us are very skeptical about that. I admit that it sounds very good when you are explaining your goals, but let me give you—let us just take one example.

One thing that in the private sector they do is eliminate duplication. Here we have—and in my subcommittee we found that there is global warming research going on all over the Federal Government. I mean, it is being duplicated all over the Federal Govern-

ment. EPA, DOE, NASA, NSF, all of these have global warming projects.

Should global warming research be done in your department? Or should it be done elsewhere?

Secretary BROWN. I believe it should be done in NOAA. We believe that we have created within the Department of Commerce the Department of Sustainable Development. That is where it should be.

Let me tell you one thing we have done—

Mr. ROHRABACHER. Then would you support—the major question then is. Would you support then eliminating the other departments and the other agencies' involvement in global warming?

Secretary BROWN. I think we should do all of the consolidation that is reasonable so that we can meet our national security interests.

Let me say one thing that I am sure you are aware we have done. There were a lot of complaints before about satellites. Everybody had these satellites doing duplicative things. We have now combined those.

We run the civilian satellites, the Department of Commerce, now. I think by any objective analysis we are doing a good job. One of the things that the Chairman has proposed is putting more of that in our Office of Space Commerce within the Department of Commerce.

Mr. ROHRABACHER. I would agree with that. If I could just—because I have only just a couple of minutes here—one of the things that we came through within my subcommittee, in terms of a suggestion, is we took a look at NOAA's fleet for example and we suggested that the fleet be privatized where you have NOAA officers who are given the same benefits as military benefits, and basically they are civilian researchers.

Is the Administration going to support that suggestion?

Secretary BROWN. Yes. As a matter of fact, we have a plan on the table. We are reducing FTE from 400 to 118. There is no question you cannot keep ships that are 30 years old on the surface of the ocean at least for very long.

So, yes, the privatization idea, the setting up government corporations where appropriate, is certainly something we are giving real consideration to.

Mr. ROHRABACHER. One last thought before the buzzer rings and my time is up. I have heard your explanation of the Administration's commitment to research often. In your explanation today you were talking about projects, research and development projects, which took 6, 8 and 10 years, and how were we going to get people to invest in that type of research.

If I might just be so bold as to offer this observation: This Administration supported—and we have had our back and forth on this before—a change in the patent law that eliminated the 17-year guaranteed patent term, which if a project takes 6, 8 or 10 years, under the old system at the end of that time they had 17 years, the investors had 17 years to recoup their investment.

Under what the Administration has done to change the patent law, the 6, 8, and 10-year projects have lost half of their time for the investors to recoup.

Is this not much more of a dramatic harm to the incentive to invest than any type of other type of subsidy program or bolstering program that the Administration can come up with?

Secretary BROWN. I think you raise an important point. As you know, you and I have discussed this. We have discussed it with Commissioner Lehman. We are willing and anxious to work with you on an issue that you have raised with us.

Mr. ROHRBACHER. Thank you very much.

The CHAIRMAN. The time of the gentleman has expired.

Mr. Bartlett.

Mr. BARTLETT. Thank you very much.

Mr. Secretary, you have made a very persuasive argument that we need to spend more money on research and on R&D. You pointed out, I think, that as compared to Japan they spend 35 percent more on a per capita basis than we do.

Germany spends 30 percent more. I think almost everyone would agree that if we are going to maintain our technological edge that we have to spend more on research and on R&D.

So everybody is agreeing to that.

The question therefore is not whether we should spend more money on research and R&D, but who should spend that money. In the final analysis, sir, there is no such thing as "federal dollars."

Every dollar the Federal Government has either came from some hardworking American's paycheck; it came from taxes collected from a business or an industry that has been successful; or we have borrowed it from our children and our grandchildren.

Please help us understand why you think that the more money that everybody agrees should be spent on R&D will be better spent by the Federal Government in taxes collected than it would be spent by the companies that have made the money? Why would it not be better spent by the venture capitalists who will take the savings to the American people who, if they were not taxed so much, might save and have some money for investment?

Please help us understand why you think the government does a better job of supporting research and R&D than the job that companies would do, than the job that would be done with the savings from the American people if we did not take their money in taxes?

Secretary BROWN. I say respectfully the position I take is not that the government does a better job. The position I take is that it is not being done. It is not being done by the private sector.

Mr. BARTLETT. Sir, do you think that it is not being done because the average American works 189 days to support government and has only 175 days left to support themselves, and to save and to invest?

Secretary BROWN. No, I think it is not being done because we have a different kind of economy than we had 20 years ago. We have a global economy with different kinds of global competition.

We need to look, as intelligent people always look, at what their global competitors are doing and how they are trying to create economic growth in jobs for their people. I wish it was all done by the private sector.

As the chairman well knows, it is not. That is why the Federal Government has a long bipartisan history of investing in science and technology, to make sure that we stay number one as a Nation

in those areas; to make sure that we have products, and goods and services to export; to make sure that we can keep our economy growing.

Mr. BARTLETT. Mr. Secretary, nobody is arguing but what these are very necessary goals. I come from a background in both big industry—

Secretary BROWN. I know you do.

Mr. BARTLETT [continuing]. And in small business, but I would like to yield now to my colleague from Pennsylvania for a moment.

Mr. WELDON of Pennsylvania. Mr. Secretary—and I thank my colleague for yielding—I just want to clarify this for the record. This is a very important part of what is driving this legislation in this effort. That is, the claim of the Administration is that it really is reinventing government and downsizing the federal work force.

I went out and got that study, and it is from the Bureau of Labor Statistics, which is the President's own agency.

The Bureau of Labor Statistics, as of the most recent month for which statistics were available, June of 1995, claims that non-defense federal employment increased by over 40,000—40,300 to be exact—from the beginning of Clinton's Presidency to June 1995.

The only cut, in fact, was in the defense area where we have cut 107,800 workers, or 12 percent of our work force. So in fact what is being said and what is being told to us in terms of a downsizing and a consolidation is not occurring except in defense, which is underway anyway.

I mean, that downsizing has been underway for about six years. That is a dilemma. I mean, I just heard you say a few moments ago that we are going to be cutting by 300,000 workers. Well, the statistics from the Bureau of Labor do not bear that out.

Secretary BROWN. Well, the statistics that you just cited did bear out that we have got a smaller federal work force now than we had when President Clinton became President. That is the claim that is being made that is a true claim. It is being phased in.

It is absolutely correct that most of the initial cuts have been in defense. That is true. If you look at the plan for reduction to that 300,000 you will see where the rest of them are coming from.

I have indicated to you in my testimony that 20 percent of the Department of Commerce work force will be cut by the year 2000. So obviously there is a long-term plan to reach this goal.

Mr. WELDON of Pennsylvania. If the gentleman would further yield, here we are with no cuts of substance except in defense, which were underway anyway. I think if you want to look at why these things are happening, and you asked that question during your testimony, this is exactly the reason.

Secretary BROWN. But Mr. Weldon I say that, respectfully, that in—

Mr. WELDON of Pennsylvania. We have increased employment by over 40,000 people.

Secretary BROWN [continuing]. The previous Administration, there were no cuts in the federal work force. It has just been since 1993 that we have begun to take down the federal deficit, which as you know was skyrocketing, and take down the federal work force, because there is a plan to do it and we have been faithful to that plan.

The CHAIRMAN. The time of the gentleman, Mr. Bartlett, still has a few seconds.

Mr. BARTLETT. Thank you very much.

Mr. Secretary—

Secretary BROWN. Can I interrupt just for one second?

Mr. BARTLETT. Yes.

Secretary BROWN. I see my friend, Mr. Boehlert, leaving and I do not want him to think I would ever evade one of his questions. [Laughter.]

He asked a question about the STEP Program, the State Technology Extension Program. It was initiated by the Congressman and by Senator Rockefeller in the late 1980s and is now a part of our MEP program.

It grants small amounts of money to states to coordinate and stimulate their local efforts to reach out to small manufacturers. It has been critical to many states to get them started in that direction, and we view it as an integral part of the MEP program.

Mr. BOEHLERT. Thanks, Mr. Secretary, but tell your researcher that that is a "Boehlert-Rockefeller" program. [Laughter.]

The CHAIRMAN. The time of the gentleman from Maryland that was used by several people has expired.

The gentleman, Mr. Tanner.

Mr. TANNER. Thank you very much, Mr. Chairman.

Mr. Secretary, thank you for being here. At the risk of repeating, it seems to me an axiomatic fundamental of American business in the marketplace that there is a restriction or a restraint on the private sector in terms of what monies they can be permitted to by the vagaries of the marketplace to commit to long-term research and development. They are in business to make a profit to show their stockholders and the marketplace in general that they are moving forward with the company and therefore have certain short-term pressures on them that they cannot escape.

Now as a function of the Federal Government, if you are going to have a federal government in this area, it seems to me that one of the things that all of us desire is that the Federal Government be an ally of business not an adversary of business, and that one of the ways that the Federal Government can become an ally of American business in this country is to help and assist in that small area of long-term research and development for which there is not an immediate payback that stockholders and the marketplace itself can see, but nonetheless is critical to our long-term viability in a world economy that is becoming more and more competitive.

At the risk of asking you to repeat yourself, but for the record could you explain please, sir, why you think it is important to have a Technology Administration? Could you explain the functions of that policy?

Furthermore, what steps are being taken now and standards put in to measure the benefits of that program? And how has the program changed?

What do you see your department doing to be the ally of business in the future and not the adversary?

I think it is almost just fundamental that we have a roll to play to assist American businesses. If this bill we are here on, 1756, Mr.

Boehlert said no one in their right mind would seriously contest NOAA—my question was not about NOAA, but I see here NOAA programs, under this bill NOAA pollution research, and so on, terminated; Office of Atmospheric Research, terminated; and so on.

So I will be looking forward to someone who thinks that is a good idea. But, getting back to my original question, this I think is one of the most critical, absolutely fundamental questions that we ought to be asking ourselves as members of the Federal Government.

Thank you.

Secretary BROWN. Thank you very much, Mr. Tanner. I am pleased to attempt to respond to the question.

I think one of the most distressing things that has happened is not only discussion of dismantling of the Department that has this as its principal function, but also what has happened in the Appropriations process.

To think about eliminating the Technology Administration is just absurd. What we have done is gone out and recruited the best and brightest from the private sector, Dr. Mary Goode, to serve as the Administration's leader in shaping technology policy. She drives and coordinates technology policy at the highest levels of the Federal Government and oversees all the work of NIST.

She shapes America's technology policy, which is much needed. Do you know what the funding level is? I think last year it was \$10 million to run our technology policy for the United States of America.

If you look at that compared to what other countries are doing, it is almost laughable. For the first time I believe in recent American history it is working. We have got our Under Secretary for Technology and our great Director of NIST, Arati Probhakar, working closely together as part of the same team—Arati running the programs at NIST, and Mary shaping the technology policy based on experience at the field level.

Let me say, too, as a response to your question, Mr. Tanner, there are a number of areas in which we have proven over the years how important public/private partnership is. I know that there are some in America who think that we have become the breadbasket of the world just because we have got the smartest farmers and the hardest working farmers.

We do have the smartest farmers, and we do have the hardest working farmers. But we have become the breadbasket of the world in part because it was a public/private partnership; because it was an agricultural outreach program at the beginning of this century that helped create the kind of superiority that we have achieved.

I would suggest that the same is terribly important in technology. It worked in aeronautics. We are not just the best in aeronautics because we have got great companies like McDonnell Douglas, and Boeing, and many others; but because it was a real public/private partnership.

A lot of federal R&D money went into making us the greatest. I want to make sure that it stays that way in America. It is going to stay that way because we understand the need, the essential nature of this kind of public/private partnership.

What kind of role does the Federal Government play in order to keep us, number one, NIST, ATP, MEP, that are some of the principal examples of how important it is to leverage federal dollars to keep America number one technologically.

The CHAIRMAN. The time of the gentleman has expired.

Ms. Jackson-Lee.

Ms. JACKSON-LEE. Mr. Chairman, thank you very much.

Good morning, Mr. Secretary.

The CHAIRMAN. Before the gentlelady proceeds, this will be the last questioner at this point. This will be the expiration of time.

Then, as I stated earlier, when we get the next witness we will start with the group that did not have a chance to question in this round with the next witness.

Secretary BROWN. I might like to stay and question the next witness, Mr. Chairman—

[Laughter.]

The CHAIRMAN. We would have to examine the rules very carefully on that, Mr. Secretary. [Laughter.]

Ms. Jackson-Lee.

Ms. JACKSON-LEE. I might help you with that, Mr. Secretary. [Laughter.]

Mr. Chairman, I do have a few remarks as an opening statement, but I would like to just submit that for the record, please, and question Secretary Brown.

The CHAIRMAN. Without objection.

[The prepared opening statement of Ms. Jackson-Lee follows:]

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Committee on Science
United States House of Representatives
Hearing on Restructuring the Federal Scientific Establishment:
Dismantling the Department of Commerce
September 12, 1995

Opening Statement Made by Congresswoman Sheila Jackson Lee

In the days since the 104th Congress began its work, it has become ever clearer that my esteemed Republican colleagues have come, not to legislate, but to hunt. They seem to perceive all government programs, departments and entities, regardless of function, as prey to be destroyed or emaciated to the point of near-death. They offer not, well considered and thoughtful solutions, but instead simplistic policies. We are discussing both today and Thursday, not only what is to happen to the programs, people and facilities of NIST and NOAA, but more fundamentally, the philosophy that indeed, government has a special responsibility and place in the society and lives of its citizens.

24 Nobel laureates have signed a letter, stating the essential role and nature of the NIST laboratories to both government and

industry. These learned men agree that these valuable national assets have saved the nation billions of dollars annually through the results of their activities. I believe it would behoove this committee and this country to listen to the opinions of such people. People who are not concerned with either budget-cutting trophies or the ideological consideration, but instead the interests of science.

During the Reagan administration, several attempts were made to privatize the NTIS. It has been well documented that no commercial entity could be found to assume its responsibilities. Yet, here we are again, approximately five years later, going through the same exercises and doomed to come to the same conclusions. An often stated principal of government is that it should be held responsible for how the taxpayers money is spent. The NTIS disseminates the results of taxpayer sponsored research and activities. Allowing a private entity to then resell this information to the same public that paid for it seems to me to be unfair and unacceptable.

These are but two examples of the ill-advised nature of some of the proposals contained within H.R. 1756. There are many many more. Regardless of this however, it is with dauntless resolution and unconquerable faith that I will defend not only the valuable environmental, scientific and other work done by NIST and NOAA, but the welfare, faith and trust of my constituents.

Ms. JACKSON-LEE. Thank you very much.

I would consider this a very sincere exercise, Mr. Secretary, if I had not had the opportunity to read the proponent of the elimination or dismantling of the Commerce Department's own words which, if I might share with him, that having chaired a task force I understand Congressman Chrysler mentioned, that he was grateful that they had moved beyond the issue of should we dismantle the Commerce Department to the question of how do we get there.

It is my understanding that the 104th Congress has been in session maybe a mere nine months or so, and I would wonder whether or not this rush to judgment has anything to do with the reality of the place the Department of Commerce has in this Nation, and trade and science, or does it have something to do with a 1996 campaign deadline.

So for me I am frustrated because I think there is merit in any discussion to make government work better. But when the statement of the proponent is permeated with suggestions of downsizing an overblown federal bureaucracy, I do not think there leaves time for reasonableness and seriousness in the discussion.

If I might, I would like to just have you track for me the role and the place that this Nation stands in the world, because we seem to have been discussing this in the limelight or in the shadow of what we want to do with downsizing the American Government in response to 37 percent of the vote in 1994.

My question to you then is: How do we compare, as you travel internationally with G-7 countries in terms of their technological response to their private sector? Is there government involvement internationally? And how do we compare with our government involvement in partnerships?

Does that add to the leverage of foreign countries as they compete in the world market with the government's involvement or partnership?

And how does that either compare to what we are presently doing?

Then, would you also give me a sense of the return on the investment that we give to R&D as it translates into the world market?

If I need to refer back to those questions as you answer, I would be happy to do so. But the real question is: Are we discussing this in the right perspective, downsizing the government or how we compete in the world market?

Secretary BROWN. Well thank you very much for that question.

I think you can anticipate my answer. We are not even close to our foreign competitors, and we need to start getting close if we are serious about America being a first-rate economy in the 21st Century.

We have done a thorough examination of what our principal international competitors are doing, and we need to do a lot better. It means we need to make some tough choices, some priority choices.

How do we spend federal dollars?

Most importantly, how do we leverage federal dollars?

Let me give you two examples, one in the area of technology and one in the area of trade:

We take a federal budget for the International Trade Administration of about \$250 million a year, and we have produced or helped produce over the last 18 months \$50 billion worth of business for American businesses and American workers. That is a fact.

I would call on this Committee to talk to the CEO's of those companies, both large and small, to talk about the impact we have had on the outcome of those decisions. We want to compete and win in this tough global economic arena, and that requires the Federal Government, standing shoulder to shoulder with American business and industry, not because we have some ideological or philosophical bent in that direction, but because we want to be relentless and pragmatic and we know how the global marketplace works in the 1990s.

It is terribly important that that kind of relationship exists. If you want to talk about leverage, that is leverage.

You talk to the CEOs of Boeing or McDonald Douglas, they will tell you that, but not for us, AirBus would have been bought by Saudi Arabia and not Boeing or McDonald Douglas.

You can go around the corporate world to companies large and small and they will give you the same answers.

Finally on technology, Mr. Chairman, if I could, the MEP program, as evaluated by the GAO, leverages 8 to 1. Every dollar we put in creates \$8.

I think the same can be said, although the evaluations are not as clear yet because it is a longer term on ATP, but I would suggest that the numbers on ATP are going to be even stronger numbers.

To me, the federal dollars that we can leverage to attract private sector capital are the most important federal dollars we can spend.

Ms. JACKSON-LEE. Mr. Chairman—

The CHAIRMAN. The time of the gentlelady has expired.

Ms. JACKSON-LEE. Mr. Chairman, may I just ask him for a response in writing, not to take up the time, to respond to this next witness's comment on the Advanced Technology Program, of former Secretary Franklin, if I could have a response to that in writing.

Secretary BROWN. She supported it strongly when she was Secretary of Commerce.

Ms. JACKSON-LEE. If I could just get that in writing. Thank you.

[The information follows:]

In her prepared testimony, former Secretary of Commerce Barbara Hackman Franklin referred to the ATP as a "large pork barrel," picking "winners and losers among technologies and favorites among companies." This statement is contrary to fact.

Advanced Technology Program (ATP) awards are not and have never been made on the basis of political influence or to curry favor with particular companies. The proposal selection process is unchanged since former Secretary Franklin's tenure, so her testimony is especially puzzling. Every dollar of ATP funding since the programs inception in 1990 has been awarded strictly on the technical and business merit of the projects as evaluated by experts from both the public and private sectors. Anyone who has seriously examined the process has found this to be true. In addition, during the previous Administration, the final selection authority rested with the Director of the National Institute of Standards and Technology (NIST). Starting in 1993, however, that responsibility has been delegated down, so that no political appointee is involved with project selection.

The National Institute of Standards and Technology and the Department of Commerce welcome a full and honest exploration of the appropriate role of government in supporting U.S. industry and the U.S. economy in a world of global markets and

fierce competition. We welcome a full and honest evaluation of the ATP, its mission, and its accomplishments. But we feel that neither the Nation nor the taxpayer are served by unsubstantiated statements.

Ms. JACKSON LEE. Thank you, Mr. Chairman, for your indulgence.

The CHAIRMAN. The time of the gentlelady has expired.

Mr. Secretary, I just wanted to raise one point of clarification.

Did I understand your testimony earlier as saying that over the last 30 years that manufacturing as a percentage of GDP has dropped dramatically?

Secretary BROWN. Yes—no, no, no. That the number of manufacturing workers; our manufacturing employment has dropped dramatically.

The CHAIRMAN. But as a percentage of GDP it has remained constant?

Secretary BROWN. Yes.

The CHAIRMAN. Is that correct?

Secretary BROWN. That is right.

The CHAIRMAN. Thank you, Mr. Secretary.

Secretary BROWN. Thank you very much, Mr. Chairman.

The CHAIRMAN. We very much appreciate your testimony before us today. It has been very helpful and we will certainly be considering these issues as we take this matter up in markup.

Secretary BROWN. I would hope so, Mr. Chairman. I was glad to see so many people in this side of the panel supporting the Department of Commerce. It was very heartening.

Thank you, Mr. Chairman.

The CHAIRMAN. Thank you, Mr. Secretary.

The next witness is former Secretary of Commerce Barbara Franklin.

Ms. Franklin, we are delighted to welcome you to the Committee. We look forward to your testimony. We understand that you are under time constraints, and we will attempt to accommodate that.

But if you can summarize your statement for us, the entire statement will be included in the record and that will give members who have some questions an opportunity to ask those questions.

Welcome, and we look forward to your testimony.

STATEMENT OF THE HONORABLE BARBARA HACKMAN FRANKLIN, FORMER SECRETARY OF COMMERCE, PRESIDENT AND CEO, BARBARA FRANKLIN ENTERPRISES, WASHINGTON, DC

Ms. FRANKLIN. Thank you very much, Mr. Chairman, Members of the Committee, I am delighted to be here this morning to take part in what I think is a very important discussion. I applaud the leadership role that you and the Committee are playing in this effort to down-size, streamline, and make the Federal Government more productive and more efficient.

As someone who has participated in corporate boardrooms for the better part of 15 years while the private sector has been doing this, I want to say that streamlining our government is long overdue.

The benefits to the private sector have been enormous, even though they have been difficult and sometimes painful; but the

Federal Government must catch up or it will be a continual drag on our Nation's productivity.

In reviewing each function of the Federal Government, the starting point should be this question: Is this a proper role for the Federal Government?

If the answer is "no," then the function should be eliminated. If the answer is "yes," then the next questions are: How should this function be organized so that it is carried out most productively and efficiently; and where should the function reside in the federal structure so that it can best fulfill its mission?

I have applied these questions when considering the disposition of the science programs of the Department of Commerce that fall under this Committee's jurisdiction, and I am supporting the dismantling of the Department.

Here are my specific recommendations:

First, the National Oceanic and Atmospheric Administration, NOAA, should be downsized, kept together, and either made an independent agency or grouped with other similar functions.

While I was in office, NOAA accounted for about 60 percent of the budget and about half the people of the Department. Meshing this agency sensibly with the rest of the Department was the biggest stretch in finding a way to manage the entire entity. Hence, my conclusion that NOAA should stand alone or be grouped with similar functions which have a science base.

However, I am convinced, after some hard thinking, that the fundamental arguments made by the Stratton Commission prior to this agency's formation are sound. There was then and is now synergy in the combination of ocean and atmospheric functions, and I think there is a legitimate role for government in this scientific activity.

But I would emphasize that NOAA could stand some considerable slimming and trimming.

To mention just a few parts of that agency:

The National Weather Service. I think the Service does a good job forecasting national emergencies—life-threatening hurricanes, tornadoes, floods—and assisting in times of critical national security, such as during Desert Storm.

I think this is a legitimate government function and should remain mostly intact.

The Oceanic and Atmospheric Environmental Research Laboratories. Some consolidation is probably in order here, but I believe it is in the interest of the U.S. to have in the Federal Government an independent function that produces documented research ranging from the Ice Age to the present, and which advises the Congress and President on such things as global climate change and stratospheric ozone risk.

This body of research also enables the U.S. to deal factually and from strength when debating global climate change with other countries.

The questions of how much of this research we need, and whether it can be contracted out is left for another discussion, but I do not believe these labs should be sent to a regulatory agency.

The National Environmental Satellites. I am speaking here of the GOES, the Geostationary Orbiting Satellites, and the Polar

Satellites. They are essential in weather forecasting and other oceanic and atmospheric research.

But there is a management dilemma here. The satellites belong to NOAA, but NASA which has special expertise in satellites, manages the contractors who build and launch them.

So we have the unusual situation of one agency's interests and appropriated monies, NOAA, being managed by another agency, NASA, which has no statutory accountability for cost overruns and other problems. And there have been cost overruns and problems over the years—but, happily, today the next generation of GOES is up and functioning.

However, the issue of who should own, operate, and manage the replacement of the next generation of GOES and Polar satellites continues to be a concern.

NOAA does not have expertise in managing technology in contracts of this kind; NASA does, but is thought to be somewhat contemptuous of these "little satellites" that do not further the exploration of Outer Space.

So if NOAA becomes an independent agency, dealing with NASA may become more difficult. Today, NOAA can bring the Secretary into the situation if NASA does not perform adequately. If NOAA is independent, that leverage is gone. This may be a case where grouping the governmental scientific functions would offer a solution to this management dilemma.

My second recommendation:

That the heart of the National Institute of Standards and Technology, NIST, should be preserved. However, the Advanced Technology Program, ATP, should be eliminated.

Unfortunately, the ATP has turned into a large pork barrel and a means to make industrial policy, and I was pleased to note that the House Appropriations process this year zeroed it out for the next fiscal year.

The justification for the fundamental function of NIST, the setting of standards, dates back to the earliest days of our country. What was a bushel in one state was not necessarily a bushel in another.

Therefore, the Framers of our Constitution thought that an independent third-party was needed to establish a precise measure of what a "bushel" was. So Article I, Section 8 of the U.S. Constitution empowers the Federal Government to fix Standards of Weights and Measures.

Today there is a need to establish standards for many new things: The width of a line in a silicon chip, for example—and there will be even more such need as we invent new technologies.

NIST has an outstanding record of performing this function, and is a jewel of a government agency. It should be constituted as an independent agency or with other government science functions.

Also, NIST has been administering since 1987 the Malcolm Baldrige Quality Award. This has been a great incentive to American business and is, I believe, one of the contributing factors to enhanced U.S. competitiveness around the world. This program is worthwhile and should survive.

My third recommendation:

The National Technical Information Service should be privatized. This repository of government publications is essentially self-sustaining now. Privatizing it seems to be a logical next step.

These are some of my thoughts, Mr. Chairman, about the way the science functions of the Department of Commerce could be better organized or eliminated altogether.

I appreciate the opportunity to present them. Your Committee has an excellent opportunity to make a substantial contribution and I know you will make the most of it.

[The prepared statement of Ms. Hackman Franklin follows:]

TESTIMONY BY
THE HONORABLE BARBARA HACKMAN FRANKLIN
FORMER U.S. SECRETARY OF COMMERCE
BEFORE THE HOUSE COMMITTEE ON SCIENCE HEARING
ON THE
DEPARTMENT OF COMMERCE DISMANTLING ACT
TUESDAY, SEPTEMBER 12, 1995

Mr. Chairman, Members of the Committee. I am very pleased to be here today to be taking part in this important discussion about the ways and means of making government more efficient.

This is the first time in my memory that there has been such strong effort and will to change the way we think about the Federal Government -- its proper role, the way it works, and the way it ought to work to meet the challenges presented by the dynamics of the world today. I applaud the leadership role this Committee is playing in the drive to downsize, streamline, and make the Federal Government more productive and more efficient.

And, as someone who has participated in corporate board rooms for the better part of 15 years while the private sector has been doing this, I want to say that streamlining our government is long overdue. The benefits to the private sector have been enormous, even though they have been difficult and sometimes painful. Our businesses are more competitive than ever in global markets. The U.S. is the largest economy and the Number One exporter in the world. The most recent world competitiveness survey by the World Economic Forum and the International Institute for Management and Development ranked the U.S. as the world's most competitive economy for the second straight year. The Federal Government must catch up with this drive for efficiency or it will be a continual drag on our nation's productivity.

As we review each function of the Federal Government, the starting point should be this question: Is this a proper role for the Federal Government? If the answer is no, then that function should be eliminated. If the answer is yes, the next questions should be: How should this function be organized so it is carried out most productively and efficiently? And where should the function reside in the federal structure so that it can best fulfill its mission?

I applied these questions to the Department of Commerce when I was Secretary and concluded then -- as many in Congress have now -- that the Department could and should be restructured, perhaps even dismantled. It does contain a number of seemingly disparate activities. And although I had devised a way to manage the disparity, by creating a seven-point agenda under the banner "Commerce is the new front line for promoting economic growth and jobs," I must admit this was a stretch. Managing would have been easier if there had been more cohesiveness and focus to the department's activities. In other words, the departmental structure worked against its being managed most effectively.

The purpose of this hearing is to consider specifically the disposition of the science programs of the Department of Commerce that fall under this Committee's jurisdiction. Here are my recommendations.

First, the National Oceanic and Atmospheric Administration should be downsized, kept together, and either made an independent agency or grouped with other similar functions.

While I was in office, NOAA accounted for about 60 percent of the budget and about 50 percent of the people in the Department. Meshing this agency sensibly with the rest of the department was the biggest "stretch" in finding a way to manage the entire entity. Hence, it is my conclusion that NOAA should stand alone or be grouped with similar functions which have a science base.

However, I am convinced -- after some hard thinking -- that the fundamental arguments made by the Stratton Commission prior to this agency's formation are sound. NOAA's formation brought together various programs then scattered throughout the government. There was then and is now synergy in the combination of ocean and atmospheric functions, and I think there is a legitimate role for government in this scientific activity. But I would emphasize that NOAA can stand considerable slimming and trimming. It is a great example of bureaucratic bloat.

The key parts of the agency are these:

- **the National Weather Service.** Currently, our nation depends upon it for forecasting national emergencies, including life-threatening hurricanes, tornadoes, and floods, and to assist in times of critical national security, such as during Desert Storm. I think the service generally does a good job, that this is a legitimate governmental function, and that it should remain mostly intact. At one point, I had thought that the Weather Service in its entirety could be privatized, but the health and safety and national security implications have caused me to change my mind. However, there are some special services -- those relating to agriculture, for example -- which could be contracted out and/or privatized.
- **the National Marine Fisheries Service.** (NMFS) This agency, which administers over 100 statutes relating to living marine resources, is also a legitimate governmental function. I believe the conservation and management of our living marine resources is important to our country -- both economically and environmentally. But, in order for proper decisions to be made regarding status of stocks, condition of the marine environment, habitat, and the like, some research is necessary and should be kept together with the management responsibility.

Conceivably NMFS, essentially a regulatory entity, together with the research labs which underpin its work, could be placed organizationally with the regulation and management of freshwater fishing. Currently this latter activity is housed in the Interior Department.

Seafood inspection, now a part of NMFS, is an activity relating more to food and its health and safety than to oceans and the atmosphere, and could be moved out of NOAA and combined with USDA.

- **Oceanic and atmospheric environmental research laboratories.** Some consolidation is probably possible. But, it is in the interest of the U.S. to have in the Federal Government an independent function that produces documented research ranging from the Ice Age to the present, and which advises the Congress and the President on such things as global climate change and stratospheric ozone risk. For example, it was this research effort that increased our understanding of El Nino so that we can begin to make significantly improved yearly climate forecasts. This body of research -- world class science respected internationally -- also enables the U.S. to deal factually and from strength when debating global climate changes with other countries.

The questions of how much of this kind of research we need -- or whether it could be contracted out -- is left for another discussion. But under no circumstances should these labs and/or their work be placed into the Environmental Protection Agency (EPA). This research should not be driven by a regulatory agenda.

- **National Environmental Satellites.** This is an area I want to especially highlight because its current situation -- as well as its history -- is unusual and presents a management dilemma.

The procurement process for the U.S. national environmental satellites predates my time at Commerce. It has been something less than model, as I understand it. The specs for the satellites -- the types of data needed and in what form -- were developed by NOAA scientists. Weather forecasters -- as well as other oceanic, living marine resource, and atmospheric scientists who need satellite data for the variety of studies about the planet -- all contributed to the specifications. Then, as I understand it, NASA, because of that agency's experience with satellite contracts, was brought in to manage the contractors who built the NOAA satellites. Thus, we had the unusual situation of one agency's interests and appropriated moneys being managed by another agency which had no statutory accountability for cost overruns or other problems. There were considerable cost overruns and delays over the years. And since the process was still going on when I arrived at Commerce, one of my first acts as Secretary was to reappoint a special task force, headed by the Assistant Secretary for Administration, to oversee and monitor the progress. Additionally, I personally kept close tabs. I did not wish to have a breakdown or further complications in this process -- and a waste of taxpayers' dollars -- on my watch.

Today, the next generation of the "eye in the sky" or geostationary orbiting satellite (GOES) is up and functioning. But the difficulty of monitoring a NOAA procurement contract -- subcontracted to NASA for management -- still exists.

The issue of who should own, operate, and manage the replacement of "next generation" GOES and POLAR (polar-orbiting) satellites, continues to be a concern. This data-collection apparatus is essential to the various earth-science functions of NOAA -- weather forecasting and other functions -- and therefore, I think the satellites should continue to be a part of the agency. But the dilemma remains: NOAA does not have expertise in managing technology and contracts of this kind; NASA does have such expertise but is thought to be somewhat contemptuous of these "little" satellites which do not further the exploration of outer space, NASA's primary mission.

If NOAA becomes an independent agency during the reorganization process, dealing with NASA may become more difficult. Today, NOAA can bring the Secretary into the situation if NASA is not performing adequately. If NOAA is independent, the leverage of a Cabinet officer's involvement is not available.

It would appear that this is a case where grouping the governmental science functions together would offer a solution to this management dilemma.

- **National Ocean Service.** This function deals with Coastal Zone Management regulations, National Marine Sanctuary designations and regulations, and estuary research reserve designations. This office monitors the quality of ocean water, including critical damage assessment surveys from oil spills such as the infamous EXXON-VALDEZ in Prince William Sound, Alaska. NOAA's emergency damage assessment team plays a key role in determining proper containment and clean-up directions when such disasters strike. There is some role for government here.

The National Ocean Service also includes the U.S. Coast and Geodetic Survey, which charts and maps our nation's coasts and harbors for obstructions, currents, and other navigational needs. This function evolved from the early 1800's when Thomas Jefferson created the Coastal Survey. Up-to-date and accurate nautical charting is essential for national security, for our fishery and transportation industries as well as for recreational boaters. What is not clear is whether government should do this or whether it can be effectively privatized. That question needs further study.

The related question is who does this work. Currently this is done by the NOAA Corps. If the Corps is to be discontinued, we need to make sure that the replacement for doing this work is more economic than the Corps and is well-equipped and capable of producing the required data.

My second recommendation: that the heart of the National Institute of Standards and Technology (NIST) should be preserved. However, the Advanced Technology Program (ATP) should be eliminated.

Unfortunately, the ATP has been turned into a large pork barrel and a means to make industrial policy. Through ATP, the government is picking winners and losers among technologies and favorites among companies. This is simply not appropriate and ATP should be zeroed out and eliminated. I was pleased to note that the House appropriations process zeroed the program out for the next fiscal year.

Also, the Technology Administration should cease to exist. It is simply a layer of bureaucracy placed squarely over NIST.

The justification for the fundamental function of NIST -- the setting of standards -- dates back to the earliest days of our country and the drafting of the constitution. When the country was founded, the individual states sometimes had differing standards for weights and measures. What was a bushel in one state was not necessarily the same in another. Therefore, the framers of our Constitution thought that an independent third party was needed to establish a precise measure of a bushel for the entire country. They thought this was an appropriate role for government, and I agree. So, Article I, Section 8, of the U.S. Constitution empowers the Federal Government to "fix the standards of Weights and Measures."

Today, there is a need to establish standards for many new things -- the width of a line in a silicon chip, for example -- and there will be even more such need, as we continue to invent new technologies.

In addition, uniform standards to which all countries adhere are very important for international trade. They help to facilitate our exports. In fact, the Bureau of Standards was created in 1901 to help fulfill our obligations under international standards treaties. For close to 100 years, this Bureau, and its successor agency NIST, have preserved and protected U.S. interests, representing the United States in international organizations and conferences.

NIST has an outstanding record of performing its function efficiently and effectively. Stripped of the unwieldy bureaucracy of the Technology Administration that was layered on top and the grant programs, NIST is a jewel of a government agency that should be kept. Where to place it in the government structure requires some thought. Perhaps it could be constituted as an independent agency or grouped with other government science functions if Congress elects to follow that course of reorganization.

In addition to its role as adjudicator in establishing weights and measures, NIST has been assigned a leadership role in setting quality standards. Since 1987, NIST has been administering the Malcolm Baldrige National Quality Award. This has provided a great incentive to American business to live by the principles of total quality management, and is, I believe, one of the contributing factors to enhanced U.S. competitiveness around the world. NIST's role is to

oversee this program -- to set standards for quality. Most of the program is funded by private sector dollars through the National Foundation for the Malcolm Baldrige Quality Award and other volunteer efforts. I think this program is worthwhile and should survive in its present form.

Third, the National Technical Information Service should be privatized.

This entity is the repository of all governmental publications relating to science and/or any technical field. During my time in office, it was mostly self-sustaining -- it sells these publications -- and was thought to be effectively run. Thus, this function could be privatized.

These are some of my thoughts about ways in which the science functions of the Department of Commerce could be better organized or eliminated altogether. I appreciate the opportunity to present them. The Committee has an excellent opportunity to make a substantial contribution to reshaping government and I am sure you will make the most of this chance.

Thank you.

The CHAIRMAN. Thank you very much, Ms. Franklin.

Mr. Brown.

Mr. BROWN. Ms. Franklin, Secretary Brown indicated briefly before he left that you had changed your mind about the Advanced Technology Program, and obviously you have since you were Secretary. There is nothing wrong with this. I changed my mind in terms of supporting the Space Station just this year. It was a traumatic thing for me, but I think you need to put on the record, if you do not mind, what has caused you to change your mind since the time when you were a part of the Administration.

You were quoted, for example, in 1992 as saying that "The Advanced Technology Program, now entering its third year, has demonstrated its ability to attract top-flight proposals from virtually every field of technology, and from innovative companies both large and small. This clearly shows the basic concept of the program. An industry-driven cooperative partnership between government and the private sector to advance the Nation's competitive position has been accepted by industry."

You now need to put on the record, if you do not mind, what has caused you to change your views and we can explore that a little bit.

Ms. FRANKLIN. Indeed I have changed my view on this. This program has gotten tremendously larger—that is the first point—since I was in office.

Secondly, the way it is being administered has changed so that it really is now I believe government picking winners and losers, and I really do not think that is an appropriate role for government.

Some of the private sector input that we had, that John Lyons, who ran NIST, had in the process, I think, is not working in the same way, and I do not like the way it is working today.

Finally, I would just observe that there is the appearance that NIST has been politicized to a degree that has never occurred before. Typically the head of NIST is a presidential appointee.

In previous years, as long as I can remember—and my relationship with the old NBS goes back to the 1970s when I was at the Product Safety Commission—the person who was head of NIST, but a presidential appointee, has been a career person.

Well, in this Administration for the first time that has been changed. The head of that office is still a presidential appointee, but in this case it is not a career person out of NIST.

I think she is a perfectly good person, the current director, but there is the appearance of politicization—I cannot say it—politicizing the whole of NIST, and I really just simply disagree with all of that, and the ATP is the most egregious piece of it.

Mr. BROWN. Well, Ms. Franklin, I cannot wholeheartedly agree with your criticism, beginning with size. Is there some magic size at which an agency no longer is useful? Or do you have a standard for size?

Ms. FRANKLIN. No. I think it ought to be totally zeroed out now. I suppose you could argue that at any size, picking winners and losers is not a good idea.

Mr. BROWN. Well, I—

Ms. FRANKLIN. And certainly when it has gotten as big as it has now I think it really is not a good idea.

Mr. BROWN. Ms. Franklin, picking winners and losers has become a slogan back here. Those who oppose it say it picks winners and losers.

I am going to have to ask you to indicate how you have made the judgment that it picks winners and losers. As you know, all of the awards are competitively granted. If you have indications or evidence that any of those have been made on the basis of political favoritism, we would like to have that for the record and to correct it, because it would be a violation of the law.

Also, you indicated that the head of NIST has been a career person. The present head of NIST is a career person who has established an excellent reputation at the Department of Defense for managing high technology programs and was brought over to Commerce to give them the benefit of that kind of experience.

Now is that an invalid procedure?

Ms. FRANKLIN. Well, it is simply different than what has been done in the past, where the head of NBS has been somebody out of NBS.

Mr. BROWN. Well, Ms. Franklin, the position of the Republican Party today is that they want everything to be different than was done in the past. [Laughter.]

Ms. FRANKLIN. Okay, I have no comment to make about that.

Mr. BROWN. But can you provide evidence indicating the degree to which the Department and its ATP awards is picking winners and losers? That they are selecting people based on political favoritism, any evidence that you can put in the record? Because we want to correct that.

Ms. FRANKLIN. I am speaking more, because I am not following precisely who is getting what today—I am not in office any more. Were I, it would be different.

I am talking about the process. I just think that this is not an appropriate role for government—

Mr. BROWN. Well, I have tried to be—that is what you have really changed. You do not think it is appropriate now, and you did when you were in control. That is not a very good reason, actually, because you are not in control not to favor it any longer.

If you are going to sloganize, I regret very much that that has to be done in a Committee which is noted for trying to apply rational judgment to these programs.

The CHAIRMAN. The time of the gentleman has expired.

The Chair recognizes the gentleman from Texas, Mr. Stockman, for five minutes. I would ask the gentleman if he would yield to the Chairman for a moment?

Mr. STOCKMAN. I yield to the Chairman. I do not think I would deny that request. [Laughter.]

The CHAIRMAN. No, I would just simply say that in material that was submitted by the GAO to Mr. Brown at his request with regard to ATP, over half the companies who received awards under it indicated they would have done the work even if there had not been an ATP program.

That would seem to indicate, maybe, that we are using government money to pick certain winners who otherwise would use their

own money for the project. There is some evidence on the record done by the GAO.

I thank you, and I thank Mr. Stockman for yielding.

Ms. FRANKLIN. Thank you.

Mr. STOCKMAN. Ms. Franklin, I have a question regarding the Office of Atmosphere Research. Could you tell me exactly what their duty is?

Are you aware of their duty?

Ms. FRANKLIN. Remember, now, I am out of office, okay? I am not sure. Is that part of the ocean—

Mr. STOCKMAN. It is part of NOAA. I guess I will help you answer it. They do work. They study, of course, atmosphere, but some of these applications in which they are involved in would seem to be duplicated throughout the agency such as the Mission to Planet Earth.

How would you feel about some of this—you are talking about creating a whole independent agency—what would your view be if it was merged with NASA?

Ms. FRANKLIN. "Merged" is an interesting choice of words. I do not know quite what "merged" would do. "Grouped with," perhaps.

Well, as I began to think about the environmental satellites, as I have mentioned in my statement, and the management dilemma that exists and has for as long as I guess we have had those satellites—it goes way back before my time—putting NOAA and NASA into some grouping would solve that management dilemma, I believe.

Mr. STOCKMAN. So we are understanding, what I am trying to understand is. Are you saying there is a lot of duplication that is being performed right now?

Ms. FRANKLIN. Between NASA and NOAA you mean?

Mr. STOCKMAN. Yes.

Ms. FRANKLIN. I truly do not know the answer to that question. I think if in the end the Congress does decide to group some of these functions in a different way—I mean, right now we are going about streamlining government kind of one department at a time, and we are making decisions, or are about to make decisions.

I think at some point when that is all done, the Congress and the President are going to have to step back and look at what has happened.

If let's say NOAA and NASA did get grouped together, then I think a further review has got to go on as to whether there are things that are duplicative.

Mr. STOCKMAN. What was your opinion of NIST? Did you think they should be abolished, or maintained?

Ms. FRANKLIN. No, I do not. My statement I hope is very clear.

Mr. STOCKMAN. I think you said you wanted to retain it. Where would you, in your perception, where should it go?

Ms. FRANKLIN. Where would I put it? Well that is one of those interesting questions. It either stands alone, or you group it with other scientific functions. I think that is a real judgment call.

NIST to me is a jewel of an agency. The heart of NIST and the standards function I think we need at the government level, and I think those people are very professional and very good.

Mr. STOCKMAN. How long were you with the Department of Commerce?

Ms. FRANKLIN. About a year. I wish it had been longer. [Laughter.]

Mr. STOCKMAN. So in that year's time you became familiar with it, did you perceive or understand that at some point—I guess later on, you as a former chairman mentioned, you were convinced that maybe it was time to change, downsize, and eliminate.

Was that a growing process?

Ms. FRANKLIN. The Department, you mean?

Mr. STOCKMAN. Right.

Ms. FRANKLIN. Yes, I think it was a growing process. I felt that I had found a way to manage the Department of Commerce that does have a bunch of disparate functions in it, that is true, and NOAA is the biggest hunk and that is the most difficult.

The way I went about managing the Department—and I did this with the help of—I did not do it alone—career people and some of the political appointees, we did it through a process that started at a retreat.

In order to get these folks in different agencies of the Department to talk to each other, which was not always the case, what we came out of that with was a banner: "Commerce is the new front line for promoting jobs and growth."

Under that was a seven-point agenda that in fact knit the 14 different agencies of that Department together. That was my way of managing it.

We then put down action plans, and we drove it through the budget process—

[The bell rings.]

Ms. FRANKLIN. I am sorry.

Mr. STOCKMAN. Just one last question. If we cut this—

The CHAIRMAN. The time of the gentleman has expired.

Mr. STOCKMAN. Okay. Thank you.

The CHAIRMAN. Mr. Gutknecht.

Mr. GUTKNECHT. Mr. Chairman, I have to do a radio show at 11:00 o'clock, so I am going to yield some time to my colleague from Texas, but I do want to make a comment. It is sort of in response to some comments you made, and those made by Secretary Brown.

I try to do at least one or two town meetings in my District, and at least one or two plant tours a week. It is interesting. In my District—and I do not think mine is much different than districts anywhere else in the country—how many relatively small businesses now are doing world trade.

In fact, I was in one small plant in a little town in Minnesota and I was shocked to learn that over 30 percent of what they manufacture is now being shipped overseas. As a matter of fact, within two years their goal is to be over 50 percent of what they manufacture in that plant to be overseas.

I think that is going on all over the United States of America. But the interesting thing is, when you ask them. Do you get a lot of help from the Federal Government, from the Department of Commerce? Or do you get more problems?

I think the general consensus is—with all due respect to this Department and this Federal Government—is that most of what is

happening out there relative to our becoming more competitive in that world marketplace is in spite of the Federal Government not because of the Federal Government.

There is sort of a philosophical divide going on right now about what role the Federal Government should play. I appreciated your comments, and frankly I appreciated the comments of Mr. Brown because I think he illustrated the clear difference between the two sides on this issue.

So that is more of a comment than a question. I know that my colleague, Mr. Stockman, has another question, so I would yield the balance of my time to Mr. Stockman, if I could, Mr. Chairman.

Mr. STOCKMAN. I just wanted to say, quickly, do you view us eliminating the Department of Commerce as something that is anti-business?

Ms. FRANKLIN. No. I see it as a drive toward government efficiency.

If I could just add a line that answers your last question about why I seem to change my mind about dismantling Commerce, I really did not. It was a thought process.

I have to tell you that managing that Department, even though I think I had found a way to do it, was a stretch because the structure did not lend itself to being well managed.

I really believe that we have in this government a lot of very good and sincere and hardworking career people who want to do the right thing. I think if they are in structures that lend themselves to management and are very focused on what the mission is, it is very much easier for those people to perform well.

So where I am coming out today is I think our government ought to be more efficient. We ought to structure these entities that we have so that they can be focused and have clear missions, and therefore I think be more productive, be more streamlined, and serve our taxpayers much better than we have in the past.

We have a government structure that is really kind of out of date.

Mr. STOCKMAN. I just want to tell the Chairman that I am a little confused, because we are confused of cutting welfare, we are accused of cutting school lunches, and now we are being accused to cutting corporate welfare, and it is a little puzzling.

I just want to say that I stand behind what this Committee, I hope, will do, which is to adopt the abolishment of the Department of Commerce.

Thank you. I yield back the balance of the time.

The CHAIRMAN. I thank the gentleman for yielding back his time.

Mr. Doyle.

Mr. DOYLE. Thank you, Mr. Chairman, and thank you, Ms. Franklin, for your testimony.

I am one of the new kids on the block, being one of the landslide 13 Freshman Democrats elected in this last election. I think all of us who are new here to the Congress heard a message out in our Districts that the American public wants this government to live within its means and wants to see agencies be run as efficiently as they can be run.

Having said all that, I think abolishing the Department of Commerce would be a terrible idea. It just seems to me, in looking at

the Chrysler bill and listening to some of the testimony today, that it seems like an interesting shell game that we have taking place here.

We are acknowledging many programs within the department are valuable programs and should continue, and we are going to transfer those functions—I am not quite sure where it is all being transferred—to me, it seems like in search of a trophy.

We have got to eliminate one of these Cabinet Departments here in the government so we can go back home and pound our chests and say we have cut the Federal Government. I think we can do that, and we should do that, with every Department, and I was pleased to hear Secretary Brown earlier in his comment allude to the Vice President's goal in downsizing government.

I think that is what should take place in the Department of Commerce. We should examine this agency, find out where the fat and the duplication is, and make sure that we are eliminating that and preserving the programs that are important.

I think we can do that within the Department's framework and do a great service to the American people.

I just have two questions. In your testimony, you had advocated the privatization of NTIS.

Since federal law protects the right of foreign companies to bid, much of our U.S. information industry has been bought by foreign governments. I wonder, would it bother you that the archives for 50 years of federal research, if they were owned by a company whose allegiance was to a country that some day might be our enemy, and that there is also no protection against the foreign company bidding for NTIS' archives and then dumping them to give their country a strategic advantage, I wonder if you have any concerns about that happening?

Ms. FRANKLIN. Well, I think you raise an interesting set of conditions that I would have to think about a little more.

I mean, all of this is public information now. So it is not as though somebody would be getting something that is somehow confidential.

Mr. DOYLE. Yes, but we are talking about who would control the archives at this point if it were owned by a foreign government. They would control people's access to that information.

Ms. FRANKLIN. I would rather have it here.

Mr. DOYLE. So would we. But there is no protection at that point.

Ms. FRANKLIN. That is an interesting point.

Mr. DOYLE. I just wondered if that was a concern in privatization.

Ms. FRANKLIN. What you are doing is making an argument for keeping NTIS somewhere in our government, I think—

Mr. DOYLE. I think that would—

Ms. FRANKLIN [continuing]. Even though it is a self-sustaining operation, pretty much. And that is an option. You know, I am not terribly wedded to privatizing, although that just seems like a logical step here. But I think you raise an interesting question, and I will think about that some more.

Mr. DOYLE. Thank you.

I wonder if you might also comment briefly on your opinion of the Manufacturing Extension Program?

Ms. FRANKLIN. MEP is a program that I have always rather liked. And I think—am I correct—that the House has appropriated some monies for that program for the next fiscal year?

The question—let me go back.

The reason that I have liked that activity is that, as I have seen it in action around the country; it has been truly a partnership and there have been state and local entities, and in some cases academia, and in others large businesses have helped to support this activity because it mainly does help small business.

I do think that there is something—there is a very legitimate function there. I think the question we have to ask is who should do that, whether the Federal Government ought to do some of it, or whether we ought to push it all back to the states and locales.

Mr. DOYLE. Or would they in turn pick up the slack, or would private industry pick up the slack.

Ms. FRANKLIN. And in that case, I am thinking of one instance where I know that private industry, the bigger businesses, would pick up the slack, I think. So that is another approach to this, rather than to have the Federal Government do it.

But I really do believe that the program is fundamentally a good idea. My question is who should do it.

Mr. DOYLE. I think it is a good idea, too. MEP of course is taking a 50 percent cut in funding in this year's budget.

Thank you, very much.

I yield back my time.

The CHAIRMAN. Ms. Harman.

Ms. HARMAN. Thank you, Mr. Chairman.

I would like to state for the record that I oppose the Chrysler bill, though I am not opposed to the notion of reorganizing functions and streamlining.

I wholeheartedly support the Vice President's efforts to reinvent government.

The primary reason I oppose the Chrysler bill is that it would, as far as I am concerned, devastate the government role in technology in the commercial sector and, in my view, we cannot possibly be competitive in the global marketplace of the 21st Century if we do not have the world's most robust technology.

I cannot imagine the United States competing for the lowest wage rates in the world. That would make us equivalent to the economy of Sri Lanka, or some other small Asian nation.

I cannot imagine us continuing to lead in the commercial sector with our technology as we have always led in the defense sector with our technology.

Therefore, I strongly support an appropriate government role in technology.

Now, Ms. Franklin, you have been asked about the MEP by Mr. Doyle, and you said you kind of liked it. I would like to read just a small portion of a letter that Mr. Brown has put into the record from Dr. Robert White who was a senior official in your Commerce administration. This letter was written to Mr. Brown earlier this month.

He says. "I don't think of TA"—the Technology Administration—"as providing services and expertise as much as providing incentives through matching funds for such services to be available

where they would not be otherwise. Having visited most of the original MEPs, I believe they serve a very useful and necessary function. If these were competing with private versions, as some argue, then we would expect to see such private versions in cities without MEPs. This is not the case.

So my question to you is. If we either dismantle totally or savage by funding cuts the MEPs, how will they, somehow, how will this function somehow survive in the states and localities without the government role?

Ms. FRANKLIN. Well, one way—and now I am speaking having not really thought through what I am about to say; this is very risky—but you know how the Baldrige Award works. In other words, the government, NIST in this case, has an administering role and a seeding role, but the monies are coming mostly from somewhere else, the private sector.

Could not this same kind of philosophy be applied to the MEP?

The Baldrige Award approach, just to carry that example, has mushroomed all over the place. The folks at NIST help the states and locales who are setting up their own version of it. Maybe something similar could be done with the MEP.

Ms. HARMAN. I think that is basically the concept of the MEP. As someone else said earlier, the leverage in terms of private/public dollars is 8 to 1. That is the philosophy behind ATP as well. It is matching grants. It is this notion of government as partner, not government as manager and owner of the project.

I would just submit—and I will be brief, Mr. Chairman—that without a critical government role in applied technology in the commercial sector, we will lose our dominance in the global marketplace in the 21st Century. I think this is extremely short-sighted of this Committee, and I will do everything I can to save the technology functions in this government.

Thank you. I yield back.

The CHAIRMAN. I thank the gentlelady.

I would just remind her that the MEP legislation as passed by this committee did have a 6-year phaseout for each of the MEPs, a standard that neither the Appropriations Committee nor the department have been willing to stick to, that had we been operating it along the lines of the authorized legislation, it might be in much stronger shape at the present time.

Mr. Ehlers.

Mr. EHLERS. Thank you, Mr. Chairman.

First of all, I commend you, Mr. Chairman, for holding this hearing. I am sorry that I have been popping in and out for other meetings and did not have a chance to make an opening statement.

But I think very few people realize the extent to which the total mission of the Commerce Department at this point is scientifically oriented, and it is entirely appropriate for this committee to spend a lot of time on this because 69 percent, more than two-thirds of the budget of the Department of Commerce, is in the scientific area.

Having said that, I want also to commend Ms. Franklin. I am sorry we haven't met before. I have heard a great deal about you. I do want you to know my background is as a scientist, and I served years ago on an evaluation panel for the former National

Bureau of Standards for several years, and so I am quite well acquainted with it.

I have a great concern about maintaining the scientific activity that goes on in the Department of Commerce. NOAA, as you mentioned, and I really appreciate your testimony because it was right on in terms of what is important, what has to be kept. Keeping NOAA as an entity, I believe, is extremely important.

I think if we are to dismantle the Commerce Department, Mr. Chairman, I believe a logical place for NOAA would be a new Department of Science.

I think, seriously, if we are going to pursue this and dismantle several departments, including Energy—

The CHAIRMAN. If the gentleman would yield, he is very perceptive. [Laughter.]

Mr. EHLERS. I might say you are very perceptive, too. [Laughter.]

But if we are dismantling the Department of Energy, as we talked about, the Department of Commerce, I think it is very important to pull these different agencies together, NOAA, NIST, and Department of Energy labs, into one agency. So that may be a hearing of another day.

Be that as it may, I really appreciate your comments, and I want to express my appreciation because you have identified two things that I think are extremely important. One is to keep NOAA as an entity and to keep NIST as an entity, and, secondly, to get rid of the administrative overburden that is hampering both agencies tremendously. If we accomplish those two things, regardless of whether we dismantle the department or not, we will have done a great service to the country and for the Department of Commerce.

So I want to thank you for your testimony and your comments.

Ms. FRANKLIN. Thank you.

The CHAIRMAN. Thank you, Mr. Ehlers.

Ms. Rivers.

Ms. RIVERS. Thank you, Mr. Chairman.

Ms. Franklin, I listened very closely when you were questioned for specifics to buttress the arguments which you are making today, particularly given the fact that your arguments today are very different from your arguments of 3 years ago. In virtually every case, when you were asked for specifics, you said, "Well, I have no knowledge. I am out of office. I am not in charge."

Ms. FRANKLIN. That's right.

Ms. RIVERS. But you came to commend the committee and this bill for doing the right thing, and if you have no knowledge of what is actually happening, on which do you base the commendation?

Ms. FRANKLIN. I base my knowledge on process as opposed to outcome. In that case, I do have—you are talking about the Advanced Technology Program—in that case, I think I do have a valid opinion.

But to make the distinction, what I was saying is that I am not looking at precisely who is getting what awards, because I am out of office. But in terms of the process and what I consider to be quite a change in that process, yes, my comments are valid.

Ms. RIVERS. I think your comments originally were specifically that the Government was picking winners and losers.

Ms. FRANKLIN. Yes.

Ms. RIVERS. The question was. Did you have any examples of political favoritism or undue influence? And you said you were not in office.

Ms. FRANKLIN. No. I think I said that the process was a problem and that a process like that will pick winners and losers because it can't help it.

Ms. RIVERS. So, improving the process would meet your concerns?

Ms. FRANKLIN. No. Actually, I just think that we have now gotten to the point that Government should not be in the business of trying to dictate which technologies we shall pursue for the future because Government can't do it.

I am a product of the private sector, and I just do not believe that Government cannot do it.

Ms. RIVERS. Well, let me go on to that then because that is also of interest to me. I assume that many of your views you have held for a long period of time, and so as we look at this bill and see there are a variety of cuts that are being proposed in a variety of changes, I would like to know that during the time you were in charge, what specific cuts did you propose in any programs within Commerce, did you make any cuts, and what particular functions of Commerce you proposed to privatize during the time you were Secretary?

Ms. FRANKLIN. Had I been in office a little longer, I would have. But I was only there for a year, and that was just one budget cycle. We held the budget as it had been the preceding year.

Ms. RIVERS. But we are talking about massive cuts here, which is what you are interested in.

Ms. FRANKLIN. Correct.

Ms. RIVERS. As opposed to holding the budget. I am asking specifically what you did to put flesh and bones on your view of how Government should operate, the kind of costs, et cetera, et cetera, what did you do to advance the agenda that you are supporting today?

Ms. FRANKLIN. What I did was to do my utmost to manage that department, disparate pieces as it had, to manage it so that it really was focused, as best we could focus it, using the taxpayers' monies in the most productive way. That's what I did.

Ms. RIVERS. But process and management are the important issues, and if we can make improvements in process and management, you wouldn't have any problems with the Department of Commerce?

Ms. FRANKLIN. No, because I already said that I think the structure does not lend itself to management that makes sense. I had to stretch to come up with the management scheme that I came up with.

No, I think there is something structurally wrong with the makeup of the department. That is my bottom line. That is why I am supporting this.

Ms. RIVERS. How would you restructure the department to maintain the programs, if the programs are good and the problem is process and the problem is management? Surely you must have given some thought to this, given that you ran the agency. What would you change?

Ms. FRANKLIN. What I would do is the following. I would get rid of certain things like the ATP, like the Technology Administration; I would get rid of EDA.

I would take the trade pieces, ITA, plus the Bureau of Export Administration, and I would even throw in Patent and Trademark, and I would come up with a trade, a sharply focused trade function that I would put together with the U.S.T.R., and we have some kind of whatever you call it, ministry or something, take the trade functions and really focus them.

I would take the statistics functions, put them together with other statistics functions in Government that do the same thing. And really what we are backing into here is that we do the same thing with the science functions.

Ms. RIVERS. Okay. Let me ask you a question though, about something you said about holding the line. Didn't you ask for an increase in ATP the year you were Secretary?

Ms. FRANKLIN. I don't know. Truly I do not remember.

Ms. RIVERS. You did.

Ms. FRANKLIN. I did? Okay.

Ms. RIVERS. Thank you.

Ms. FRANKLIN. She says I did. If she says I did, I did. [Laughter.] Times change.

The CHAIRMAN. The time of the gentlewoman has expired.

Mrs. Morella.

Mrs. MORELLA. Thank you.

Hi, Secretary Franklin.

Ms. FRANKLIN. Hi.

Mrs. MORELLA. Thank you for appearing before us.

You know, I do agree with what has been said by both Secretary Brown and by you, and that is that NIST is our jewel of competitiveness.

I have some concerns about the Chrysler bill in terms of what would happen to NIST. I think I heard you say maybe it would be on its own, maybe under another department. Would you like to comment further on it and also on do you see a diminishment of NIST if the Technology Administration is abolished, if ATP, if MEP?

Ms. FRANKLIN. No. I really don't, because I first knew NIST before it was NIST. It became NIST in 1988.

Mrs. MORELLA. Right.

Ms. FRANKLIN. I knew the National Bureau of Standards for a lot of years before that because when I was at the Consumer Product Safety Commission, that was where we went for standards, and I think that what was the old NBS is the heart of what is NIST today. If you strip the grant programs away, you have still got the old NBS, which I think is the jewel, and that is what we ought to keep.

The question you raise about where to put it, whether it gets grouped with other science functions, that does make sense to me, or whether it stands alone.

I mean, because it is an independent third party that is setting standards, I think it could stand alone. But it may really have more synergy with some other functions, and that would make sense.

So I am a little ambivalent about what the best way to do that is, except that I really feel so strongly that it should be preserved.

Mrs. MORELLA. Have you had a chance to look at the Chrysler bill?

Ms. FRANKLIN. Yes.

Mrs. MORELLA. What are your comments about it?

Ms. FRANKLIN. Well, there is something I don't understand, and the Congressman is sitting here. There is some discussion, I think, in there about trying to sell the individual laboratory pieces that comprise NIST. I don't think that makes any sense. In fact, I don't think it is even practical.

I can't imagine that there would be buyers for those, and we need those different laboratories if NIST is to come out with a standard for the width of a line in a silicon chip or whatever it is. Those laboratories are contributing to that process. So they are what I consider to be the heart of NIST and should be preserved together.

Mrs. MORELLA. So you would be very much against any kind of privatizing of any part of NIST?

Ms. FRANKLIN. Yes. I don't think it would work. I just don't think it's practical.

Mrs. MORELLA. I have one dilemma that has been coming up in the discussions of ATP or whatever you want to call programs where Government helps companies, because in the articles that we read we know that 25 years ago RCA pioneered a technology known as the flat panel or the liquid crystal display, got no help from Government, and ultimately what happened, the Japanese came in and now they are No. 1 in the world in that regard.

Ms. FRANKLIN. Yes.

Mrs. MORELLA. Then you could look at Airbus, which also was helped by government, and U.S. firms didn't get the opportunity because they didn't push.

We need something that will synchronize and say Government will give a push for competitiveness and other times when Government would not be just giving giveaways. Do you see what I mean? There is the distinction.

Would you like to comment on that? Do you see some merit in that thought?

Ms. FRANKLIN. This is a very hard distinction.

Mrs. MORELLA. Yes.

Ms. FRANKLIN. To make it work. The problem is that once you start down the road of Government helping this technology or that, then it is really hard to stop it. I see ATP as having been on that continuum. It started out rather innocently and then became kind of a player.

Mrs. MORELLA. I just wonder if ATP could be modified in some way so it provides a boost, maybe a different name since it seems to have that connotation now.

Ms. FRANKLIN. I would have to think about that.

Mrs. MORELLA. It was just a thought.

Ms. FRANKLIN. I would have to think about that.

Mrs. MORELLA. Thank you. Thank you for appearing.

Thank you, Mr. Chairman.

The CHAIRMAN. Thank you, Mrs. Morella.

Mr. Luther.

Mr. LUTHER. No questions.

The CHAIRMAN. Just a couple of points to follow up, and I appreciate your testimony and I think that you have provided us with an appropriate overview.

The issue here, of course, is somewhat philosophical. There are people here in the Congress who believe that the Government picking winners and losers is exactly what the Government should be doing and that the Government ought to be deeply involved in all these issues, and the question is really one of whether or not we are going to have the appropriate macroeconomic policies to allow us to compete globally or whether or not we are, because we are unwilling to do the proper macroeconomic policies, then going to do a backfilling in order to find ways of helping our companies because we have done so much to damage them with the policies we have.

So, to some extent, you have to look at this in a larger framework. If, in fact, we had the appropriate regulatory policies, the appropriate taxation policies, the appropriate litigation policies, most of our companies would be able to compete very, very well globally. But the fact is that we have destroyed the ability of companies to compete globally with the wrong regulatory policies, the wrong taxation policies, and the wrong litigation policies.

So, therefore, when we come along and we have people suggest to us in Congress that because we have all of the bad policies at the macroeconomic level, we then ought to come up with all kinds of Government spending to supplement the businesses' inability to compete.

Part of our answer to all of this is, let's change the macroeconomic policies, let's make some structural changes in regulation, taxation, and litigation, thereby give our companies more of an ability to compete, and then you can get rid of some of the superfluous superstructure that the Government has that supposedly makes our companies more competitive.

I appreciated your testimony because that is exactly where you came from on it. You identified some things that need to be a part of that overall framework. I think you made it very clear that we need to have NIST because NIST in fact is a standard-setting agency.

I agree with you. I don't know who in the private sector picks it up if you try to privatize the laboratories, and the problem with it is that who trusts, if you are competitor, the work of private laboratories in standard-setting. You know, you don't get the right kind of policy out of that kind of a decision.

It seems to me that there are some pieces of NOAA, for instance, the NOAA fleet, that can be dismantled and eliminated, but, in essence, NOAA has some important things to do for the national good. You have pointed those kinds of things out.

We are trying to find the right kind of solution. Do I understand your testimony to say that those items that have to be kept in the national interest should be put into some kind of independent function?

Mr. Ehlers was quite perceptive in saying that it ought to be a department of science. He has read my bill carefully and knows that that is the direction we ought to go.

But I am not so certain we have the votes in this committee to move in that direction. We certainly do not have a budget policy on that. On the Department of Commerce dismantling, we have a budget policy. It's clear we are going to do it.

So the next question is: What are the other places that it could go? The Department of Energy, for instance, has some experience in running laboratories. It might be an appropriate place.

Some people have suggested the National Science Foundation. It is basically a granting agency. I am not certain it's the right place to put it.

Ms. FRANKLIN. I would not.

The CHAIRMAN. Do I understand you would not?

Ms. FRANKLIN. Yes. I wouldn't put it there. I think the functions are not the same.

The CHAIRMAN. Are not the same.

Ms. FRANKLIN. Correct.

The CHAIRMAN. The other thing is perhaps an independent science agency of some sort where we begin to pull together some of these elements.

Would you expand a little bit on your thoughts on those from your testimony?

Ms. FRANKLIN. I guess my bottom line at this point is that I would lean toward grouping science functions together, and I would have to tell you in all honesty, Mr. Chairman, you and I have known each other for a lot of years, but I didn't start out there as I looked at dismantling of Commerce. But the more I got into where things should go, there are science functions in this Government that I think could be appropriately grouped.

Now, what you call that, I know we are not into creating new departments at this moment, we are trying to get rid of them and make Government more efficient at this point, but what you call it, I don't know. But I think there is some merit to this idea of grouping science functions, I really do.

The CHAIRMAN. Thank you.

Ms. JOHNSON, I understand that you had a question. Is that correct?

Ms. JOHNSON. I just wanted to ask about the MEP programs and the research programs, your opinion on their value and where you think they might fit.

Ms. FRANKLIN. The MEP, we did discuss some. I think that there is great utility to that program because it helps small business, and I have seen that in action.

My question is where it belongs and how much Federal Government involvement there needs to be, whether that could be pushed back to States, locales, private sector. I think my instinct is it probably could.

On the Advanced Technology Program, if you are asking about that, we have kind of beaten that to death here. I think there is just a real philosophic difference among us about what Government's appropriate role in advancing technology of this kind is. I

think that program, I think the House did the right thing in zeroing out that program for the next fiscal year.

Ms. JOHNSON. Thank you.

The CHAIRMAN. Mr. Foley, did you have questions?

Mr. FOLEY. No. Thank you, Mr. Chairman.

The CHAIRMAN. Secretary Franklin, we thank you very, very much for having been with us, and we appreciate your testimony, and we look forward to continuing to consult with you as we move ahead with the issue. Thank you very, very much.

Ms. FRANKLIN. Thank you very much. Good luck with your work.

The CHAIRMAN. Thank you.

I am going to divert a little bit from the schedule. The gentleman from Michigan, Mr. Chrysler, is with us and has indicated a willingness to testify with regard to his bill. I am going to permit him to do so at the present time to give the committee an opportunity to ask him some questions later.

Mr. Chrysler, we would appreciate if you would summarize your statement. The members have had an opportunity to look through it here and then leave some time for us to follow with some questions.

I would be happy to recognize the gentleman from Michigan.

STATEMENT OF HON. DICK CHRYSLER, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF MICHIGAN

Mr. CHRYSLER. Thank you very much, Mr. Chairman.

You know, I look at the Department of Commerce, and I say if the Department of Commerce is in fact the voice of business, then it would be supporting a balanced budget amendment, it would be supporting a capital gains tax, it would be supporting tort reform and regulatory reform.

The fact of the matter is that they are diametrically opposed to all the things that the business community in this country wants most.

Having said that, Mr. Chairman and members of the committee, I would like to thank you for the opportunity to continue the discussion of the dismantling of the Department of Commerce with your committee.

My previous testimony has focused primarily on the reasons why our task force believes the Department of Commerce should be dismantled. I know that this committee is especially interested in the details of how we sensibly and efficiently organize the Federal Government's science and technology's activities in a post-Commerce Department Federal Government.

Today I will quickly summarize the written testimony, as you have suggested, that I have submitted earlier.

I am excited that we have moved beyond the question of should we dismantle the Department of Commerce to the question how do we go about it? H.R. 1756, the Department of Commerce Dismantling Act, is the product of months of studies by our task force members of Congress, former Commerce Department officials that we have heard from today, and outside policy experts.

We took a close look at each of the Commerce programs, consolidating the duplicative programs, streamlining the essential pro-

grams, eliminating the unnecessary programs, and privatizing programs better performed by the private sector.

The Department's problems can only be resolved if it is dismantled. Reinvention will not work in this case, and we have drafted a specific plan to dismantle the Department of Commerce.

Most of the money spent on the Commerce programs simply amount to what the Clinton Administration's Labor Secretary, Robert Reich, has called corporate welfare. As Secretary Reich has called for, these programs should be terminated immediately.

In fact, the Commerce Department gives away almost \$1 billion each year to the Nation's industry giants that do not need taxpayers' money. The Department's interference in the private sector, in many cases, actually hurts American competitiveness. The Technology Administration and the Office of Technology Policy should leave technology policy decisions to the private sector, and the self-funding National Technical Information Service should be privatized, giving it the freedom from Government red tape.

One agency of the Department of Commerce that seems the most out of place yet makes up 55 percent of the Department is the National Oceanic and Atmospheric Administration. NOAA's activities, from the National Weather Service to fisheries management to the NOAA Corps have little to do with commerce.

Our legislation would consolidate the components of NOAA in more appropriate homes in Government where their jobs can be done more effectively and would privatize others.

Our proposal would also privatize many of the labs of NIST and NOAA so they can be run more efficiently, pursuing research in areas demanded by the marketplace.

Our legislation ensures that important research activities are not disrupted by any privatization effort, by requiring that the potential buyers intend to perform essentially the same functions the labs currently perform.

One idea that I understand this committee has been considering is the consolidation of all federal science and technology programs into a unified science agency, and I commend you for this effort.

Government regulation must be based on sound science. Certainly, one of the goals of the Department of Commerce Dismantling Act is to create a Government that works more efficiently and effectively. By transferring the Department's science functions to agencies or offices where these functions are their primary focus, I believe we will see even greater savings and improved service for the American taxpayer.

Mr. Chairman, this Congress is committed to downsizing an overblown Federal bureaucracy while creating a Government that works better. Clearly, in the areas of scientific research and development, the Federal Government can and must do better. One of the places we can make a good start is by dismantling the Department of Commerce.

I look forward to working with this committee to create a Government ready for the challenges of the 21st century.

[The prepared statement of Mr. Chrysler follows:]

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VICE CHAIRMAN

Testimony of

The Honorable Dick Chrysler
United States House of Representatives
8th District, Michigan

before the

Committee on Science

September 12, 1995

Mr Chairman and Members of the Committee, thank you for the opportunity to continue the discussion of the dismantling of the Department of Commerce with your committee. My previous testimony has focussed primarily on the reasons why our Task Force believes the Department of Commerce should be dismantled. I know that this Committee is especially interested in the details of how we sensibly and efficiently organize the federal government's science and technology activities in a post-Commerce Department federal government

I am excited that we have moved beyond the question of "Should we dismantle the Commerce Department?" to the question "How do we go about it?"

H.R. 1756, the Department of Commerce Dismantling Act, is the product of months of study by our task force of Members of Congress, former Commerce Department officials, and outside policy experts. We took a close look at each of Commerce's programs, and found a Department that cannot be "reinvented." The Department's problems can only be solved if it is dismantled, and we drafted a specific plan to do just that

I want to share with the Committee a recent report by the General Accounting Office, which includes an interesting chart on the Department of Commerce's share of spending in its four purported mission areas: natural resources, advancement of commerce, area/regional development, and research/general education. The chart indicates that of Commerce's disparate missions, it takes the lead in none within the federal government. The Commerce contribution to research and general education is a tiny fraction of the federal efforts in this area.

Clearly, the Department of Commerce is a hodge podge of unrelated and uncoordinated programs that even former Commerce Secretary Barbara Franklin has called a "stretch" in uniting into one common sense of purpose. The ill-fitting pieces that we are here to discuss today, Mr. Chairman, are the Department's science and technology functions.

At the top of Commerce's technology bureaucracy is the Technology Administration (TA), a recently created "super-bureaucracy" that adds no value, just another layer of bureaucracy, to the offices it oversees. Within the TA is the Office of Technology Policy (OTP), a policy advisor for technology issues; the National Institute of Standards and Technology (NIST), an agency that works with U.S. industry to promote new technology; and the National Technical Information Service (NTIS), a clearinghouse for scientific and technological information produced for the federal government.

Most of the activities of these offices simply interfere with what should be left to the very capable hands of the private sector. Government bureaucrats are poorly equipped to pick winners and losers, or to dictate the direction of our nation's technological progress, than the private sector

The TA and the OTP should be abolished, and the development and implementation of any kind of technology policy should be left in the hands of the private sector, which has a vested interest in pursuing new technological advances

Programs like the Advanced Technology Program (ATP) and the Manufacturing Extension Partnerships (MEPs) unnecessarily interfere in the marketplace's ability to develop new technology by subsidizing those programs that the market may choose not to pursue. As a recent Heritage Foundation report noted, "The technology programs [of the Commerce Department] represent most clearly the failed theories of government-industry 'partnership,' in which bureaucrats pick projects to subsidize and encourage private-sector interest to pursue government funding rather than to invest in entrepreneurial research."

Many of the nation's industry giants receive million dollar grants from Commerce's technology programs. For me, it is difficult to justify to my constituents huge handouts of taxpayer money to very profitable corporations, when this Congress faces chronic billion dollar deficits

Most of the money spent on these programs amount to what Clinton Administration Labor Secretary Robert Reich has called "corporate welfare." As Secretary Reich has called for, these programs should be terminated immediately.

The NTIS is already a self-funding agency that simply collects and disseminates the federal government's technical and scientific material. This agency should be freed from the burden of federal government oversight and should be given greater autonomy through privatization

Clearly, Mr. Chairman, we have a budget resolution which requires us to make tough choices. I believe the most useful question when deciding where limited federal resources will be dedicated should be, is the federal government the only entity which can perform these functions?

In the case of the Commerce Department's technology programs, the answer to that question is clearly no. In fact, I would argue that the Department's interference in the private sector in many cases actually hurts American competitiveness. The meddlesome TA and OTP should leave policy decisions to the private sector, the high-tech pork barrels of ATP and the MEPS should be shut down immediately, and the self-funding NTIS should be given its freedom.

One beneficial function of the TA is the weights and measures function of NIST. There is a legitimate role for government in maintaining consistent standards for national and international usage. H.R. 1756 would transfer this limited function to the National Science Foundation, which will continue to develop and maintain a constant set of standards.

One agency of the Commerce Department that perhaps seems the most out of place is the National Oceanic and Atmospheric Administration (NOAA). NOAA's activities - from the National Weather Service to fisheries management - seem oddly situated in a department meant to promote the interests of American business.

Our legislation would move the various components of NOAA to more appropriate homes of the government, where we believe their missions may be accomplished more effectively. The plan would streamline many NOAA functions, eliminating duplicative functions and consolidating similar functions in other agencies. A further explanation of the NOAA transfers is included in the legislative summary attached with my testimony.

Since the introduction of our legislation, there has been discussion of keeping NOAA intact as an agency within the Department of the Interior or as an independent agency. Our original intention to divide NOAA's components among several different agencies is an attempt to consolidate like functions, such as the seafood inspection program with the meat inspection program of the Department of Agriculture. At the same time, we would privatize certain functions, such as the NOAA Corps and its aging fleet, rather than replace it at a cost of billions of dollars.

The Department of Commerce Dismantling Act would also privatize many of the laboratories of the Technology Administration and NOAA. Similar privatization proposals have been successful in other countries.

The Heritage Foundation report I cited earlier quotes Robert M. White, the president of the National Academy of Engineering, arguing that privatization of government research labs makes sense: "With their new freedom to pursue research in whatever areas the market demands - rather than just fulfilling government missions - these laboratories might, if successful, spin-off companies and attract new businesses at a far greater rate than they do today. Research universities and private R&D companies with less governmental direction of their activities tend to contribute significantly to their region's economies."

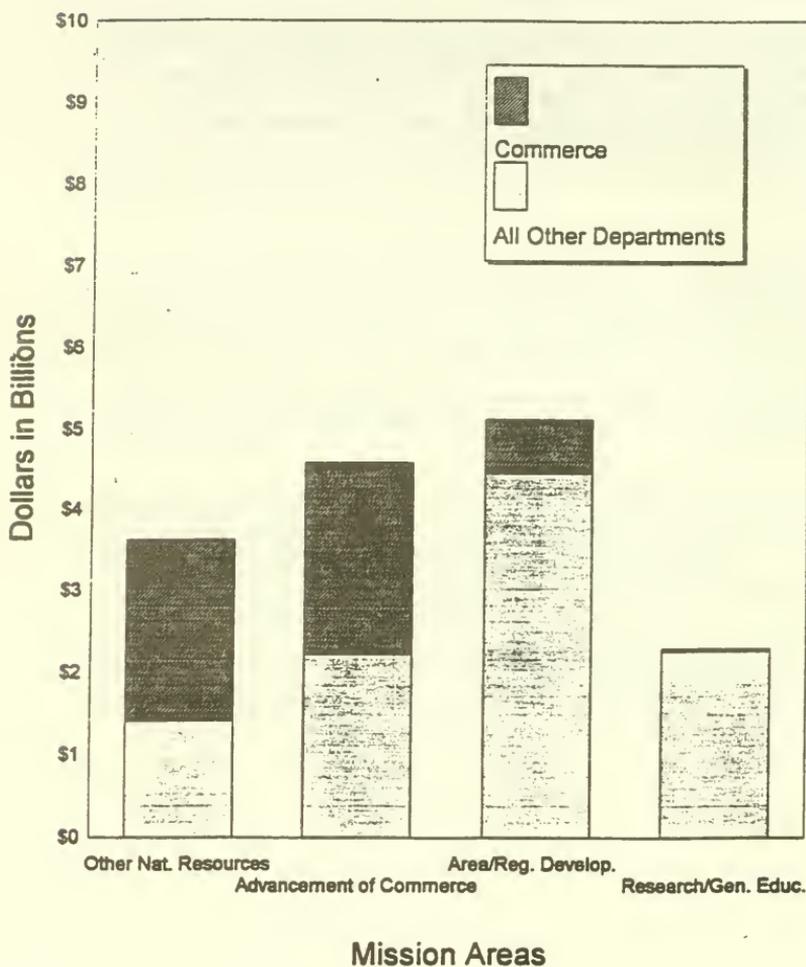
Our legislation includes special provisions to ensure that privatization does not lead to the termination of important research activities. The legislation requires that potential buyers must intend to perform essentially the same functions the laboratories currently perform.

One idea that I understand this Committee has been considering is the consolidation of all federal science and technology programs into a unified science agency. The federal government's scientific activities are currently spread throughout numerous agencies and offices, often leading to lack of coordination and confusion.

Certainly one of the goals of the Department of Commerce Dismantling Act is to create a government that works better, more efficiently and effectively. As I mentioned at the beginning of my testimony, Commerce's role in scientific research and development is just a small fraction of overall efforts. By transferring the Department's scientific functions to agencies or offices where these functions are the primary focus, I believe we will see even greater savings and improved service for the American taxpayer.

Mr. Chairman, this Congress is committed to downsizing an overblown federal bureaucracy, while creating a government that works better. Clearly, in the area of scientific research and development, the federal government can and must do better. Government regulation must be based on sound science. One of the places we can make a good start is by dismantling the Department of Commerce. I look forward to working with this Committee to create a government ready for the challenges of the 21st century.

Department of Commerce's Share of Spending on its Four Missions



104th Congress

Privatize Localize Consolidate Eliminate

THE DEPARTMENT OF COMMERCE DISMANTLING ACT

LEGISLATIVE SUMMARY

Former Commerce Secretary Robert Mosbacher recently called the Department, "nothing more than a hall closet where you throw in everything that you don't know what do to with."

The Department of Commerce has evolved into a "a loose collection of more than 100 programs" according to the agency's own Inspector General. The General Accounting Office goes further, reporting that the Department "faces the most complex web of divided authorities" sharing its "missions with at least 71 federal departments, agencies, and offices." Its bureaucracy is bloated, its infrastructure is in disrepair, and more than 60 percent of its resources are dedicated to activities completely unrelated to its mission. Former Commerce Department officials recently testified before the House Budget Committee that the few unique functions contained in Commerce suffer under the multiple tiers of bureaucracy and its 263 political appointees.

Today's Department of Commerce cannot be "reinvented." Its problems can only be solved if it is dismantled. The Department of Commerce Dismantling Act was drafted by a House and Senate Task Force consisting of Members of Congress, Senators, former Department officials, and outside experts, with the following four principles as a guide:

- Those programs deemed unnecessary or wasteful are terminated.
- Those programs duplicative of other departments or agencies are consolidated.
- Those programs that serve a valid purpose are transferred to more appropriate agencies.
- Those programs which can be better performed outside the government will be privatized.

Following is a brief agency-by-agency description of the legislation. The terminations, transfers and consolidations are to be completed over a thirty-six month period under the direction of a temporary Commerce Programs Resolution Agency. The savings indicated are preliminary Congressional Budget Office figures over five years.

Administrative Functions

The Office of the Secretary, General Counsel, Inspector General, and other administrative functions are terminated.

Estimated Savings: \$250 million

Economic Development Administration

The EDA provides grants and assistance to loosely-defined "economically depressed" regions. EDA's functions are duplicated by numerous other federal agencies including the Departments of Agriculture, HUD, and Interior, the Small Business Administration, the Tennessee Valley Authority and the Appalachian Regional Commission. The parochial nature of the program often targets EDA grants to locations with healthy economies which do not need federal assistance. The EDA is terminated and its grant programs eliminated, transferring outstanding obligations to the Treasury Department for management or sale.

Estimated Savings: \$1.139 billion

Minority Business Development Agency

Although MBDA has spent hundreds of millions on management assistance – not capital assistance, since 1971, the program has never been formally authorized by Congress. The MBDA's stated mission, to help minority-owned businesses get government contracts, is duplicated by such agencies and programs as the Small Business Administration and its failed 8(a) loan program, and Small Business Development Centers, along with the private sector. The MBDA would be terminated and its 98 field offices closed.

Estimated Savings: \$183 million

United States Travel & Tourism Administration

This Administration seeks to promote travel and tourism in the United States through trade fairs and other promotional activities. According to the Heritage Foundation, "the agency often works with private sector organizations, including the Travel Industry Association of America, to organize events such as the 'Discover America Pow Wow' or the 'Pow Wow Europe.' There is no justification for federal involvement in such promotional activities of a commercial nature." Because functions such as these are already extensively addressed by states, localities, public sector organizations, and the private sector, the USTTA is immediately terminated.

Estimated Savings: \$75 million

Technology Administration

The Technology Administration currently works with industry to promote the use and development of new technology. Because government in general, and the federal government in particular, is poorly equipped to "pick winners and losers" in the marketplace - frequently allowing political criteria rather than market criteria determine the choice - this agency is terminated, including the Offices of Technology Policy, Technology Commercialization, and Technology Evaluation and Assessment.

The Industrial Technology Service programs, including the Advanced Technology Program (ATP) and the Manufacturing Extension Partnerships, are terminated; these programs are often cited as prime examples of corporate welfare, wherein the federal government invests in applied research programs which should be conducted in the private sector.

The weights and measures functions of the National Institute for Standards & Technology would be transferred to the National Science Foundation. The National Technical Information Service, a clearinghouse for technical government information, would be privatized.

Estimated Savings: \$1.872 billion

National Telecommunications and Information Administration

The NTIA, an advisory body on national telecommunications policy, would be terminated, including its grant programs. Federal spectrum management functions would be transferred to the Federal Communications Commission.

Estimated Savings: \$315 million

Patent & Trademark Office

Providing for patents and trademarks is a Constitutionally-mandated government function. Our proposal would transfer this office to the Justice Department, requiring the PTO to be supported completely through fee collection.

Estimated Savings: \$375 million

Economic & Statistics Administration

The Bureau of the Census, another Constitutionally-mandated function, is transferred to the Treasury Department. Select General Accounting Office recommendations for savings at the Bureau would be implemented. The Bureau of Economic Analysis is transferred to the Federal Reserve System to ensure the integrity of data. The superfluous ESA bureaucracy would be eliminated.

Estimated Savings: \$827 million

National Oceanic & Atmospheric Administration

While the activities of NOAA are only tangentially related to the promotion of commerce, it makes up over 40% of the Department of Commerce budget. The individual functions of this agency would be sent to more appropriate agencies or departments:

National Marine Fisheries Service - The enforcement functions of this agency would be transferred to the Coast Guard, while the scientific functions would be transferred to the Fish and Wildlife Service. Seafood inspection would be transferred to the Department of Agriculture, which already carries out most food inspection programs. State fishery grants and commercial fisheries promotion are terminated.

National Ocean Service - Geodesy functions are transferred to the U.S. Geological Survey. Coastal and water pollution research duplicated by the Environmental Protection Agency is terminated. Marine and estuarine sanctuary management would be transferred to the Interior Department, which already manages some fisheries. Nautical and aeronautical charting is privatized, as the private sector undertakes this activity already.

National Environmental Satellite, Data & Information Service - The weather satellites of this agency are transferred to the National Weather Service to consolidate these functions, while the NESDIS data centers would be privatized.

Office of Oceanic & Atmospheric Research - Because many of its activities are duplicative of other federal agencies or could be better served by the private sector, this office is terminated. The labs which could operate in the private sector will be sold and the remaining labs will be transferred to the Interior Department.

NOAA Corps - The NOAA Corps is terminated and its vessels sold to the private sector. Services can be obtained in the private sector and its fleet is in disrepair.

Estimated Savings: \$2.338 billion

Bureau of Export Administration

The BXA is one of several agencies responsible for monitoring U.S. exports that may compromise national security. Because this function remains important to the country, our legislation would reassign these functions as follows:

Export Licensing Functions transferred to the State Department - The determination of export controls would be transferred to the State Department, where some licensing functions are already performed. The United States Trade Representative would advise the State Department in disputed cases.

Export Enforcement Functions transferred to Customs Service - The Customs Service, which already has the staff, expertise, and facilities, would enforce the export licensing determined by the State Department.

Estimated Savings: \$91 million

International Trade Administration

The Department of Commerce claims to be the lead in trade promotion, but actually plays a small part. Five percent of Commerce's budget is dedicated to trade promotion, and it comprises only 8 percent of total federal spending on trade promotion. The ITA is the primary trade agency within the Department of Commerce. Our legislation would transfer the offices of the ITA to agencies where their functions may be better performed:

Import Administration transferred to the Office of the United States Trade Representative - The USTR, which already plays a role in this area, would make determinations of unfair trade practices.

U.S. and Foreign Commercial Service transferred to the Office of the United States Trade Representative - The domestic component of USFCS is terminated, and the foreign component would be transferred to the Office of the United States Trade Representative, which already takes the lead in trade policy.

International Economic Policy terminated - This office would be terminated, and these functions would continue to be carried out by the USTR.

Trade Development Functions terminated - The functions of this office would be terminated and replaced with a series of Industry Advisory Boards, composed of representatives from the private sector to provide advice to policy makers, at no cost to the federal government.

Estimated Savings: \$294 million

TOTAL SAVINGS

OVER FIVE YEARS: \$7.765 Billion

The CHAIRMAN. Thank you, Mr. Chrysler.

Questions for Mr. Chrysler, Mr. Brown?

Mr. BROWN. Thank you, Mr. Chairman.

Mr. Chrysler, I appreciate the hard work that you have put into this exercise. You have, however, gotten past me a little bit here. I am not yet ready to go to the question of how we go about it. I am still more interested in should we do it, and I hope you will forgive me for that.

Mr. Chairman, I would like to insert in the record a letter from Chairman Dingell to Mr. Chrysler, asking him to provide certain information with regard to the study of his task force, and also a document from the Department of Commerce analyzing the question of how much savings would result from dismantling the Department and indicating that the amounts suggested by the Chrysler Task Force are considerably exaggerated.

I think that these should go in the record at this point, along with Mr. Chrysler's testimony.

The CHAIRMAN. Without objection.

[The letter from Mr. Dingell follows:]

ONE HUNDRED FOURTH CONGRESS

THOMAS J. BULLEY JR. VIRGINIA, CHAIRMAN

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JAMES E. DEARDEN, CHIEF OF STAFF

U.S. House of Representatives
Committee on Commerce
Room 2125, Rayburn House Office Building
Washington, DC 20515-6115

August 3, 1995

The Honorable Dick Chrysler
Member of Congress
327 Cannon House Office Building
U.S. House of Representatives
Washington, D.C. 20515-2208

Dear Dick:

Thank you for your testimony at the hearing on July 24, 1995, relating to the bill you have introduced, H.R. 1756, the Department of Commerce Dismantling Act.

As I indicated at the hearing, I believe the proposed legislation and your testimony raise several serious questions that need to be answered prior to any legislative action. While recent press reports indicate the desire of the Republican leadership to move your legislation quickly in September, I am sure you will agree that it would be ill-advised to proceed without a complete examination of all relevant facts. As W.C. Dyer of the Midwest Manufacturing Center in Ann Arbor, Michigan has written: ". . . the prospect of shutting down an entire business division of government without a thorough examination is, at the very least, unwise."

Your written testimony indicates that the task force you chaired spent "several months of careful study" and that H.R. 1756 represents a "well thought-out, responsible program for dismantling the Department of Commerce." In order to assist the Committee in its deliberations, I respectfully request that you provide full and complete written responses to the following questions, which I assume have been considered by your task force:

1. Your written testimony indicates your task force found that the Department of Commerce is a loose collection of "more than 100 programs." Please provide the Committee: (a) a list of each such program identified by your task force; (b) the current level of appropriated funds applicable to each such program; (c) the level of funding for each such program for fiscal year 1994;

The Honorable Dick Chrysler
August 3, 1995
Page 2

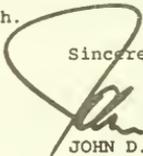
and (d) the maximum amount of funding, if any, applicable to each such program, assuming enactment and implementation of H.R. 1756.

2. Your written testimony indicates your task force found that, of the "more than 100 programs, . . . all but three are duplicated by other government agencies or the private sector." Please provide the Committee: (a) a list of each program that is duplicated; (b) an identification of other government agencies or private sector activities that duplicate each such program; (c) a detailed description of how each such program is duplicated by other government agencies or the private sector; and (d) a list of the three programs that are not duplicated by other government agencies or the private sector.

Due to the fact that legislative action on H.R. 1756 could proceed early in September, it would be most helpful to receive your written responses to the foregoing questions no later than September 5, 1995 in the office of the Committee's Minority Counsel, 2322 Rayburn House Office Building and ask that you provide a copy to Chairmen Bliley, Oxley, and Fields so that your response will be included in the hearing record.

With every good wish.

Sincerely,



JOHN D. DINGELL
RANKING MEMBER

cc: The Honorable Thomas J. Bliley, Jr.
The Honorable Michael G. Oxley
The Honorable Jack Fields

From DOC

RESPONSES TO QUESTIONS OF CONGRESSMAN DINGELL
 HOUSE COMMITTEE ON COMMERCE
 SUBCOMMITTEES ON COMMERCE, TRADE, AND HAZARDOUS
 MATERIALS AND TELECOMMUNICATIONS, AND FINANCE

By the Department of Commerce

Question:

1. Rep. Chrysler has indicated that H.R. 1756 will result in total savings of \$7.765 billion over five years. Please provide a detailed response as to whether you believe this is accurate, and include a discussion of whether the alleged savings include amounts that have already been realized through cost reductions and other efficiencies, whether the alleged savings appropriately reflect costs that would have to be incurred when the bulk of Commerce functions are dispersed throughout numerous Federal agencies, and any other information that bears on the accuracy of Rep. Chrysler's estimated savings.

Answer:

1. As OMB Director Rivlin noted when the Chrysler Bill was introduced, she doubted that savings would occur from dismantling Commerce if implemented. We concur with her assessment. By using the FY 1995 CBO baseline from which to calculate savings, the Chrysler bill is more than \$5 billion short of minimum expenditures that must be made for continuing programs. This is so because:
 - o There are errors and omissions in the Chrysler estimates;
 - o The Chrysler bill failed to include as an offset to savings the costs associated with dismantling the Department such as RIF costs, dislocation costs, disposal of facilities and operation of a Commerce Programs Resolution Agency;
 - o There is no ability to achieve the proposed across the board cut of 25 percent below FY 1994 levels for remaining Commerce programs except by the program cuts described in the response to question 3 below; and
 - o Savings that are already built into the President's budgets will occur without the Chrysler bill.

OMISSIONS AND ERRORS

- o The Chrysler estimates, as scored by CBO, make several substantial omissions and errors in their assumptions.
- o The largest is the CBO baseline that does not include an estimate for the decennial census in the year 2000. The five year total decennial shortfall from 1996 to 2000 is \$3.6 billion, and for all Census programs exceed \$4.3 billion. Also the Chrysler bill had claimed \$.8 billion from Decennial Census improvements with the \$7.765 billion saving estimate. However, since no funds are in the CBO baseline for the Decennial, the funds cannot be saved.
- o Within NOAA, the Chrysler estimates omit funds to pay for continuation of weather satellite systems and completion of the Congressionally approved Weather Service Modernization program. The costs for procuring additional satellites and Weather Service contracts alone exceed \$1.5 billion above the CBO baseline for the modernization program. These costs are required to ensure future continuity of weather forecasts and warnings nationally.
- o The Chrysler bill makes two substantial errors in PTO. The Omnibus Budget Reconciliation Act of 1993 requires \$325 million to be appropriated from the PTO Surcharge Fund. The bill would make those funds directly available to PTO, but does not identify an offset. Therefore, in terms of the deficit, the savings are overstated by \$325 million. Further, PTO collects 100 percent of costs in fees now. If PTO must reduce costs 25 percent, or \$375 million, as called for in the Chrysler bill, no reduction will accrue to the deficit because PTO already obtains these fees directly.
- o The funding for the budget of the United State Trade Representative (USTR) is \$21 million annually. In FY 1995 alone, ITA is providing USTR direct assistance of \$12.1 million from Trade Development and International Economic Policy. These two activities are terminated by the Chrysler bill. The FY 1996 termination costs for ITA under the Chrysler bill would be \$106 million or 500 percent of the USTR budget, but are not included in the Chrysler estimate.

- o The Chrysler bill assumes that Treasury, at no additional cost, will monitor the EDA portfolio of grants. We estimate the three year cost of closing out EDA at \$26 million plus RIF costs regardless of organization location.
- o Establishment of a Commerce Programs Resolution Agency is assumed in the Chrysler bill, and would operate for three years. We believe that it would cost approximately \$150 million for that period, about the same as the Office of the Secretary and Inspector General currently cost.

UNFUNDED COSTS IN THE CHRYSLER BILL

- o The Chrysler bill does not reflect the costs of closing agencies, terminating employees, dislocation and operating a Commerce Programs Resolutions Agency. We estimate these costs at \$2 billion, and they are shown in Table 1.
- o A total of 12,685 FTE would be eliminated under the Chrysler bill assumptions, 35 percent of existing staff, in the first year after enactment. The closeout costs, RIF costs and dislocation costs would total \$1.526 billion for all of Commerce. The balance of the \$2.001 billion is \$325 million for an offset to PTO appropriations requirements under OBRA of 1993 and \$150 million for a three year Commerce Programs Resolution Agency.

ABILITY TO ACHIEVE 25 PERCENT SAVINGS FROM OVERHEAD

- o The basis for the Chrysler 25 percent cut below FY 1994 funding totals is not stated in the legislation or the press release. Congressman Chrysler indicated on July 24 that the cut was related, at least in the case of PTO, to an overhead rate Commerce now charges bureaus.
- o Commerce does not charge its bureaus any overhead rate. While Commerce sells services through the Working Capital Fund, bureaus purchase an average of 1.4 percent of their available funding in services. See bureau Working Capital Fund estimates in Table 2. All Commerce oversight is funded through the General Administration account, \$36 million in FY 1995 or about .7 percent of the Commerce total appropriation.
- o The only way to achieve a savings of 25 percent in programs not terminated would be through further program reductions as discussed in the response to question 3 below.

SAVINGS IN PRESIDENT'S BUDGET

- o The budget President Clinton submitted for FY 1996 already contained savings built into the budgets for FY 1996 - FY 2000 that would have occurred without the Chrysler proposals. These savings total \$1.472 billion for the period and are shown in Table 3.
- o Savings are shown for program terminations, program reductions, FTE/Administrative reductions and the President's Reinventing Government initiative. The individual program terminations and reductions proposed in the FY 1996 President's budget are listed in Table 4. The FTE and Administrative savings result from Public Law 103-226 to reduce FTE by 272,900 by FY 1999, and Executive Order 12837 to reduce administrative expenses by 14 percent by FY 1997.
- o Two reinventing government savings estimates are shown for increasing Census data sales and for privatizing specialized weather services. The President is considering additional Commerce reinvention proposals which are not included in these totals.

COMPARISON OF H.R. 1756 AND H.R. 2076 "SAVINGS"

- o The Chrysler Bill claims to save \$5.370 billion from program terminations, \$78 million from privatization and \$2.317 billion from the 25 percent across the board cut provision for remaining programs. A breakout of the reductions shown by Commerce bureau in the attached Table 5. The reductions result from program terminations, not from dismantling Commerce.
- o The major savings is from the elimination of the Office of the Secretary, \$250 million over five years. Sixty percent of this amount provides procurement, general counsel, accounting, budget, security and building support which would have to be replicated in the agencies receiving Commerce program transfers.
- o Therefore, actual savings from eliminating Executive Direction at Commerce would be no more than \$20 million per year. These savings would not be realized until the Commerce Program Resolution Agency is dissolved, three years after Chrysler enactment.

SUMMARY OF CHRYSLER BILL SAVINGS

- o Chrysler savings are overstated for the five year period, 1996-2000, as follows:

Chrysler Estimate.....	\$7.765 billion
Less:	
o Tech errors Inappropriate overhead rate.....	-2.317 billion
o Unfunded Closeout Costs.....	-1.990 billion
Revised Chrysler Estimate.....	3.458 billion

- o Congress needs to carefully evaluate the components of the Joint Budget Resolution. For example, in Commerce alone, more than \$5 billion in costs for the decennial census and Weather Service contracts have been ignored in the CBO baseline so far.
- o Adding the \$5 billion in additional costs to the revised Chrysler Estimate above indicates that the Chrysler bill has a potential cost of \$1.542 billion.

DEPARTMENT OF COMMERCE
UNFUNDED TERMINATIONS/RIF COSTS
OUTLAYS
(IN MILLIONS OF DOLLARS)

31-Jul-95
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	H.R. 1756 CHRYSLER BILL		H.R. 2076 HOUSE APPROPRIATIONS BILL	
	FTE	\$	FTE	\$
GENERAL ADMINISTRATION	194	0	200	9
ECONOMIC DEVELOPMENT ADMINISTRATION	311	40	135	8
BUREAU OF CENSUS/ECONOMIC & STATISTICAL ANALYSIS	1,720	75	128	8
INTERNATIONAL TRADE ADMINISTRATION	1,824	108	0	0
BUREAU OF EXPORT ADMINISTRATION	198	14	0	0
MINORITY BUSINESS DEVELOPMENT AGENCY	165	10	0	0
UNITED STATES TRAVEL & TOURISM ADMINISTRATION	94	12	94	12
NATIONAL OCEANIC & ATMOSPHERIC ADMINISTRATION	5,482	794	560	35
PATENT AND TRADEMARK OFFICE	1,269	700	0	0
UNDER SECRETARY/OFFICE OF TECHNOLOGY POLICY	73	3	18	0
NATIONAL TECHNICAL INFORMATION SERVICE	378	21	0	0
NATIONAL INSTITUTE OF STANDARDS & TECHNOLOGY	984	53	147	15
NATIONAL TELECOMMUNICATIONS & INFORMATION ADM.	193	14	0	0
SUBTOTAL, DEPARTMENT OF COMMERCE	12,685	1,851	1,280	87
COMMERCE PROGRAM RESOLUTION AGENCY	0	180	0	0
TOTAL, DEPARTMENT OF COMMERCE	12,685	2,001	1,280	87

02 - Aug - 85
04:55 PMDEPARTMENT OF COMMERCE
WORKING CAPITAL FUND
DISTRIBUTION BY BUREAU
(IN MILLIONS OF DOLLARS)

	FY 1995 ESTIMATED COST	FY 1995 BUDGET AUTHORITY	OVERHEAD PERCENTAGE
GENERAL ADMINISTRATION - OFFICE OF THE SECRETARY	5	36	14.0%
GENERAL ADMINISTRATION - INSPECTOR GENERAL	1	17	5.9%
ECONOMIC DEVELOPMENT ADMINISTRATION	3	450	0.7%
BUREAU OF CENSUS	9	278	3.1%
ECONOMIC & STATISTICAL ANALYSIS	3	50	6.2%
INTERNATIONAL TRADE ADMINISTRATION	13	266	4.8%
BUREAU OF EXPORT ADMINISTRATION	6	41	13.8%
MINORITY BUSINESS DEVELOPMENT AGENCY	2	44	5.6%
UNITED STATES TRAVEL & TOURISM ADMINISTRATION	1	17	5.0%
NATIONAL OCEANIC & ATMOSPHERIC ADMINISTRATION	13	1,949	0.7%
PATENT AND TRADEMARK OFFICE	4	580	0.7%
UNDER SECRETARY/OFFICE OF TECHNOLOGY POLICY	1	10	8.9%
NATIONAL TECHNICAL INFORMATION SERVICE	4	78	5.0%
NATIONAL INSTITUTE OF STANDARDS & TECHNOLOGY	3	854	0.3%
NATIONAL TELECOMMUNICATIONS & INFORMATION ADM.	2	113	1.3%
TOTAL, DEPARTMENT OF COMMERCE	69	4,782	1.4%

NOTE: TABLE DOES NOT REFLECT RESCISSIONS IN P.L. 104-19. DISTRIBUTION OF TRAVEL/ADMINISTRATIVE REDUCTION IS PENDING DEPARTMENTAL APPROVAL.

DEPARTMENT OF COMMERCE
 OUTLAY SAVINGS IN THE PRESIDENT'S BUDGET IN AGREEMENT WITH THE 96 HOUSE ALLOWANCE
 OUTLAYS
 (IN MILLIONS OF DOLLARS)
 1996-2000

02-AUG-95
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	PROGRAM TERMINATIONS	PROGRAM REDUCTIONS	FTE/ ADMINISTRATIVE SAVINGS	REGO	TOTAL
GENERAL ADMINISTRATION	0	0	13	0	13
ECONOMIC DEVELOPMENT ADMINISTRATION	0	2	59	0	61
BUREAU OF CENSUS/ECONOMIC & STATISTICAL ANALYSIS	0	8	46	39	93
INTERNATIONAL TRADE ADMINISTRATION	37	1	28	0	66
BUREAU OF EXPORT ADMINISTRATION	0	0	9	0	9
MINORITY BUSINESS DEVELOPMENT AGENCY	0	0	4	0	4
UNITED STATES TRAVEL & TOURISM ADMINISTRATION	0	0	4	0	4
NATIONAL OCEANIC & ATMOSPHERIC ADMINISTRATION	385	338	392	40	1,155
PATENT AND TRADEMARK OFFICE	0	0	14	0	14
UNDER SECRETARY/OFFICE OF TECHNOLOGY POLICY	0	0	1	0	1
NATIONAL TECHNICAL INFORMATION SERVICE	0	0	0	0	0
NATIONAL INSTITUTE OF STANDARDS & TECHNOLOGY	0	0	46	0	46
NATIONAL TELECOMMUNICATIONS & INFORMATION ADM.	0	0	6	0	6
TOTAL, DEPARTMENT OF COMMERCE	422	349	622	79	1,472

TABLE 4

NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
FY 1996 House Approved Terminations and Reductions

(Millions of Dollars)

	House Mark <u>5 Yr. Outlays</u>
SC Cooperative geodetic survey.....	(4)
Land Information System.....	(4)
Ocean assessment program.....*	(11)
Transfer from Damage Assessment Fund*	(1)
Oil Spill Research.....	(3)
National Institute of Environmental Renewal.....	(2)
Charleston, SC, spec area mgt. plan.....	(4)
Hawaii stock management plan.....	(2)
Atlantic bluefin tuna research.....	(1)
International fisheries commissions..*	(4)
North Atlantic fishery project	(12)
Export strategies/Mahi Mahi.....	(3)
Federal/state weather mod. grants...	(13)
Southeastern storm research.....	(2)
VENTS.....	(11)
SE US/Caribbean FOCI program.....	(2)
GLERL/Zebra mussel.....	(4)
Lake Champlain study.....	(1)
Pacific Island technical assistance.	(1)
National coastal R&D Institute.....	(4)
NOAA Undersea Research Program.....	(77)
Regional marine research centers....	(6)
MARDI.....*	(133)
Agricultural & fruit frost program.	(10)
Fire weather services.....	(2)
Susquehanna River Basin Flood Sys..*	(2)
Samos.....	0
Regional climate centers.....	(14)
NEXRAD.....*	(119)
ASOS.....*	(2)
Ocean remote sensing.....*	(19)
Critical safety & instrumentation...*	(15)
Charleston Fisheries Lab repairs.....	(30)
Boston biotechnology innovation center..	(8)
Mystic, CT maritime educ. & research center.	(4)
Alaska Fisheries Center.....	(8)
Kansas City Weather & Environment Center	(10)
NEXRAD WFO construction.....*	(16)
Columbia river facilities.....*	(14)
Multippecies aquaculture center.....	(14)
Lafayette, LA Fisheries Lab	(44)
National Estuarine Research Reserve	(16)
Indiana State University	(21)
Newport marine science center.....	(10)
Tiburon/Santa Cruz.....	(40)
5 year Total	(723)

* Reductions to the FY 1996 Appropriation (\$336 million in outlays)

International Trade Administration

House Mark
Program Terminations
FY 1996
(Dollars in Millions)

Program Terminations	Amount	5 Year Outlay
National Textile Center	(2)	(9)
Center for Global Competitiveness	(1)	(5)
Emerging Technologies Institute	(1)	(5)
Michigan Biotech Institute	(1)	(5)
Tailored Clothing Technology Center (TC2)	(1)	(3)
Massachusetts Biotech Research	(2)	(8)
Transfers to Office of Inspector General	0	(1)
Japan Information Center	(1)	(2)
Total	(9)	(38)

TABLE 5

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DEPARTMENT OF COMMERCE
CHRYSLER BILL SAVINGS BY CATEGORY
OUTLAYS
(IN MILLIONS OF DOLLARS)
1998-2000

	1995 CBO BASELINE	SAVINGS FROM DISMANTLING PRIVATIZATIONS TRANSFERS		COST OF TRANSFERRED PROGRAMS
		TERMINATIONS	TOTAL	
GENERAL ADMINISTRATION	298	250	0	250
ECONOMIC DEVELOPMENT ADMINISTRATION	2,177	1,139	0	1,139
BUREAU OF CENSUS/ECONOMIC & STATISTICAL ANALYSIS	1,801	27	0	800
INTERNATIONAL TRADE ADMINISTRATION	1,472	240	0	54
BUREAU OF EXPORT ADMINISTRATION	224	51	0	41
MINORITY BUSINESS DEVELOPMENT AGENCY	239	183	0	0
UNITED STATES TRAVEL & TOURISM ADMINISTRATION	90	75	0	0
NATIONAL OCEANIC & ATMOSPHERIC ADMINISTRATION	10,684	1,468	78	798
PATENT AND TRADEMARK OFFICE	416	0	0	375
UNDER SECRETARY/OFFICE OF TECHNOLOGY POLICY	56	70	0	0
NATIONAL TECHNICAL INFORMATION SERVICE	44	0	0	0
NATIONAL INSTITUTE OF STANDARDS & TECHNOLOGY	4,328	1,847	0	155
NATIONAL TELECOMMUNICATIONS & INFORMATION ADM.	585	221	0	95
TOTAL, DEPARTMENT OF COMMERCE	22,415	5,370	78	2,317
				7,765
				14,650

**STATEMENT OF
THE HONORABLE JOHN D. DINGELL**

**HEARING ON H.R. 1756
THE DEPARTMENT OF COMMERCE DISMANTLING ACT**

BEFORE THE COMMITTEE ON SCIENCE

SEPTEMBER 12, 1995

Chairman Walker and Members of the Committee, I appreciate this opportunity to discuss these important issues with you.

A bill to abolish the Department of Commerce has been introduced by my good friend, Mr. Chrysler. Unfortunately, I believe the Chrysler bill will do great damage to programs that benefit the Nation:

* It will mean lost jobs here at home and hurt efforts to protect American jobs from unfair practices by foreign companies.

* It will endanger our ability to compete in the global marketplace by killing programs that produce technological innovations, quality products, and scientific advances.

* It destroys programs that preserve jobs and help distressed communities and the environment.

I base these conclusions on what I have heard from businesses and others in the State of Michigan. I have copies of scores of letters I have received from Michigan businesses and others on the Chrysler bill and ask that they be included in the hearing record. I also have copies of four Dear Colleagues that I and other Michigan Members have signed that give you a flavor of what our constituents are telling us about this dangerous proposal.

As these letters spell out in vivid detail, the Chrysler bill will abolish or slash programs that create and preserve jobs in Michigan. They shuffle boxes for the sake of shuffling boxes, with great detriment to programs that protect U.S. jobs from unfair practices by foreign competitors and promote the sale of our products around the world. They destroy programs that produce technology and innovation resulting in high-tech, high-wage jobs in Michigan. They abolish programs that produce investment many times over for our communities. They slash cost-effective programs that benefit the entire Great Lakes region. They kill programs that build telecommunications and information systems to improve the education and health of our children and citizens.

For example, the Donnelly Corp. in Holland writes: "Rather than both houses of Congress proposing the elimination of the Department of Commerce, they should be reemphasizing the department's critical role in promoting international trade and, in particular, export promotion activities. Without question, U.S. exports are creating new jobs, building growth in our economy, and helping to reduce the growth of our trade deficit." American Broach in Ann Arbor writes: "With our country's balance of trade problems, we hope the business community and general public realizes how important the Department of Commerce...is to creating jobs and allowing small companies to compete in the global market." And discussing the elimination of domestic Commercial Service offices, VIATEC, in Hastings writes that: "...[T]his valuable program is an 'INVESTMENT' that produces returns back to the American taxpayers with more high-paying skilled jobs, higher tax paying citizens, U.S.A. purchased materials, etc. etc. Please help defeat this [legislation]." Others talk about their first-hand experience with programs that produce community investment, build telecommunications and information systems, produce great benefits for the entire Great Lakes region, and develop new research and technologies that produce skilled jobs.

What really is going on here is a trophy hunt by the new Republican leadership in Washington. They want to eliminate a department just to say that they have done so. They are doing this without regard for the importance of the programs they are abolishing or whether real efficiency and savings will be produced. As Morton Kondracke recently said in Roll Call: "Even fellow Republicans deride [the Chrysler bill] as mere 'box shuffling'-- redistributing Commerce's sub-agencies throughout the federal government without deep study of how to sensibly consolidate their functions, cut overall costs, and improve the government's performance."

The Department of Commerce has the smallest budget of any cabinet department. It is working better than ever. It already is cutting costs, reducing personnel, closing offices, and increasing its efficiency to deliver quality services that pay huge dividends to Michigan's economy. Businesses across the country hail Ron Brown as the best Secretary of Commerce ever. As business and community leaders in Michigan have written, the Department's programs are creating jobs and producing returns and investment far in excess of its budget.

Look at how other countries operate and tell me where we will be if these bills become law. Other countries invest far more than we do to promote their businesses, products, and technology. While the Japanese are talking about doubling their research and development budget by the year 2000, these bills are proposing to abolish the only agency whose mission it is to promote commerce! Why would anyone propose to give foreign businesses such a huge advantage in the global market? Why would anyone choose to eliminate programs that create

and protect American jobs? Why would anyone choose to abolish a department that produces billions of dollars more than it spends?

I am not here to defend the Department of Commerce, per se. Whether there is any building called the Department of Commerce is of no great importance to me. Nor am I here to defend an inefficient bureaucracy. If we can make changes that make sense, I'm for it. I have spent my career in Congress trying to root out waste and inefficiency.

But what is important to me is that we save programs that create jobs in Michigan, help Michigan businesses compete against foreign companies and countries, and help improve the State's economy and environment. The bills that have been proposed are a meat-axe approach to cutting government -- they disregard programs that really work for the State of Michigan, its businesses, and its citizens.

* Scores of small businesses in Michigan are now exporting and competing around the globe because of the work of the International Trade Administration. The Chrysler bill eliminates domestic offices of the U.S. & Foreign Commercial Service. As Durametallic, a small business in Kalamazoo, has written to me: "[I]t would be a serious mistake to eliminate the export assistance programs provided by the International Trade Administration and the Domestic Commercial Service. It will hurt small businesses particularly and negatively impact employment in the state of Michigan."

* The President of Monroe Auto Equipment writes that: "[T]he aggressive trade promotion policies of our government, coupled with knowledgeable human resources, is adding value to my company's efforts to compete in worldwide markets. The beneficiaries of these actions are [our] shareholders, our employees domestically and abroad, and the communities in which we reside...In the final analysis, I believe a Cabinet-level department focused upon export opportunities and the promotion of international market development will best serve the country at a time when global competition is at its keenest."

* The Chrysler bill eliminates the Advanced Technology and Manufacturing Extension programs. MERRA, a non-profit association of major Michigan businesses, the executive and legislative branches of the State, universities, and economic development organizations, writes that the ATP program: "is important in transferring the results of fundamental research into practical products. This results in the creation of jobs and an increase in export sales." Its members report that the MEP program provides "invaluable assistance" to small and medium-sized businesses.

* The Great Lakes Environmental Research Lab in Ann Arbor (that employs 100 people) would be eliminated. This lab and other NOAA programs benefit the entire Great Lakes region's environment. As a letter from Professor Kerfoot of the Michigan Technological Institute states: "The proposed legislation is akin to Sherman's march to the sea in the damage it will do to forecasting and research programs related to marine and Great Lakes' transportation, weather, water quality and ecosystem health research. The proposed restructuring fragments a cohesive agency and sends the pieces to areas where the present forecasting and research development...will not function."

* The Chrysler bill eliminates EDA grants. The West Michigan Shoreline Regional Development Commission, serving 5 counties and 120 local governments, opposes the elimination of the Department of Commerce. They have written to me detailing 41 EDA projects that have leveraged private sector investments of more than 50 times the total EDA investment and created or saved over 22,700 jobs in Michigan. And Detroit's Focus:HOPE, the premiere model in the Nation for providing skills in technology and manufacturing technology education, would not be in existence without the Department's help.

* The Chrysler bill eliminates NTIA grants. The Michigan Ass'n for Local Public Health has described a grant it received last year to build an information exchange to connect all local health departments and the state Department of Public Health that "provided direct and immediate benefits to local governments throughout the state and continues to promote the health of Michigan citizens." And the director of the Regional Educational Media Center 10 in Cass City has written that: "It is inconceivable to me that members of Congress would even think about eliminating the NTIA at a time when the information explosion threatens to overwhelm us."

The Chrysler bill is wrong for the State of Michigan and wrong for the Nation. And while the proponents of the legislation claim significant savings, the fact of the matter is that the bill may actually increase costs to taxpayers, while destroying programs that create and preserve jobs.

We can all agree that we need to take a long, hard look at whether savings and efficiencies can be achieved in all government programs. But the Chrysler bill is a cynical and counterproductive way to do business. I respectfully urge this Committee to seriously examine the real and lasting adverse consequences of enacting this legislation.

Mr. BROWN. Mr. Chrysler, are you familiar with the Department of Commerce analysis of your statement that there would be a total savings of \$7.765 billion over 5 years?

Mr. CHRYSLER. Yes. Those were CBO estimates, in fact, not my estimates.

Mr. BROWN. Well, the Office of Management and Budget comes up with some different figures, as you are probably aware. The question I am asking you is if you are familiar with the OMB analysis and not the CBO analysis, and the differences between the two sets of estimates.

Mr. CHRYSLER. Well, I can remember when our President said that CBO numbers would be the ones that were used for all functions in the Government until just recently, probably about a year ago, he changed that back to Office of Management and Budget. But CBO is certainly the source that we get our numbers from as the Congress, and those are the numbers that we think actually historically have represented the best estimates.

Mr. BROWN. Well, I don't want to belabor that point, of course. I would just like to point out that this report, which is attributed to the OMB, says that your bill failed to include as an offset to savings the costs associated with dismantling the Department, such as RIF costs, dislocation costs, disposal of facilities and operations of the Commerce programs resolutions agencies.

It says further that there is no ability to achieve the proposed across-the-board cut of 25 percent below fiscal year 1994 levels for remaining programs except by the program cuts described in a subsequent answer, and it says further that savings are already built in the President's budget which will occur without your bill and that furthermore the Chrysler estimates as scored by CBO make several substantial omissions and errors in their assumptions.

Now, do you want to make a general rebuttal to that just for the record so that we can have both sides on that?

Mr. CHRYSLER. Sure. I think the numbers, quite frankly, are a little bit conservative. I have had the benefit, I guess, of coming from a State like Michigan where we put the Michigan government on this kind of a program in 1990, and we had a \$1.7 billion deficit.

While we eliminated the \$1.7 billion deficit, we then filled up the rainy day fund, which was \$1.1 billion, which was a maximum allowed by law, and then we had to give tax cuts No. 12, 13, 14, and 15 this year in order to give back another \$1.2 billion to the Michigan taxpayers because we couldn't keep it legally. That is on about a \$20 billion budget for the State of Michigan.

I think with a \$1.5 trillion Federal budget, as we put this Government on this type of a program of cutting taxes and cutting the amount of Government that we have and looking at welfare reform and downsizing this Government, letting people keep more of what they earn and save, I think that we will end up with greater savings than anybody in this room anticipates.

Mr. BROWN. So your statement is that despite what the OMB says, that you think your estimates of \$7.7 billion is a little conservative and that it would actually be more than that?

Mr. CHRYSLER. Yes, I do.

Mr. BROWN. And you say that the State of Michigan has gone through this exercise. Does that mean that you have eliminated the Government of the State of Michigan?

Mr. CHRYSLER. Well, we eliminated the Commerce Department in the State of Michigan.

Mr. BROWN. Oh, the Commerce Department. I am sorry. I thought you meant the whole State Government. [Laughter.]

Thank you, Mr. Chairman.

The CHAIRMAN. We are just trying them one at a time, too. [Laughter.]

Mr. Rohrabacher.

Mr. ROHRABACHER. Thank you, Mr. Chairman.

Mr. Chrysler, could you talk just a little bit about duplication? I mean, as I mentioned earlier to Secretary Brown, I found in our hearings that we had numerous agencies and departments exploring the idea of global warming.

What type of duplication have you found exemplifies or underscores your effort to eliminate the Department?

Mr. CHRYSLER. Well, the Department of Commerce is a little bit like your hall closet, you know, it's a place that the Government has kind of thrown everything when they didn't know where else to put it. In fact, of the 100 programs in the Department of Commerce, 71 of them are duplicated some place else within the Federal Government and all but three of them are duplicated either within the Federal Government and/or by the private sector.

If I had a department like this one in my company, that is, inward-looking, self-serving, and self-perpetuating, I would only be able to look at it as a department that has a certain recipe for failure.

Mr. ROHRABACHER. The point that Chairman Walker made earlier that we were told by Secretary Brown, for example, that we spend so much money but that generates so much more money that is being spent in the area of research, and Chairman Walker suggested that much of that money would be spent anyway by these corporations and basically it is just a subsidy that could be done without?

Mr. CHRYSLER. Well, one of the things that we did when we started looking at dismantling the Department of Commerce, we had about 14 Members of Congress, some outside groups, and we kind of broke this up into small segments, the Department of Commerce and each one of the groups formed their own task force to take a look at it and came back and made their recommendations.

We found, certainly, in those recommendations that there was not only the duplication of effort, and I want to go back to specifically your question.

Mr. ROHRABACHER. This is in terms of Chairman Walker's suggestion earlier that when Secretary Brown talked about leveraging money, that the Federal Government had leveraged investment money or research money, that this had caused the private sector to spend so much more money on research and development, but I believe that Chairman Walker was suggesting that there is a report that much of that money would have been spent anyway.

So it wasn't being leveraged but instead it was an unnecessary expenditure that benefitted a specific special interest.

Mr. CHRYSLER. Yes. We found that true there.

We found that, you know, even though Secretary Brown alludes to the fact that the trade portion of Commerce is so vital and so important to the United States, in fact only 4 percent of the budget of the Commerce Department is dedicated toward trade and the Commerce Department is not the lead agency in trade and there in fact are 19 different Federal departments that deal with trade, and we found that in some of the research on looking at different programs that Secretary Brown looked at, we found that 86 percent of those programs, as you have indicated, would have happened regardless of whether the Department of Commerce was involved in those at all.

Mr. BROWN. Would the gentleman yield briefly to me?

Mr. ROHRABACHER. I certainly would, yes, sir.

Mr. BROWN. Mr. Walker referred to this purported study and you have referred to it, and I would like unanimous consent to put the exact content of the question that was responded to in the record at this point.

Mr. ROHRABACHER. It is up to the chairman.

The CHAIRMAN. Without objection.

[The study referred to follows:]

United States General Accounting Office

GAO

Report to the Ranking Minority Member,
Committee on Science, House of
Representatives

May 1995

PERFORMANCE
MEASUREMENT

Efforts to Evaluate the
Advanced Technology
Program





United States
General Accounting Office
Washington, D.C. 20548

Resources, Community, and
Economic Development Division

B-259591

May 15, 1995

The Honorable George E. Brown, Jr.
Ranking Minority Member
Committee on Science
House of Representatives

Dear Mr. Brown:

This report responds to your request concerning the Advanced Technology Program (ATP), which is administered by the National Institute of Standards and Technology (NIST) within the Department of Commerce. ATP's purpose is to provide support on a cost-sharing basis to research and development (R&D) projects in industry. These projects are intended to have a significant potential for stimulating economic growth and improving the competitiveness of U.S. industry. Funding for ATP has grown from \$68 million in fiscal year 1993 to \$431 million in fiscal year 1995, more than doubling each year. The President has set a goal for the program's funding to reach \$750 million by 1997.

In light of these significant budget increases, the Congress is interested in ATP's impact. Although NIST recognizes that it is too early to measure ATP's long-term economic effects, the agency has reported short-term results that, it says, indicate the program is making an impact. As agreed with your office, we (1) analyzed these short-term results and (2) reviewed NIST's plans for evaluating ATP in the future, as reported in the NIST document entitled Setting Priorities and Measuring Results at the National Institute of Standards and Technology, dated January 31, 1994. In addition, we are presenting information on other ATP evaluation efforts that NIST has planned or under way.

Results in Brief

Evaluating the Advanced Technology Program poses many challenges. For example, while funded projects are intended to be technical successes and to have a commercial impact, several years can elapse between the end of technical work and the realization of such an impact. NIST has, however, identified six short-term results in the Setting Priorities document that it believes demonstrate the program is making an impact. While all six have limitations, our analysis shows that four are overstated or lack adequate support. For example, NIST projected ATP's impact from one joint venture to the entire industry of approximately 800 companies.

NIST also summarized its plans for evaluating ATP in Setting Priorities. This summary includes indicators, such as the number of technical milestones completed and the number of joint ventures formed, that we do not believe reflect the long-term economic success of the program. Setting Priorities does, however, provide descriptive information that may be useful to NIST officials in managing the program.

According to NIST officials, NIST has other evaluation efforts planned or under way besides those included in Setting Priorities. These efforts include engaging the advice and services of the nation's leading economists in impact assessment and evaluation. NIST has also put in place an extensive data collection system to support ATP's evaluation. The results of some of these evaluation efforts may not be known for some time.

Background

ATP was established by the Omnibus Trade and Competitiveness Act of 1988 (P.L. 100-418). The program is intended to assist U.S. businesses in creating and applying the generic technology and research results necessary to (1) commercialize significant new scientific discoveries and technologies rapidly and (2) refine manufacturing technologies. Funding for ATP is awarded through announced competitions. Single companies that receive awards are reimbursed for the direct costs of their proposed research but must pay for all overhead costs. Joint ventures, which consist of two or more companies, are reimbursed for both their direct and overhead costs but must provide more than 50 percent of the total funding for their project. ATP supports high-risk projects that have the potential for eventual substantial widespread commercial application. Since the first competition in fiscal year 1990, NIST has funded 177 ATP projects. As of April 1995, 12 projects had been completed.

NIST summarized the results of its initial evaluation efforts and future plans in Setting Priorities, which received wide distribution. NIST distributed 3,800 copies of this document to the Congress, administration officials, and industry. NIST officials also submitted the document to the Congress during the fiscal year 1995 appropriations hearings.

Evaluating ATP poses many challenges. For example, ATP research projects are intended not only to be technical successes but also to have commercial results. The linkage between technical work and commercial results may not always be direct and may be subject to interpretation.

Also, several years can elapse between the end of technical work and the realization of commercial results.

ATP'S Results Reported in Setting Priorities

NIST cites six examples of ATP's short-term results in Setting Priorities. While all six have limitations, four overstate ATP's success or lack adequate support. Specifically, NIST reported that as a result of ATP

- total U.S. research on advanced technologies for printed wiring boards has quadrupled,
- participants have pursued research they otherwise could not have pursued,
- participants have forged new relationships with companies and government or academic laboratories, and
- the number of joint R&D ventures in private industry has increased.

ATP's Impact on Printed Wiring Board Industry Overstated

NIST overstated ATP's impact on the printed wiring board industry. On the basis of ATP's impact on one five-member joint venture, NIST concluded that total U.S. R&D in the U.S. printed wiring board industry had quadrupled. NIST reported that "total U.S. R&D work on advanced technologies for printed wiring boards essential to all modern electronic devices more than quadrupled as a result of the ATP." According to NIST officials, this statement is based on a third-party review that resulted in a report entitled Advanced Technology Program: Economic Study of the Printed Wiring Board Joint Venture After Two Years. This study was designed to measure the impact, after 2 years, of a 5-year ATP-supported project undertaken by a five-company joint venture and does not assess ATP's impact on the entire U.S. printed wiring board industry. Specifically, the statement is based on the study's finding that

"of the 29 major project areas under investigation [in the joint venture's research project], the participants reported that on average only 6.6 projects would have been started in the absence of the ATP award. In fact, a number of critical projects would not have been attempted in the absence of the joint venture."

According to an industry association representative, however, there are approximately 800 merchant manufacturers in the printed wiring board industry, many of which are active in R&D.¹ Discussions with the industry association indicate that the industry spent at least \$26.5 million on R&D in

¹The industry association is the Institute for Interconnecting and Packaging Electronic Circuits (IPC). Merchant manufacturers make printed wiring boards and sell them to companies.

B-259591

1992. In comparison, the ATP-supported joint venture spends \$5.7 million per year, on average, on printed wiring board research.

We believe that NIST's conclusion that total U.S. R&D on printed wiring boards quadrupled as a result of ATP was an overstatement because the third-party study was limited to a single five-member joint venture in an industry that contains over 800 merchant manufacturers, many of which engage in R&D. The evidence presented by NIST supports statements only about the five-member joint venture, not about the entire U.S. industry.

Claims of Increased High-Risk Research and New Relationships Not Adequately Supported by Survey Data

In reporting the most important effects of ATP on the basis of a survey of early award recipients, NIST was selective in its use of the survey data. NIST reported that the most important effect cited by award recipients was "the ability to pursue promising lines of research that they otherwise could not have followed." According to NIST officials, this statement is based on responses to the survey's question "What would you say is the single most important effect that the ATP award has had on your organization thus far?" Fifteen out of 28 responses in the study were categorized as saying "the ability to afford and engage in this kind of high-risk, long-term research."²

However, responses to another question in the same survey provided conflicting information. When asked "In the absence of this ATP award, would your organization have pursued the development of this technology?" nearly as many respondents—14 out of 26—responded affirmatively. Four respondents said they definitely would have; 10 said they probably would have; 7 said they probably would not have; and 5 said they definitely would not have. In response to a subsequent question, the 14 respondents said they would have pursued the development of the technology at a different level of effort. Thus, although 15 participants believed that ATP enabled them to pursue this kind of high-risk, long-term research, 14 participants in the same study believed that they would at least probably have pursued the technology even without the ATP award, although at a different level of effort.

On the basis of the same survey, NIST reported that the second most important effect cited by early ATP participants was "forging new relationships between companies, and between companies and government or academic labs." However, several discrepancies exist. First,

²Twenty-six organizations participated in the study. However, two participants provided two answers to this question about ATP's "single most important effect." Two of these answers are included in the 15 responses classified as "the ability to afford and engage in this kind of high-risk, long-term research."

the survey results do not refer to a second most important effect, nor were the participants asked to identify a second most important effect. NIST officials said this statement was supported by the second most frequent response to the question about the "single most important effect" of the ATP award. However, the second most important effect cannot be inferred from the second most frequent response because the frequency of the response to this question does not say anything about the relative importance that individual respondents would have ascribed to this effect. The survey would have to have asked the participants specifically what they believed the second most important effect of ATP was in order to make that determination.

Another discrepancy is that the second most frequent responses were categorized as "the benefits that can flow from industry-industry collaboration," but made no mention of "government or academic labs," as NIST reported. To support its conclusion that the second most important effect was "forging new relationships between companies, and between companies and government or academic labs" NIST officials said that they had also included information from responses to another survey question. The other question asked participants to rate a list of potential effects of ATP. According to NIST officials, the item rated second highest on the list of potential effects for this question was the basis for NIST's statement about the "second most important effect." This item was "enhanced the technology infrastructure by strengthening linkages between sectors (industry-government, industry-university) and/or within sectors (industry-industry)."

However, NIST did not base its "most important effect" on the same question. Since NIST based its "second most important effect" on this question (respondents were asked to rate a list of potential effects of ATP), in order to be consistent, the highest rated response to the same question should have been the "most important effect." However, the highest rated item on this list is "collaboration and strategic alliances." This conflicts with the responses mentioned previously, which said that the "single most important effect" was "the ability to afford and engage in this kind of high-risk, long-term research." This inconsistent methodology casts doubt on NIST's reporting of ATP's most important effects.

Relationship Between ATP and Increase in Number of Joint Ventures Not Adequately Supported

NIST's conclusion that ATP has increased the number of joint R&D ventures in private industry is not adequately supported. NIST states that ATP was responsible for an increase in U.S. joint ventures, despite a variety of possible causes. According to NIST,

"Profiles also suggest that the ATP has led—as desired—to an increase in joint R&D ventures in private industry. In the first four competitions, approximately 125 joint ventures involving over 800 organizations were formed to apply to the ATP."

However, the only support NIST gave us for this statement is the fact that 125 joint ventures submitted proposals to ATP. Although the number of joint R&D ventures has increased, there are several reasons to question a direct relationship between this increase and ATP. The number of joint R&D ventures has steadily increased since 1986—years before NIST made its first ATP award. Some explanations for the causes of this trend and for the formation of joint ventures are unrelated to ATP. For example, the National Science Foundation cites the passage of the National Cooperative Research Act of 1984 as one reason for this growth. The Foundation explains that this act encourages research collaboration among industry competitors by better defining joint R&D ventures and protecting them from antitrust suits by limiting potential liability. We believe that NIST's conclusion about the causal relationship between ATP and an increase in the number of joint ventures lacks adequate support.

NIST's Future Plans for Evaluating ATP in Setting Priorities

The evaluation plan, as presented in *Setting Priorities*, includes several measures that NIST expects will indicate the long-term economic success of ATP projects. However, some of these measures may not indicate the economic success of ATP.

One of the measures that NIST believes will indicate the long-term economic success of ATP projects is "straightforward tracking of technical milestones."³ However, achieving technical milestones may not be a valid indicator of the economic success of ATP projects because technical advancement does not always lead to economic success. For example, earlier versions of the ATP evaluation plan pointed to one ATP project that was achieving all of its technical milestones as evidence of the project's likely success in stimulating economic growth. The lead company involved in this joint venture, however, went bankrupt before the project was

³Technical milestones are significant points in the course of a research project. They consist of individual research tasks with estimated completion dates that are part of the project's overall timetable. Technical milestones might consist of the estimated completion dates of experiments or tests in the project.

completed. Although the other company in the joint venture has stated its intention to continue the joint venture's commercialization plan, the lead company's bankruptcy reduces the likelihood of future economic effects being realized from this ATP project.

Tracking the completion of technical milestones for ATP projects provides helpful information to ATP managers who need to know whether this vital step in the commercialization process is being achieved. However, using this information as an indicator of "long-term economic success" may create the false expectation that technical success will result in commercial success.

"Increased collaborations and strategic alliances [between companies]" is another measure that NIST expects to indicate long-term economic success. However, the number of collaborations and strategic alliances may not indicate ATP's economic success. A joint venture is one form of collaboration or strategic alliance that can occur between companies. As the previously cited example of the bankrupt company and its collaboration shows, the use of this measure to indicate "long-term economic success" may create the false expectation that collaboration will lead to commercial success.

The ATP evaluation plan summarized in *Setting Priorities* shows that NIST intends to continue providing descriptive data on the program and its operations. Two of the five major components of the evaluation plan focus on obtaining this type of information and are descriptive in nature: (1) assessing ATP's operational activities and (2) profiling applicants, recipients, technologies, and projects. This information will include descriptive data about the program's operations, participants, and monitoring activities as integral parts.

This information is helpful to ATP officials in managing the program. Collection of these data, however, does not provide the Congress with information about the program's impact and economic success.

Additional ATP Evaluation Efforts

According to NIST officials, program evaluation has been a part of ATP from its beginning, and the development of a long-term evaluation strategy is an ongoing NIST process. NIST says that at this point in ATP's history, its approach to evaluating ATP is to lay the groundwork to provide metrics for the program's results at the earliest possible time.

NIST's evaluation efforts include engaging the advice and services of the nation's leading economists in impact assessment and evaluation. NIST has also put in place an extensive data collection system to support its ATP evaluation efforts. In addition, NIST says it is conducting microeconomic case studies and supporting the development and use of economic models for projecting outcomes of ATP.

Conclusions

It is too early to determine ATP's long-term economic impact; therefore, there has not been a complete assessment of ATP. Evaluating ATP will be challenging. For example, ATP research projects are intended not only to be technically successful but also to have a commercial impact. The linkage between technical work and commercial results may not always be direct and may be subject to interpretation.

NIST has reported short-term results in *Setting Priorities* that, it says, indicate that the program is making an impact. However, our analysis indicates that these results are overstated or lack adequate support. Thus, judgments about the economic success of ATP should not be based solely on the information in *Setting Priorities*. In addition, some of the indicators contained in *Setting Priorities* that NIST proposes to track for future evaluations of ATP, namely technical milestones and the number of collaborations and strategic alliances, may create false expectations of the program's economic success. Neither of these indicators necessarily reflects the long-term economic success of the program. According to NIST, other efforts are under way that will support studies of the program's long-term outcomes as soon as such studies are feasible.

Agency Comments and Our Evaluation

We provided a draft of this report to the Department of Commerce for written comments. These comments, along with our detailed responses, are provided in appendix I. In addition, at the Secretary of Commerce's request, we met with the Under Secretary for Technology and the Director of NIST to discuss the draft report in more detail. Specifically, NIST made the following observations about our draft report:

- It overestimated the amount of "advanced" R&D in the printed wiring board industry by citing industry figures that include R&D that is not "advanced." However, we point out in our response that the broader industry figure is appropriate to use for comparison purposes because the ATP project also includes R&D that is not "advanced."

- It introduced a negative bias to our conclusions by including only partial responses to a survey question. We have added language to the final report reflecting the additional information contained in responses to this survey question. However, this does not change our analysis or conclusions because the information still suggests that as many as half of the ATP projects would have been undertaken even without ATP support, although at a different level of funding. Moreover, a Congressional Budget Office study reached a conclusion similar to ours on the basis of the same data.
- It overlooked evidence and made it appear that NIST's conclusions about ATP's impact on forging relationships between companies and government or academic labs lacked support. Our review of this evidence is included in this report and shows that NIST's conclusions are based on an inconsistent methodology used in analyzing the evidence.
- It overlooked evidence supporting NIST's statement that ATP has led to an increase in the number of joint ventures. However, the evidence provided by NIST still does not demonstrate that ATP has caused an increase in the number of joint ventures for primarily two reasons. First, the National Cooperative Research Act was influencing the number of joint ventures over the same time period. Second, NIST has no evidence that shows why joint ventures that applied to ATP formed in the first place. NIST currently has a study under way to determine that information. The fact that the joint ventures registered with the Federal Trade Commission or the Department of Justice when applying to ATP is irrelevant because joint ventures are not required to register with these agencies when they form.

NIST's comments on our draft report also include important qualifications that help dispel false expectations about the indicators of long-term economic success in *Setting Priorities*. Had these qualifications appeared in *Setting Priorities*, one would have been less likely to arrive at false conclusions about the program's impact.

Our draft report contained a proposed recommendation that the Secretary of Commerce direct NIST officials to develop an evaluation strategy that includes measures of the program's outcomes. In commenting on our draft report, NIST said that it intends to continue to refine the ATP evaluation plan through the use of microeconomic case studies and economic models for projecting ATP's outcomes. Therefore, we have withdrawn that proposed recommendation.

Scope and Methodology

In conducting our analysis, we interviewed the NIST senior economist responsible for evaluating ATP and examined *Setting Priorities*. The NIST

B-259591

economist said that this document summarizes the evaluations of the program conducted to date, as well as the plan for evaluating ATP in the future. We investigated all statements about ATP in this document by reviewing the supporting studies and data to determine their consistency with NIST's reported statements. We analyzed the ATP evaluation plan's "indicators of future economic success" but were unable to analyze the usefulness of those indicators that were too general for understanding the effects of ATP. For example, indicators that include terms such as "technological infrastructure" and "enabling technologies" do not clearly identify what they measure or how they are related to the economic success of ATP. In addition, NIST supports some of its statements about ATP's effects with references to two NIST-supported studies. Although we examined these studies, we did not evaluate them for their validity. NIST's evaluation of ATP is an ongoing process. When we had nearly completed our work, NIST provided us with a copy of NIST Industrial Impacts: A Sampling of Successful Partnerships, which contains anecdotes about ATP awards. We did not evaluate this document. We also consulted economists, the R&D evaluation literature, and a trade association representative. We conducted our review from January 1994 to April 1995 in accordance with generally accepted government auditing standards.

As arranged with your office, unless you publicly announce its contents earlier, we plan no further distribution of this report until 30 days after the date of this letter. At that time, we will send copies to the Secretary of Commerce; the Director, NIST; the Director, ATP; the Inspector General, Department of Commerce; the Director, Office of Management and Budget; and other interested parties. We will make copies available to others on request.

Please contact me at (202) 512-3841 if you or your staff have any questions. Major contributors to this report are listed in appendix II.

Sincerely yours,



Victor S. Rezendes
Director, Energy and
Science Issues

Appendix I

Comments From the Department of Commerce

Note: GAO comments supplementing those in the report text appear at the end of this appendix.



THE SECRETARY OF COMMERCE
Washington, D.C. 20230

JAN 7 1995

Mr. Victor S. Rezendes
Director, Energy and Science Issues
Resources, Community, and Economic
Development Division
U.S. General Accounting Office
Washington, DC 20548

Dear Mr. Rezendes:

Enclosed is the Department of Commerce's response to the General Accounting Office's (GAO) recommendations and conclusions in the draft report, "PERFORMANCE MEASUREMENT: Completed and Planned Evaluations of the Advanced Technology Program."

We note that GAO did not raise most of the issues cited in the draft report at the October 20, 1994, exit interview and that GAO has not allowed us the usual 30 days to respond to the conclusions and recommendations of the draft report.

In view of the substantial disagreement by the Department with the facts, conclusions, and recommendations presented in the GAO draft report, we request that a meeting be held between the appropriate GAO officials and the Under Secretary for Technology, Dr. Mary Good, and the Director, National Institute of Standards and Technology, Dr. Arati Prabhakar, to discuss your conclusions and recommendations and the factual basis for them in more detail.

If your staff requires additional information about the Department's response to your report, they may contact the Advanced Technology Program's Senior Economist, Rosalie Ruegg, at 301-975-3189.

Sincerely,

Ronald H. Brown

Enclosure

cc: Charles A. Bowsher

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Commerce

U.S. Department of Commerce
Comments on GAO Draft Report Entitled
"PERFORMANCE MEASUREMENT: Completed and Planned Evaluations
of the Advanced Technology Program"

GAO/ECED-95-68
dated January 11, 1995

January 27, 1995

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EXECUTIVE SUMMARY

The National Institute of Standards and Technology (NIST) finds that the GAO draft report inaccurately portrays the Advanced Technology Program's (ATP) evaluation plan and progress in implementation, and that it misrepresents NIST's statements of short-term ATP results as lacking supporting evidence and being overstated. NIST stands by ATP's evaluation plan and its statement of short-term results as appropriate, informative, and well founded.

The GAO draft report contains a number of inaccuracies and omissions which combine to misrepresent the results of early ATP evaluations as well as the program's planned methodologies for future evaluations. The GAO draft report's assertions that NIST statements of impact are (generally) extravagant and not to be trusted are erroneous and without grounds.

See comment 1.

The GAO report's conclusion that the ATP evaluation plan focuses only on outputs, not outcomes is in error; in fact, the ATP's plan provides for a well-balanced combination of measures that include both output and outcome measures. The GAO report is in error that ATP relies on measures of technical progress as the mainstay in assessing economic success; in fact, technical progress is only one of a set of intermediate measures that indicates the promise of future economic success (i.e., technical progress is viewed as a necessary, but insufficient condition for economic progress). The GAO draft report's assertion that NIST's future evaluation includes indicators that may create false expectations is groundless; in fact, the ATP has a comprehensive set of indicators that have been developed and reviewed by leading economists in the field and can be expected to provide a reasonable indication of future potential.

See comment 2.

See comment 3.

The GAO's analysis is based primarily on only six pages of a NIST document that was intended only to summarize other more comprehensive documents and data. Other information was provided, but the GAO's analysis ignored it. By excluding available information, the GAO draft report gives a distorted view of ATP's evaluation.

See comment 4.

The salient fact is that the ATP is a new program with the bulk of its multi-year research projects funded only in the last several years, and with most of its projects still very much in the research or pre-product development phase. Under the circumstances, it would be premature for the ATP to assert that it now can perform meaningful ex post measures of long-term economic outcome.

At present, a responsible and responsive approach for the ATP is to lay the ground work to provide these metrics at the earliest

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possible time -- which it is doing. The ATP can promote sound evaluation of long-term economic impacts by establishing a solid information collection system, by conducting detailed microeconomic case studies, by supporting the development and use of economic models for projecting outcomes, by supporting a variety of approaches to economic evaluation of R&D projects, and by having this process reviewed by outside experts in evaluation to assure that ATP is on the right track -- all of which ATP is doing.

In reviewing the accuracy of four statements of results made by NIST in the paper *Setting Priorities and Measuring Results*, the GAO made the following errors:

- GAO overestimated the baseline amount of R&D directed towards pushing the state of the art of printed wiring board technology by approximately \$24 million per annum. The GAO also underestimated the ATP-induced increase in advanced R&D by \$5.2 million. These two errors by GAO led it to conclude that NIST's figures were exaggerated. (GAO's error in the baseline was confirmed with the source that GAO cited.)
- GAO overlooked information critical to understanding the results of the contractor survey concerning the impact of the ATP on the scope and level of R&D funding. By including only partial results of participant responses, the GAO draft report introduced a negative bias.
- GAO overlooked evidence that forging new relationships with academic labs and government was important to participants, in addition to establishing new relationships with other companies. By omitting a critical part of the survey evidence, the GAO draft report made it appear that NIST's statements lacked support.
- GAO overlooked strong available evidence supporting NIST's statement that the ATP has led--as desired--to an increase in joint R&D ventures.

See comment 5.

See comment 6.

See comment 7.

See comment 8.

NIST stands behind the ATP's evaluation plan and its implementation. NIST stands behind its statements of short-term results contained in *Setting Priorities and Measuring Results* (the NIST source document upon which the GAO based its report) as valid and supported by solid evidence.

NIST rejects as unnecessary the GAO recommendation that the Secretary of Commerce direct NIST officials to develop an evaluation strategy that, consistent with the Government Performance and Results Act, includes outcome measures of ATP.

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See comment 9.

NIST concludes that it had met the requirements of the Government Performance and Results Act to include in its evaluation plan outcome measures of the program long before the GAO draft report was initiated. NIST intends to continue to refine the ATP evaluation plan and to pursue aggressive implementation of the plan.

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U.S. Department of Commerce Comments on
the General Accounting Office (GAO) Draft Report
"Performance Measurement: Completed and Planned Evaluation
of the Advanced Technology Program" (dated January 11, 1995)

See comment 1.

The GAO draft report contains a number of inaccuracies and omissions which combine to misrepresent the results of early ATP evaluations as well as the program's planned methodologies for future evaluations. We reject the GAO recommendation that the "Secretary of Commerce direct NIST officials to develop an evaluation strategy that, consistent with the Government Performance and Results Act, includes outcome measurements of the Program." From the inception of the ATP, NIST has developed performance measures and a data collection plan to ensure that long-term outcomes would be evaluated in a systematic and rigorous manner. NIST has led the government in this regard and its methods are being adopted by other agencies. NIST will continue to improve and refine its methods for evaluating outcomes.

See comment 9.

The GAO draft report's assertions that NIST's claims of impact are (generally) extravagant and not to be trusted are without grounds. In these comments on the GAO draft report, NIST addresses each of the points raised by the GAO, and demonstrates why NIST stands behind the conclusions contained in the GAO-cited NIST paper as reasonable descriptions of early ATP results that are supported by evidence.

See comment 1.

1. Nowhere does the GAO draft report clearly lay out the full scope of the ATP evaluation plan. The GAO draft report incorrectly suggests that short-term project measures such as technical milestones and the formation of industrial research consortia are being used by the ATP as measures of long-term economic impact.

See comment 10.

The ATP's evaluation strategy is not accurately presented in the GAO's draft report. Almost immediately after the ATP became operational, it began to plan for evaluation; and, soon thereafter, to implement the plan.¹ That plan, as refined and extended by the ATP (and clearly summarized in the NIST paper *Setting Priorities and Measuring Results*) has five components:

- 1) assessing the ATP's operational efficiencies,
- 2) profiling the ATP's portfolio of projects,
- 3) evaluating industry's implementation of the projects,
- 4) tracking short-to-medium term project results, and
- 5) measuring long-term economic impacts (outcomes).

Recognizing that a major obstacle to comprehensive, accurate measurement metrics typically is the lack of good data, the ATP has put in place an extensive data collection system to support

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the five evaluation components listed above. In addition, because the accurate evaluation of long-term outcomes for technology development projects presses the state of the art of economic methods, the ATP has engaged the advice and services of the nation's leading economists in impact assessment and evaluation metrics.⁴ Intense interest in early results of the program has led the ATP to commission evaluation studies of intermediate results⁵ and of projected long-term outcomes.⁶

Although it is not yet possible to perform comprehensive ex post studies of long-term outcomes because virtually all of the ATP projects to date are still in their short-to-medium term phase, the ATP has launched modeling and data collection efforts to support such ex post studies as soon as they become feasible. For example, the ATP is developing collaborative research with leading economists in the field to develop a common framework for its detailed microeconomic studies to increase their usefulness in performing long-term impact studies.⁷ The ATP is exploring the feasibility of developing new approaches for estimating economic externalities of technological innovation. It is putting in place methods to collect data needed to extend the private rate of return measures supported by its existing data collection system to national (social) rate of return measures.

The ATP's comprehensive evaluation program has been presented to many groups, including numerous professional evaluators. For example, the GAO's Special Assistant for Methodology and Data Systems, recently invited ATP's Chief Economist to discuss ATP's evaluation program at the annual meeting of the American Evaluation Association, in a session titled "Research and Development Evaluation: Methodological Issues."⁸ The ATP's evaluation program has received considerable attention and praise from other agencies, members of Congress, foreign delegations, academics, and private industry.

NIST made every effort to see that the GAO was aware of its multi-part evaluation plan and ongoing evaluation activities. For example, on March 14, 1994, NIST sent the GAO a descriptive overview of ATP's new information system, sample data, an ATP evaluation planning study which addressed the use of long-term impact measures, a newly completed case study of an ATP-funded joint venture, and a description of ATP's plans for a survey of all companies funded during ATP's pilot phase. In the late summer of 1994, NIST offered to demonstrate its data-collection software to the GAO, and described its investigation of economic modeling tools for forecasting long-run impacts of the program. The GAO, however, did not reflect additional ATP evaluation materials in writing its draft report. By excluding available information, the GAO draft report gives a distorted view of ATP's evaluation program.

See comment 4.

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See comment 3.

The GAO draft report presents ATP statements out of context thereby giving the impression that the ATP considers achievement of technical milestones as adequate evidence of economic success. The ATP has always stated that accomplishment of technical milestones is a necessary, but insufficient, condition for the achievement of long-run economic success. The ATP's entire evaluation effort is based on the premise that technical success is not a sufficient condition for economic success.

At the same time, NIST recognizes that without technical success, there can be no economic success for the projects funded by the ATP. Hence, it is of keen interest to the ATP to track technical progress as the award recipients carry out their R&D projects, and to include achievement of technical milestones in the list of "intermediate indicators" that help to signal whether or not a given project is continuing on a path that has the potential for long-run success.

A previous GAO report (GAO/RCED 93-221; *Advanced Technology Program's Indirect Cost Rates and Program Evaluation Status*), issued in 1993, presents a more accurate (but still incomplete) summary of the ATP's evaluation strategy. The 1993 GAO report states (p. 5) that "ATP staff have also established 11 criteria for measuring ATP's long-term success including (1) value added, (2) the creation of new industry; and (3) changes in sales, manufacturing costs, product quality, the time it takes to bring a technology to market, and market share." The 1993 report goes on to make an important point:

"However, ATP staff face barriers in evaluating their long-term objective of identifying ATP's impact and the factors that lead to a successful ATP project. First, ATP staff need to wait for more projects to be completed before they can evaluate the program. Second, ATP projects are evaluated on both their technical and commercial success. Even after a project is completed, its commercial success may not be evident for several more years. Even then, commercial success may be difficult to determine because the resultant technical developments might be incorporated into a different product that eventually reaches the market."

The 1993 GAO report recognized that the ATP does not fund product development and that it may take a number of years after an ATP project is completed to develop and commercialize products that incorporate the technologies developed through the program. Even now it is too early to see many bottom-line economic outcomes from this young program. The GAO has offered no reason for its apparent change in position between the 1993 and 1995 reports.

See comment 11.

2. In criticizing NIST's statement of short-term results of a project on advanced technologies for printed wiring boards, the GAO draft report misinterprets data on advanced

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See comment 12.

technology development funding levels and uses a figure that is incorrect by an order of magnitude. GAO's use of incorrect data led it to reach erroneous conclusions.

The GAO draft report faults the 1994 NIST paper *Setting Priorities and Measuring Results* for stating that "total U.S. R&D work on advanced technologies for printed wiring boards essential to all modern electronic devices more than quadrupled as a result of the ATP." GAO's analysis in questioning the statement is, however, incorrect. The GAO draft report asserts that a conservative estimate of the baseline is \$26.5 million in 1992, and cites the Institute for Interconnecting and Packaging Electronic Circuits (IPC) as the source. But, according to the IPC, the GAO's estimate overstates the industry's expenditure in advanced printed wiring board R&D by at least \$24 million or more.

See comment 13.

NIST investigated the reason for the large error in the GAO's estimation of the baseline amount that the industry would have spent on R&D on advanced technologies in the absence of the ATP, by consulting with the IPC, the source of the GAO's numbers. According to an IPC official¹¹, GAO's estimating error apparently stems from confusing the total annual industry R&D expenditure of approximately \$26.5 million, with the total annual industry R&D expenditure on advanced technologies. The IPC official estimated industry's expenditure on advanced technologies to "push the PWB envelope" as 10 percent or less of the total R&D expenditure, for an upper limit of \$2.65 million per annum. According to the IPC official, fewer than 10 companies perform R&D that pushes the envelope -- the type of high-risk R&D cost-shared by the ATP -- and 90 percent or more of the approximately \$26.5 million cited by GAO is aimed at very near-term (1 year or less), narrowly focused, low-risk objectives and, hence, is not comparable to the ATP-sponsored R&D.

See comment 14.

The GAO draft report also fails to take into account in its calculations the \$5.2 million that the Department Of Energy provided to Sandia National Laboratory to participate in the ATP project. Yet the underlying ATP source document explicitly states that the DOE funds were conditional on the ATP project.¹² This omission caused the GAO to underestimate ATP's contribution to PWB advanced research, thereby throwing GAO's conclusion farther off base.

See comment 15.

3. By reporting only the first part of a two-part question asked in an early ATP survey, the GAO draft report arrives at a conclusion almost exactly opposite to the ATP survey's true finding.

The GAO draft report contests NIST's statement that "a survey of early ATP award recipients found that they believed the most important effect of ATP was that it enabled them to pursue

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promising lines of research that they otherwise could not have followed." The GAO faults this statement because at a later point in the interview, over half of the respondents said that they would probably have pursued this technology, even without ATP funding. However, the GAO draft report omits the second part of the survey question and the company responses that they would not have done the same research at the same level of effort without the ATP. This omitted part is essential for understanding the first part and critical to conclusions to be drawn. This omission significantly affected GAO's interpretation of the finding.

Here are the facts:

- (1) When participants were asked, "what would you say is the single most important effect that the ATP award has had on your organization thus far," the most frequent answer was, "the ability to afford and engage in this kind of high-risk, long-term research." This was an open-ended question asked at the beginning of the survey (part A) and coded by the contractor.
- (2) Later in the ATP survey (part C), participants were specifically asked about the likelihood that their organization would have pursued the development of the technology without the ATP award. At this point, fifteen percent responded that they definitely would have; thirty-eight percent said they probably would have; twenty-seven percent said they probably would not have; and nineteen percent said they definitely would not have.
- (3) Those that responded "yes, probably," or "yes, definitely," were then asked if they would have pursued development of the technology at about the same level of effort, with the same ultimate goal without the ATP award. This second part of the answer -- the critical part omitted from the GAO draft report -- was that the award recipients unanimously stated that they would NOT have been able to pursue the development of the technology without the ATP award at the same level of effort or with the same ultimate goal.

Nearly three-fourths of the participants went on to describe how the project would have been different without the ATP. Typical comments were:

"...the scale would have been smaller, the timeliness slower, and the goal ... not as far-reaching."

"Couldn't afford it. Might have skirted around the edges of it, but not pursued it at the same level of effort with the same resources."

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"Probably would have been done, but at a much reduced level...would have taken 10 times as long to get there and we may never have accomplished what we have to date."

"Ten years down the road, we might have gotten there, but competitors might have gotten there before us."

Based on a complete understanding of the survey questions and the company responses, NIST stands behind its reporting of the survey results as accurate and fully supportable.

4. NIST stands by its statement that another finding of this same survey was...that survey participants rated as the second most important effect of the ATP forging new relationships between companies, and between companies and government or academic labs."

GAO overlooked evidence that forging new relationships with academic labs and government was important to participants, in addition to establishing new relationships with other companies. By omitting a critical part of the survey evidence, the GAO draft report made it appear that NIST's statements lacked support.

See comment 17.

The GAO draft report states that it does not understand NIST's reasoning, despite having assured ATP staff at the audit exit interview that they understood and accepted NIST's finding.

At GAO's audit exit interview on October 20, 1994, the GAO staff raised its concern with NIST that only the portion of the statement pertaining to relationships between companies was supported by the survey as "the second most important effect of ATP," and not the portion of the statement pertaining to relationships between companies and government or academic labs.

In response, ATP staff walked the GAO team members through the logic that led to the conclusions in the statement. The Assistant Director of GAO's Resources, Community, and Economic Development Division assured ATP staff that GAO understood NIST's rationale for the statement. Without the GAO's assurance that it understood NIST's statement and accepted it as reasonable, ATP staff would have taken further steps to clarify this issue at that time.

See comment 18.

The NIST statement in question appears in the primary source document of the GAO draft report, NIST's paper *Setting Priorities and Measuring Results*. The statement combines participant responses to two separate questions in the contractor survey. Because *Setting Priorities and Measuring Results* was intended to provide a brief overview of all NIST evaluation activities, the space devoted to the Advanced Technology Program was necessarily limited. For brevity, the statement in question was intended to synthesize the following survey results:

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a) On the entrance question, "what would you say is the single most important effect that the ATP award has had on your organization thus far," the second most frequently cited answer was "the benefits that can flow from industry-industry collaboration."

b) On an exit question intended to summarize the impacts and outcomes portion of the survey, participants were asked to rate the degree of impact that the ATP had to date on each of nine selected items. The second highest rated item was "benefits from strengthened linkages between sectors (e.g., industry-government; industry-university) or within sectors (industry-industry)" that they felt were stimulated by the ATP project.

To facilitate the ranking presentation, the contractor used impact classification labels in the report in place of the detailed descriptions. Hence, "benefits from strengthened linkages ..." was dubbed "technology infrastructure" in the survey report.

In explaining the synthesis of the two results to the GAO team during the audit exit interview, NIST pointed both to the survey instrument which made it clear that participants were specifically being asked to rank the degree of impact on industry-government, industry-university, and industry-industry linkages, and to Section L of the survey report which states "The contribution that the ATP has made - even at this early stage - to enhancing the nation's technology infrastructure was measured by whether participants had experienced any benefits from strengthened linkages (contractor underlining) either between sector (e.g., industry-government; industry-university) or within sectors (industry-industry) that they felt were stimulated by the ATP project." Eighty-one percent of the 26 companies interviewed said they had experienced such benefits.

Given the strength of the survey evidence that participants rated highly (second on the interview summary ranking) ATP's role in promoting linkages among the cited organizations, there is no factual basis for GAO's assertion that NIST overstated the result or lacked support for it.

5. In arguing that NIST has no grounds for stating that the ATP has led to an increase in the number of joint research-and-development ventures in industry, the GAO draft report omitted available evidence from the ATP proposal evaluation process.

The draft report faults NIST for reporting "that the ATP has led - as desired - to an increase in joint research and development ventures in private industry," saying that this cannot be supported, and may well be due simply to the change in the R&D

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See comment 20.

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climate as a result of the National Cooperative Research Act of 1984.

Certainly the National Cooperative Research Act has had a significant effect on the formation of cooperative R&D ventures in industry. Given that the ATP was a relatively small pilot program before 1994, its effect to date on the number of joint industry R&D venture formations could be expected to be small when compared to the impact of this Act. Nevertheless, it is clear that the ATP is increasing the number of industry-led joint R&D ventures. Even for those joint ventures where there were possibly pre-existing relationships, the ATP is increasing high-risk, high-payoff research on advanced technologies.

NIST reached its conclusion -- that the approximately 125 joint ventures which applied to ATP in the first four competitions were formed to apply to the ATP -- on the strength of several pieces of evidence which are completely overlooked in the GAO draft report.

An analysis of the joint venture filings with the Department of Justice and the Federal Trade Commission (FTC) showed little or no overlap in the applications; that is, the great majority of ATP joint ventures to date had not already filed to conduct joint research prior to their ATP proposal. Although existing concordia sometimes administer joint ventures (hence, the impression of preexistence of the joint venture), the individual member companies typically come together in a unique collaboration specifically to cooperate on the ATP-proposed project.

See comment 21.

The nature of ATP's joint venture process gives NIST confidence that the great majority of formal joint ventures proposed to it are for new research projects by newly formed alliances of firms. This confidence is supported by the findings of Professor Al Link, a contractor doing impact studies for the ATP, who informed the ATP that the four joint ventures that were investigated all formed in response to ATP's competition,¹⁴ and by questions raised during oral reviews, when companies are often asked by the Selection Boards why and how the particular organizational structures were formed.

The formal joint ventures must submit a copy of the joint venture agreement to the ATP, at least in draft, at the time of an oral review. Prior to an award, the proposer must provide ATP with copies of the notification sent to the Department of Justice or the FTC under the National Cooperative Research Act, that a joint venture has been formed for the purpose of the proposed research. If two or more for-profit companies have merged in a legal entity prior to applying to the ATP, that entity alone is not eligible to apply as a joint venture, but would have to join with other entities. If the R&D project submitted to the ATP for funding is

See comment 22.

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deemed to duplicate existing on-going research, the ATP will not fund it.

There is additional information that suggests that the ATP stimulates future alliances to promote the economic benefits of ATP projects through key partnerships. Among the ways that participants achieve effective partnering for commercialization activities include forming strategic alliances for licensing agreements, joint production ventures, and informal and formal arrangements with end-users and suppliers. When participants in the contractor survey were asked whether they used these kinds of partnering mechanisms to further advance the technology associated with their ATP project, forty-six percent responded "Yes," and another fifty percent stated that it was either "too early" or that such alliances were "in process" of being formulated. Only one company in the survey said that they had not engaged in any collaborations to date and had none in their near-term plans.

The ATP is already seeking additional data that will allow it to learn more about the relationship between the ATP and the formation of joint R&D ventures in industry, as well as partnering arrangements to commercialize the technology. The new survey of ATP award recipients will question both joint-venture members and informal alliances of companies whether or not their collaborative associations predated their ATP application, and whether or not the ATP had any influence on their decision to collaborate."

See comment 23.

REFERENCES

1. Link, Albert N. *Measuring the Economic Impact of the Advanced Technology Program: A Planning Study* (Prepared in 1991; publication date, May 1992).
2. Link, Albert N. *Advanced Technology Program: Economic Study of the Printed Wiring Board Joint Venture After Two Years* (April 1993); *Advanced Technology Program: Economic Study of the Joint Venture Project on Short-Wavelength Sources for Optical Recording After Three Years of a Five-Year Research Program* (March 1994); *Advanced Technology Program: Economic Study of the Joint Venture Project on Advanced Manufacturing Technology for Low-Cost Flat-Panel Displays After Three Years of a Five-Year Research Program* (Forthcoming).
3. Solomon Associates. *The Advanced Technology Program: An Assessment of Short-Term Impacts: First Competition Participants* (February 1993).
4. ATP Information Reporting System. The system includes special software to facilitate the collection of data in a

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systematic and structured way from recipients of ATP awards on a quarterly basis. Post-project reporting is planned.

5. Griliches, Zvi, Harvard University. "Long-Term Economic Impact Assessment for the Advanced Technology Program," Seminar at NIST, August 11, 1994.
6. Modeling Economic Impacts of Technological Innovations: A Workshop, December 15, 1994, ATP/NIST, Gaithersburg, MD. (Summary Proceedings forthcoming).
7. Studies of intermediate results include the joint-venture studies performed by Professor Link; the early survey of awardees by Solomon Associates; the forthcoming survey of all awardees in the first four competitions by Silber & Associates; industrial impact cases prepared by NIST's public affairs office, and various analyses conducted by ATP staff. Additional case studies of intermediate results are in process.
8. Examples of economic evaluation studies that focus on projecting long-run outcomes of ATP-funded projects include a study underway by Applied Economics, Inc., to evaluate the ATP/Diamond Semiconductor Group's jointly funded project to develop new ion implantation technology important for manufacturing larger semiconductor wafers; and a study underway by CONSAD Research Corporation of ATP/Automobile Body Consortium jointly funded "2mm project" to develop improved dimensional controls for manufacturing automotive body parts and other manufactured products. Additional studies are in the planning stage.
9. Jaffe, Adam, and Josh Lerner, Harvard Business School. A Study to Develop a Framework for Performing Microeconomic Case Studies for the Advanced Technology Program. (In contract negotiation, December, 1995.)
10. "ATP's Economic Evaluation Plan and its Implementation," a presentation by R.T. Ruegg, Chief Economist for ATP, in the session titled Research and Development Evaluation: Methodological Issues, chaired by Dr. M.J. Wargo, GAO's Special Assistant for Methodology and Data Systems, U.S. General Accounting Office, Resources, Community, and Economic Development Division. The Annual Meeting of the American Evaluation Association, Boston, MA, November 2-5, 1994.
11. Estimates and descriptions of industry R&D funding were provided by Mr. Thomas Dammrich, Executive Director of the IPC, Telephone Interview, January 13, 1995.
12. Link, Albert. Advanced Technology Program: Economic Study of the Printed Wiring Board Joint Venture After Two Years (April 1993, p. 2 and p. 13, fn 19).

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13. Solomon Associates, *The Advanced Technology Program: An Assessment of Short-Term Impacts: First Competition Participants* (February 1993), p. 10.
14. Interview with Professor Link, January 13, 1995.
15. Survey of participants in ATP projects funded from ATP's inception in 1990 through 1993. Silber & Associates. (Survey underway)

The following are GAO's comments on the Department of Commerce's letter dated January 27, 1995.

GAO's Comments

1. Our work focused specifically on the information provided by the National Institute of Standards and Technology (NIST) in its document entitled Setting Priorities and Measuring Results at the National Institute of Standards and Technology. We examined (1) the short-term results that NIST says indicate the impact of the Advanced Technology Program (ATP) and (2) the measures that NIST expects will indicate ATP's long-term economic success. We did not address the progress made by NIST in implementing its evaluation plan. After reviewing additional support provided by NIST, we maintain that our original assessment of NIST's conclusions about short-term results is valid. None of the information provided in the comments refutes our original conclusions. We have included additional information about NIST's ongoing evaluation efforts beyond those cited in Setting Priorities. We also maintain that the indicators of long-term economic success included in Setting Priorities may create false expectations. Although NIST's comments on our draft report included important qualifications that help dispel false expectations (e.g., "accomplishment of technical milestones is a necessary, but insufficient, condition for the achievement of long-run economic success"), Setting Priorities did not include any of these qualifications.
2. The draft report said "ATP evaluations would better assist the Congress in making budget decisions if the evaluations focused more on outcomes, which reflect the impacts of the program, than on outputs, which describe the activities of the program." This statement was not intended to be a broad conclusion about the plan. The report now discusses this topic within the context of the descriptive information that ATP collects. As the report notes, this information does not necessarily provide the Congress with information about the program's impact and economic success.
3. We continue to maintain that "tracking technical milestones" and "increased industrial collaborations and strategic alliances," when presented as indicators of long-term economic success, may create false expectations. Presenting additional information, such as NIST provides in its comments, would help avoid creating false expectations.
4. Since we focused our work specifically on the statements about ATP in Setting Priorities, we reviewed the studies and data supporting these statements to determine their consistency. We did not ignore any

information provided that was relevant to this work. In addition, we have added information about NIST's evaluation efforts that does not appear in Setting Priorities.

6. We maintain that our analysis and estimates are appropriate and accurate. The details are provided in the body of the final report and in comments 13 and 14. Moreover, the evidence NIST provided—a report on a single five-member joint venture—cannot be extrapolated to the entire U.S. printed wiring board industry.

6. See comment 15.

7. We included all of the relevant information in our analysis and maintain that NIST's statements lack support and are based on a selective use of data. See comment 19.

8. Comment 23 summarizes our rationale for questioning NIST's statement about ATP's impact on the formation of joint ventures.

9. We have withdrawn the proposed recommendation in light of additional information about plans to refine the ATP evaluation plan.

10. We agree that our draft report did not lay out the full scope of the ATP evaluation plan. That was not our intent. Our work focused on the information contained in Setting Priorities, which states on page 15 that "A number of measurable short-term effects are expected to provide indicators of long-term economic success. In addition to straightforward tracking of technical milestones, these indicators include: . . . increased industrial collaborations and strategic alliances; . . ."

11. We have not changed our position. Our 1993 report did not evaluate NIST's ATP evaluation strategy but did present a NIST-provided summary of the ATP evaluation strategy. In addition, the current report contains similar language concerning the barriers and challenges facing NIST in evaluating ATP. For example, our report states, "Evaluating ATP poses many challenges. For example, ATP research projects are intended not only to be technical successes but also to have commercial results. The linkage between technical work and commercial results may not always be direct and may be subject to interpretation. Also, several years can elapse between the end of technical work and the realization of commercial results."

12. According to NIST, the statement about ATP's impact on the printed wiring board industry is based on a study that is limited to a single five-member joint venture. We maintain that it is an overstatement to project the impact of this joint venture to the entire industry of over 800 manufacturers. For purposes of comparison, in the draft report we estimated spending for research and development (R&D) for the entire printed wiring board industry. We still maintain that these estimates are the correct figures to use for such purposes and that the figures further reinforce our conclusion.

13. Our analysis is based on the industry's overall expenditures for R&D for the following reason. As NIST comments, only a portion of the industry's R&D is focused on advanced technology. But similarly, only a portion of the joint venture's R&D is focused on advanced technology, and the larger balance is devoted to incremental improvements in existing technology.

14. NIST's suggested analysis still does not demonstrate that ATP has quadrupled total U.S. R&D work on advanced technologies for printed wiring boards. Taking into account the Department of Energy's contribution of \$5.2 million, or \$1.04 million annually, the total annual spending on R&D by the ATP-supported joint venture is that amount plus the joint venture's original annual expenditure of \$5.7 million, for a total of \$6.74 million. Since less than half of that total is spent for R&D on advanced technology, \$3.37 million, or a half, is a high estimate of the amount spent annually by the joint venture on advanced technology R&D. NIST's claim remains overstated because the joint venture's annual expenditure of \$3.37 million still does not quadruple the industry's expenditure of \$2.65 million per year for advanced technology research on printed wiring boards.

15. Language has been added to the final report reflecting the information provided by responses to this question. This information, however, does not change our analysis or our conclusions. Our conclusions are reinforced by a Congressional Budget Office (CBO) report, which arrives at a similar conclusion about this evidence. According to the CBO report, "One privately funded study of the 11 projects supported by the first [ATP] competition in 1990 suggests that as many as half of them would probably have been undertaken even without ATP support, although at a lower level of funding."⁴

⁴Reducing the Deficit: Spending and Revenue Options, CBO (Feb. 1995).

16. Language has been added to the body of the final report reflecting the information provided by these responses. This information does not change our conclusions.
17. We included all of the relevant information in our analysis, and our conclusions remain unchanged. See comment 19.
18. At the exit conference we said we understood NIST's logic and rationale for making the statement. We did not say we accepted it as reasonable.
19. As stated in our final report, this is an inconsistent use of survey data. NIST's synthesis of the results of two different questions, one open-ended and one closed-ended, does not adequately support NIST's statements, nor does the information provided by another question in the survey (section L.).
20. We included all of the relevant information in our analysis, and our conclusions remain unchanged. We agree with NIST's comment on the National Cooperative Research Act and feel that NIST should have included references such as this in *Setting Priorities* to avoid overstating any potential effects of ATP on the formation of joint ventures. As we pointed out, the effects of the National Cooperative Research Act make it difficult to determine the effects of ATP on the number of joint ventures during ATP's first four competitions.
21. Joint R&D ventures exist throughout industry and are not required to register with the Department of Justice or the Federal Trade Commission. Therefore, the joint ventures may have been formed before applying to ATP and may never have applied to the Department of Justice or the Federal Trade Commission.
22. None of this information shows that ATP caused 125 joint ventures to form. As shown in comment 21, registration with the Department of Justice or the Federal Trade Commission does not mean a joint venture is new and did not exist before the time of registration.
23. As noted in comments 20, 21, and 22, the current evidence supporting ATP's impact on the formation of joint ventures is inconclusive and anecdotal. Moreover, the NIST statement says that "approximately 125 joint ventures," i.e., all of the joint ventures that sent in a proposal to ATP, were formed because of ATP. We look forward to the completion of NIST's new survey, which is under way, for more definitive information on "whether

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or not the ATP had any influence on [ATP award recipients'] decision to collaborate."

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Mr. ROHRBACHER. So, Mr. Chrysler, what we are saying is that there is duplication in the area that my subcommittee dealt with, we found tremendous duplication, for example, in the area, as I have stated, in the area of research on global warming. You are saying that this duplication goes throughout the Department of Commerce and in many other areas, for example, the trade area?

Mr. CHRYSLER. Absolutely, and that is why certainly, you know, we have sponsored as companion bill to H.R. 1756, which is H.R. 2024, I believe, which is a bill which would consolidate the 19 different departments in the Federal Government that deal with trade into one trade office, office of trade, with a seat at the Cabinet table, in order to put us in the same competitive position with all of our major trading partners, such as United Kingdom and France and Japan and Germany and even Canada, of having an office of trade that would consolidate the efforts with a negotiating arm, an export arm and an import arm, working hand in hand so that we could do a better job in trade than this country has ever done.

Mr. ROHRBACHER. Thank you very much.

The CHAIRMAN. The time of the gentleman has expired.

Mr. Bartlett.

Mr. BARTLETT. Thank you very much.

Mr. Chrysler, I am very appreciative of the work that your committee has done in this area.

I would like to ask a question now that, at least in some circles, may not be a politically correct question to ask. As a result of the recent Supreme Court Lopez decision, which, as you may remember, indicated that whether or not it was desirable to have guns on school property, that that just wasn't the proper province of the Federal Government and so the Federal laws prohibiting guns on school property were unconstitutional.

What that says, I think, is that in looking at things that the Government is doing, that one should not necessarily just argue as to whether or not it is a useful program. Certainly keeping guns off of school property is a useful program, but the Lopez decision indicates, I think, that it is appropriate to take a look at whether or not this is a proper function of Government as envisioned by the Constitution.

Now, if it isn't, if it's something that we nevertheless want to do, then I would wonder if we shouldn't first change the Constitution before we do things that are not permitted by the Constitution.

My question is: Did your committee consider whether or not these programs, a great variety of programs under the present Department of Commerce, were in fact supported by Article I, section 8 of the Constitution or by an amendment to the Constitution?

As I look through Article I, section 8, I have difficulty finding constitutional support for much of what is done in the Department of Commerce. Certainly, to fix the standard of weights and measures speaks to the importance of NIST as a proper function of the Government relative to the Constitution.

Did your committee consider whether or not the programs of the Department of Commerce were included under the authorizations provided for? Remember that there is a Tenth Amendment to the Constitution which, in effect, says, if you can't find it in Article I,

section 8 or in any of the amendments, you can't do it. Was this a consideration in the procedures of your committee, and should it be?

Mr. CHRYSLER. Let me just say first we should do whatever it takes to keep a very small percent of the children that are bringing guns to school from destroying the education system for the rest of the kids that are there.

But directly to your question, if we looked at it from that perspective, and in fact we did, we observed that instead of 14 Cabinet-level positions of the Constitution, it would probably mandate that we would have about four.

So I think there is a lot more room and I think the dismantling of the Department of Commerce is just a beginning of the freshman class to put proposals forward for dismantling Education, Energy, HUD, and I believe there is a movement even to dismantle the Department of Labor. So maybe we are heading in that direction to getting back to the constitutionality of it all.

The other thing that we looked at with these programs, we looked at every program and we asked ourselves two basic questions. No. 1 is, should the Government be in this business that we are talking about; and, No. 2, is this program so important that our children should have to pay for it? Because that is exactly what is happening today in this Government.

Mr. BARTLETT. Thank you very much.

I particularly appreciate your comments about the desirability of not having guns in schools, and I thought that the Supreme Court decision, the Lopez decision, was a particularly important one because there is absolutely nobody who doesn't argue but what this is a very admirable goal to keep guns out of school property. Their decision was a decision as to whether or not this was a proper function of the Federal Government.

Certainly, it is a proper function of Government, but they, as is very appropriate to the Supreme Court, was that they needed to review this in terms of the Constitution, and whether or not a program does something which benefits the Nation is one thing, and certainly we don't want to have any programs that don't benefit the Nation where the cost exceeds the benefit that we get from that program.

But above and beyond that, since we are the longest surviving republic in the history of the world and since the Constitution is the basis of that republic, I think that it is incumbent upon us in the Congress to make sure that what we do in the Federal Government is consistent with the Constitution. There is a procedure for amending it. We have done it a number of times. If we needed to do it in the future in an orderly process, I don't think anybody is opposed to that.

But doing things separate from that very orderly process of modifying the Constitution I would think would ultimately not be in the best interests of this Congress and the best interests of the country.

Thank you very much for what you have done, and thank you for your answers to my questions.

Mr. CHRYSLER. Thank you. We need to preserve that republic.

Mr. BARTLETT. I yield back my time. Thank you.

The CHAIRMAN. I thank the gentleman.

Ms. JOHNSON.

Ms. JOHNSON. Thank you, Mr. Chairman.

Mr. Chrysler, if you would share with me the private businesses that have shown an interest in the purchase of NIST laboratories and the functions, are you aware of any?

Mr. CHRYSLER. I am sorry, I am having a hard time hearing you over here.

Ms. JOHNSON. I am sorry.

Could you share with me the interest shown by some private businesses in the purchase of NIST?

Mr. CHRYSLER. I don't have, you know, specific examples. I believe it was one of the major newspapers did a survey that asked the question about dismantling the Department of Commerce, and by a 2-to-1 margin businesses, and these were all asked from CEOs from Fortune 500 companies, and by a 2-to-1 margin, 66-to-33, they said that dismantling the Department of Commerce would be the right thing to do.

Now, specifically as far as NIST and in privatizing those laboratories, there has been some examples of that in other countries around the world where they have done that and done it with more success than they ever anticipated doing it.

Ms. JOHNSON. That includes the nuclear reactor component as well?

Mr. CHRYSLER. No.

Ms. JOHNSON. Are you aware of these programs being duplicated in the private sector now?

Mr. CHRYSLER. Are we talking just NIST now, or are we talking, you know, in the Department of Commerce? There are 71 that are duplicated either in the Government, and all but three of them are duplicated either in the private sector and/or in the Federal Government.

Ms. JOHNSON. Could you share that list? I wouldn't ask you to go over it now.

Mr. CHRYSLER. Sure. Yes. I mean, things like people think that we get our weather information from NOAA. The fact of the matter is that 85 to 90 percent of the newspapers, the television stations and radio stations receive their weather information from private sector companies. Only a small percentage receive their weather information from NOAA.

Ms. JOHNSON. Well, in particular, the laboratories, do you think that the Government will save money by purchasing this information from the private industry?

Mr. CHRYSLER. Well, I am not sure that Government, I mean if we are talking about research laboratories, I am not sure that the Government needs that information. Private industry needs that information, and that is why private industry and certainly major corporations that surely have the funds to do that research and if the Government was not there handing out, opening up the checkbook and writing the checks, then the private sector industry would do that work.

Mr. MINGE. Would the gentlelady from Texas yield for a moment?

Ms. JOHNSON. Yes.

Mr. MINGE. You just made a statement that the substantial majority of the weather information came from private sources, not from NOAA. Do you know where these private sources obtain their basic weather data? Isn't it correct they obtain that from NOAA?

Mr. CHRYSLER. They receive it from the weather satellites that are currently put up or managed by NOAA. We see, as we look at satellite and satellite management in the Federal Government, there are three agencies that manage satellites. One is the Air Force, one is NASA, and one is NOAA. And if you look at the efficiency of each one of those organizations, you would see that in fact the Air Force does the most efficient job of managing satellites.

Mr. MINGE. But, in fact, NOAA is furnishing that basic data at this time to the private weather forecasting services. Wouldn't that be accurate?

Mr. CHRYSLER. I don't know. I don't know.

Mr. MINGE. I yield back.

Ms. JOHNSON. Mr. Chrysler, in my limited experience, limited knowledge of how the research and research labs function, is that once there are findings, then the commercialization that creates lots of jobs is taken over by private industry.

But prior to that, I wonder if there are these industries which you can identify that are willing to put up that kind of money to do the basic research prior to the commercialization period, the transference of that information.

Mr. CHRYSLER. I am just not sure I am understanding your question. Could you clarify it a little bit?

Ms. JOHNSON. Well, in many of the laboratories and many of the research programs, such as space, many, many products are commercialized from experience of that research, but most of the private industry companies that I have had, and I am from Dallas, we have a lot of national headquarters, and I have talked with a lot of them, there are a lot of headquarters in my district, many of them are not in a position or not willing to do the basic research. They are willing to make the products and the wholesale or retail components.

The CHAIRMAN. The time of the gentlelady has expired.

Mr. CHRYSLER. You know, the bottom line is, I guess, having been in business for 25 years and having created literally thousands of jobs, I'm sure the business community would be more than happy to just continue to let the Government fund those things rather than fund them themselves as long as the Government is willing to do that.

But I guess I ask the question. Are these programs worth having our children pay for them? Because we are not paying for them, our kids are paying for them. I think that is the question we ought to ask ourselves. I think we need to say to these major corporations, "You need to do your own research."

Ms. JOHNSON. That includes NIH?

The CHAIRMAN. The time of the gentlelady has expired.

The gentleman from Michigan, Mr. Ehlers?

Mr. EHLERS. Thank you, Mr. Chairman. Just a few questions, briefly.

In looking at the figures for the savings, I really question some of them. You say these were arrived at by the CBO?

Mr. CHRYSLER. Yes, they were.

Mr. EHLERS. I would appreciate it if you could provide a copy of the CBO report for me, and perhaps other members here are interested in that as well.

Mr. CHRYSLER. Certainly. I will be happy to do so.

Mr. EHLERS. I have some specific questions that arise out of that. [The following information was received:]

National Oceanic and Atmospheric Administration
Elimination of Commerce Department - Rep. Chrysler

23 May 1995

	1995	1996	1997	1998	1999	2000
Terminations:						
State Fisheries Grants	12,314	12,314	12,314	12,314	12,314	12,314
Fisheries trade promotion	1,500	1,500	1,500	1,500	1,500	1,500
OAR except for NWS functions	216,894	216,894	216,894	216,894	216,894	216,894
Aeronautical chart. (added 5/22/95)	13,180	13,180	13,180	13,180	13,180	13,180 (Aircraft servc)
Pollution research:						
Observation and Prediction	12,423	12,423	12,423	12,423	12,423	12,423
Estuarine and Coastal Assess.	38,281	38,281	38,281	38,281	38,281	38,281
All NOAA vessels						
NOAA Corps	62,011	62,011	62,011	62,011	62,011	62,011
Transfer from "P & D" account	30,000	30,000	30,000	30,000	30,000	30,000
Pres's '95 budget term. requests	55,500	55,500	55,500	55,500	55,500	55,500
	66,697	66,697	66,697	66,697	66,697	66,697
Spec. weather services subtotal:						
Agricultural	6,465	6,465	6,465	6,465	6,465	6,465
Marine Radiofax	2,318	2,318	2,318	2,318	2,318	2,318
Regional Climate Centers	500	500	500	500	500	500
Forestry	3,200	3,200	3,200	3,200	3,200	3,200
	448	449	449	449	449	449
Total Terminations - BA	515,265	515,265	515,265	515,265	515,265	515,265
John Webb's NOAA Accounts - BA						
"Promote and Develop" account	12,000	12,000	12,000	12,000	12,000	12,000
Fleet construction & Fish funds	25,000	25,000	25,000	25,000	25,000	25,000
Total BA	37,000	37,000	37,000	37,000	37,000	37,000
Total Terminations (BA)	552,265	552,265	552,265	552,265	552,265	552,265
Outlays (except for John's accounts)		309,159	448,281	484,349	515,265	515,265
Outlays (John Webb's accounts)		13,000	19,000	26,000	31,000	35,000
Total Outlays		322,159	467,281	610,349	546,265	550,265

Savings	1996	1997	1998	1999	2000	Five-year Cumulative
BA	552,265	552,265	552,265	552,265	552,265	2,761,325
OT	322,159	467,261	510,349	546,265	550,265	2,396,319

Eliminating the Economic Development Administration
for Michael Rubin, HBC

10-Mar-95

Rachel Robertson, CBO
226-2860

Assumptions: 1) no other drastic action would be taken (i.e., rescissions of unobligated and obligated funds, etc.)
2) as requisite amount of S&E would be appropriated to outlay the funds appropriated previously
Revolving Fund
This would be moved after yr. 2000, when there would be about 3-4 people managing it

Disaster Relief - some is done programmatically, some through supplementals. This estimate assumes no supplementals to EDA but also no changes to the authorization law. Program obligations are made within the year

This includes both EDAP and S&E accounts

Savings (in thousands)	1998	1997	1998	1999	2000	5-yr. Cumulative
Total BA	429,633	441,491	443,420	445,348	447,277	2,206,169
Total OF	27,946	116,820	238,709	337,462	426,215	1,138,852

	1986	1987	1988	1989	2000	5-year total
DOC Admin						
BA	27	36	36	36	36	173
OL	28	35	36	36	36	171
DOC OIG						
BA	13	17	17	17	17	80
OL	12	16	17	17	17	79
Terminate USTTA						
BA	13	17	17	17	17	79
OL	10	16	16	17	17	76
Terminate MBDA						
BA	33	44	44	44	44	208
OL	16	36	43	44	44	183
Terminate part of EXA						
BA	15	20	20	20	20	95
OL	13	19	20	20	20	91
Terminate part of ITA						
BA	61	68	68	68	68	321
OL	35	57	68	68	68	284
Terminate TA						
BA	7	10	10	10	10	47
OL	8	10	10	10	10	46
Terminate Information Infrastructure Grants						
BA	61	61	61	61	61	304
OL	1	37	52	61	61	211
Terminate Public Broadcasting Facilities and Equipment						
BA	29	29	29	29	29	145
OL	3	17	23	29	29	101
Terminate Endowment for Children's education						
BA	2	2	2	2	2	12
OL	0	1	2	2	2	9
NIST - Terminate ITS						
BA	523	523	523	523	523	2,615
OL	84	251	434	523	523	1,828
Total						
BA	774	827	827	827	827	4,061
OL	218	496	719	827	827	3,086
Some ideas discussed at meeting						
Census						
BA	(5)	(5)	(5)	(5)	950	930
OL	(4)	(5)	(5)	(5)	846	827
PTO						
BA	82	82	82	82	82	412
OL	45	82	82	82	82	378
Subtotal						
BA	77	77	77	77	1,032	1,342
OL	41	77	77	77	928	1,202
Grand Total						
BA	851	904	904	904	1,859	5,423
OL	258	572	797	904	1,755	4,287

Mr. EHLERS. The other question relating to that is you have total savings of 5 years of \$7.7 billion, whereas the overall budget of Commerce, if we don't do anything, is roughly 3 to 4 times that over that time period, depending on what assumptions you make.

So we are saving a quarter to a third of the money that is currently expended. Is that correct?

Mr. CHRYSLER. It works out to about 40 percent.

Mr. EHLERS. Forty percent. I guess it depends on the assumptions you make about the growth of the Commerce budget in the next 5 years if we don't do anything. The current budget is for \$4 billion. Five times that would be \$20 billion. If there is no growth, it is \$4.4 billion. So it would be \$22 billion. \$7.7 billion is about a third of \$22 billion. So that is about 33 percent.

But in any event, did you and your colleagues who worked on this take a look at how much could be saved maintaining the Department of Commerce and doing the same cost cutting you are doing here? In other words, you are downsizing. That is where the savings are coming from, from the downsizing and eliminating of functions.

Mr. CHRYSLER. With the amount of duplicative programs that were in the Department of Commerce, when you look at, you know, reinventing or downsizing, you know, you literally could eliminate 71 of the 100 programs, which gets you back to that same thing and/or what we find is things like NOAA, which is the major part of Commerce.

There are three programs that are in Commerce that are major programs. NOAA is one of them, obviously, that we are moving into the Interior Department. It should have been in the Interior Department except for Richard Nixon was upset with the Secretary of Interior at the time and he put it in Commerce. When we do our research and find out what happened and why that is even there, that is the reason.

We find that the other two major areas are Patents and Trademarks in Commerce. Patents and Trademarks is a self-funding agency, but they are required to pay a 25 percent stipend to the Department of Commerce just because they are in the Department of Commerce. That is about \$111 million last year, although the Department of Commerce only wants to acknowledge receiving about \$85 million of that. So I don't know what happened to the other \$26 million. We are still looking for that.

The other major agency in Commerce is Census, which the budget this year is about \$400 million for Census. I think Ron Brown made some comments about the cyclical nature of Census and how we would cut it out. The fact of the matter is Census is mandated by the Constitution, it has to be there. We just think that we ought to have it either in an independent agency that would collect statistics for the Government and share that information with the Government and with that process.

We think that we could save anywhere from 3 to 5 percent out of any other Federal bureaucratic budget just from not having rooms full of people sitting in front of computers putting in names and addresses and those kinds of things, but instead in fact getting that information from a central statistical agency within the U.S. Government.

Mr. EHLERS. A final question. Do you have a hall closet in your house?

Mr. CHRYSLER. I probably have several. They look like the Commerce Department, I have to admit. [Laughter.]

Mr. EHLERS. My point is simply I am not using this to argue for continuation of the Department of Commerce, but I think everyone needs a hall closet, and the Government has to have one department which is a catchall. Various States have different catchall departments.

Mr. CHRYSLER. I think most of us at home that have these hall closets, though, we also balance our budget, and this Federal Government isn't doing that, and that is need for dismantling the Department of Commerce.

Mr. EHLERS. That is the key objective.

Mr. CHRYSLER. Yes.

Mr. EHLERS. Regardless of whether it's this department or another one.

Thank you very much, Mr. Chairman.

The CHAIRMAN. Thank you, Mr. Ehlers.

Ms. Rivers.

Ms. RIVERS. No questions.

The CHAIRMAN. Mrs. Morella.

Mrs. MORELLA. Thank you.

I know a lot of work went into this bill. But I want to direct your attention to something that has been mentioned before. That is the National Institute of Standards and Technology. It is like 100 years old, if it is 1902 when it was started. It was the Bureau of Standards. It has performed exceedingly well. I know it has had Advanced Technology Programs and the Manufacturing Extension Program.

But looking even at the laboratories in the text of the bill itself, it says the laboratories of the Institute shall be transferred to the Commerce programs resolution agency. It sounds like the Resolution Trust Corporation.

I am just wondering, you know, as it talks about, "The resolution agency shall attempt to sell the property of the laboratories of the Institute within 18 months to a private sector entity and then if no offer to purchase property is received within the 18-month period, the agency shall submit a report to Congress containing recommendations on the appropriate disposition of the property and functions of the laboratories of the Institute."

Do you realize what that would do to demoralize people who are working for our competitiveness and who have contributed so much scientifically through NIST? Do you see what I am getting at?

Not only do I think it can't be done, not only do I think that trying to privatize in any way NIST is the wrong way to go because of its history and its accomplishments, but I also think the psychological demoralizing quality in the message it would send, and I wondered if you had considered that, whether you disagree with me completely on that, Dick, or not?

Mr. CHRYSLER. Well, you know, we tried to do this in a very thoughtful manner, Connie, actually. We looked at each one of these programs, we studied them, we made recommendations. We consulted, certainly, with the Senate and what they were doing

over there, certainly with the Budget Committee, and Commerce Department resolution agency is just a temporary agency that is set up in order to wind up the business of the Department of Commerce in a very thoughtful manner. It takes about 30 months to resolve all of the different businesses or the contracts of certainly the research labs and things like that.

So we are trying to look at it and not take a meat ax approach to this, as others have said. We are doing it in a very thoughtful manner, trying to wind it down.

Actually, I guess, you know, your comment about demoralizing the people in these agencies of going through this, I look more at what we are doing as far as demoralizing today the American taxpayer as they are continuing trying to shoulder this burden of this national debt that we have built up where every child in this country born today will spend \$187,000 in his or her lifetime just to pay the interest, their share of the interest, on the debt.

The fact that we will spend more money next year in this Congress on the interest on the debt than we pay for the Army, the Navy, the Air Force, the Marines, the FBI, the CIA, and the Pentagon, combined. That is demoralizing. That is demoralizing to the American people.

Mrs. MORELLA. I know. I recognize that almost 15 percent of the budget is interest on the debt.

Mr. CHRYSLER. That is what we are concerned about.

Mrs. MORELLA. But you have to look at what the payoff would be, whether or not privatizing is the way to go.

Have you visited NIST in Gaithersburg? I mean I would like you to go as my guest. I am serious about that.

Mr. CHRYSLER. I am sorry, have I visited?

Mrs. MORELLA. Have you visited NIST in Gaithersburg, Maryland? A subway ride.

Mr. CHRYSLER. I am trying to remember which one of our members of the task force undertook that particular portion of it.

Mrs. MORELLA. I would like to invite you. It would be very close, and I believe we can arrange it. Thank you.

Mr. CHRYSLER. I would love to do that, Congresswoman, seriously.

Mrs. MORELLA. Good. Good.

Mr. CHRYSLER. I am very interested in doing it.

Mrs. MORELLA. Thank you.

The CHAIRMAN. I thank the gentlelady.

Mr. Luther.

Mr. LUTHER. No questions.

The CHAIRMAN. Mr. Minge.

Mr. MINGE. I would yield my time to the gentlewoman from Texas, who had graciously yielded to me, in case she has additional questions.

Ms. JOHNSON. Thank you very much.

I am not opposed to privatization, nor am I opposed to cutting spending. But I do have some very major concerns about safety and dismantling the various laboratories that have been put together for the research, and I am certain that you have done quite a bit of study on this as you bring in the legislation.

I would like some of my anxieties to be allayed a bit by you explaining to me exactly how the privatization could take place in some of these very critical areas where there are nuclear power reactors and other very detailed research that really produces jobs.

I am keenly interested in those jobs, and I know that the only way we will continue in our age of technology to produce jobs is to continue research, and some of the research projects are quite expensive.

When I think about NASA and all the space exploration, but also I have to believe that as a result of that research we have saved many lives and we have produced many products. While it is expensive, I guess if we calculate all the dollars that that research has generated in jobs, it might possibly be worth it. To do this in the private sector does confuse me a bit.

But could you give me a little bit more enlightenment on that area?

Mr. CHRYSLER. Sure. You know, obviously the major corporations will do this research. Of course, any corporation, if the Government is going to do it for them, they will back off of it and let the Government do it. But major corporations, if they want to remain competitive in their field, they will step up to the plate if the Government is not there, and they will do this.

When it comes to job creation, certainly in this country, that is something I guess I can talk about from a firsthand perspective and know a great deal about.

Eighty-five percent of all the new jobs that are created in this country are created from employers that have less than 100 employees. That is where job creation happens in this country. It doesn't happen necessarily from major corporations who are receiving these grants from the Government.

So I think when we are talking about job creation, and I think it is what I call a universal law, it's called you never see an employee unless you see an employer first. You know, you have to have people to create jobs if you are going to have jobs, and I think if the Department of Commerce was in fact the voice for business, then it would be supporting the things that the business community feels that they need the most in order to have job creation in order to foster entrepreneurship.

I don't believe that it was big Government and/or big Government programs and/or big Government regulation that built this country into being the greatest country in the world. It, in fact, was free enterprise, capitalism, entrepreneurship, rugged individuals going out and risking what they have. That is what built this country into being the greatest country in the world, and I think that is what we are trying to get back to.

Ms. JOHNSON. Yes, sir, and I fully support that statement. But I guess, as you were speaking, in the back of my mind is the imaging process that came out of space exploration that has brought about mammograms and lots of other products, cancer treatment. Would you then expect private business to take over that kind of research?

Mr. CHRYSLER. I think in this conversation we have confused a couple of things with Commerce and a couple of other departments. Certainly, the nuclear power reactors you mentioned are managed

by the Energy Department. We are looking at that, too. Certainly, the other program, the imaging program, it is a NASA program, which is a standalone agency.

Ms. JOHNSON. Yes. You know, NIST does have a nuclear reactor, and I think that the general direction, because there was a proposal to eliminate Energy as well, and this particular bill, of course, focuses on the Department of Commerce, but at the same time, the nuclear reactor is a part of NIST, and there is a great deal of fear still with nuclear power. But you feel very certain, then, that private industry could take care of that.

The CHAIRMAN. The time of the gentlewoman has expired.

Mr. McHale.

Mr. MCHALE. Thank you, Mr. Chairman.

Mr. Chrysler, I share your concern for fiscal responsibility. I voted for the balanced budget amendment, for the line item veto, and for the Stenholm balanced budget. So I applaud your efforts to cut spending.

However, I would like to associate myself with the remarks of Congresswoman Morella. I really believe that NIST is not an expenditure, it is an investment. I am particularly concerned that your bill, H.R. 1756, would terminate the Manufacturing Extension Partnerships.

About a month ago, when this committee considered the issue of funding for MEP, it became apparent that the appropriators, principally the leaders of your part on the Appropriations Committee, had wisely found something in excess of \$80 million to fund MEP.

Mr. Boehlert and I, aware of that, sponsored an amendment that passed in this committee that said that, consistent with available funds, we would indeed like to continue supporting MEP. The amount of funding was left to some uncertainty, but we believed it to be in excess of \$80 million.

With that as an introduction, do you have any flexibility at all in terms of the willingness to continue MEP?

I am from Pennsylvania. We have had manufacturing extension programs since 1988. These are not theoretical considerations for us. We have a proven program that has been extremely well regarded by the business community in my district and throughout the State. It really has worked, and the dividends paid on the initial investment have been many times more than the amount of that initial investment.

So I guess I present to you a question that simply asks how deeply committed are you to the elimination of MEP, and in light of the previous action taken by this committee, do you have any flexibility in that particular area?

Mr. CHRYSLER. Well, I guess I am the proverbial messenger here with this bill. We are bringing a concept and an idea there is an awful lot of flexibility with this bill. Certainly, H.R. 2024, which is the Mica trade bill, running as a bill that will go lockstep with H.R. 1756 in order to create an office of trade, demonstrates the flexibility.

Certainly, some of the things that we did in the beginning of this bill which we needed to do to get concurrence with the Senate, the other body, they have now come around to where we were originally, as an example, wanting to look at more of an independent

statistical agency that standards and measures and Census and some of those departments would be put into.

So there is a great deal of flexibility, and I don't propose to have all the answers. I don't propose to say this is the way it's going to be. I am just one of 435 of us, and I am the messenger. I bring the message. Certainly, there is going to be a consensus amongst the majority of us.

Mr. MCHALE. If I could make this recommendation. Mrs. Morella a few minutes ago offered to take you out to NIST to view first-hand the work that is done by that agency. Similarly, I would recommend that you contact, and I would certainly urge her as well to contact you, Ms. Edie Ritter, who runs the Manufacturers Resource Center, the MEP program in my district. She is married to a former member of this committee, the Honorable Don Ritter, who preceded me in office.

I mention that only because I have absolutely no political loyalties here. I happen to be a Democrat; he was a Republican, the gentleman I defeated. His spouse runs this program and runs it very professionally. I think what she would tell you is that the business community in my district deeply appreciates the work that is done by MEP and is convinced that it is not a wasteful boondoggle, not a meaningless expenditure, but a true investment in technology transfer to the workplace and that we have countless proven instances where that technology transfer was fully commercialized and later very profitable.

I will ask Edie to contact you, and if you could bear that name in mind, she is a wonderful resource for practical information regarding the operation of this component under NIST.

Thank you, Mr. Chairman.

Mr. CHRYSLER. I appreciate that, Mr. McHale, and we make as many of those visits as we possibly can in our tight schedule this year, and we will continue to do that, and we will certainly accept that invitation.

The CHAIRMAN. Thank you, Mr. McHale.

Mr. Brown, you wished to just briefly question?

Mr. BROWN. Yes.

Mr. Chrysler, first let me just assure you that I believe that your efforts to shrink the size of Government and to eliminate waste and duplication are highly commendable and that you should continue to work on that in every way that you can.

On our side, we are not really opposed to balancing the budget. We may have some different ideas about how to do it.

I would like to point out that this committee in the past, with Mr. Walker's cooperation and my cooperation, have done everything we can to privatize Government programs. LANDSAT is an example, for example, and we are moving toward private launch services as much as possible for the space program, and we are definitely shrinking the space program, which by its nature has to be largely a Government program.

But you might be interested to know that from a budget level of \$15 billion, which is considerably more than Commerce over the next 7 years, it will shrink by about a third, about \$5 billion, which is more than the total cost of the Department of Commerce. In fact, if we could persuade you to take that \$5 billion home as your tro-

phy and say you have eliminated a Department of Commerce-size amount of Government, why, I think that would be a laudable thing to do.

But there are some things that we think do not contribute to the national welfare in eliminating some of the programs that you have heard praised here in Commerce and in fact were praised by the previous Secretary when she was Secretary. We don't really think would be good. I just say this, Dick, I am not raising questions for you about it.

But I would like at this point, since Mr. Ehlers had asked for you to provide the CBO estimates for the savings, and I had previously asked that the Department of Commerce's response to Mr. Dingell, which contains the OMB estimates, be put together in the record so that we can compare the differences.

I would like to have you look at them because one of the problems we have is you can get different estimates on anything around here, and you might as well learn that early in your congressional career and be guided by it to some extent.

Just as a last point, we had a little exchange earlier about how well the President is doing in shrinking Government in which it was pointed out by somebody on the Republican side that the civilian workforce has increased by 40,000 people.

The facts of the situation are that the Post Office Department has increased by 60,000, which is not under the President's control, the Department of Defense has shrunk by 120,000, the civilian workforce under the President's control has shrunk by 20,000.

So the total of shrinkage in the part of the Government under the President's control is 140,000 people.

I want that fact to be inserted in the record to offset the statement that the civilian Government or the Government under the President's control had not actually not shrunk at all. Again, this is a statistical matter. The Post Office is not under the President's control.

The CHAIRMAN. We will certainly have a lot of figures in the report.

Mr. CHRYSLER. A couple of quick comments, sir.

You know, certainly the majority of us, 300 of us in this Congress, voted for a balanced budget amendment, and so that is a good, strong bipartisan supported amendment.

Mr. BROWN. I voted for the budget agreement myself, Mr. Chrysler.

Mr. CHRYSLER. Yes. So, you know, I commend you for that. Certainly we are not looking for trophies in this request at all. We are trying to do something that is good for the American taxpayers.

Actually, the Department of Commerce gives away in outright grants about \$1 billion, almost \$1 billion a year this year, and it is the fastest growing part of the Commerce Department. If we do not have a Commerce Department for the next 50 years, then that will be \$50 billion that we just don't give away.

I think that goes far beyond the \$7 billion or \$8 billion that we are talking about saving, just not having that department give things away.

Certainly, I have had some good firsthand experience before I came to this Congress in Michigan to see what downsizing can do

and streamlining can do. In fact, in dismantling the Department of Commerce in one of my stops was to speak with the President, President Clinton, about the dismantling of the Department of Commerce, and he said at the time, he says, "Well, gee, the Department of Commerce is really creating money for the Government."

I said, "Well, that is the trade portion of it. That is 4 percent of it. That's why we are going to take and make an office of trade so we can do it better than we have ever done it before." I said, "What I am talking about is the other 96 percent."

He says, "Well, I've got to cut about 200,000 people out of this Government to meet my objective. So maybe this is a good place to start."

The CHAIRMAN. The time of the gentleman has again expired.

Just let me clarify a couple of issues with you, Mr. Chrysler.

First of all, the dismantling of the Department of Commerce was adopted by the Budget Committee and the final budget as recommended by both houses. Is that correct?

Mr. CHRYSLER. The House and the Senate, yes.

The CHAIRMAN. It is your understanding at the present time that it is the intention of the process to move forward and include this as a part of reconciliation. Is that correct?

Mr. CHRYSLER. Yes, it is.

The CHAIRMAN. So that we will either have something that will be reported from the Government Reform Committee, either your bill or some other bill, that will be included as a part of that reconciliation process, or under the rules that the Budget Committee will draft. Is that correct?

Mr. CHRYSLER. That is correct.

The CHAIRMAN. Anything that the authorizing committees fail to do with regard to the budget process would then be handled by the Budget Committee. Is that correct?

Mr. CHRYSLER. Yes, it is.

The CHAIRMAN. So your understanding of the situation is, if the Government Reform Committee as constituted does not get the recommendation from us to move forward on, then your bill would be the principal instrument that would be before the Budget Committee for consideration for the dismantling activity. Is that your understanding of the present situation?

Mr. CHRYSLER. Yes, it is.

The CHAIRMAN. Now, do I understand correctly that you would, in fact, have some flexibility to, for instance, this committee did have reservations about some of the proposals that have been put forward with regard to NIST and with NOAA, that there is some flexibility in your proposal to look at an independent agency to handle those science functions or some other form of spinoff?

Mr. CHRYSLER. Absolutely.

The CHAIRMAN. You have listened to the testimony a little bit here today. When your task force was considering, for example, the labs at NIST, was there an understanding at that point that the standards work is something where there would be a problem in terms of private sector activity, given the nature of the competitive environment, that if you had one company making decisions about standards that would affect another company, that that, in fact, could result in a very, very dicey situation?

Mr. CHRYSLER. Yes. You know, the Bureau of Standards has always been, I guess, proposed in our bill and in the alternatives that I have heard always remain. It was a question whether it remains in a bureau of statistics or whether it remains.

The CHAIRMAN. I understand the point. But how does the Bureau of Standards operate without its laboratories under your approach?

Mr. CHRYSLER. The Bureau of Standards certainly would have the opportunity to go out and contract with those laboratories, whether they be in the private sector or the public sector, in order to gain that knowledge.

The CHAIRMAN. But, for example, and, you know, I don't know if this is the case, but, for example, if General Motors bid and had the laboratories to set the standards for the automotive industry, it does seem likely that both Chrysler and Ford might have some concerns about General Motors setting the standards for their particular competitive position.

Now, that is the problem that we run into, that if the laboratories are being operated by a competitor of somebody that has a standards issue, that it could end up being a very dicey situation.

Mr. CHRYSLER. Certainly in those cases, and many of the laboratories would be bought by independent companies, many of the laboratories have to be independent because of the nature of the work that they do, and certainly in competitive instances that you have just talked about there, that would be done in an independent agency rather than by one of the corporations.

The CHAIRMAN. But our problem is that standards as a whole are a very, very broad issue that literally covers the entire competitive environment, and while it would be fine to talk about independence, somebody has to be independently capitalized then to be able to bid on a laboratory not knowing what the work is that they might have to do.

I mean at one point you might be measuring microchips, at another time you might be measuring the amount of pollution that would be permitted to go through a radiator or something. I mean there are a whole host of things here that it would be very difficult for somebody to find capital to invest in, not knowing what the next standard is that they might have to set.

Mr. CHRYSLER. The thing that I have testified here in my testimony, in fact, as we have said that the people who would buy these independent labs and run them independently would have to continue the same type of work that they were currently doing. So that would be preserved in that transition.

The CHAIRMAN. Well, I guess the question is but who is going to put capital up front to purchase the labs, given the nature that the downstream opportunities to make money on it are a pretty dicey proposition? I mean Ms. Johnson asked you a little while ago whether or not you are aware of any companies that are out there that are bidding to do that kind of work, and that is really my question.

I am not aware of anybody that is likely to be anxious to put up capital for the kind of enterprise that we are talking about here.

Mr. CHRYSLER. Well, actually, one that I am personally involved with right now is my company manufactures nickel metal hydride batteries, and we need those batteries tested, and those batteries

are in demand by literally all the car companies. So you have to go to a U.S. AVC independent lab in order to have that testing done.

The CHAIRMAN. I understand that, but would you then be satisfied to have a standard set by, for instance, a competitor that might be in with a different kind of battery? Let's say they came up with a zinc oxide battery or something that was a totally different technology and set the standard and said that battery will be allowed in the marketplace, your nickel hydride battery won't be allowed in the marketplace.

Mr. CHRYSLER. We deal with that right now, Bob. You know, we have the SAE that sets standards for the automobile industry. Certainly, in the battery business, that is going on right now. People are saying, gee, a battery has got to be this and such and such size, and we are saying not necessarily.

Everything is in our business. We do our own testing so that we know what the results are going to be before we send it to that independent lab so that when the numbers come out of there, there is some correlation with ours because, you know, you can't as a company invest this kind of capital unless you know what the results are.

The CHAIRMAN. You make a good point with regard to products, and in fact I think voluntary standards with industries make a lot of sense in terms of finding a way to do actual product development. But the fact is that there are underlying issues with regard to standards even before you to the product development issue, and that is where the Bureau of Standards really comes up. You know, we are discussing things here that are more product related, and I probably have confused the issue in so doing. I didn't mean to do that.

But it is the underlying standards, and there is some question about whether or not you could have, for example, the kind of nuclear reactor capacity at a laboratory that the Bureau of Standards presently operates, or whatever other kinds of facilities that you would need in the future to measure, for instance, things at the molecular or cell level.

Mr. CHRYSLER. A lot of those things, Bob, get into, you know, process. They get into, quite frankly, what you are really starting to move into there, is a lot of the patents and trademarks issues, you know, certainly, which we deal an awful lot with.

You know, the reason that we can manufacture the product we are manufacturing for less money and more quantity is because of our process trademarks or process patents that we have used in developing this technology.

The CHAIRMAN. But fundamentally, it seems to me that in global competition, it is the ability of our country to continue to do what we have done for so long, and that is set standards for the world. As long as we are setting standards for the world, the ability of our particular companies to be able to compete is enhanced. If in fact we give that up to other people either because we don't have the appropriate facilities because people haven't invested in it or for a variety of other reasons, we have in fact crippled ourselves.

I think what this committee wants to do is make certain that we don't in the process of dismantling the Commerce Department end

up crippling ourselves in an area where we have provided world leadership for virtually the entire century. I mean the Bureau of Standards has been around for most of this century, and it has been a fairly successful model for helping us set the world standards, and our attempt is not to cripple that.

What we would like to do is be able to work with you in designing a methodology for maintaining the laboratory functions that are necessary to have a vibrant Bureau of Standards.

We thank you very much for testifying.

Mr. CHRYSLER. Thank you.

The CHAIRMAN. I appreciate the fact that many of you have waited around.

We are going to move to Panel No. 3 at the present time, and we would ask Admiral Watkins, Mr. Wolff, Dr. Knauss, Dr. Hallgren, and Mr. Smith to come to the table, please.

Obviously, we would like you to summarize your statements. All of your statements will be made part of the record. A summary would allow us to get to the questions. We will go in the order that I announced the names. Admiral Watkins first, Mr. Wolff, Dr. Knauss, Dr. Hallgren, and Mr. Smith.

So, Admiral Watkins, would you lead off, please?

**STATEMENT OF ADMIRAL JAMES D. WATKINS [RETIRED],
FORMER SECRETARY OF ENERGY; PRESIDENT, CONSORTIUM FOR OCEANOGRAPHIC RESEARCH AND EDUCATION,
WASHINGTON, DC**

Admiral WATKINS. Thank you, Mr. Chairman.

Members of the committee, on behalf of the 34 oceanographic institutions which make up the Consortium for Oceanographic Research and Education, I would like to thank you for this opportunity to testify at this important hearing.

These 34 CORE, as we call it, oceanographic institutions constitute a large percentage of the intellectual and material assets of the U.S. oceanographic community. Representatives of CORE include the Deans and Directors of the nation's premier oceanographic research institutions, and each is a recognized leader in the field.

CORE was established to further ocean research and education. We are now faced with a fight to preserve virtually every element of ocean science. While we all understand the environment of today's fiscal policy and the difficult choices that have to be made to meet current budgetary goals, I am highly concerned that we as a society will underestimate the value of our investment in the oceans.

The U.S. stands to gain more from the oceans in the coming decades than from any other natural resource. Nations around the world are coming to the same inevitable conclusion. More and more coastal nations are turning to the oceans as a primary resource base for food, energy, recreation, and a medium for international trade.

More and more countries are realizing the importance of the oceans to significant economic sectors, like agriculture and tourism, through the oceans' role in driving world climate and spawning deadly weather events.

Compounding this imperative are statistics showing substantial increases in world coastal populations, which now stand at approximately 50 percent of the total. The need for a broad understanding of the ocean, integrating many disciplines of science, has never been greater.

By necessity, applications of ocean science are also becoming more broadly distributed than ever before. Whereas in the past issues of national defense were the central compelling drivers for understanding the oceans, there is now an equally important, but more diffuse, urgency. We have migrated beyond such traditional applications as military operations and fisheries to areas including recreation, coastal hazard mitigation, biotechnology, and transportation. This movement is reflected in the distribution of ocean science responsibilities throughout the Federal Government. At my count, nine agencies contribute the vast majority of our investment in oceanographic research. A breakout by percentages for these nine agencies is contained in my formal statement.

As shown, NOAA's contribution is about one-sixth of the total. Another four agencies also have operational interests in the ocean. This multiple agency requirement to seek new knowledge of the oceans to carry out their mission responsibilities is more than for virtually any other single scientific discipline. The reasons are clear. The oceans are fundamentally important to aspects of everyday life that most of us would never imagine.

Gaining a more comprehensive understanding of the oceans, including their interactions with other natural systems, atmospheric and terrestrial, provides a foundation for a spectrum of economic sectors, protects life and property, supports national defense, and adds to our quality of life.

This concept is, in turn, reflected in the distribution of ocean research within the Federal Government. Yet I must point out that the ocean science portion of the Federal basic research budget has remained constant at approximately \$525 million in constant 1995 dollars for the past 10 years, while the basic Federal research investment has gone from \$8 billion to \$14 billion in constant dollars.

In other words, we have already cut in half the percentage that ocean science plays in basic Federal research.

That brings us back to today's debate; more specifically, the fate of NOAA as described in the Chrysler bill. As I alluded, there is an interacting and integrated mosaic of Federal agencies involved in ocean sciences in pursuit of specific objectives.

I would like to say, in view of some comments I heard earlier, that these are not necessarily redundant in any way. Some perhaps are, but certainly in aggregate they are not redundant.

As the central Federal agency for oceans and atmosphere, NOAA is the only agency with a directed ocean mission and serves as a focus for oceans in the Federal Government.

Additionally, NOAA has many specific missions which are vital to the Nation, including, among others, management of marine fisheries, weather prediction, and coastal stewardship. The success of these and other NOAA missions are directly reliant upon a strong fundamental understanding of Earth systems as obtained from basic research efforts performed and supported by NOAA.

Although NOAA has suffered from inclusion in the Department of Commerce and has evolved in balkanized internal structure which may impede some operations and interactions, the academic research community strongly believes that the Nation needs to have a central ocean/atmosphere science agency, and that an agency, like NOAA, can fulfill that purpose.

The couplings between oceanic and atmospheric processes that have been demonstrated over the last decade and the resulting exponential advances in understanding of weather, climate and environmental prediction, have made it abundantly clear that the ocean and atmosphere are integrally linked and should be maintained within a single agency.

The Stratton Commission, whose report was entitled "Our Nation and the Sea. A Plan for National Action," envisioned this 25 years ago and made a wise recommendation for such an agency. Given our advanced understanding, this recommendation is perhaps even more persuasive in today's debate.

There are several specific activities within NOAA that the academic community consider crucial and which would be done in by the Chrysler bill. NOAA's long-term oceanographic and atmospheric monitoring programs are extremely important, as they provide high-quality, valuable scientific data tied to such enormously significant issues as tracking and predicting ocean events that disrupt normal weather patterns around the world. These are operations which can only be carried out on the appropriate scale by a Federal organization.

Similarly, the management and distribution of the large data sets generated through such environmental monitoring must be maintained within a centralized oceanographic/atmospheric agency. Dr. Knauss, as the former head of NOAA, provides more specifics on this and others in his testimony.

Through partnerships with academia, NOAA research programs have made remarkable progress in understanding the oceans and supporting specific NOAA environmental prediction and stewardship missions. From these programs we have learned about issues as diverse as the diseases ravaging oyster populations in the Chesapeake Bay, the natural mechanisms which sustain coastal fisheries, the physical structure of undersea reserves of natural gas, and the feasibility of predicting how well the oceans can absorb anthropogenically derived CO₂.

Ocean and atmospheric scientists within and sponsored by NOAA have also learned how to predict climate variations up to a year in advance in some regions of the Earth with dramatic economic benefits in agriculture.

In conclusion, we should step cautiously and logically when looking to the disposition of NOAA. Casting NOAA piece-meal to several agencies will have two decidedly disadvantageous effects. One, it will remove the established focus for oceans and atmosphere in the Federal Government; and, two, it will separate inherently linked oceanographic and atmospheric programs, resulting in the obliteration of research and operations key to such fundamental national priorities as economic development, for example, fisheries; safety, for example, navigation; and quality of life, for example, weather forecasting.

NOAA, as it exists, is not perfect, and there should be adjustments to enhance its effectiveness. The National Academy of Sciences has reviewed many aspects of NOAA and made suggestions in this regard. In fact, I will note that about half a dozen reports surrounding NOAA have been made by the National Academy over the last few years, almost, I think, five out of those six were reported out last year, and they are excellent recommendations on what needs to be done to enhance efficiency.

Senator Roth is moving a bill on the Senate side that maintains the agency while proposing specific actions to increase efficiency and effectiveness, which I applaud.

I would like to work closely with this committee to identify the key components that must be resident in an ocean/atmosphere agency, as viewed by the academic community and assure that this resultant body is functional and efficient.

The oceans are a resource we will increasingly rely on in the coming decades. We need to be aware of this fact and plan accordingly. I believe that the Government of a great island nation like ours must maintain an ocean/atmosphere agency somewhere in its structure, and given the broad range of operational missions associated with the oceanic and atmospheric research, this should take the form of an independent agency in the near term. If the dust ever clears around the ongoing Cabinet reduction debates, perhaps NOAA functions could reside elsewhere, as long as they remain an integral body.

Thank you, Mr. Chairman.

[The prepared statement of Admiral Watkins follows:]

Testimony of

Admiral James D. Watkins, USN (Ret.)

**President, Consortium for Oceanographic
Research and Education**

presented to the

House Science Committee

September 12, 1995

Admiral James D. Watkins, U.S. Navy (Retired)

President, Joint Oceanographic Institutions
and
President, Consortium for Oceanographic Research and Education

Admiral Watkins became President of the Joint Oceanographic Institutions (JOI) in September 1993. JOI collectively represents the world's ocean research institutions and has been at the forefront of coordinating the international collaborative research programs in deep ocean sampling since 1976. He also serves as President of The Consortium for Oceanographic Research and Education (CORE) a group established on October 1, 1994 and dedicated to help provide an effective and unified voice, at the national level, in support of institutions, public and private, that make up the U.S. ocean science and technology community.

Prior to his work at JOI and CORE, Admiral Watkins served under President George Bush as the sixth Secretary of Energy (1989-1993) and as Chairman of the Presidential Commission on the Human Immunodeficiency Virus Epidemic (1987-1988). As Secretary, he helped to develop the first comprehensive National Energy Strategy.

Born in 1927, James D. Watkins graduated from the United States Naval Academy (1949), received his Master's degree in mechanical engineering (1958), and completed a reactor engineering course at the Oak Ridge National Laboratory. He became the twenty-second Chief of Naval Operations as selected by President Ronald Reagan in 1982. His tours as a flag officer included Chief of Naval Personnel, Commander of the Sixth Fleet, Vice Chief of Naval Operations, and Commander-in-Chief of the Pacific Fleet. He has been decorated with several Distinguished Service and Legion of Merit medals as well as the Bronze Star with combat "V."

Admiral Watkins combines extensive military experience, proven administrative skills, and a vast knowledge of the ocean sciences and our educational system.

Mr. Chairman and members of the Committee, on behalf of the Consortium for Oceanographic Research and Education (CORE) I would like to thank you for the opportunity to submit testimony for this important hearing. I believe that this is a very timely and important hearing given the nature and scope of the proposal being discussed.

Before addressing the specific issues before the Subcommittee, I would like to provide a brief description of CORE and its missions. CORE consists of 34 oceanographic research and education institutions constituting a large percentage of the intellectual and material assets of the oceanographic community. Representatives to CORE include the Deans and Directors of the Nation's premier oceanographic institutions and each is a recognized leader in the field. CORE was organized to further oceanographic research and education, with specific missions to:

- Promote, encourage, develop and support efforts to advance knowledge and learning in the science of oceanography and to disseminate such knowledge to the scientific community and to the public;
- Facilitate the formulation of goals, policies and objectives and provide advice and management for educational and research programs and facilities in oceanography and related fields; and
- Promote the exchange of information and knowledge to create, foster and encourage cooperative efforts among members of CORE and other U. S. scientists and federal, state and local agencies.

To address these missions, CORE seeks to:

- Foster membership by the U. S. academic institutions actively involved in research and education in oceanographic science and technology;
- Obtain grants from government and private sources to support the development of partnerships in oceanographic research and education;
- Involve the private sector in an advisory and participatory role for CORE as a critical linkage between the government agencies, academia and the marine industries; and

- Actively work with policy setters and decision makers on oceanographic research and education issues.

While CORE was originally established to further ocean research and education; we are now faced with a fight to preserve virtually every element of ocean science. While we all understand the environment of today's fiscal policy and the difficult choices to be made to meet current budgetary goals, I am highly concerned that we as a society will underestimate the value of our investment in the oceans.

The U. S. stands to gain more from the oceans in the coming decades than from any other natural resource. Nations around the world are coming to the same inevitable conclusion. More and more, coastal nations are turning to the oceans as a primary resource base for food, energy, recreation and a medium for international trade. More and more, countries are realizing the importance of the oceans to significant economic sectors, like agriculture and tourism, through the oceans role in driving world climate and spawning deadly weather events. Compounding this imperative are statistics showing substantial increases in world coastal population, which now stands at approximately 50 percent of the total. The need for a broad understanding of the ocean, integrating many disciplines of science, has never been greater.

By necessity, applications of ocean science are also becoming more broadly distributed than ever before. Whereas in the past issues of national defense were the central, compelling drivers for understanding the oceans, there is now an equally important, but more diffuse urgency. We've migrated beyond such traditional applications as military operations and fisheries to areas including recreation, coastal hazard mitigation, biotechnology and transportation. This movement is reflected in the distribution of ocean science responsibilities throughout the Federal government. At my count, 9 agencies contribute the vast majority of our investment in oceanographic research. This portion of the Federal basic research budget has remained constant at approximately \$525 million (constant 1995 dollars) for the past 10 years...this out of a total basic research investment of \$14 billion. Another four agencies have operational interests in the oceans, but conduct little research. (A table outlining the missions and investments of each agency is attached). This is more than for virtually any

other single scientific discipline. The reasons are clear. The oceans are fundamentally important to aspects of everyday life that most of us would never realize. Gaining a more comprehensive understanding of the oceans, including their interactions with other natural systems (atmospheric and terrestrial), provides a foundation for a spectrum of economic sectors, protects life and property, supports national defense and adds to our quality of life. This concept is, in turn, reflected in the distribution of ocean research within the Federal government.

That brings us back to today's debate and, more specifically, the fate of NOAA if the Department of Commerce is dismantled. As I alluded, there is an interacting and integrated mosaic of Federal agencies involved in ocean sciences in pursuit of specific objectives. As the central Federal agency for oceans and atmosphere NOAA is the only agency with a directed ocean mission and serves as a focus for the oceans in the Federal government. Additionally, NOAA has many specific missions which are vital to the Nation including among others; management of marine fisheries, weather prediction, and coastal stewardship. The success of these and other NOAA missions are directly reliant upon a strong fundamental understanding of earth systems, as obtained from the basic research efforts performed and supported by NOAA.

Although NOAA has suffered from inclusion in the Department of Commerce and has evolved a balkanized internal structure which may impede some operations and interactions, the academic oceanographic community strongly believes that the Nation needs to have a central ocean-atmosphere science agency and that an agency like NOAA can fulfill that purpose. The direct linkages between ocean and atmosphere that have been demonstrated over the last decade and resulting exponential advances in understanding of weather, climate and environmental prediction have made it abundantly clear that ocean and atmosphere are integrally linked and should be maintained within a single agency. Additionally, problems within the existing agency, such as the lack of formal connectivity between research and operations, can be resolved as part of a more thoughtful legislative package determining NOAA's future.

There are specific activities within NOAA that the academic community considers crucial. NOAA's long-term oceanographic and atmospheric

monitoring programs (including those which would be terminated under sections 211(g) and (j) of H.R. 1756) are extremely important as they provide invaluable scientific data tied to such enormously significant issues as tracking and predicting ocean events that disrupt normal weather patterns around the world. These are operations which can only be carried out on the appropriate scale by a Federal organization. Similarly, the management and distribution of the large data sets generated through such environmental monitoring must be maintained within a centralized oceanographic-atmospheric agency (the proposed privatization of these centers, in section 211(l)(1), would prove unmanageable).

NOAA's oceanographic extramural basic research programs including the Coastal Ocean Program, the Global Change Research Program, the National Sea Grant College Program and the National Undersea Research Program, through partnerships between NOAA and academia, have made remarkable progress in understanding the oceans and supporting specific NOAA environmental prediction and stewardship missions. I have attached a short description of the specific programs mentioned emphasizing the importance of each of these programs. From these programs we have learned about issues as diverse as the diseases ravaging oyster populations in the Chesapeake Bay, the natural mechanisms which sustain coastal fisheries, the physical structure of undersea reserves of natural gas, and the feasibility of predicting how well the oceans can absorb anthropogenically derived CO₂. Ocean and atmospheric scientists sponsored by NOAA have also learned how to predict climate variations up to a year in advance in some regions of the earth, with dramatic economic benefits in agriculture. Because science projects within these programs are selected through peer-review, competition ensures that the best science is supported and duplication is minimized. In the case of research conducted by academic scientists, costs are often contained as project funding is efficiently leveraged by other funding sources. I believe these programs could be used as a model for successful research throughout the agency but under section 211(j) these programs would, at best, be delayed many years, and at worst, be eliminated.

NOAA-supported projects performed by the academic research community have a defined duration while placing no additional personnel requirements on the agency. Perhaps most important, these same programs play a direct role in

expediting the training of the next generation of scientists through graduate assistantships and fellowships as exemplified by the National Sea Grant College Program within the Office of Oceanic and Atmospheric Research. Because peer review ensures that funds are awarded to the best scientists, the graduate students supported receive the best training available.

Conclusion

We should step cautiously and logically when looking to the disposition of NOAA. Casting NOAA piecemeal to several agencies, as directed in HR 1756, will have two decidedly disadvantageous effects: 1) it will remove the established focus for oceans and atmosphere in the Federal government, and 2) it will separate inherently linked oceanographic and atmospheric programs resulting in the obliteration of research and operations key to such fundamental national priorities as economic development (e.g., fisheries), safety (e.g., navigation), and quality of life (e.g., weather forecasts).

As I stated earlier, NOAA as it exists is not perfect, and there should be adjustments to enhance its effectiveness. The National Academy of Sciences has reviewed many specific aspects of NOAA and made suggestions in this regard. NOAA research must become formally associated with and accountable to the mission of the agency. In simple terms, this translates to a well established and highly visible linkage between the operational components of the agency and those components responsible for research.

The oceans are a resource we will increasingly rely on in the coming decades, we need to be aware of this fact and plan accordingly. I believe that this government must maintain an ocean-atmosphere agency, preferably as an independent agency, that can effectively guide the use, prediction and protection of our ocean resources.

**AGENCIES INVOLVED IN SUPPORT OF ACADEMIC OCEAN SCIENCES
RESEARCH COMMUNITY**

(Source is the Ocean Studies Board of the National Research Council)

AGENCY	MISSION WHICH IS SUPPORTED BY OCEAN SCIENCES RESEARCH	\$M TO ACADEMIC OCEAN SCIENCES RESEARCH in FY95 not including ships and satellites	APPROXIMATE NUMBER OF PRINCIPAL INVESTIGATORS SUPPORTED
NSF	Basic research in all disciplines	193.37 (37%)	1500
ONR	National security	103.21 (20%)	800
NOAA	Fisheries, weather, coastal zone management, navigation	79.50 (15%)	600
EPA	Pollutant dynamics, environmental protection, environmental monitoring	41.00 (8%)	300
NASA	Ground truthing for satellite observations of sea surface; large scale oceanographic observations	38.90 (7%)	300
USGS	Coastal erosion and hazard mitigation, mapping, hard mineral resources	36.49 (7%)	250
MMS	Exploration and development of oil and gas resources on outer continental shelf	13.40 (3%)	100
DOE	CO ₂ budget, energy sources and transport	11.30 (2%)	85
ARPA	Advanced technology demos, industry coordination	7.00 (1%)	50
USACoE	Ports and harbor management, dredging	negligible	negligible
USCG	Coastal search and rescue, law enforcement	negligible	negligible
Oceanog. of Navy	Operational navy - forecasts of environmental conditions	negligible	negligible
CLA	Access/exploitation of declassified data	negligible	negligible
TOTALS		\$524.17M	2100 (see note)

Note: The total number of scientists does not equal the sum of the numbers in the column, since most scientists receive funding from multiple agencies

*R. Spinrad
Consortium for Oceanographic Research and Education
July 25, 1995*

NOAA Coastal Ocean Program

The Coastal Ocean Program (COP) was begun by NOAA in 1989 as an innovative approach to coordinate science activities of the five NOAA offices and the community of non-federal scientists, mainly in academic institutions. Initially funded at \$6.4 million, the program has grown to \$12 million.

From its inception, the COP has applied peer review in selection of projects funded, both intramural and extramural, and has been subject to high level oversight and review by the National Research Council (NRC) of the National Academy of Sciences. A 1994 NRC report gave the COP high marks for quality, appropriate focus, and responsiveness. It indicated that the COP has filled "a unique niche" and "has advanced understanding and created useful products in a number of strategic areas." It noted that an important aspect of the COP is that it "explicitly encourages NOAA-academic partnerships in coastal research" thereby taking advantage of the resident university expertise and reducing the need for permanent Federal employees.

The COP has supported high quality, relevant research on coastal fisheries, coastal ecosystem health, and environmental forecasting. Over its seven year history 44% of its funds have gone to support extramural research by 156 academic scientists around the country. The following are areas of research COP currently addresses:

Toxic Chemical Contamination - In areas showing elevated levels of contaminants, COP supports a series of comprehensive field surveys to understand the effects of contamination as well as supporting development of improved bioindicators which allow more accurate and faster assessment of contaminant-induced stress in fish and shellfish.

Nutrient Enrichment - COP supports the study of the levels and impacts of nutrients flowing into the Gulf of Mexico, addressing the dynamics, controlling factors and effects of nutrient over-enrichment (such as from runoff of agricultural fertilizers) in coastal and estuarine areas.

Estuarine Habitats - COP conducts research to understand coastal habitat functions, impacts from natural and human-induced activities (such as coastal zone development and recreational boating) and their susceptibility to restoration.

Advancing Fishery Prediction - COP funds research to improve understanding of the factors that influence fish population levels. By understanding sources of natural variation in fish populations, scientist can

supply fisheries managers with predictions of fish populations to be used in defining allowable catch for a given species.

In its short life, the COP has expanded knowledge and improved the quality of science within the agency, as a result of peer review and federal-academic scientist collaboration. Eliminating the extramural portion of the program, as proposed in the House Appropriations Committee FY 1995 rescission, would almost certainly result in NOAA canceling the program entirely.

NOAA Global Change Program

In 1982, the most intense El Nino of the century was well under way before experts even realized that it was happening. It caused thousands of deaths and billions of dollars in damage worldwide. Back then -- only a dozen years ago -- not many people throughout the world had ever heard the term "El Nino."

Since then, many of us now understand that the El Nino/Southern Oscillation is a naturally occurring cycle produced by the complex interplay between the ocean and atmosphere in the tropical Pacific. And we have learned that El Nino has direct impacts on the climate of more than half the planet. It affects the onset and intensity of the Indian monsoon; the frequency, severity and paths of storms in the Pacific; the viability of commercial fisheries; and the occurrence of regional droughts, forest fires, floods, storms and weather patterns from Indonesia, Australia and southern Africa to South America and the United States.

In a stunningly short time, our knowledge of El Nino has advanced so quickly that we have developed computer models that can predict El Nino with a great degree of accuracy. Armed with such forecasts, policy makers in South America and Australia -- countries directly affected by El Nino have had the necessary time and information to store grain, plant certain crops, conserve water, alert fishing fleets, reinforce infrastructure against flooding or otherwise devise strategies to mitigate the adverse socio-economic impacts caused by El Nino's climate fluctuations. In recent years, we have begun to see how the effects of El Nino percolate into more far-flung regions of the world. We now have evidence that the El Nino cycle affects corn crops on which millions of people depend halfway around the globe in southern Africa. We are starting to piece together how El Nino rearranges weather across the United States, causing unusual storm and rainfall patterns that lead to flooding and drought.

This has been an enormous scientific breakthrough that has already saved lives and money and whose potential to save even more looms large. It is the tangible fruit of years of research sponsored by NOAA's Global Change Program.

Our advances on El Nino have been exciting and beneficial, but El Nino is just a part of the Earth's complex climate system. Our knowledge of how Earth's climate system works is rudimentary. It is like living in a house without knowing how much fuel the oil tank holds or where the thermostat is or how sensitive it is. Perhaps a small rise in global temperatures in itself may not be of great concern, but what if it changes the frequency or intensities of El Ninos, for example? The impact on society would be enormous. There is ample evidence that the Earth's climate system has frequently changed in the past -- dramatically and within a human lifetime. Could the accumulation of greenhouse gases or changing land-use patterns push the climate system past a certain threshold and into a radically different way of operating? We can't answer those questions

without understanding the complex plumbing, heating and ventilation components that interact to create Earth's climate system.

Clues to this understanding are locked in the annual growth rings of trees; in chemical changes accruing over thousands of years in the skeletons of corals throughout the world's oceans; in sediments deposited on the ocean floor; in bubbles of ancient atmospheres frozen into glaciers. Piece by piece by piece, scientists funded by NOAA's Global Change Program have been extracting these clues and assembling a fuller picture of how Earth's climate system functions. It is a painstaking process, like much scientific endeavor, whose progress is not necessarily incremental: Breakthroughs occur as many pieces come together and a new picture comes into focus — as the example of El Nino research demonstrates.

Shutting the door to sustained progress in global change research is like sitting in a cornfield or an orchard for five days in the middle of summer and believing that it has always been this way and always will. Knowing that winter is coming gives us the perspective and motivation to take steps to avoid crop failure or to improve crop yields next summer. Basic research is like farming for knowledge: If you don't provide funds to plant the seeds and do the plowing, you must be prepared to face the consequences of next year's poor harvest.

From Biblical days, life has always depended on the climate. The impact of climate fluctuations depends wholly on society's ability to adapt to the shifts. Our ability to adapt depends on our understanding of the climate. As the world has become stressed by limited resources and rapid population growth, the climate's potential to disrupt human society grows larger. Storms in California affect many more people and cause much more monetary damage today than they did a generation ago. The research supported by NOAA's Global Change Program provides the basis on which we will make wise long-term decisions that will ensure and improve our quality of life.

NOAA National Undersea Research Program

The National Undersea Research Program (NURP) is the nation's only program dedicated to *in situ* underwater research in the coastal oceans and Great Lakes. NURP's mission is to increase knowledge essential for the wise use of oceanic, coastal, and large lake resources through direct sampling, observation, and experimentation from within the marine environment. Such new approaches to provide data over a broad range of scales, in both space and time, are needed to make difficult resource management decisions; NURP leads the nation in developing these approaches.

Although two other agencies (National Science Foundation and the U.S. Navy) provide modest support for coastal undersea research, NURP remains the only federal program dedicated to undersea research throughout the entire U.S. Exclusive Economic Zone, with emphasis on coastal regions. These regions are where most of the nation's population resides and, as a consequence, where most of the environmental challenges we face as a nation must be addressed.

Through six regional centers and a national office, NURP provides access for the nation's civilian research community to submersibles, robotic vehicles, underwater laboratories, *in situ* observatories, and air/mixed gas diving. NURP's highly skilled personnel are known for their ability to lead safe, efficient, and effective undersea operations. During the past three years alone (1992-1994), NURP personnel have directed 2,000 submersible dives, 970 remotely operated vehicle (ROV) dives, and 27,500 air and Nitrox dives for scientific research. No other program in the world matches this record of diving safety and productivity.

NURP is a leading supporter of research and development of new sampling technology at universities and research institutions. This technology continues to provide new market opportunities for growing ocean technology industries.

NURP's most significant impact is made through partnerships formed with scientists and resource managers from academia, private research institutions, federal, state, and local agencies. In the past four years, NURP has supported undersea projects involving 702 principal research scientists from 36 states, 14 from Canada, and 34 from other countries, representing over 400 institutions world-wide. The results of this research have been published in 268 peer-reviewed journal articles in the past three years alone.

To ensure that NURP supports only the very best science, every research project is competitively reviewed through a rigorous, impartial process. A multi-disciplinary panel comprised of regional and national experts judges the scientific merit. Thirty percent of the proposals submitted were recommended for funding in 1995.

Why NURP is Needed Today

- NURP is the nation's only program dedicated to underwater research, supporting high quality basic and applied science topics.
- NURP provides information needed by resource and environmental managers to make wise decisions.
- NURP provides scientists with safe, cost-effective access to *in situ* technology.
- NURP supports existing marine industries and promotes the development of new undersea technologies.
- NURP is very productive in publishing results that increase our basic understanding of the oceans and large lakes.

Selected Recent Research Accomplishments:

- NURP supported scientists have isolated previously undiscovered and undervalued chemical compounds from reef species that must be collected *in situ*. These compounds demonstrate promise for the treatment of heart disease, cancer, and Auto-Immune Deficiency Syndrome (AIDS).
- NURP sponsored submersible studies determined the fate and effects of municipal sewage sludge disposal in the deep sea off New Jersey. Results were used to reassure fishermen and the public concerning the safety of eating seafood from the area, and are relevant to other proposed uses of the deep ocean for waste disposal.
- NURP scientists recently discovered that tanner crab, an economically important Alaskan fishery, forms large mating aggregations in deep water off Kodiak Island. This discovery is a milestone in understanding the crab's biology and provides critical information needed to successfully manage the fishery.
- NURP research provides monitoring data and understanding of the factors that affect the health and status of U.S. coral reefs; a resource worth \$22 billion per year to the south Florida economy alone.
- NURP submersible dives revealed that the seafloor of the Gulf of Mexico is pock-marked with outcrops of frozen hydrocarbon deposits called gas hydrates. Estimates of the value of potential reserves frozen on the U.S. Outer Continental Shelf are in the billions of dollars. *In situ* studies of exposed hydrate beds, discovered during NURP dives, are providing data on chemical and physical properties needed to tap these vast natural resources.
- NURP scientists sampled contaminants at the interface of the water and sediments on the bottom of several Great Lakes. This research measured the amount of contaminants that reach the lake bottom and revealed the role bacteria play in making contaminants available to the lake food chain. This knowledge is critical for management of the \$2 billion per year recreational fishery in the Great Lakes.

Selected Recent Technologic Accomplishments:

- NURP is a world leader in the development and use of Nitrox, a breathing gas that increases the amount of time scientists can safely stay on the bottom by up to 250% over dives with air. Related procedures and technology continually perfected by the program are the foundation of a growing multi-million dollar commercial diving industry.
- NURP support led to the design and construction of a prototype low-cost (<\$20,000), light-weight (<70 lbs.) free-swimming underwater vehicle for survey of hydrography and water quality in estuaries and on the continental shelf. The vehicle is expected to be commercially developed for an international market and will lead to increase knowledge and better management of coastal ecosystems.
- NURP supports the Loihi undersea observatory in Hawaii which provides real-time data on materials that spew from this subsea volcano and early warning data on seismic activity and potential earthquakes.

NOAA National Sea Grant College Program

The National Sea Grant College Program is a nationwide network of universities that provides critical information for the wise use and management of the nation's marine resources. Sea Grant is a truly effective partnership between academia, government, and the private sector. The Sea Grant program was reauthorized in December 1991 (P.L. 102-186), and reauthorization legislation is being introduced in both the House and Senate this year.

Sea Grant is a model for conducting top-quality science to solve basic problems, and then providing a way for industry, government, and the public to "reach-in" to the university and obtain the scientific results for use in real-world settings. This allows everyone to most effectively utilize our nation's substantial investment in basic research and technology. The heart of Sea Grant is its "core program" consisting of a balance between research, extension services, and education. Sea Grant funding and proposal review is provided through 29 university-based programs involving more than 300 academic institutions nationwide. Nearly half the cost of Sea Grant comes from state and local governments, industry, and citizens.

Sea Grant has amassed a remarkable record of accomplishment. A recent report showed that businesses and others had used Sea Grant science to stimulate new business opportunities, implement cost-saving techniques, and improve productivity. The result was an \$842 million annual impact on the national economy relative to the federal contribution of about \$40 million annually. Sea Grant has the capacity to do much more.

Yet for over a decade Sea Grant's core program has been virtually level-funded, diminishing the program's "buying power" by nearly 40 percent since 1979. While Congress has provided additional funds for special initiatives such as marine biotechnology in the last two years, Sea Grant's critical base remains undersupported. Adequate funding is essential to strengthen Sea Grant's national and regional efforts to enhance coastal environmental management, ensure continued U.S. leadership in the emerging field of marine biotechnology, and to provide scientific and technological advancements that have proven to spur economic growth.

-- Marine biotechnology to develop new materials, enhance aquaculture and seafood production, improve methods of environmental remediation, and derive new pharmaceuticals from the sea. This is widely regarded as the most promising area for applied marine research, with remarkable benefits already having been shown in the following areas:

- disease prevention, both in humans and in the seafood supply;

- aquaculture to produce new and improved products from the sea;
- seafood safety and human health, to rapidly detect contaminated seafood and enhance its shelf life;
- protection and restoration of the aquatic environment, particularly through bioremediation;
- reduction of fouling and corrosion of ships and marine structures; and
- biomaterials and bioprocessing to exploit marine natural products for human benefit.

-- Enhanced coastal development to enable coastal communities to handle the enormous growth in these areas. By the year 2000, more than half the U.S. population will live along the coast. Sea Grant is uniquely prepared to help coastal communities in responding to development pressures, to provide science-based advice for use by businesses and local governments in economically disadvantaged areas, and to support advances in coastal engineering and the development of new marine technologies. Each of these activities will result in responsible development, consistent with a sound coastal environment, and with minimal need for regulation of coastal activities.

-- Seafood safety to ensure that consumers have a safe and high quality supply of seafood and that seafood businesses can be more competitive. Seafood processors have used Sea Grant expertise to help comply with new federal regulations for seafood safety, and Sea Grant sponsored a series of workshops that brought together representatives of the seafood processing industry, consumer groups, the fishing industry, and researchers with the goal of adopting a comprehensive plan to improve the quality and safety of our nation's seafood supply.

-- Coastal climate and hazards research can be used by coastal residents to prepare for hurricanes, storm surges and tsunamis, coastal erosion and subsidence, sea level rise, as well as human-induced hazards such as catastrophic spills. Sea Grant research in these areas has already produced proven savings in the billions of dollars.

-- Aquatic nuisance species research to understand and mitigate invasions of species such as the zebra mussel in the Great Lakes, which represent a billion dollar threat to water supplies and ecosystem quality. It is estimated that over 350 non-native species of marine and estuarine organisms have been introduced to U.S. waters, many of which are known to compete against indigenous species, altering ecosystems and contributing to the decline of important fisheries. A significant effort will be required to stop the introduction of such species and to identify ways of controlling harmful populations that have already been introduced.

The CHAIRMAN. Thank you, Admiral Watkins.

Mr. Wolff, thank you for tearing yourself away from the Federal Mediation Board.

STATEMENT OF PAUL WOLFF, FORMER ADMINISTRATOR FOR OCEAN SERVICES, NOAA, PEBBLE BEACH, CA

Mr. WOLFF. Thank you, Mr. Chairman.

I strongly support the provisions of H.R. 1756, dealing with NOAA. Only the Congress can rein in this out-of-control bureaucracy. The best way to do this under existing conditions is to cut off the funding. The time is now.

In view of the changing climate in Congress, I was requested in February 1995 to look at the NOAA budget to identify areas of potential savings and privatization. Working from the fiscal year 1993 budget of \$2.3 billion, we identified a series of actions which would produce a reduction of \$1 billion per year within 2 years.

A copy of that study is appended.

My background includes 30 years in the Naval weather service, with the last 12 years at the Fleet Numerical Weather Center in Monterey, California, 12 years in private meteorology and oceanography business, and 5 years as Assistant Administrator of NOAA under President Reagan. I have no financial interest in any NOAA matter.

Prior to 1940, the U.S. weather bureau was a small, efficient, nonpolitical service whose mission was to predict the weather for U.S. citizens and commercial interests. The service expanded rapidly during and after World War II and was funded mostly by Government agencies. The last outside review of the U.S. weather bureau activities took place in the 1950s under President Eisenhower.

The agency expanded rapidly in the 1960s, and in the early 1970s it was merged into the new NOAA.

NOAA is a conglomerate of the weather service and many other semirelated activities. It is organized into five divisions. Activities in each division have expanded rapidly and are independently supported and protected by groups of congressmen. The agency has been unmanageable, and the weather service has generally ignored its existence, protected by its Democratic supporters.

Budgets for NOAA have increased steadily, passing the \$1 billion mark in the mid-1980s and reaching \$2.3 billion last year.

The only valid mission remaining is weather forecasting. All the rest are unnecessary in an era of governmental red ink.

An examination of two recent documents reveals the present Administration plans for NOAA expansion. NOAA's 1995 to 2005 strategic plan reveals the Administration's plan to expand every section of NOAA. This plan is not priced nor is there any mention of the increased bureaucracy required. A conservative estimate would be that implementing this plan will involve an increase of 300 to 400 percent in the agency's budget and FTE count over a 10-year period.

The national implementation plan for the modernization of the National Weather Service is a detailed description of the attempt to perpetuate an expanding weather activity accompanying installation of new observing radars and automatic equipment. The plan contains at least three times as many offices as needed, with ex-

travagant staffing levels to be specified by Congress. The grade levels are also specified and inflated, ensuring expanding costs.

There is inadequate provision to collect the observations and communicate them to prediction models. The procedures for closing a station involve certifications by one or two Cabinet Secretaries. These conditions all codify an expanding budget.

I just brought the covers because the reports were too heavy for me to carry from California.

There are many good people in NOAA, and I feel the programs outside the weather forecasting operation might well be considered for funding if the Government were operating with a surplus. Although the weather service has received favored treatment and overall adequate funding within NOAA, certain activities within the weather operations have recently been underemphasized and underfunded. These activities include the National Meteorological Center computer equipment and communications, two, the global and ocean data collection, and, three, the cooperation and exchanges of data with the U.S. Naval Weather and Oceanography Center in Monterey. This last point is especially important, since it represents an efficient and low-cost way to make Government produce computer products available to the private sector and to State and local Government users.

In closing, this Chrysler bill is an excellent start in restoring some proper order to NOAA.

Thank you, Mr. Chairman.

[The prepared statement of Mr. Wolff follows:]

Testimony of Paul Wolff before the House of Representatives Committee on Science. September 12, 1995

I strongly support the provisions of H.R. 1756 dealing with NOAA. Only the Congress can rein-in this out of control bureaucracy. The best way to do this is under existing conditions is to cut off the funding. The time is now.

In view of the changing climate in Congress I was requested in February 1995 to look at the NOAA budget to identify areas of potential savings and privatization. Working from the FY 1993 budget of 2.3 billion we identified a series of actions which would produce a reduction of 1 billion per year within two years ¹.

My background includes thirty years in the Naval Weather Service with the last twelve years at the Fleet Numerical Weather Center in Monterey, California: twelve years in private meteorology and oceanography business and five years as Assistant Administrator of NOAA under President Reagan. I have no financial interest in any NOAA matter.

Prior to 1940 the U.S. Weather Bureau was a small, efficient non-political service whose mission was to predict the weather for U.S. citizens and commercial interests. The service expanded rapidly during and after World War Two and was funded mostly by government agencies. The last outside review of USWB activities took place in the 1950's under President Eisenhower. The agency expanded rapidly in the 1960's and in the early 1970's it was merged into the new NOAA.

¹ A proposal to restructure the NOAA in order to reduce it's budget by one billion dollars per year. March, 1995 Paul Wolff and James W. Winchester

NOAA is a conglomerate of the Weather Service and many other semi-related activities. It is organized into five divisions. Activities in each division have expanded rapidly and are independently supported and protected by groups of congressmen. The agency has been unmanageable and the Weather Service has generally ignored it's existence protected by it's Democratic supporters. Budgets for NOAA have increased steadily passing one billion in the mid 1980's and reaching 2.3 billion last year. The only valid mission remaining is weather forecasting. All the rest are unnecessary in a era of governmental red ink.

An examination of two recent documents reveals the present administration plans for NOAA expansion. NOAA's 1995 - 2005 Strategic Plan ² reveals the present administration's plan to expand every section of NOAA. The plan is not priced nor is there any mention of the increased bureaucracy required. A conservative estimate would be that implementing this plan would involve a 300 to 400 percent increase in the agencies budget and FTE count over the ten-year period.

The National Implementation Plan for Modernization of the National Weather Service ³ is a detailed description of the attempt to perpetuate an expanding weather activity accompanying installation of new observing radars and automatic equipment. The plan contains at least three times as many offices as needed with extravagant staffing levels to be specified by Congress. The grade levels are also inflated ensuring expanding costs. There is inadequate provision to collect the observations and communicate them to prediction models. The procedure for closing a station involve certifications by one or two Cabinet Secretaries. These conditions all codify an expanding budget.

² NOAA 1995 - 2005 Strategic Plan
July, 1993

³ National Implementation Plan for Modernization of the National Weather Service
April, 1995

There are many good people in NOAA and a few of the programs outside the weather forecasting operation might well be considered for funding if the government were operating with a surplus.

Although the Weather Service has received favored treatment and overall adequate funding within NOAA, certain activities within the weather operations have recently been under emphasized and under funded. These activities include:

1. National Meteorological Center computer equipment and communications.
2. Ocean and Global Data Collection
3. Cooperation and exchanges of data with U.S. Naval Weather and Oceanography Center in Monterey.

This last point is especially important since it represents an efficient and low cost way to make government produced computer products available to the private sector and state and local government users.

In closing, this Chrysler bill is an excellent start in restoring some proper order to NOAA.

February 20, 1995

**A PROPOSAL TO RESTRUCTURE THE NATIONAL OCEANIC AND
ATMOSPHERIC ADMINISTRATION (NOAA) IN ORDER TO REDUCE ITS
BUDGET BY ONE BILLION DOLLARS PER YEAR**

Paul Wolff¹

Former Assistant Administrator for Ocean Services

NOAA

James W. Winchester²

Former Associate Administrator

NOAA

INTRODUCTION

The authors were non-career political appointees and each served for approximately 5 years during the Reagan Administration. In addition to their routine managerial duties, they aggressively pursued cost-cutting efforts by attempting to reduce unnecessary programs, eliminate unnecessary staff positions and to contract with private sector organizations for goods and services that are not inherently governmental functions. The Associate Administrator was the responsible official for NOAA's privatization program and for implementation of the requirement for contracting out selected inhouse programs in compliance with OMB Circular A-76. In spite of a formal requirement in the Circular that contracting out any services currently being provided by federal employees must produce cost-savings of at least 10%, the opposition to all privatization efforts by the career bureaucracy and several members of the Congress was vicious.

Based on the experience of the authors, producing meaningful cost-savings and significant reductions of the NOAA bureaucracy will require a complete restructuring of the agency and a new, well-defined mission consistent with the federal government's obligation to expend federal funds for providing services to the general public if those same kind of services are available from private sector sources. Eliminating small organizational elements and programs that clearly have out-lived any semblance of usefulness will achieve little or no savings. Furthermore, career civil servants have an uncanny skill for avoiding *real cuts*, even if they were *micro-managed* by a dedicated Republican Congress.

It is beyond the scope of this proposal to provide detailed recommendations on restructuring the Department of Commerce (DOC). However, it is generally recognized that NOAA logically does not fit into the DOC's mission. Since both NOAA's budget and number of employees comprise more than 50% of the total budget and total staff of the entire DOC, some changes are obviously needed. Finally, restructuring and defining a new mission for NOAA must be clearly stated and must include a formal, legally mandated partnership with commercial weather services companies that provide special and site specific forecasts to business and industry. Government should not *compete with the private sector*.

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BACKGROUND

NOAA is conglomerate formed in 1970 by President Nixon from several federal agencies of very different natures and histories. It has been impossible to manage the agency efficiently for several reason:

1. The sciences involved are meteorology, oceanography, fisheries, satellites and applied research. Other significant activities have included coastal zone management, university grants, mapping for ocean navigation, mapping for the Federal Aviation Agency, mammal protection, pollution monitoring, environmental protection, international scientific relations, and others. These activities have operated as a set of independent fiefdoms each funded and micro-managed by different groups of legislators. The tendency has been for each group to grow at typical Parkinsonian rates for governmental agencies without effective management.

2. The administrators have been experienced in only one or two of these areas. They have included 1 meteorologist, 1 lawyer, 2 oceanographers, 1 satellite manager, 1 marine biologist and 1 political fund raiser. Most have been liberal Democrats. All have been unsuccessful in unifying the agency because the components have been protected by their congressional sponsors.

BRIEF HISTORY AND MISSION ANALYSIS OF THE 5 MAJOR LINE ORGANIZATIONS

1. National Weather Service (NWS): The U.S. Weather Bureau is the forerunner of the NWS. It was established by the Organic Act of 1890 with a broad mission of forecasting the weather for United States citizens and business interests. This remains a valid mission; although, some have used the Act to justify a virtually unlimited federal role in weather information and forecasting services. In the 1950's a large corporation offered to provide the weather forecasting services for \$25 million per year. Unfortunately, President Eisenhower declined the offer. A restructured NWS should be continued but with a well-defined mission and legally mandated responsibilities. Obviously, the Organic Act should be revised, and the new NWS should be prohibited from competing with private sector companies that provide weather services as commercial products.

2. National Marine Fisheries Service (NMFS): This monstrosity grew out of the old Bureau of Commercial Fisheries whose mission was to help U.S. fishermen earn a living. Presently, NMFS views its mission as managing the fisheries resources of the U.S. However, its efforts have been ineffective. So, the organization should be eliminated, and its treaty activities transferred to the Department of State (DOS).

3. National Ocean Service (NOS): This service grew from the Coast Survey which tenuously dates back to the early 1800's. Its mission was to map navigable U.S. waters. That job was finished 30 years ago, but the activity continues to grow and has attracted several new "pork barrel" programs. These include coastal zone management, global warming, and coastal pollution management. The ocean and weather observation program should become part of the new NWS and the rest of the programs should be eliminated.

4. Office of Oceanic and Atmospheric Research (OAR): This service is new and artificial. Oceanic and atmospheric program development and applied research belongs in the NWS, and grants to universities and other organizations are not an appropriate NOAA mission and should be transferred to the National Science Foundation (NSF) or eliminated. Responsibility for "pure science" activities should reside in the National Science Foundation (NSF); and unless NSF wants the 43 OAR laboratories, they should be closed and their consultants and contractors fired.

5. National Environmental Satellite, Data, and Information Service (NESDIS): This is a new organizational element formed since satellite data have become essential to weather forecasting. The maintenance of 3 GOES and 2 POLAR ORBITING satellites that are now delivering data throughout the world is essential to weather forecasting. However, NASA can satisfy these requirements, so no valid need exists for a separate space agency in NOAA. Experience shows that NESDIS's performance has been poor, and its operation has been unnecessarily expensive. The organization should be eliminated, and responsibility for environmental satellites should be transferred to NASA with approximately \$200 million of budget authority.

6. Other Programs: Other programs not included in 1 through 5 above should be transferred to NWS, off-loaded to private sector sources or eliminated. NOAA policy has evolved into creating a new program for each special weather problem that arises, even though these should be a part of the overall NWS mission. Obviously, the purpose of such a policy is to attract new funding. Following are some examples of such programs: Acid rain, Global warming, Coastal ocean, Weather modification, and Radioactive fallout. All are ill-conceived as appropriate programs for special attention; they are only appropriate as continuing, low-funded research programs within a general weather forecasting mission.

PROJECTED BUDGET FOR A RESTRUCTURED ORGANIZATION TO REPLACE

	NOAA (millions) ³		
	1993 Request	First new year	Second new year
Weather Service	\$500	\$500	\$500
Satellite Service	\$440	\$250	\$200 (to NASA)
Fisheries	\$220	\$50	\$10 (to Dept. of State) \$10 (to Dept. of Interior)
Research	\$195	\$30 (block grants) states	0
Ocean Service	\$150	\$25 (privatize)	0

³1996 Budget request for NOAA - \$2.2 billion

NOAA Corps and Ship -	\$65	\$45	\$25 (to Coast Guard)
Aircraft	\$10	\$5	\$2 (to FAA)
Admin.	<u>\$80</u>	<u>\$40</u>	<u>\$20 (to Weather Service)</u>
Total	\$1750	\$1000	\$750-800

RECOMMENDATIONS

The authors recommend that NOAA be abolished as an agency, and that the present National Weather Service become the surviving organization. However, it should become an independent agency and have the title: **United States Weather Bureau**. The Organic Act of 1890 should be revised, and the new Weather Bureau should have a **core mission** and a legal mandate to: *provide weather warnings and forecasts for the protection of the lives and property of all residents of the United States*. Since loss of lives and damage to property are generally caused by severe weather systems, the new **Weather Bureau** should be totally responsible for the predictions of *all extreme weather events* and for the dissemination of forecasts and warnings to the general public. Continuation of existing NWS centers and field offices should be decided on whether or not they are *required* to satisfy the **core mission** of protecting lives and property. All other weather related programs and field activities that do not meet those criteria should be off-loaded to the *private sector or eliminated*.

Defining all essential functions of an organization responsible for providing accurate and timely forecasts and warnings to the general public must be done by competent and unbiased individuals instead of self-serving bureaucrats. Some of the factors that must be considered in developing specific functions are as following:

- 0 Specify responsibility and authority for collecting, distributing and analyzing the data required for providing an effective forecasting and warning service,
- 0 Assure that the data or service is necessary for carrying out the mission,
- 0 Determine if data or service should be provided by government employees or by contracting out,
- 0 Evaluate costs of data or service in terms of benefits to **the core mission** of saving lives and property,
- 0 Establish criteria for defining eligibility of the recipients of data or services,
- 0 Establish criteria for defining the government's obligation to provide a specific service, and
- 0 Develop a partnership with and assist private sector weather services organizations in providing information and forecasts as commercial products that are inappropriate for government to provide with federal funds.

CONCLUSIONS

There are many others factors that must be considered in developing functions and operational procedures for a new **United States Weather Bureau**. Therefore; the mission, functions, authority, responsibilities, and operational procedures must be defined clearly in order not to create another inefficient federal bureaucracy.

The authors have attempted to address all NOAA programs considered to be an obligation of the federal government and that do provide a bona fide benefit to the general public. However, we do believe strongly that the Federal Government does not have an obligation to provide weather information and special forecasts with public funds that only benefit special-interest groups. Furthermore, we do not believe that any governmental organization should be permitted to provide products or services, even if it is reimbursed, that are available from private sector sources. The function of government is to govern - not to compete with private sector businesses.

We hope our proposal receives favorable consideration, and we will be pleased to provide supporting analysis and additional background information.

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The CHAIRMAN. Thank you very much.
Mr. Knauss.

STATEMENT OF JOHN KNAUSS, FORMER ADMINISTRATOR OF NOAA; PROFESSOR AND DEAN EMERITUS, GRADUATE SCHOOL OF OCEANOGRAPHY, UNIVERSITY OF RI, NARRANGASETT, RI

Mr. KNAUSS. Thank you, Mr. Chairman, Congressman Brown.

I was the NOAA Administrator, undersecretary of commerce for oceans and atmosphere under President Bush. I have spent most of my career as a university professor and administrator, and I was fortunate enough to be a member of the Stratton Commission back in 1968-69, appointed by President Johnson, where we, as has been mentioned before, brought forth the recommendations that brought together the various disparate parts of our Government to form NOAA, that which we now see.

The Stratton Commission made the recommendation that NOAA be an independent agency. President Nixon, who received those recommendations, agreed that there should be a NOAA but was not prepared to make it an independent agency. There was some question as to whether it was going to go into the Department of Commerce or the Department of Interior, and Commerce won out, and that is where NOAA has been ever since.

Mr. Chairman, if I have one simple recommendation and message to leave with you, it is that whatever happens to the Department of Commerce, keep NOAA together. Where NOAA goes is less important than keeping it as a single entity, whether it is in the department of science, as you have suggested, whether it's an independent agency, as the Stratton Commission suggested, and I understand that the Senate committee the other day, the Government Operations Committee also reported out the dismantling of Commerce but keeping NOAA being an independent agency.

There are a number of reasons for this. The oceans and atmosphere are a physically coupled system. It makes sense to keep in a single agency that group of people who make the observations, do the research, provide the services for the forecasting.

While I was Administrator of NOAA, I had an opportunity to represent our country at the World Meteorological Organization as well as the Intergovernmental Oceanographic Commission. Without exception, my colleagues from other countries in the western world and Asia were generally envious of the fact that we in the United States had in a single agency both the oceans and the atmosphere. Not many other countries have that.

In reading the Chrysler bill, Mr. Chairman, I am concerned about what the meaning of privatization is in this bill as it reflects on a couple of the recommendations made in the bill. The bill recommends that the data centers be privatized. These modern, large and very important data centers could be run by private contractors and NOAA could let the contract to the private contractors. That makes reasonable sense if that is what the Government wants to do.

But there is no way that those data centers can be self-supporting. It makes no more sense and is no more possible to make a self-supporting data center than it is to have a self-supporting Library

of Congress or a university research library where you make enough money by lending out your books to pay for the cost of maintaining the library.

I maintain that it is the Government's responsibility to maintain those data centers, which are becoming of increasing importance.

I have the same concern about the privatization of NOAA's national research laboratories. Yes, they can be run by private groups, they could be associated with universities, but the work they do needs to be done. I believe it is a Government responsibility to see that the research important to NOAA's mission be done, and certainly in the past this Government has had, and NOAA in particular has had, a fine record in terms of research that has produced useful results, whether it goes to tracking weather, the first of the observations about the ozone hole in Antarctica, the recent observations and increased understanding as to why ozone levels are high and far away from urban areas, information on the destruction of fisheries habitat, the importance of non-point source pollution. This is all work that has been done by NOAA laboratories and universities, and are important.

There are things that could be reduced in NOAA, and the bill points out several of these. The specialized forecasts that are made could be reduced. Certain promotion work in NOAA could be eliminated. But I would only hope, Mr. Chairman, that if we do that, there be a level playing field and that you get your colleagues on the Agriculture Committees to do the same thing with respect to efforts they make to push agricultural products otherwise.

Finally, weather stations could be closed, a certain number of them. When I was in NOAA, we were trying to reduce the number of weather stations from 314 to 114. That has gone very slowly. It is as hard to close a weather station as it is to close an Army base.

In summary, Mr. Chairman, let me read my final statement.

If the decision is made to abolish the Department of Commerce, NOAA, its largest single component, should be transferred in total to another department or agency or made an independent agency. Breaking up NOAA is a terrible mistake. Once a decision is made as to where NOAA should go, Congress can decide what functions it wishes to strip from NOAA and which functions, if any, it wishes to privatize.

This bill, which breaks up NOAA and reorganizes the pieces, does a major disservice to a well-run, competent organization where the synergy of combining ocean and atmosphere functions is well recognized and envied by our colleagues in much of the developed world.

Thank you, sir.

[The prepared statement of Mr. Knauss follows:]

Testimony before the US House Committee on Science
on the Department of Commerce Dismantling Act, H.R. 1756
September 12, 1995

John A. Knauss

I served as Undersecretary of Commerce for Oceans and Atmosphere and Administrator of NOAA (the National Oceanic and Atmospheric Administration) under President Bush. Most of my career has been as a university professor and administrator, but I did serve as a member of the Stratton Commission (the Commission on Marine Science, Engineering and Resources) appointed by President Johnson that brought forth the recommendations that led to the formation of NOAA. I am presently retired.

The Stratton Commission recommended that NOAA be an independent agency. President Nixon, who came into office shortly after our report was completed, accepted our concept of NOAA and what NOAA should include, but not our recommendation of an independent agency. The final decision of where to place NOAA was between Commerce and Interior. Commerce won out.

I do not believe my role at this hearing is to argue the pros and cons of abolishing the Department of Commerce. What I do wish to argue strongly for is that if the Department of Commerce is abolished, NOAA be moved as a whole to a new home. It could go to the Department of Interior as President Carter and others once suggested. It could be an independent agency as the Stratton Commission recommended. It could be combined with EPA or NASA as others have suggested in the past. It could be part of the Department of Transportation as Senator Stevens has recently suggested. It could be part of a new Department of Science as Congressman Walker has proposed. My personal preference continues to be that of the 1968 Stratton Commission, make NOAA an independent agency. But, whatever is done, keep NOAA together. Do not break it up.

I strongly believe this nation is well served by combining its ocean and atmospheric services in a single agency. I found while NOAA Administrator that many of my colleagues in Europe and Asia wished they had a similar arrangement. Combining ocean and atmospheric observations, research, services and forecasting in a single agency is becoming of increasing importance as we move from the daily weather forecast to the seasonal and longer range forecasts. You can ignore ocean variability in making the weather forecast for tomorrow. Good oceanic observations are critical to a successful seasonal forecast. The importance of the ocean-atmosphere

interactions was a key reason for the mix of functions the Stratton Commission put into NOAA almost 30 years ago. It would be tragic to break-up the ocean and atmosphere functions of NOAA now that our increased understanding of such atmospheric-oceanic phenomena as El Niño give promise to making significantly better seasonal and yearly climate forecasts.

I believe NOAA could and should undergo the same detailed analysis of function and costs as other agencies are presently undergoing. My concern is that in the effort to abolish the Department of Commerce that you not inadvertently break-up one of the better, more effective agencies of the federal government.

I have several comments on NOAA functions that will be stripped from it or significantly reduced by this bill.

Importance of Data Centers: I am concerned about the plans to privatize the NOAA data centers as proposed in section 211 (l) (1). Privatizing these data archives is like privatizing the Library of Congress. It can be done if what one means by "privatization" is for NOAA to let a contract with one or more private companies to run the data centers. If, however, the implication of "privatization" means these data archives will be economically self sufficient by selling the data, the sponsors of this proposal simply do not understand either the economics or the functions of these data archives. It is no more possible for these data archives to become economically self sufficient than for the Library of Congress, or a major university research library, to pay for itself by charging lenders.

I believe it continues to be a federal responsibility to maintain the nation's environmental data archives, just as it is a federal responsibility to support the Library of Congress. These data archives are the largest, the most complete and the most modern environmental data archives in the world. They are becoming of increasing important as this nation becomes ever more concerned about possible long term trends in our environment. You can support these archives with civil service employees as is now the case, or you can "privatize" them by letting contracts for the private sector to run them. Either way, it continues to be a federal responsibility to support them.

NOAA's Research Function One strong implication from reading this bill is that support for NOAA's research function will be severely reduced. Reduced support for research would appear to be a trend throughout this

Congress. I believe that is a terrible mistake. This Committee, of all committees in Congress, should recognize the importance of scientific research to the growth and well-being of this nation. The science that NOAA supports in its laboratories, and in contracts and grants to scientists in universities, has been, and continues to be, of considerable importance. Recent contributions include improvements in our ability to track and to forecast the path of hurricanes and the inception of tornadoes; the role of the tropical Pacific ocean in controlling seasonal changes in our weather, the role that polluted habitat plays in controlling the viability of a number of important commercial species of fish, an explanation for the very low ozone levels in the Antarctic stratosphere and the sometimes very high levels found in rural areas far from an urban source, the role that non-point sources (for example, urban run-off as distinguished from that which flows into our estuaries through a sewer pipe) play in determining the level of pollution in our estuarine and coastal areas. These are a few of the important societal issues to which NOAA has made important, and in many cases definitive, contributions. This research has been done in both its in-house laboratories and through its extra-mural support programs, such as Sea Grant.

Under H.R. 1756, NOAA's Environmental Research Laboratories will be privatized. Again I come back to the question of what is meant by the term "privatization." Does it mean that NOAA will only support extra-mural research through universities and private industry? Does it mean that its fine set of national laboratories will be run by universities or industry and the same work will be done, only now these scientists will be in the private sector and not civil servants? If it means the latter that is certainly possible, although it could be gut wrenching to a number of very good scientists who have dedicated their lives to the federal service. If, however, the implication is that NOAA will no longer support the kind of research done at these laboratories, that could be a disaster. NOAA has supported successful research on important societal problems in the past. I would expect it to continue to support the kind of work done in these NOAA laboratories whether they are private or civil service laboratories.

NOAA's Role in Coastal Research: One type of NOAA research that will be terminated under H.R. 1756 is coastal and estuarine research and assessment [Paragraph 211 (g)]. The implication is that this work overlaps with that of EPA and should be transferred to EPA. I question the degree of overlap, but if Congress insists on shutting down this type of research in one agency or another, I suggest it shut down EPA. I expect most university scientists working in this field would concur. EPA is a regulatory agency. When I was running NOAA I had to look three levels below the EPA Administrator before I could find someone without a law degree. Bill Reilly tried, as have

other EPA Administrators, but science and research are not well served in EPA. We used to joke about EPA's "pollutant of the month." You cannot do good science if you are continually being jerked around. EPA has great difficulty in attracting and keeping good scientists. There are a number of wonderful exceptions to that generalization, but if Congress insists on eliminating coastal and estuarine research from one agency or another, this nation would be better served to eliminate that function in EPA and concentrate it in NOAA.

Program Elimination: Based on my experience in NOAA I believe there are a number of NOAA programs that could be eliminated or reduced. H.R. 1756 has noted several. Under 211 (b), (c) and (d) there are proposals to eliminate a number of government programs to promote fisheries products [Termination of Fisheries Trade Promotion Program, for example] I agree that these could be eliminated. I hope, however, that the playing field is level and that the analogous programs for farm products are eliminated in the Department of Agriculture. I also believe that at least some of the specialized agricultural forecasts [listed under 211 (m) (2) (A)] could be eliminated.

Navigational Charting and the NOAA Corps My interpretation of 211 (h) is that in the process of eliminating the NOAA Corps nautical charting will be privatized. When I was in NOAA we were about to let a contract to a private company to do some nautical charting for us to determine as an experiment (a) whether they could do the work to our standards and (b) whether it was cost effective. There was an election and I left before that experiment could be conducted. I believe such contracts have been let under the Clinton administration. I would urge that before terminating the NOAA Corps and privatizing all nautical charting that Congress do a little cost-benefit analysis. The conventional wisdom is that it is always cheaper to contract work out. This is not always the case. However these navigational charts are produced, I assume they will continue to be official government charts, since I question whether any private entity is prepared to take on the liability that can be associated with publishing private, but official, navigational charts. Those who go to sea are going to expect the same level of accuracy and quality that has been associated with government navigational charts since the days of Thomas Jefferson when the survey of the coast began. Given the responsibility that I assume NOAA will continue to have for the quality of these charts, I expect that NOAA will insist (I know I would if I were still there) that there be something equivalent to NOAA Corps oversight at various stages from data gathering to chart production.

Weather Station Closings: One possible cost reduction that is not included in H.R. 1756 is the reduction in the number of weather stations. Our goal in the weather service under President Bush was to reduce the number of weather stations as we went about modernizing the service with better computers, radars and weather observing instruments. Our plan for the new weather service called for a reduction of the number of weather stations from 340 to 114 albeit many of the remaining ones would be larger. There would be a reduction of about 300 full-time employees. We found closing small weather stations almost as difficult as DOD has found closing military bases. I am told that this Congress is no more enthusiastic in tackling this issue than were the Congresses of the Bush Administration.

Division of Responsibility: Last, but not least, now that I am no longer in government, let me bring up a part of H.R. 1756 that I find most unattractive. One of the most annoying aspects of what was a generally congenial relationship with Congress during my term in NOAA was the need to get approval from Congress (more often senior staff) for even the smallest organizational changes we in NOAA might wish to make. I did not appreciate such micro management, believing as I did that those charged with responsibility for the program were in a better position to know how to most effectively run the organization. This bill makes some very sweeping organizational changes in the various pieces of NOAA; for example, putting the satellite service into the weather service and terminating the Office of Oceanic and Atmospheric Research. I do not believe Congress should make such recommendations. It is one thing to establish or abolish programs. That is a Congressional prerogative. I believe you should leave it to the Administration to determine how it can most effectively organize itself to run the programs that Congress authorizes.

To Summarize: If the decision is made to abolish the Department of Commerce, NOAA, its largest single component should be transferred in-total to another department or agency, or made an independent agency. Breaking up NOAA is a terrible mistake. Once a decision is made as to where NOAA should go, Congress can decide what functions it wishes to strip from NOAA, and which functions, if any, it wishes to privatize. This bill, which breaks up NOAA and reorganizes the pieces, does a major disservice to a well-run, competent organization where the synergy of combining ocean and atmospheric functions is well recognized, and envied by our colleagues in much of the developed world.

The CHAIRMAN. Thank you very much. We appreciate your statement.

Mr. Hallgren.

STATEMENT OF RICHARD E. HALLGREN, EXECUTIVE DIRECTOR, AMERICAN METEOROLOGICAL SOCIETY, WASHINGTON, DC

Mr. HALLGREN. Thank you.

I was deeply involved in a variety of positions in NOAA, all related to ocean and atmospheric prediction, and that is what I will focus on today. In fact, I started as associate administrator and gradually went down the ladder to director of the weather service for the last decade.

The comments that I will give will be strictly personal and based on that experience of 18 years at NOAA. I am not going to try to do anything more articulate than John just did with regard to keeping the atmospheric and oceanic prediction services together. Let's not separate them, which is what I read would happen if you had the bill that Mr. Chrysler has put forward as it is today. It has just served us too well to separate these two activities.

Also, I believe that this Nation has a superb public-private partnership between the National Weather Service and the private meteorological industry. I believe we have the best weather services through these combined efforts of any nation in the world.

The mission of the weather service focuses on the safety of life and the protection of property. The private sector focuses on the dissemination of weather forecasts and warnings, and of course that is why Mr. Chrysler discovered that 85 percent of the forecasts that go to the public are from the private sector. That is the partnership we have developed over the years with the private sector. In addition, the private sector of course provides a wide range of value-added services.

The proposed new structure of the weather service, which, as John just said, decreases the number of offices by well over a factor of 2, almost the 3 that Paul Wolff called for. But that structure focuses on preparing severe weather and flood warnings and the associated public forecasts, and at the same time, recognizes and takes into account that one of the most significant small-scale forecasting problems, that is, forecasting for short-term on a very fine scale, is the aviation forecasts. These are the primary functions of the field offices under the new structure of the weather service.

Of course, as John just said, the agricultural weather services, which are not related to safety of life, would no longer be done by the Government, and this is perfectly the way we had planned it back in the mid-1980s.

So I am strongly recommending that we finish this modernization of the weather service. We have already been reaping improved warnings from the parts of it that have already been installed. Let's get on with it, let's get it finished. AWIPS has gone much too slowly, and after we have finished with this, after we have done something that was reinventing government 10 years ago when it wasn't in vogue, then let's take stock and see whether there are any additional changes that are required.

For one time, let's finish something we started in Government instead of just going along for a while and then changing directions.

Likewise with regard to the satellites. For over 25 years this Nation operated both the civil and military polar meteorological satellite systems. Many of us knew that this wasn't the right way, it was much more than was needed, and after many unsuccessful attempts to merge the two systems we now have agreement. So let's get on with that as well. It is reinventing government, it's shrinking government, it is streamlining government. Let's get on with it.

But let's at the same time not forget those difficult years we had when we tried to operate with only one geostationary satellite because of optimistic assumptions, of which I was part as director of the weather service, in an attempt to reduce budgets in the early 1980s. So let's make sure we get on with these two programs, the convergence of the polar meteorological satellites and of course maintaining the two geostationary satellite system.

I also have trouble, as John Knauss said, with the idea of selling, privatizing the data centers. The data in these centers come from many countries around the world and also serve as world data centers under long-term arrangements.

Yes, in terms of requests, more than half come from the private sector, but major users of these data are a wide range of scientists working on a wide range of research problems and at the same time focusing on some of the major environmental issues. We can't make decisions on the basis of market value alone whenever we are deciding what data to store.

I believe, and I served on both the global change committee at the Academy and the data information system at the Academy and cooperated and observed what was going on in the Government as they developed a plan for a global change data information system. It was a superb cooperative attitude there. Let's get on with that. I believe, if we aggressively come up with a national plan in that area, we can contain costs very easily of the centers and have much better centers than we would have on any other basis.

With regard to the NOAA research laboratories, again they have done some absolutely outstanding work. John has listed some of that in his testimony. I would like to add a couple more. The Forecast Systems Laboratory at Boulder played a key role in many facets of the risk reduction activities and the development activities associated with the modernization of the weather service. The Environmental Technology Laboratory has provided us the wind profilers and a wide range of remote sensing devices. You just simply can't replace these.

I would also like to emphasize that almost every one of those laboratories have worked with cooperative institutes in conjunction with some major university. So we are getting that synergism that you derive from working with universities already.

I don't believe that we would save anything, and we would lose a whole lot by privatizing them, whatever that means.

One thing that isn't even mentioned or I could not find as I read H.R. 1756 was what happens to the Climate and Global Change Program. This program has probably done, that is, in NOAA, this program has done probably more than any single activity to foster and support the combined study of the atmosphere and oceans. Re-

cently, as a result of the multi years of effort which they led, which NOAA led both nationally and internationally, we now have at least the hope of developing a capability for seasonal and annual forecasts, a tremendous achievement. Let's not lose that in the process.

So, in summary, I would like to stress that we should, A, finish those things that are reinventing Government, that were streamlining Government, namely, the modernization of the weather service and the convergence of the polar meteorological satellite, and think again as to how we can be more efficient and effective with our research laboratories and data centers, but for sure let's not just throw them out and destroy them.

Thank you.

[The prepared statement of Mr. Hallgren follows:]

TESTIMONY

by

RICHARD E. HALLGREN

on

H.R. 1756

DEPARTMENT OF COMMERCE DISMANTLING ACT OF 1995

before

COMMITTEE ON SCIENCE

U.S. HOUSE OF REPRESENTATIVES

SEPTEMBER 12, 1995

I appreciate the opportunity to comment on H.R. 1756, the Department of Commerce Dismantling Act.

I was deeply involved in a variety of positions in the atmospheric and oceanic prediction programs of NOAA from its beginning in 1970 to 1988, initially as Associate Administrator for Environmental Monitoring and Prediction and for my last decade at NOAA as Director of the National Weather Service. I was at NOAA Headquarters about half of that period and the other half I was in a line component, so I saw the operation from above and below. In light of my experience and background, I will comment primarily on operational and research activities related to environmental prediction and information services.

I am worried that H.R. 1756 does not recognize adequately that the atmosphere and ocean must be studied as a single physical system; that the Weather Service modernization will not be completed due to budget reductions and that the convergence of the civil and military polar satellites will not materialize with the proposed budget levels. I believe that the proposals to "sell" the Environmental Data Center and the Environmental Research Laboratories except for the "weather" research are not realistic. Finally it is unclear what will happen to climate and global change research if this act is passed.

The recognition that the atmosphere and ocean are inextricably linked was the driving force that underpinned the formation of NOAA. I believe that combining atmospheric and oceanic science and services in NOAA has led to major advances of great national benefit. From the beginning in 1970, the structure of NOAA provided an opportunity to move forward more effectively with air-sea interaction research, climate modeling (the Geophysical Field Dynamics Laboratory was and still is the world leader in climate modeling and developed the first ocean model) and numerical prediction research. In addition, NOAA made it much easier to move ahead with satellites and buoys to serve the needs of both atmospheric and oceanic prediction and the CO₂ monitoring network the world relies on today. More recently, the research effort to develop a seasonal to annual prediction capability using coupled atmosphere/ocean models was led nationally and internationally by NOAA with most line components playing a role under the

leadership of the Office of Global Programs at Headquarters. With the need to better manage our fisheries resources, NOAA provides an excellent structure to develop a capability to predict fish stocks, building on the observation and prediction programs for the physical and chemical aspects of the atmosphere and ocean. It would be a very serious setback to separate the atmospheric and oceanic services and science. Much has been done and I believe with a vibrant NOAA great strides will be made in the coming decade in all aspects of environmental prediction and information services.

I believe this nation, through the combined efforts of the National Weather Service and the private meteorological industry, has the best weather services of any nation in the world. This public-private partnership is unique in the world. The mission of the National Weather Service is centered on the safety of life and protection of property; the private sector focuses on the dissemination of forecasts and warnings to the public and on the provision of value added services.

The modernization of the National Weather Services focuses on improvements in public forecasts and warnings and forecasts for aviation. The proposed new National Weather Service field structure takes into account the common problems of preparing severe weather and flood forecasts for the public and forecasts for aviation operations at or near airports. Both require accurate short range forecasts of thunderstorms, strong winds, heavy rain etc. at very specific locations -- in meteorological terms, mesoscale forecasts.

I strongly recommend this nation complete the modernization of the Weather Service. We have the new geostationary satellites in operation and over 100 NEXRAD Doppler radar and hundreds of automated Surface Observing Systems have been installed. The modernization plan will reduce by roughly a factor of two the number of weather offices across the country. In fact, maybe with a twinge of bias since I was very much involved in the planning of the modernization, I believe the Weather Service was reinventing government ten years before it was in vogue. To disrupt a decade of planning and implementation which has already improved severe weather and flood warnings with an arbitrary budget cut is wrong and the best way I know to reduce the effectiveness of government programs and further undermine confidence in government generally. The right way is to complete the implementation of the modernization -- AWIPS has proceeded much too slowly -- and then identify additional changes that may be possible and result in lower costs.

For over 25 years the nation has operated separate civil and military polar meteorological systems. Many of us in NOAA in the early '70's recognized that two complete polar systems were not needed. Numerous unsuccessful attempts were made to merge the two systems. Now we have agreement. Let's move forward and not jeopardize the new arrangements with arbitrary budget cuts. Also, let's not forget those difficult years when we operated with only one geostationary satellite because of optimistic assumptions, which I contributed to as Director of the Weather Service, on the operational life of satellites in an attempt to reduce budgets in the early 80's. We now are starting to operate a two satellite configuration -- one over the eastern Atlantic and one over the western Pacific. Let's make sure the budget is adequate to keep a two satellite configuration in operation.

I believe the proposal to "sell" the Climate, Ocean and Geophysical Data Center is unwise. The data archived in these centers is used in a wide variety of ways by many different groups.

The data in these centers comes from many countries and the Centers also serve as World Data Centers under long term arrangements. It is important to note that the Centers focus almost exclusively on archiving and making available the data to users. A number of private companies and consulting meteorologists use the data to provide value added services. I think this is a very wise policy since it allows the market forces to operate.

Yes, in terms of numbers of requests, more than half come from the private sector. But major users include research scientists working in many areas of research, especially on major environmental issues. Decisions on which data is to be archived cannot be made solely or even primarily on the basis of numbers of requests.

In the last few years I was a member of the National Research Council's Panel on Data Information Systems and the Committee on Global Change Research for which I served as liaison to the federal agencies on data systems. I was impressed with the cooperative attitude and the detailed program planning for a Global Change Data Information System that is underway. Instead of "selling" the Data Centers, we should push forward aggressively with the interagency planning. With this path, I believe we could contain costs and have data centers that would serve the future needs of this country.

The proposal to sell or privatize NOAA research laboratories except for the weather research component in them does not make sense to me. The NOAA laboratories have made major contributions to today's environmental prediction capability. A few examples are: a hurricane numerical model and major components of the National Meteorological Center primary numerical prediction model were developed at GFDL at Princeton, NJ; the understanding of many aspects of hurricanes and small scale air-sea interaction comes from the Atlantic Oceanographic and Meteorological Laboratory at Miami, Florida; the Doppler radar and interpretation of its observation came, to a substantial degree, from the National Severe Storms Laboratory in Norman, Oklahoma; the buoy and ocean measurements system, along with understanding of the tropical atmosphere and ocean in the Pacific, comes from the Pacific Marine Environmental Laboratory at Seattle Washington; the monitoring network for CO₂, the climate diagnostic capability and the observational and scientific understanding of stratospheric ozone and low level ozone, a growing problem, especially this summer, are the responsibility of the NOAA laboratories in Boulder, Colorado. The Forecast System Laboratory has played a major role in much of the development and many of the risk reduction activities for the modernization of the National Weather Service and the Environmental Technology Laboratory has provided many remote sensing capabilities for both the ocean and atmosphere. Very few of these activities would be supported as private sector ventures. NOAA laboratories have been leaders in these fields for many years. It is true other laboratories in other agencies have entered into these fields of study, but this is very healthy since research moves forward more rapidly with greater innovation with several groups of scientists active in an area of research.

I recognize that one could argue in favor of contracting out the laboratories to universities. It is important to note that most NOAA laboratories have close affiliations with universities such as those in Princeton, Miami, Norman, Seattle and Boulder. Very effective relationships between the universities and laboratories have been developed informally and formally through cooperative institutes. So probably the synergistic benefit of the laboratories working with universities is in effect already being realized.

We should not be terminating NOAA's coastal and estuarine science programs. This nation must move forward with a comprehensive science and assessment coastal program. The future of this country is linked in a major way to our coastal and estuarine waters. We are now in a position to be able to understand these vital components of our ecosystem and NOAA with its Research Laboratories and overall structure should lead the national effort in cooperation with other federal agencies, states, universities, etc. Solid and sound science and assessment programs are needed to eliminate unnecessary, ineffective regulations and ensure when regulations are in place that they are environmentally wise and cost effective.

In addition, it is essential to recognize that the Climate and Global Change Program has done more than any other single activity to foster and support the combined study of the atmosphere and ocean and more recently the land surface leading to a substantially enhanced capability in the area of seasonal to annual predictions and better understanding of climate variations on longer time scales. Both of these activities require the atmosphere and ocean be treated as a single physical system. It is these types of programs that can lead to greater efficiency and therefore more profit and higher productivity in this country without costly regulation. If we are wise in our ways of coping with climate variability primarily through adaptation, we can also be wise in coping with climate change in a similar way. However, it is unclear what happens to the Climate and Global Change Program in H.R. 1756.

In summary, let's keep together the operational and research activities for atmospheric and oceanic prediction services. Let's not disrupt the modernization plans for the National Weather Services and the convergence plan for Polar Meteorological Satellites. These two thrusts have the same goals as H.R. 1756 -- provide better services at a lower cost. And we should face the fact that "selling" the Data Centers and Research Laboratories of NOAA is not a practical solution.

Mr. BARTLETT [presiding]. Thank you very much for your testimony.

Mr. Smith.

**STATEMENT OF MICHAEL R. SMITH, PRESIDENT,
WEATHERDATA, INC., WICHITA, KS**

Mr. SMITH. Thank you, Mr. Chairman.

As part of the debate regarding H.R. 1756, it is proper to consider the role of NOAA in the 1990s and beyond. I speak from the perspective of a small-business person in the commercial weather industry. I am here today to urge Congress to adopt the language of the NOAA authorization, H.R. 1815 into H.R. 1756, to amend for the first time in 105 years the mission of the National Weather Service. We support reform at NOAA not just because it would promote the growth of the private weather industry but because we sincerely believe that it is in the best interest of our Nation to downsize Government and to refocus NOAA.

For most of the 105-year history of the National Weather Service, it has attempted to be all things to all people. The 1890 law establishing the National Weather Service, known as the Organic Act, defined the mission of the National Weather Service very broadly, and it has not been amended in 105 years.

In 1995, there is very real evidence that the National Weather Service is being stretched too thin by operating in the all-things-to-all-people mode and is in danger of inadequately performing the missions for which the American people depend upon it the most: data gathering, storm warnings, and weather forecasting.

In both the text and appendix A of my written testimony, I have outlined some of the operations and forecasting problems of the past year. I wish to stress that these are not cited to criticize or embarrass the National Weather Service. Forecasting the weather is always a difficult task and Mother Nature sometimes behaves in ways that cannot be reasonably anticipated.

But we are certain that it was the expectation of Congress that the quality of storm warnings and forecasts to the public would improve when it authorized the modernization of the National Weather Service. This improvement does not seem to have occurred. In fact, it appears that significant problems are developing pertaining to the forecasts and warnings of storms.

As an example of this point, I would like to direct your attention to figure 1 of my testimony which deals with the 3-day outage of the National Weather Service's news radars. The weather service says it does not have enough spare parts to keep the new radars running. So for 3 days at the height of the tornado season, these radars were inoperative over parts of Kansas, Oklahoma, Texas, and New Mexico, while wave after wave of tornadoes and severe thunderstorms moved across the region.

Even though most of the tornadoes occurred at the southern fringe of the outage, there were serious problems with the warnings of at least some of these tornadoes. Had the severe outbreaks occurred 100 miles farther north, the lack of radar coverage could have been disastrous.

Yet, in spite of this shortage of spare parts and other operational problems, NOAA and the National Weather Service is expending taxpayer funds in ways that do not benefit the public as a whole.

For example, it is sending 20-plus people from the weather service and NOAA's forecast systems laboratory to support the Olympics in Atlanta. The national severe storms lab in Oklahoma is using taxpayer funds to develop weather work stations to compete with those produced by private sector weather companies.

The regional climate centers, largely funded by the National Weather Service, have provided snow tire marketing studies to an automobile manufacturer, tailored services to electric utilities, and other services in direct competition with private sector weather companies.

Numerous examples of this type of NOAA-sponsored industry-specific and business-to-business services are cited in my written testimony in appendix C.

These services are being provided in spite of a 1990 policy statement of the National Weather Service that says, and I quote, "The NWS will not compete with the private sector when a service is currently provided or can be provided by commercial enterprises unless otherwise directed by applicable law."

It is clear from the examples I have cited that this policy is sometimes not taken seriously by NOAA.

The commercial weather industry believes it is in the national interest to define the mission of NOAA and the National Weather Service in the way that makes the most sense in the 1990s.

If you will turn to figure 2 of my testimony, we recommend that the National Weather Service be focused on a core set of missions that would provide the maximum benefit to the taxpayer while creating an environment where private weather sector companies can do what they do best: provide innovative services to business and industries

The center of the mission of NOAA must be the collection of raw meteorological and environmental data upon which all weather forecasts and storm warnings are based. The recent threats by NOAA to cut off data to the private sector are, we believe, both misguided and unfortunate. If NOAA is not in the business to collect and distribute environmental data, then what is its mission?

In a similar manner, atmospheric modeling is generally agreed to be a Federal function. These computerized simulations of the atmosphere are increasingly the basis of weather forecasts and storm warnings by both the weather service and the private sector. While commercial weather companies provide business-to-business cite-specific storm warnings, we recommend that storm warnings for the general public continue to be provided by the NWS. This is because certain types of storm warnings, such as those for hurricane and flood, require the evacuation of large numbers of people requiring the coordination of Government at several levels.

In the past 6 months I have been asked by several Members of the House and Senate whether the private sector could take over weather forecasts for the general public other than those that pertain to storms. The answer is clearly "yes." When you look at U.S.A. Today, the Washington Times, the Washington Post, those weather forecasts come from the private sector. Perhaps 85 percent

of the forecasts the public receive come from private sector weather companies.

But the position of the commercial weather industry is that the National Weather Service continue to provide broad general forecasts for the general public. But economic sector and user-specific services, numbers 5 and 6 in my examples, should clearly be turned over to the private sector. Federal funds should be spent keeping radars operating and flying hurricane-hunter aircraft into storms rather than providing corporate welfare activities, such as specialized services to air freight companies, large agribusiness companies, electric utilities, and others.

By adopting the language of H.R. 1815 to refocus the national weather service mission on the general public, the new weather service will have the greatest benefit to the taxpayer while giving the commercial weather industry a measure of protection against unfair competition from NOAA and the organizations it sponsors.

We also recommend to Congress that NOAA be forbidden from withholding any of its data from private sector weather companies and to continue the current policy of charging only the incremental costs on the fees it charges for the data it collects.

I wish to thank the members of this committee for inviting me to share my views of the commercial weather industry regarding the future of NOAA and the National Weather Service in particular. Thank you.

[The prepared statement of Mr. Smith follows:]



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THE MISSION OF NOAA AND THE NATIONAL WEATHER SERVICE IN THE 1990's AND BEYOND

Michael R. Smith
 Certified Consulting Meteorologist
 President
 WeatherData, Incorporated
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NOAA and the National Weather Service generally attempt to be "all things to all people." This is because the mission of the National Weather Service as defined in the 105 year old "Organic Act of 1890" was defined in very broad terms.

In this era of tight Federal budgets, it no longer makes sense for the National Weather Service to continue to operate in this way. The danger of not redefining the National Weather Service's mission to reflect the reality of the 1990's is that the NWS will be stretched so thin that it will fail to provide quality services to the general public. There are already indications that this is occurring:

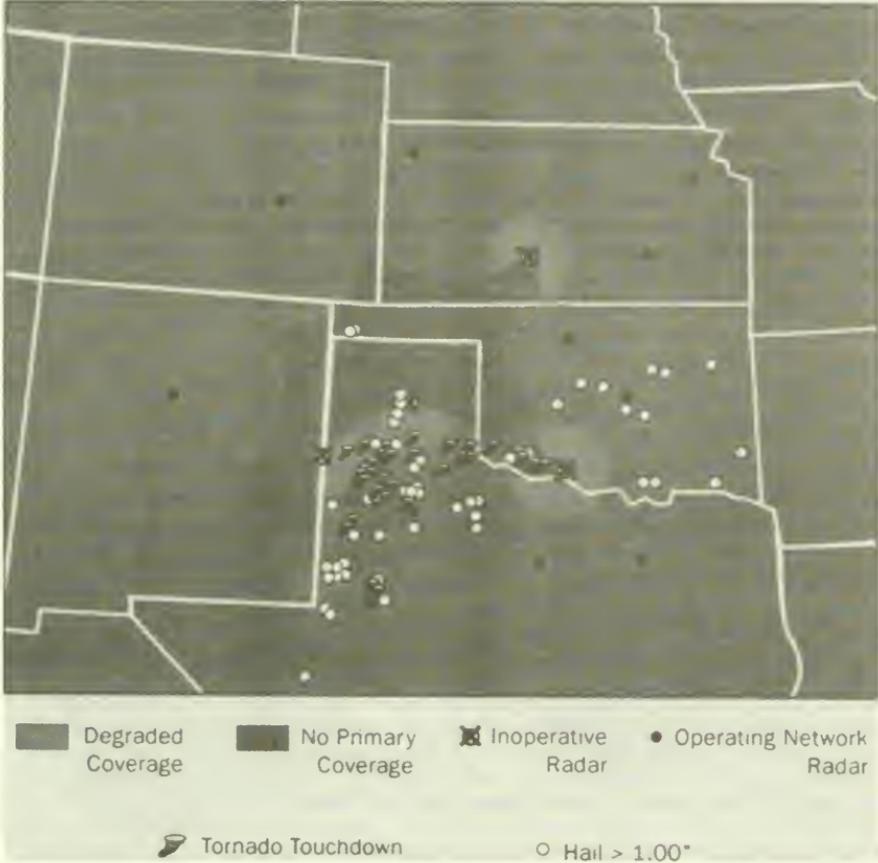
- The National Weather Service was criticized by the City of Dallas for inadequately warning of the flash flood which killed 18 people in April, 1995.
- For three days from June 1-3, 1995, four of the NWS' new WSR-88D radars ("NEXRADs") in the tornado belt were out of service due to a lack of spare parts as wave after wave of tornadoes and severe thunderstorms moved across the region (see Figure 1).
- The accuracy of the National Weather Service's tornado watches and warnings, by some measures, has been dropping.

There are numerous other examples which could be cited, some of which are included in Appendix A.

The above examples are **not** cited to criticize or embarrass the National Weather Service. They are cited to illustrate the need for the National Weather Service to focus its resources and efforts in performing the functions that benefit the largest numbers of taxpayers, i.e., the general public.

Figure 1

June 1-3, 1995 Doppler Radar Outage



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How should the National Weather Service's mission be defined? In addition to basic scientific research, I propose that the National Weather Service collect raw meteorological data, operate computer models of the atmosphere and create generalized storm warnings and weather forecasts for the public. I have attempted to illustrate this mission in Figures 2-4.

The raw meteorological data (mission #1 in Figures 2-4) is needed by every weather forecaster, government or commercial, to make weather forecasts, storm warnings and related environmental products. By treaty, this is an obligation of the Federal government and is NOAA's most basic and important function. We believe that recent threats by NOAA to limit both the collection of data and its availability (for example, the letter from Dr. James Baker, August 11, 1995) are both misguided and unfortunate. If the collection and dissemination of environmental data is not the mission of NOAA, what is?

Operation of the computer models (mission #2), which are increasingly used to forecast the weather, is also a governmental function because of their worldwide nature, requiring the coordination of governmental weather services throughout the world.

We urge Congress to provide adequate funding for the infrastructure of the National Weather Service. Without accurate raw data and realistic computer models neither the National Weather Service nor commercial meteorologists can provide quality weather forecasts and storm warnings.

The private sector provides storm warnings tailored to the needs of individual businesses and has the expertise to provide storm warnings to the general public as well. However, the commercial weather industry believes that storm warnings for the general public should continue to be provided by the government. This is because certain types of storm warnings (such as hurricane warnings) involve the evacuation of large numbers of people requiring a coordinated effort of government at several levels. We recommend that forecasts and warnings of storms for the general public (mission #3) continue to be a function of the National Weather Service.

In the case of day to day weather forecasts ("partly cloudy tomorrow," mission #4), this function can be provided by either the National Weather Service or commercial weather companies. Indeed, most Americans already receive their day to day weather forecasts from private industry (please see Appendix B). The commercial weather industry is certainly not opposed to the National Weather Service continuing to provide forecasts for the general public. However, if the Congress wishes to save additional

Figure 2

National Weather Service Functions and Relation to Private Sector Meteorology



Figure 3

Today

(Shaded area shows current boundary of NWS operations)



Figure 4

The Future With H.R. 1815

(Shaded area shows proposed boundary of NWS operations)



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monies, the private sector weather companies are willing and able to provide weather forecasts for the general public.

With regard to missions #5 and #6, Industry-Specific and User-Specific Weather Services, these should clearly be turned over to the private sector. There is no justification for the Federal government continuing to subsidize this type of "corporate welfare." Appendix C is a list of just a few of these services funded, directly or indirectly, by the taxpayer. All of these services can be provided by commercial weather companies.

The language of H.R. 1815, including section B, is needed to focus the National Weather Service on its core mission. By doing so, the taxpayer's investment in the meteorological infrastructure would be leveraged in the most efficient way possible resulting in the greatest benefit for both the general public and the economy of the United States.

If H.R. 1815 becomes law, the United States will see rapid growth in the commercial weather industry. Why is this of benefit to our Nation as a whole? Consider the following weather-related products and services that we take for granted in our daily lives:

- Color weather radar
- Color weather satellite imagery
- Colorized newspaper weather maps and forecasts
- Dynamic, animated television weather graphics

These innovations of the last 15 years have revolutionized the way we view the weather, yet none of these were developed by the government. All were innovations of the commercial weather industry. Figures by W. J. Maunder indicate that literally billions of dollars would be saved by businesses with accurate and appropriately tailored weather information. If the commercial weather industry grows, new innovations will help American business and industry operate in a more efficient and safe manner.

The commercial weather industry is comprised of more than 100 companies across the United States (see Appendix D for a list of members of the Commercial Weather Services Association). Every one of them is a "small business" as defined by the Federal government. But the growth of our industry has been hampered by what we consider to be unfair competition from NOAA.

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I would like to cite two examples. Additional examples are in Appendix B.

Support of the 1996 Olympic Games in Atlanta

The National Weather Service and NOAA's Forecast Systems Laboratory will send more than 20 people and will devote considerable scarce Federal resources to provide on-site weather services dedicated to the Olympic Games. In the past, commercial weather companies have provided services to the Olympics. Commercial weather services cannot compete with taxpayer-funded, dedicated, on-site services such as these.

Weather Workstation

NOAA's National Severe Storms Laboratory has created a meteorological workstation for the electric utility industry which is designed to compete with those offered by commercial weather companies such as WeatherData, Incorporated; WSI, Inc.; Kavouras, Inc.; Accu-Weather, Inc. and others. There is fierce competition among commercial weather companies to create better and better workstations at lower costs to the ultimate benefit of businesses. We accept the sometimes harsh realities of the marketplace. But we cannot compete with workstations that are developed using taxpayer dollars and taxpayer resources.

In 1990, the National Weather Service, with the best of intentions, issued "The National Weather Service and the Private Weather Industry: A Public-Private Partnership" policy statement on the Weather Service/Private Sector roles. The stated goal of the statement is "a partnership which enhances total service to the American public, government and industry." The Statement reads in part,

"The NWS will not compete with the private sector when a service is currently provided or can be provided by commercial enterprises, unless otherwise directed by applicable law."

Unfortunately, in addition to the examples cited above, there have been numerous times when the the policies outlined in the Statement have not been followed. For example, specialized forecasts for Airborne Freight, snow tire marketing studies for Ford Motor Company and numerous other forecasts, products and projects have been conducted in violation of both the letter and spirit of the policy since it was adopted.

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On February 3, 1995, NOAA went so far as to conduct a "customer satisfaction survey" of its "customers." Included were the following questions:

- What did you think about the cost of the (NWS) information services or data products?
- Would you be willing to pay for those information services or data products?
- Have you used any of the specialized services or products from the National Weather Service within the last 12 months?
- Why did you choose the National Weather Service to obtain these services or products?
- *Are there any products or services that the National Weather Service does not provide that you would like to purchase?* (emphasis added)

It is clear from these questions that the National Weather Service was or is considering expanding its "business to business" weather services. Whether it actually does so or not, the constant threat of NOAA and the National Weather Service offering taxpayer-subsidized services has a chilling effect on the management of our businesses and our ability to expand and grow.

We urge the Committee to adopt the language from the Policy Statement cited above, *which is already official National Weather Service policy*, and which is included in H.R. 1815 to prevent unfair competition with our industry.

By mandating that NOAA must devote its resources to weather services for the general public, basic scientific research, etc., an environment will be created which will allow the commercial weather industry to rapidly expand, thus creating jobs and generating tax revenues and allowing American businesses to derive the benefits of new and better sources of weather information.

Some, especially in agribusiness, have expressed concern that commercial weather companies are not able to provide these tailored weather services. As illustrated in Figures 5 and 6, not only can commercial companies provide agricultural weather services, *more than 35 companies already do!* "Soybean Digest" referred to this competition as "Network Weather Wars." Once freed of the threat from unfair taxpayer-subsidized competition, there will be an explosion of entrepreneurial initiative which will provide an even larger array of customized weather services for business.

The non-competition language in H.R. 1815 is essential to the future growth of the commercial weather industry! Without it, our industry cannot reach its full potential.

Figure 5

Agricultural Weather Information Providers

WeatherData, Inc.

Freese Notis Weather

Farm Dayta

Weather Network, Inc.

WeatherBank, Inc.

and many others . .

*More than 35 commercial weather companies provide
agricultural weather services!*



WeatherData
INCORPORATED
(316) 265-9127

FIGURE 6

BYTES & BEANS

by Grant Mangold

Network Weather Wars

If you haven't tuned in electronic ag news networks lately, you might be in for a surprise. As competition heats up, most have added several new features and more flexibility for keeping you informed. When you call them for complete information, ask about specific computer-interface capabilities.



Scan a computer screen instead of the sky for weather information.

New DTN 6001 Series features 24 pages of color weather maps with radar maps updating four times every hour, 11 programmable commodity quote pages and more than 1,000 programmable technical charts, full computer compatibility, 20 audio/visual price alarms and enhanced color graphics. Monochrome service is also available. Dept. SBD, 9110 West Dodge Road, Omaha, NE 68114; 800/486-4000.

Electronic information system announces weather enhancements, price alerts, vertical price indicator, USA TODAY Decisionline, plus link-up to your computer with InfoLink and InfoExpert to interface with spreadsheet, charting, data analysis and recordkeeping programs. Contact FarmDays², Dept. SBD, 11275 Aurora Ave., Des Moines, IA 50322; 800/853-7379.

Globalink will offer color radar weather this spring, with price quotes every 10 minutes, Futures World News supermarket of market information, and ProFarmer products—plus DTN's cash markets for crops and livestock. Satellite system oper-

ates in the background on your computer. Globalink, Dept. SBD, 219 Parkade, Cedar Falls, IA 50613; 319/277-1278.

Also, check out weather and markets with your PC on MarketBrief (405/947-1566), or Farm Bureau ACRES (312/399-5770), or the (800/225-4331).

You can also obtain weather and market information on your PC from (814/234-9901), on your FAX or PC from (814/234-9901), on your FAX from (316/265-9127), or on your satellite TV from (800/933-3276). Extension computer networks in many states also feature weather along with other news.

Software reviews of farm business programs round out the features of "Ag Executive" newsletter which also covers farm business and financial management topics, such as Farm Financial Standards Task Force recommendations. New subscribers receive all past software reviews. Ag Executive Inc., Dept. SBD, 115 East Twyman, Bushnell, IL 61422; 309/772-2168; fax 2167.

Mac or Windows? Freedom Ag Accounting upgrades to version 1.5, and announces Freedom Ag Field Records. They're both Excel-based programs for Windows 3.1 or Macintosh. Ag Accounting offers customized reports and detailed analysis. Field Records tracks farm data and handles maps from other programs. Contact Shire Growth, Dept. SBD, Box 205, Smithshire, IL 61748; 309/325-7163.

Agri-Cad announces a new value-added partnership with RDI Technologies as AgMAPP software and technical support joins the RDI lineup of fertilizer blending and grain elevator management packages. Contact RDI Technologies, Green Lake Mall, Spicer, MN 56238; 800/645-8880. Another AgMAPP distributor is FBS Systems, Box 248, Alledo, IL 61231; 800/437-7638.

Farm Equity Manager Production Analysis software calculates credit ratios. Farmer and lender programs include financial Enterprise and Breakeven Analysis, Budget Manager and Loan Tracker. Contact Equity Consultants, Dept. SBD, 304 S. Locust, Glenwood, IA 51534; phone 712/527-5216, fax 4856.

New electronic data interchange (EDI) format recently received approval from Association of Agricultural Computing Companies (AACC). The EDI will allow users to exchange data from different programs. Contact John Bruns, AACC, Dept. SBD, P.O. Box 122, Claytonville, IL 60926; phone/fax 815/457-2987.

While you're running your favorite spreadsheet or software program this winter, send us a printout and note how it makes you more efficient. We'll thank you with \$25 for items we use.

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H.R. 1756 contains language which seems to encourage user fees, specifically, Section 214. It says, "It is the sense of the Congress that the head of each agency that performs a function vested in the agency by this Act should, wherever feasible, explore and implement user fees for the provision of services in the performance of that function to offset operating costs."

We believe that this language is contrary to language elsewhere in Representative Chrysler's bill to abolish the Department of Commerce and the Paperwork Reduction Act (P.L. 104-13) contained in the Contract with America and signed into law by President Clinton.

There are certain instances when user fees make a great deal of sense. For example, the use of a campsite at a National Park requires maintenance and labor on the part of the Federal government. The more people that use the campsite, the more labor and maintenance are required.

The same is not true for data. Data can be used over and over again. Reuse does not diminish data, it actually enhances its value.

Our industry is not opposed to NOAA charging us its incremental cost to distribute beyond NOAA the data it collects. This is the current policy. In 1994, my company, WeatherData, Incorporated, directly paid NOAA \$18,455.00 in fees for data. If the current pace continues in 1995, the figure for the year will be in excess of \$20,000. This does not include our share of the fees that NOAA charges for access to its WSR-88D radars. By next year, the four primary NEXRAD suppliers will be paying NOAA approximately \$ 1 million for the privilege of connecting to the radars and the data they produce.

We believe that Congress, in order to get the full value of the taxpayer's huge investment in the Modernization of the National Weather Service, should adopt policies that encourage rather than restrict the use of this data.

We request that Congress consider adding language to this bill which requires the National Weather Service to make all data, forecasts and products which it makes available to its field offices available to commercial meteorologists. There have been numerous examples of the NWS withholding products from the private sector such as "Storm Relative Velocity" data from the WSR-88D radars (the single most useful product to detect and warn of tornadoes), Wind Profiler data (NOAA statement of June 11, 1990), flash flood guidance, satellite rainfall estimates, satellite interpretation

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messages and many others. This concern is especially acute in view of the recent comments by NOAA officials about cutting off data to the private sector that I mentioned earlier.

We respectfully suggest that Congress adopt language which encourages the widest possible use and availability of meteorological and environmental data. This includes user fees that are set at a rate no higher than the incremental cost of distributing the data and requiring the National Weather Service to make available to the private sector all raw data and all of the products that it distributes to its field offices.

In summary, the commercial weather industry recommends:

- That Congress define the mission of the National Weather Service as collecting data, operating the computer models and providing generalized storm warnings and forecasts for the general public.
- That Congress restrict, by law, the National Weather Service from operating outside of its core mission in order to insure that taxpayer funds are spent to benefit the public as a whole.
- That Congress encourage the use of the data generated by NOAA and the National Weather Service and to mandate that the National Weather Service make all of its data and products available to the commercial weather industry. This will leverage the taxpayer's investment in the NWS Modernization in the most efficient and cost-effective way.

Thank you for considering the views of WeatherData, Incorporated and the commercial weather industry in this matter.

Appendix A

The following are some recent indications that the National Weather Service, because it is stretched too thin attempting to be all things to all people, may be in danger of not providing quality services to the general public.

- "City storm study faults SW Bell, weather bureau", Dallas *Morning-News*, May 17, 1995
- "Accuracy of National Weather Service's tornado watches and warnings, by some measures, has been dropping." Based on figures from the National Severe Storms Forecast Center, Kansas City, July 1995
- June 1-3, 1995 Doppler Radar Outage at Dodge City, KS; Amarillo, TX; Clovis, NM and Frederick, OK (See Figure 1) Lack of spare parts was cited as the reason for the extended outages of these radars at the height of the severe storm season.
- June 7 - July 8, 1995 in four separate situations, the NWS in Kansas did not forecast rain or thunderstorms to occur. Within 2 to 6 hours after the forecasts were issued major thunderstorms developed. In three situations (June 7, July 2 and July 8) these thunderstorms caused significant property damage and/or flooding.
- 17 inches of unforecast snow in Boulder, CO, American Meteorological Society Meeting, Dallas, TX, January 1995

Weather forecasting is difficult in the best of situations. These examples are cited not to embarrass the National Weather Service but to highlight the need for the National Weather Service to concentrate on its core mission of forecasting the weather and providing storm warnings for the general public.

Appendix B

From Where Do Americans Get Their Weather Information?

Please consider the following facts pertaining to the State of Kansas (which is a medium size state).

- All major network television stations in Kansas employ one or more in-house meteorologists.
- KPTS (PBS), Channel 8, in Wichita employs a commercial weather company for on-air forecasts.
- In Wichita at least seven radio stations have their own meteorologists.
- The Kansas Ag (radio) Network has in-house meteorologists.
- The local telephone weather recordings in Wichita (the public has the choice of two) are both done by private industry. WeatherData, Incorporated will be providing the weather for one of them in the near future.
- The Wichita Eagle, Kansas City Star, and Lawrence Journal-World use WeatherData, Incorporated for their weather forecasts.
- Associated Press employs one of our competitors to provide weather forecasts and graphics used by smaller newspapers.
- Western Resources, Kansas City Power and Light and Utilicorp United use WeatherData to plan electric and gas loads and to plan for storms. WestPlains Energy uses one of our competitors.
- The Kansas Department of Transportation and Kansas Turnpike Authority both use a commercial weather company to provide warnings of snow and ice and monitor the condition of the pavement.
- Many counties and municipalities in Kansas use commercial weather companies for weather information that affects maintenance and snow removal.
- The agri-weather services used by farmers such as DTN, Farm Dayta and Knight-Ridder all have either in-house meteorologists or use commercial weather companies.
- The Santa Fe, Southern Pacific and Kansas City Southern Railroads receive track specific storm warnings and weather forecasts from WeatherData, Incorporated. The Burlington Northern and Union Pacific Railroads use one of our competitors.
- Northwest, Delta, American and United Airlines have in-house meteorology departments. United Express (Air Wisconsin) subscribes to one of our competitors as do a number of other airlines which serve our state.

A similar listing could be compiled for any other state. Commercial weather companies are the source used by the general public and business for an increasing percentage of their weather information.

Appendix C

Examples of National Weather Service and NOAA activities which compete with commercial weather companies.

- Announced it will send 20+ personnel to support the Olympics in Atlanta, CWSA, *Weather Industry News*, December 19, 1994
- Supported the U.S. National Hot Air Balloon Championship, *Central Region News*, June 30, 1995
- Reformatted products specifically for The Weather Channel™, *Central Region News*, 1995
- Distributed press releases for The Weather Channel™, *Central Region News*, 1995
- Provided personalized weather briefings to the Kemper Open outside Washington, DC
- Golf Tournament, Special Weather Statement, Denver, CO, August 21, 1992
- Participated in the Transglobal Balloon Project, CWSA *Examples of Government Competition*, July 27, 1995
- Provided specialized forecasts to Airborne Freight, Letter from Airborne Freight, April 12, 1995
- Began the "Wide Area Weather Information Network Service" designed to compete with private-sector weather companies, Washington Post, December 5, 1994
- Did a "market research" study of its customers, United States Department of Commerce, letter dated February 3, 1995
- Issued a "special weather statement" for an investor-owned electric plant, Special Weather Statement, Topeka, KS, June 7, 1993
- Issued a severe thunderstorm warning for the Woodlands Race Track, a for-profit, parimutuel horse and dog track
- Snow tire marketing study for Ford Motor Company, High Plains Climate Center, "Climatic Resources Available", November 1994
- Tailored forecasts for Tucson Electric Company, Western Regional Climate Center, "Climatic Resources Available", 1993 - 1994
- Temperature surveys for Lincoln Electric Company, High Plains Climate Center, "Climatic Resources Available", November 1994
- Ran taxpayer-subsidized advertisements in *Weatherwise* magazine for their services, *Weatherwise* magazine, August/September 1993
- Developed "1-900-288-CHART" to compete with private industry

Numerous other examples could be cited.



Commercial Weather Services Association

655 Fifteenth Street, NW • Suite 310 • Washington, DC 20005-5701
 Telephone 202-546-6993 • Fax 202-546-2121

Current CWSA Members

Accu-Weather
 Atmospheric Information Systems
 Baron Services Corp.
 Bruce Meteorological Services, Inc.
 Central Weather Service, Inc.
 CNN International Weather
 Concurrent Computer Corp.
 EarthSat
 ENFO, Inc.
 Fairweather Forecasting
 Fleet/Compu-Weather
 Fox Weather
 Freese-Notis Weather, Inc.
 HYDROMET
 Jeppesen Data Plan
 Kniacht-Ridder/Global Weather Services
 Locus Weather
 MAR, Inc.
 MESO, Inc.
 Met-Tech Meteorological Technologies
 MeteoQUEST, Inc.
 Micro Forecasts
 New England Meteorological Service
 Noble Denton Weather Services
 Northern Video Graphics
 NorthWest WeatherNet, Inc.
 OceanWeather, Inc.
 Ontario Hydro
 Roemer Weather, Inc.
 Solar Light Co., Inc.
 SpaceCom Systems
 Stormfax, Inc.
 Strategic Weather Services
 Unisys Weather Information Services
 Weather Services Corporation
 WeatherBank, Inc.
 WeatherData, Inc.
 Weathernews Inc. Oceanroutes
 WeatherVision
 Wels Research Corp.
 WideSpread
 Wilkens Weather Technologies Division
 ZedX, Inc.



PROFILE

Michael R. Smith, C.C.M.

ACCOMPLISHMENTS

**1992 Recipient of the
American Meteorological Society's
Award for Outstanding Contribution to the
Advancement of Applied Meteorology**



President and Founder of WeatherData, Incorporated, 1981-Present
Fellow of the American Meteorological Society
Member and Former Secretary-Treasurer of the National Council of Industrial Meteorologists
Member, Advisory Committee of the Department of Atmospheric Sciences, University of California at Los Angeles
Member, Board of Directors, Commercial Weather Services Association
Charter Member, National Weather Association
Member, AMS Committee on Weather Analysis and Forecasting
Member, Advisory Committee, Center for the Analysis and Prediction of Storms, Norman, Oklahoma

Certified Consulting Meteorologist #368 (awarded June 1984)
American Meteorological Society's Seal of Approval for Television Broadcasting #130 (awarded August, 1975)
Bachelor of Science Degree in Meteorology, University of Oklahoma, 1974

Director of Weather Services, KTVI, St. Louis, 1979-1981
Chief Meteorologist, Kansas State Network, Wichita, 1975-1979
Meteorologist, WKY Television and Radio, Oklahoma City, 1971-1975

Chairman, Commercial Weather Services Association, 1989-90
Member, American Meteorological Society's Committee on Aviation, Range and Aerospace Meteorology, 1986-1989
Member, American Meteorological Society Board of Broadcast Meteorology 1984-1987, served as Chairman, 1986
Chairman, National Weather Association Committee on Broadcast Meteorology, 1980-1981
Member, National Weather Association Committee on Radar Meteorology 1978-1979
Member, State of Kansas Weather Modification Advisory Board, 1979

Author of scientific articles on meteorology that have been published in Weatherwise, Bulletin of the American Meteorological Society, Monthly Weather Review and the Digest of the National Weather Association.

"when decisions depend on weather"
245 North Waco Street, Suite 310
Wichita, Kansas 67202
Phone (316) 265-9127
Fax (316) 265-1949

The CHAIRMAN [presiding]. Very good. Thank you all for your testimony. It is very helpful. It helps give us a little bit of a sense of direction here.

Mr. Brown.

Mr. BROWN. Thank you, Mr. Chairman.

I consider all of this testimony to be extremely enlightening, and I want to thank all of the witnesses for presenting their views here this morning.

Mr. Smith, I have here in my hand, to use an old phrase, a communication from the weather channel, which also distributes quite a bit of weather news. They seem to take issue with some of your statements.

They say, for example, the observation network and the forecasting and warning infrastructure, which the NWS manages, is a legitimate function of the Federal Government and so on. This is in response to questions which I sent to a number of people in the private weather service business.

You appear to be purporting that your views represent the private weather service industry, and I am sure that it does to a considerable extent, but not knowing much about it, could you indicate to me the scope of the private weather system business and whether there is some diversity in their point of view?

Mr. SMITH. Well, certainly. First of all, in using the examples you cited, the infrastructure of the weather service and the storm warnings that you cited in the weather channel's letter, that actually supports my testimony. We are not in favor of changing the infrastructure for data collection of the National Weather Service or storm warnings. So we are in complete agreement on that point.

In terms of the commercial weather industry, you have to remember that the weather channel is a user of the National Weather Service products. It is generally not what we consider to be part of the commercial weather industry that creates its own forecasts and sells them to business and industry. The weather channel is in the business of providing a mass media service to the general public, and as such is not part of the commercial weather industry as we define it.

Mr. BROWN. Well, I am learning some of these nuances of the business. In the past, my intervention in National Weather Service activity has generally been to stop them from getting out of certain things that they do, like agricultural and other specialized weather forecasts because of tremendous constituent interest in maintaining these services.

Now, I know that there are private forecasters who can provide this service, and I tell my constituents that you can buy it from a private forecaster, but they say that they prefer to get it for nothing from the National Weather Service. [Laughter.] I can understand that. You prefer to get your data for nothing from the National Weather Service.

Mr. SMITH. No, sir, that's not true. In fact, if you look at my testimony, you will see that my company will pay the National Weather Service in excess of \$20,000 in user fees this year.

Mr. BROWN. Is that a fee based upon the cost of reproduction of the data?

Mr. SMITH. It is the incremental cost of communicating the data.

Now, with regard to agriculture, I thought that might come up today. I prepared a list of just some of the resources available to farmers for agricultural weather information.

Mr. BROWN. Yes.

Mr. SMITH. There are more than 35 companies involved in agricultural weather, and the typical price of one of these systems that goes into your home or farm operates 24 hours a day, 7 days a week, is between \$1.30 and \$1.80 per day.

Mr. BROWN. Yes.

Mr. SMITH. So we are not talking about very much cost in order to get this weather from a private weather company 24 hours a day, 7 days a week.

Mr. BROWN. Yes. Well, believe it or not, I am not really trying to take strong issue with your position. If we could provide an adequate level of service to all of the industry user groups or the various user groups as a private service, I would prefer it that way. We have sought to move in that direction.

But there are some problems. There are, for example, when we tried to privatize the data from LANDSAT, which is sort of like the weather service in the sense that it gives you information about what is on the surface of the Earth, not necessarily meteorological but other kinds of data, we run into a tremendous problem in properly pricing the data that we get because there are researchers who use that data that want to pay a minimal amount for it, there are others, private corporations, who need it very badly and can afford to pay more for it. Then, of course, there are some who would like to get it for free.

We haven't got the magic formula yet, and I am looking for input as to how we could do that. Would you be willing to pay for part of that \$1 billion or so that the weather service has to put into managing satellites and so forth in order, to have access to all that data?

Mr. SMITH. Well, please don't take my response the wrong way, but as both an individual and corporate taxpayer, I feel we are already contributing to that \$1 billion fee. We believe the data belongs to the taxpayers as a whole, not to the National Weather Service. Plus we pay user fees, as I mentioned, in excess of \$20,000 to NOAA to convey that information to us.

Mr. BROWN. Well, if you are a major part of the private weather service and you're paying \$20,000, you are not paying a lot for that investment that the weather service is making.

Mr. SMITH. Well, but that is over and above the taxes I pay both as a corporation and as an individual.

Something else, as I mentioned in my testimony, that \$20,000 figure does not include our share of what we pay for the NEXRAD program. That is a separate user fee that is in excess of a million dollars a year in total.

So there are some significant user fees being generated by NOAA.

On the subject of user fees, let me make one general comment. When someone uses a campsite at a national park and when that campsite is used over and over again, damage to the campsite can occur, and of course it's appropriate to charge a user fee.

But in the case of data, data doesn't diminish the more often it's used; in fact, it becomes more valuable the more often it is used. I would urge the Congress to adopt user fees based on the incremental cost to encourage people to use the data paid by the taxpayer to leverage the taxpayers' investment so that the maximum good is derived from it.

Mr. BROWN. Well, I think in general we can agree with that principle, but you still haven't answered the question of how we meet the overhead costs. We have that same problem with the Census, for example. We spend hundreds of billions acquiring census data and then distributing it to anybody that wants it for the cost of distribution.

Now, if we are really going to avoid corporate subsidies by the Federal Government, we have to figure out how we can get more of that cost recovery in a fair and equitable way. I don't quite see in your testimony how you are suggesting that.

The CHAIRMAN. The time of the gentleman has expired.

Mr. Bartlett.

Mr. BARTLETT. Thank you very much.

From how many different sources do we get weather data? I know the military gets weather data. You mentioned two types of satellites, the stationary satellites and the polar orbital satellites. From how many different sources do we get satellite weather data, and who is paying for those sources?

Mr. HALLGREN. Well, that's a fairly broad question. But let's take the satellites. First of all, when you look at it on a global basis, because you have to have global information to make forecasts for more than a couple of days, even for the central part of the United States. There are five geostationary satellites that are operated around the world. Right now two of them are operated by the United States, one by Europe, one by Japan, and one by India, although we don't get every last bit of data from it.

In the polar orbiting satellites, we have, as I mentioned, the polar meteorological satellites operated by the Department of Defense and the NOAA here, and they average about four satellites if everything is going perfectly. That is what Jim Baker has recently achieved the idea of converging into these.

Throughout the world we have the radars in this country that are operated primarily by the National Weather Service, the doppler radars that you have heard. There are all kinds of surface stations across the country that are operated by a great number of people. For example, FAA is involved in that, DOD is involved in it, the National Weather Service is involved in it. In fact, many of the precipitation gauges are operated by the Corps of Engineers and so forth.

So it has been put together by a wide variety of different groups, and that has been, frankly, the strength of it. People had to have observations like from controlling reservoirs and the Corps of Engineers put those data in place. Somebody else needed it for aviation observations, they put it in place.

Let me say that I do have, I think, an answer for you, Congressman Brown, as to how to function. You don't start by saying the weather service is in charge of acquiring data. You start by saying what is the mission of the weather service? You all in the policy

positions in the Administration and the Congress decide on what is the mission of the weather service. Hopefully, you will think that through very carefully because one big part of it is safety of life, which I believe is the fundamental responsibility of the government.

The second thing then comes. What data is needed in order to carry out that mission? I believe the government should acquire the data to carry out that mission in a quality way and not one bit more data than that, in other words, to meet the mission.

Then those data that are required to carry out the mission of the government should be made available to the private sector on a marginal cost basis. It's clean, you don't have arguments as to whether or not now the government should acquire data because somebody else needs it, and so forth. They only acquire data for their mission, and those data, because it is a government mission, would be paid for by the taxpayers' money. I think that is a perfectly fair way of doing it.

Also, we wouldn't have to get into all this stuff about whether a commercial company can do it or what. Just make the decision as to what the government is supposed to do, what is the Government mission? It will all flow from there, and then the private sector can make their decisions as to what services they provide in a very clean way.

This thing is not complicated, to me, unless I am too old and naive to understand it. Thank you.

Mr. BARTLETT. An ex-President who served before we had satellites expressed his philosophy of what government ought to do as the government should do for its citizens only what they cannot do for themselves. I think if that that was a good philosophy then, it's a good philosophy now. Of course, we are now in the process of determining what citizens can collectively do for themselves apart from government and what government needs to do.

You indicated that we have meteorological data from a variety of sources, from the military, from FAA, from private sources, from the weather service. Does all of this data get into a common data pool which is available to everyone?

Mr. HALLGREN. Yes, it does. First of all, it is distributed around the world so all nations share the data. This Nation shares its data with other nations, and they share their data with us. When I was permanent representative to the World Meteorological Organization, that was the primary function we tried to achieve in our meetings, to make sure that this sharing goes on.

Yes, right now the weather service tries to bundle that in a variety of services that Mike was referring to and provide it to the government, this type of circuit, that type of a circuit, and that is how he gets his data and that's how he pays his \$18,000 or \$20,000 a year.

Mr. BARTLETT. I know my time is up, but just one final question. How much duplication is there? Does the military collect essentially the same kinds of data that others are collecting, or do they have unique requirements? Do their requirements differ?

Mr. HALLGREN. If you said the same kind of data, yes. Lots of places are measuring wind, but you have to have a network across the country. I would say that the one area where there was dupli-

cation in my opinion, and I know not everyone agrees with me, is in the polar meteorological satellites, but I feel that Baker, et al. did a good job in starting on a path to clean that up.

Mr. BARTLETT. Thank you very much.

Thank you, Mr. Chairman.

The CHAIRMAN. Mr. Olver.

Mr. OLVER. Thank you, Mr. Chairman.

My apologies for having heard only really, I guess, the testimony of three of the people, and I have tried to catch up by reading a little bit backward in what some of the others have said.

One thing I get is I think you either directly said, or in written form, I believe three of the five of you have indicated that you really believe that NOAA, the functions of the National Oceanographic and Atmospheric Administration should remain in one unit.

Do all of you agree to that? I see two nods there. If there are Federal functions in those, is there anybody who disagrees with that, and could somebody tell me why, if you do disagree?

[No response.]

Mr. OLVER. Then going back to Mr. Watkins, in your testimony, you, I think, are the only person in this group who has been an actual Secretary of a Cabinet-level agency, namely, the Department of Energy. Do you see any reason for these to be associated in the Department of Energy?

Admiral WATKINS. Well, let me say this, Mr. Congressman. I believe that if you are talking about the laboratories, in NIST laboratories, the standards laboratories, there is some synergism between those laboratories in NIST and the 30 national laboratories within the Department of Energy, only because they are scientific, do basic research both in the weapons area and the non-weapons area. So I think there is some synergism there.

I think you could make a case, for example, if you have to find a home for NIST and you don't want it an independent laboratory, that you could find a home there, just because of the scientific base. There are 16,000 scientists.

Mr. OLVER. But it's the scientific base, it's not that there may be a broader scientific base?

Admiral WATKINS. The mission would have to be altered by Congress. The laws that established the Department of Energy probably would need to be adjusted to accept that additional mission under the laboratory concept.

Mr. OLVER. Fine. NOAA, since this panel is really mostly on NOAA, is there a reason for NOAA to be a part of the Department of Energy?

Admiral WATKINS. Is there reason for it? I don't think there is a strong justification. I could make a justification for Interior and Transportation, depending on what the Congress's interests were. If they wanted to make a case, they could probably make a case.

I do believe, however, that there are functions performed by the Department of Energy in the area of research in the oceans which are very vital to our understanding of our natural Earth systems. For example, the anthropogenic CO₂ generation, where is it going, why don't we know where the carbon is in the ocean? All that is being researched as part of the global change research effort of the

United States in contribution to the international programs. I think that is very vital.

We have this kind of information piece-meal around the Federal agencies in a variety of forms, whether it's coastal research, whether it's the national undersea research program, whether it's the sea grant program and all its functions.

All of these things contribute to our base of knowledge. So you could probably make that case, but I would say that we should not try to focus on whether it should go to the Department of Energy. I think that would be premature.

Mr. OLVER. Okay. From what you have said since you have added that you didn't see reasons under certain circumstances to be in Interior and Transportation, is the synergy with Interior or Transportation greater than it might be with Energy or with Commerce?

Admiral WATKINS. If you will define what the future mission of the Department of Energy will be that the Congress will come down on, I could probably answer the question better. I just don't know.

Mr. OLVER. Okay. Does anybody here see that there is one of these, now that we have named four, I guess, Energy, Interior, Transportation, and it is presently in Commerce, that sees a strong reason why it ought to be in one or another of those? Do any of the other four of you see in its constitution why logically the synergy is strongest in one of these rather than one of the others? Does anybody want to say?

Yes, Mr. Knauss?

Mr. KNAUSS. As the ex-Administrator of NOAA under President Bush, and also as one who, through the Stratton Commission, helped put NOAA together, my sense is that it works very well in Commerce now, NOAA does. It would work better as an independent agency.

Mr. OLVER. You are in favor of an independent agency?

Mr. KNAUSS. I am in favor of an independent agency.

Mr. OLVER. I was beginning to wonder whether there is anybody who wants to say that it really very strongly belongs in one because its inherent relationship is strongest with one of these others, that maybe it ought to be an independent agency.

Mr. KNAUSS. I would say that there are some reasons why it could go in Interior, particularly because of the fisheries and other kinds of things that NOAA does. There are also reasons it could go in Transportation, because in some sense the weather service connection with the transportation industry is also very strong.

But I would say those two have a slight edge over the other possibilities, sir.

Mr. OLVER. The others that had their hands up, would they be able to comment if I stay quiet? Mr. Hallgren and Mr. Smith have had their hands up.

Mr. HALLGREN. My wife always says I am very unrealistic. I would like to see it in a department that doesn't exist; namely, the department of natural resources would be a natural home or a department of science would be a natural home.

I would also like to say, a real department of environment would be a good home. If you had quality science and services there, we

would have a lot less regulation. If we had a science based person in charge and not a lawyer, we would have a much better situation, we would solve the regulation problem tremendously. So that is actually my preference. Sorry I can't say science is No. 1. Thank you.

Mr. SMITH. I think those of us in the commercial weather industry would say Interior makes the most sense, and from our point of view, we would not view Transportation as a desirable alternative.

Mr. OLVER. That is a good set of differences of opinion, if I could just add that.

The CHAIRMAN. Did you want to respond, too?

Mr. WOLFF. Yes. I think that while my thesis is that they should withdraw and become the U.S. Weather Bureau again as an independent agency because the weather bureau in NOAA has never accepted direction either from the Administrator of NOAA or from the Department of Commerce, and regardless of how you might think they have operated, they have operated independently. [Laughter.]

I was there for 5 years, and I remember Bob White called me into his office. He was the first Administrator of NOAA and practically cried on my shoulder. He was the most competent administrator we have ever had. He said, "I can't get the weather bureau to cooperate with me. How do I do that, Paul?" And I said, "It's impossible."

Mr. HALLGREN. As an ex-director of the weather bureau, let me say I cooperated extensively with Paul Wolff's people. Thank you. [Laughter.]

The CHAIRMAN. We will let you off. Go out into the hall after this is over. [Laughter.]

Mrs. Morella.

Mrs. MORELLA. I have your comments before me, but I didn't hear you speak, and I think I won't refer to NOAA, since I have heard that answer.

But what about NIST? I think I heard DOE, Admiral Watkins mentioned. Have the rest of you also mentioned where you would put NIST?

Mr. Wolff, did you comment on that at all, or do you feel it wasn't in your purview?

Mr. WOLFF. I am not familiar with that part of it.

Mrs. MORELLA. The National Institute of Standards and Technology.

Does anyone have any comments on that?

[No response.]

Mrs. MORELLA. I think the next panel probably will, then.

Thank you very much.

Thank you, Mr. Chairman.

The CHAIRMAN. Mr. Tiahrt.

Mr. TIAHRT. Thank you, Mr. Chairman.

As one of the dying breed of rural congressmen or having rural areas in your congressional district, there seems to be a furor in the Congress these days. But I am concerned about the people out in rural areas, and I know that there is a need for them to have weather services, particularly the farmers, who live and die by the

weather. Sometimes, the way our government is structured, so do farm subsidies.

So I am kind of wondering, and perhaps Mike Smith, who I am familiar with because I used to see him on my television before he went into business for himself and became very successful with Weatherdata, Inc., how will the farmers benefit if we have a privatized weather service?

Mr. SMITH. Congressman Tiahrt, since the late 1970s, with Project Green Thumb, and through the 1990s with NAWIS, there has been a constant, we perceive, threat that the government is going to provide even more agricultural weather services, taxpayer-subsidized, to farmers.

As long as that threat has existed, it has had a chilling effect on the management of our companies, in that if you were in our position, you wouldn't want to expend hundreds of thousands of dollars starting up innovative, new services if you thought the government was going to come in and offer them for free.

So we sincerely believe that the 35 companies that offer agricultural weather services to farmers now will increase and innovate the services that they already have if the mission of the National Weather Service and NOAA are refocused to eliminate that type of specialized weather service.

We believe that you will find within a year, 2 at the most, a flood of alternatives as far as agricultural weather is concerned for farmers.

Mr. TIAHRT. When we talked about restructuring NOAA, and I always think in terms of privatization of the National Weather Service, though that is not part of NOAA, but would that, if there is kind of a privatization of weather, what impact would that have on other parts like NOAA?

Mr. SMITH. I do agree with the other witnesses in that NOAA should probably be kept together because the ocean and atmosphere are in fact one system. Where you put NOAA is of somewhat less interest to the commercial weather industry, but we agree that it should probably be one organization that looks at both the ocean and the atmosphere.

What we believe, though, and I agree with what Dr. Hallgren had to say, we need to redefine the mission of the National Weather Service and NOAA, focus it very carefully, and then people such as myself who are running commercial weather companies know exactly where the boundaries are and exactly how we can plan and grow our businesses for the overall benefit of both the taxpayer and business and industry.

So I agree with Dr. Hallgren in that matter.

Mr. TIAHRT. Admiral Watkins, you may not be familiar, but I am in the process of heading up a task force that includes members of this committee to try to consolidate parts of the Department of Energy and eliminate it as a Cabinet-level agency and because of that effort, we are of course trying to find ultimate places for NOAA to go when Commerce is eliminated.

I think that—was it correct when you said that Interior would be a good alternative, in your perspective?

Admiral WATKINS. Interior or Energy.

Mr. TIAHRT. Was that your first choice, Interior?

Admiral WATKINS. I didn't have a choice. I just merely said that you can make a case that if the Congress decides that it needs to go into some other agency once the dust settles on some of this discussion about which Cabinets are going to be abolished, then I think you can make a case for Interior, for Transportation, for Energy, depending on what the outcome of those discussions are.

You could also make a case for a designated agency for science and technology, as the chairman has proposed.

Those things are possible. I think the near-term unsettling of an organization that is fundamentally well run, albeit there could be efficiencies, while we fiddle around with organizational structure, I think is a mistake. They are doing a lot of important operational things. They are doing research that nobody else is doing.

They are the only O&A we've got in the Federal Government. Right now, as my testimony indicates, we need that kind of information desperately, and I don't think we should destroy that organization until we find its proper resting home, and I think we ought to keep it as an entity and trim it down with the efficiencies that have been recommended by the National Academy. In fact, many of the recommendations made up here on the Hill in this debate should probably be imposed upon NOAA. So let's get on with the efficiencies and let's don't get the organizational thing like the cart before the horse. That is my concern.

Mr. TIAHRT. Mr. Wolff, you were the former Administrator. Did you say, if I understood you right, that NOAA could exist as an independent agency? Would that be on a permanent basis? Do you think that should be some kind of a temporary situation?

Mr. WOLFF. I think that it should be permanent. It was the U.S. Weather Bureau, and weather forecasting is the only proper mission for NOAA. The rest of these missions, in an era when we are running in the red every year, you can do without.

Now, they have to have a strong oceans component because the prediction problem is global, the prediction problem involves both the atmosphere and the ocean. So you have to have a good data collection system to get the data from all of them, and you can't solve the computer program for very long, as Dr. Hallgren says, without having removed all the boundaries, and the way the internal boundaries, like if you wanted forecasts for this one State, you could only forecast for a very short period of time, but the bigger area you forecast for until you get global very quickly. So you have to have global data, and you have to have a strong oceans component in NOAA, and that is one of the things that has been underfunded chronically, is the ocean part of the observations.

The observations along our coasts have been underfunded chronically, but that is an internal problem. But I think that they should pull back the mission to what is really a proper function for the Federal Government, which is weather forecasting, and that is the way it was when it worked, and come back to that and give them a billion dollars, to do that with, and that was the budget for the whole NOAA back in the middle 1980s, and we were afloat in money then. So I think that would be plenty of funds now.

The CHAIRMAN. The time of the gentleman has expired.

Mr. TIAHRT. Thank you, Mr. Chairman.

The CHAIRMAN. Mr. Ehlers.

Mr. EHLERS. Thank you, Mr. Chairman.

I just wanted to mention to the panel that this morning during the earlier session, I read the testimony of each of the gentlemen before us, and I was very impressed with their recommendations.

I agree with the general conclusion that NOAA should remain one entity. I particularly agree with the conclusion that NOAA should remain intact until we know where it is going to be placed, whether a department of science, or the Department of Interior or a separate agency, and cause minimum disruption and dislocation if we proceed with the dismantling of the Department of Commerce.

I think the same is true of the National Institute of Standards and Technology, and I believe both of them perform very important service for our Nation in research measurement, data collection, standard-setting.

The point that Congresswoman Morella made this morning about demoralizing the troops is an especially pertinent point, and something we often overlook in Congress.

I know, for example, the House's computer services, formerly HIS, now HIR, has gone through a very demoralizing 6 months, and I have worked very, very hard to get that back on track. It finally is on track. But it is amazing how easy it is to demoralize the troops.

I agree totally that these are valuable enterprises, they have good people working there. Let's cut away the administrative overburden, which we have plenty of, concentrate on the scientific mission of those agencies, find a good home for them or improve the home where they are, and then proceed from there.

I have no specific questions, but I did want to thank the panel, and I am in general agreement with the recommendations they make.

Thank you.

The CHAIRMAN. Thank you, Mr. Ehlers.

I, too, appreciated the testimony.

I want to explore a couple of things here. But the one thing I have to tell you that I am a little concerned about when we come and testify to the whole business of independent agencies and all these things is the problem that was highlighted by Secretary Brown this morning, which I think he has a legitimate point. If what we do is dismantle the Department of Commerce or any other agencies of the Government and end up with a series of independent agencies, that gets real expensive real fast because then everybody has to have their own general counsel, their own office of civil rights. You know, you have a whole series of these things that gets fairly expensive fairly fast.

While you have a nice little independent agency out there with its own constituency that can be into care and feeding of the independent status, it does, I think, create some problems that go beyond what some people have thought through.

Having said that, there really is a problem here in trying to decide where some of these mission agencies ought to go and the form that they ought to take if, in fact, you are going to do it.

I am impressed with the variety of testimony here, but a fairly coherent theme that if, in fact, we are going to do these missions, they ought to stay in a fairly combined kind of unit.

Secretary Watkins, you know, I did appreciate your exchange with Mr. Olver. We in fact have one bill out here where we are floating the concept of putting NOAA at Energy. That is, in large part, done as a result of some testimony we had not too long ago from your former undersecretary, Mr. Moore, deputy secretary.

Admiral WATKINS. Deputy secretary. He has been on that kick for many years since he was a Member of Congress, and there is certain merit to what he says about it.

I just think that until I understand do you mean defense, do you mean NASA, do you mean other things, are you going to separate the equivalent of 6.1 in defense, for example, to the basic research or to the applied and developmental work of 6.2-6.3 dollars, I don't see how you do that.

I would want to communicate a lot with you, Mr. Chairman, on how you are really going to carry it out, because intellectually I can agree, but I am a victim of many years in government in Washington, watching the politicization of research which I detest, and I think if Congress is going to do this, then they need to set up the rules for who is going to be this czar of science, is it going to be a scientist or is it going to be a Coca-Cola salesman?

I think if we pin it down and let's put some competence in the leadership and set up the correlative relationship between the follow-on applied research and application functions that are critical, because mission orientation means I know where I am going, I know how to defeat the Soviet Union and my basic research feeds the 6.2 and 6.3 follow-on.

It is unique in the government to have the Defense run their research the way they do. Others do not. But it is very clear there.

So I want to know all of those things before I would agree to that concept, even though intellectually I can agree with you.

The CHAIRMAN. Those are legitimate concerns. The only point I was going to make with you, it does seem to me that one of the things we have tended to miss in the way in which we have now established the Federal Government is the fact that there is a certain amount of synergy between our energy supplies and our environment, that we have tended to see those things as on collision courses rather than as complementary, and to some extent, having agencies that reflect the needs of both obtaining energy supplies and doing so in a way that is environmentally sound has some merit to it as well, and it is one of the things that we are attempting to do as a piece of this.

I must tell you, in all honesty, my guess is that that proposal doesn't fly in this committee and certainly has not been agreed to by anyone else. So I am going to go to the next step now and see how many of you would have a concern if the independent agency that we created was not an independent agency for NOAA itself, but an independent agency that was basically a science mission agency that included, perhaps, NIST and NOAA in an independent science agency format that then also may combine some other elements as we deal with the very issues that you have raised, Secretary Watkins.

I would just like to get a reaction from each of you as to whether or not that is something where we are doing something wrong or whether or not that is an attractive possibility if, in fact, we are going to end the Commerce Department.

Would anybody like to start? Dr. Hallgren.

Mr. HALLGREN. If you do put a department of science together the way I like it, then I would favor it very much. Thank you. [Laughter.]

The CHAIRMAN. Well, yes. One of the problems that we have is that we have probably 50 different opinions of how they would like it on this committee alone. [Laughter.]

Dr. Knauss.

Mr. KNAUSS. Congressman, it seems to me that what you are doing is you are backing into your department of science and this is probably a good way to go about doing it if what you are suggesting is namely taking the science parts of the Department of Commerce and making them an independent agency.

The CHAIRMAN. Well, I am backing in because I can't get in the front door with this. [Laughter.]

Mr. KNAUSS. I understand. I was a university administrator for many years, and I know how we do these things.

I would also suggest as Secretary Franklin said this morning in her testimony, following NOAA was a very large stretch for her, because it was 60 percent of the agency, at least when I was there, the Department when I was there.

If you made NOAA an independent agency, it would not cost that much more money, because we had almost all of the components one needed and ran almost independently of the Department of Commerce in terms of our finance, personnel, Affirmative Action, all the other kinds of things you need. We did not have a separate Inspector General, but if you break up the Department of Commerce, you are going to have a lot of Inspector General people scattered around. We can take one or two of them for NOAA.

The CHAIRMAN. Well, I mean, you make a legitimate point, but if you have a NOAA independent agency, and I think there is probably reasonable agreement on this committee, although not unanimous agreement, that NIST ought to also be kept, as I said, and then you create an independent NIST. Now you've got two independent agencies out there with the superstructures.

I mean, that is where you begin to get yourself into some difficulty in this arena.

Mr. KNAUSS. I think that, again speaking from my experience within NOAA and running NOAA, that although certainly the mission of NIST and the mission of NOAA are quite different, it is also true that because we are all scientists and engineers, we speak a common language and we understood each other, probably a lot better than we did international trade.

The CHAIRMAN. Yes. Or economic development.

Mr. KNAUSS. Yes.

The CHAIRMAN. Mr. Smith.

Mr. SMITH. Regardless of which agency or whether you decide to create a new agency, Mr. Chairman, we would like to urge you to clearly define the mission of NOAA around the precepts of doing

basic scientific research and things that benefit the general public as a whole.

The CHAIRMAN. I think that that is one of the advantages of maybe going to a science-oriented agency is the fact that you then get a far better perspective of what some of your missions are.

But I appreciate that.

Mr. Wolff, did you wish to comment on the business of having an independent agency that would handle largely the science missions that are now at Commerce?

Mr. WOLFF. The line between that and NSF bothers me. The link between that and O&R bothers me. Like when you are speaking about the duplication in the global change programs, if you go to NSF, they run global change, and the same thing each one of these other areas.

So that I really view the NOAA research should be applied, as Admiral Watkins told us 6.3. NOAA has no business doing 6.1 research.

If you want to do research for the betterment of mankind, it should be under NSF because they have the framework for it. When you try to do that in NOAA, I think they result in these 30 laboratories that are scattered around the country, and believe me, the NOAA labs are entirely different from the Bureau of Standards. They have very little in common with the Bureau of Standards.

The CHAIRMAN. Okay. That is useful.

Mr. WOLFF. So if you want applied research in your science department, that's fine.

The CHAIRMAN. Okay. I appreciate that.

Admiral Watkins.

Admiral WATKINS. Well, I would like to clarify my proposal for independent agency. I am only saying that it ought to be independent in the interim period right away. In other words, we should announce that it is going to be maintained as an entity, it is going to be maintained intact, we are going to clean up what we have to do to clean up our act there that has been recommended by a variety of very responsible people. Let's do that.

That would include, could include, a NIST component at the outset. But I would say that would be interim. I do not see, other than the fact they're scientific, that NIST and NOAA have the same synergism that NIST and the Department of Energy would have with the three national laboratories. I really believe they can also talk to each other scientifically. So I am not so sure where it should end up.

I believe, though, that your idea has merit for the interim, and I would like to see the Congress provide some kind of a transitional mechanism that would minimize the disruption in the good stuff that NOAA is really doing now and NIST is really doing. That can be done, I believe.

So a transitional mechanism would be stabilizing, in my opinion, to announce such a thing, rather than the constant threat of abolishment. After all, I took over the Department of Energy at a time when my own party recommended it be abolished in 1980. I don't think they knew we made nuclear bombs in 1980, for some reason,

and they said it should be abolished. Ten years later or 15 years later, we are saying it ought to be abolished again.

That does not bode well for the efficiency of any department, to have that hanging over their heads all the time, abolish, abolish, abolish.

So I think you are on the right track here in what you are trying to do in consolidating, and I think your idea has merit, but I think it needs the kind of thoughtful process that I know you will go through over the next year or two to provide a transitional mechanism and then come to a final decision.

The CHAIRMAN. Sure.

Okay. Well, I thank you very much, and I thank you all for your testimony. It has been very helpful to us.

With that, I am going to call the next panel. That is Mr. Anthony O'Neill, Mr. John Walrad, Dr. Robert Jay Hermann, Dr. Forsen, Mr. Cheatham, Mrs. Mayhew, and Mr. Duncan.

I am also going to ask the Vice Chairman of the committee, Mr. Ehlers, to take over at this point. I am sorry to say the Speaker is calling me at the moment, and so I am going to have to go.

So, Mr. Ehlers, if you would take over, I would appreciate it.

I invite the panel to the table.

Mr. EHLERS [presiding]. Welcome. We look forward to hearing your testimony, and we will proceed right down the row once again.

In the interest of time, we do have your written testimony before us. If you would be willing to summarize that so we can get to the questions, I would appreciate that.

Mr. O'Neill.

STATEMENT OF ANTHONY R. O'NEILL, VICE PRESIDENT, GOVERNMENT AFFAIRS, NATIONAL FIRE PROTECTION ASSOCIATION, ARLINGTON, VA

Mr. O'NEILL. Thank you, Mr. Chairman.

This might be a stretch, but we will try to get the microphone down here.

Good afternoon. My name is Tony O'Neill. I am the immediate past chairman of the board of directors of the American National Standards Institute. I have two colleagues on the panel here that serve on the board at ANSI, Dr. Bob Hermann and Mr. Sam Cheatham.

I have served on the ANSI board since 1986, representing the National Fire Protection Association, which is a nonprofit technical and educational membership organization that by large has its role as developing national consensus fire safety, electrical and related codes and standards.

I also served, Mr. Chairman, for 6 years on the National Research Council review panel for the building and fire research labs at NIST. So I have some firsthand knowledge of how they operate out at Gaithersburg.

However, I am here this afternoon to present the ANSI testimony, which has been provided to your committee in written form and which has been reviewed by the ANSI leadership and represents the views of its members. I will summarize these viewpoints in my oral testimony.

First of all, ANSI is a private nonprofit organization with a membership of approximately 1,300 companies, 250 standards developing organizations, technical societies, trade associations, labor, academic, and consumer organizations, and some 40 government agencies.

ANSI is the established private sector forum for the United States standardization community. As such, ANSI represents the United States in the major non-treaty international organizations for standards development and conformity assessment.

Now to ANSI's position on NIST. First and foremost, we believe that NIST fulfills public sector obligations that are distinctly the responsibility of our Federal Government and not the private sector. Furthermore, NIST is the only government agency with the necessary experience and technical expertise to fulfill those obligations.

Any reorganization of the Federal Government that impacts NIST must be carefully considered, in our viewpoint, especially as to its potential impact on the effectiveness of NIST in carrying out its responsibilities in standardization and conformity assessment.

As has been stated earlier in earlier testimony, one of our Federal Government's responsibilities which is clearly spelled out in the United States Constitution is to fix the standards of weights and measures for the economic well-being of our community. Today that responsibility which is carried out by NIST and which was relatively simple when the Constitution was written is now, of course, far more complex. We describe in detail this complexity in our written statement.

Other roles that NIST plays are vital in assuring our national economic well-being, but unfortunately, many of these are little understood. These include basic support to U.S. industry in promoting our competitiveness internationally, improving personal and environmental safety and health, increasing the government's ability to reduce regulatory and procurement costs by working cooperatively with the private sector.

NIST also plays a critical role in assisting in our international trade negotiations and implementations of treaties, such as the North American Free Trade Agreement.

Recently, the NRC issued their report, "Standards, Conformity Assessment, and Trade into the 21st Century." It not only supported NIST but it recommended considerable expansion of NIST's role in standardization and conformity assessment.

ANSI supports these NRC recommendations, and we are pleased to see that your committee and some of the subcommittees are actively pursuing some of those recommendations of the NRC report.

This leads me to the second part of ANSI's position on NIST. The unique technical and standards-related expertise at NIST and its role as the chair of the Federal interagency committee on standards policy make it an ideal coordinator and facilitator for the purpose of helping to improve the efficiency of the U.S. standardization system. This is for all industries.

Reflecting on some of the earlier testimony, this is not for the purpose of picking winners and losers, this is for all industry.

Because NIST is neither a Federal regulator nor a procurement agency, it is in an ideal position to help better leverage the

strength of the private sector standardization system within the Federal establishment.

We do not see how NIST's policy role of coordinating Federal Government efforts and NIST's traditional laboratory functions can be privatized or eliminated. Let me elaborate.

NIST's laboratory research provides the measurement bedrock upon which modern American society exists and prospers. What does NIST offer that the private sector cannot duplicate? First, worldwide traceability and impartiality. Being able to trace their measurement to NIST enables U.S. companies to demonstrate compliance with specific technical standards, especially for doing business in foreign markets.

Secondly, there is no U.S. private sector organization that has the required metrology expertise and broad enough range of technical disciplines to assume NIST's laboratory functions.

Third reason for opposing privatization is that laboratory expertise is a long-term commitment, and any privatized NIST operation would have to recover its costs on a relatively short time scale.

Now, ANSI's written testimony provides numerous specific examples of NIST's laboratories' valuable contributions to a cross-section of American industry and the American public. So I am certainly not going to go into detail here.

But suffice it to say there are examples in health and medicine, electrical distribution systems, optical fibers, automotive industry, agriculture, food processing, paper, plastics, building materials industries.

So, in summary, Mr. Chairman, ANSI would urge your committee to carefully consider the ramifications of transferring NIST to another agency or privatizing portions of it or dismantling NIST. We believe that NIST is, and should continue to be, the lead U.S. Government agency with expertise in the area of technology, standards, and industry standardization issues.

Thank you very much.

[The prepared statement of Mr. O'Neill follows:]



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Testimony by Anthony O'Neill
Immediate Past Chairman of the Board
American National Standards Institute

*Hearing before the
Committee on Science
U.S. House of Representatives*

September 12, 1995

Good morning. My name is Tony O'Neill and I am Immediate Past Chairman of the Board of the American National Standards Institute, Inc., which usually is referred to by its acronym, ANSI. It is a pleasure to appear before this Committee this morning to present ANSI's testimony.

As background, I have served on the ANSI Board since 1986 representing the National Fire Protection Association (NFPA), a non-profit technical and educational membership organization that is the Nation's leading developer of national consensus fire safety codes and standards. NFPA is an accredited standards developing organization under ANSI procedures and virtually all of our 280 codes and standards are designated American National Standards by ANSI. I was chairman of the ANSI Board from 1992 to 1995 and now serve as past chairman.

ANSI is a private sector, non-profit organization with a membership comprised of approximately 1300 companies, 250 standards developers, technical societies, trade associations, and labor, academic, and consumer organizations, and some 30 government agencies. Virtually every industry sector is well represented within the ANSI federation. Annual sales of ANSI company members total more than \$1.2 trillion.

Tens of thousands of scientists, engineers, and technical experts from the private sector and government work together in technical committees to develop American National

Standards. (At NFPA, for example, about 4,500 individuals participate voluntarily in our standards-making process.) These standards provide the technical underpinnings for the health and safety of our every day lives and for our domestic and international commerce in virtually every industry, including telecommunications, healthcare, information technology, petroleum, banking, and household appliances.

ANSI has been asked to discuss the role of the National Institute of Standards and Technology (NIST), a federal agency with which ANSI works very closely. I understand that this hearing will focus on the impact of NIST on U.S. competitiveness and on pending legislation that would transfer NIST's standards and measurement activities to the National Science Foundation and sell NIST laboratories to the private sector. I understand your Committee is considering other options as well.

Standardization and conformity assessment -- subjects known to few and understood by even fewer -- are central to the major issues facing Congress and America today:

- regulatory reform;
- federal acquisition reform;
- health care reform;
- development of a global information infrastructure;
- international trade negotiations; and
- implementation of the World Trade Organization and North American Free Trade Agreements.

NIST is a key behind-the-scenes player in these highly complex issues. For example, NIST measurements, services, and expertise underpin efforts to eliminate technical barriers to trade, which could boost U.S. exports by an estimated \$200 billion per year.

ANSI and NIST: Their Respective Roles

In the private sector, ANSI has a leadership role with several key responsibilities:

- **Private sector leadership.** ANSI is the established private sector forum for the U.S. standardization community.
- **U.S. representative to ISO/IEC and other non-treaty organizations.** ANSI is the United States representative to the two major, non-treaty international standards organizations (the International Organization for Standardization

[ISO] and, via the United States National Committee, the International Electrotechnical Commission [IEC]).

- **Advocate of U.S. standards and technology worldwide.** ANSI provides strong advocacy for the use of U.S. standards and technology throughout the global marketplace, and represents the U.S. in many non-treaty international fora, such as COPANT (for Latin America) and PASC (for the Pacific Rim). In all of these activities, we work very closely with NIST and other federal agencies.
- **Accreditor of U.S. standards developers.** ANSI is the only accreditor of U.S. standards developers. It approves standards as American National Standards, and ensures the integrity of the standards development process.

NIST is neither a procurement agency nor a regulatory agency. It does provide an unparalleled wealth of unique technical expertise which is used to support the development of private sector standards. In addition, as chair of the Interagency Committee on Standards Policy (ICSP), NIST has a mandate to coordinate standards and conformity assessment policies throughout the federal government, a function that must be performed well if government and the private sector are to work cooperatively and effectively.

Because we share a common goal -- promoting U.S. interests worldwide -- ANSI and NIST formally recognized the need for strong private-public cooperation in the area of standardization and conformity assessment.

The ANSI/NIST Memorandum of Understanding

The importance of forging a cooperative relationship between the private and public sectors has grown dramatically in the past few years, in parallel with the shift to a global economy and the need to promote U.S. interests internationally.

Because of the compelling need for a cooperative relationship between the private sector and government, on July 24, 1995, ANSI and NIST signed a Memorandum of Understanding (MOU) in which each organization recognized each other's important role: ANSI as the leading representative of the private sector and NIST as the leading representative of the U.S. government in the areas of standards and conformity assessment.

This MOU signals the recognition by ANSI, NIST, and our respective communities that we must work together to further U.S. interests at home and abroad. ANSI and NIST each are committed to working within our respective communities -- private and federal -- to ensure the competitiveness of U.S. products and services in global markets, and the cooperative development of and reliance upon private voluntary consensus standards whenever practicable and feasible.

The 1995 National Research Council Report

Earlier this year, the National Research Council (NRC), the prestigious research arm of the National Academy of Sciences, issued a landmark report, *Standards, Conformity Assessment, and Trade: Into the 21st Century*.¹ The NRC report, conducted entirely by experts from the private sector with input from all elements of the standardization community, is a seminal work. It explains in clear, nontechnical language why standards² and conformity assessment³ are vital to U.S. competitiveness.

It is clear from the NRC report that NIST plays a critical but little understood role in supporting U.S. industry, promoting U.S. competitiveness, improving personal and environmental health and safety, and increasing the federal government's ability to reduce regulatory and procurement costs by working cooperatively with the private sector.

The NRC report made ten recommendations, several of which focus on NIST's unique and critical functions and stress their importance to U.S. competitiveness. Some of these will be discussed during the course of this testimony.

¹*Standards, Conformity Assessment, and Trade: Into the 21st Century*; National Academy of Sciences, Washington, D.C., 1995. Available from National Academy Press.

²A standard is a set of characteristics or quantities that describes features of a product, process, service, interface, or material.¹ From *The ABC's of Standards-Related Activities in the United States*, Maureen Brestenberg, ed., NBSIR 88-3821, prepared for the National Bureau of Standards, 1988.

³Conformity assessment is the comprehensive term for procedures by which products and processes are evaluated and determined to conform to particular standards. As distinct from standards development, conformity assessment may be thought of as a central aspect of the use of standards. In the context of many commercial and regulatory uses of standards, measures to evaluate and ensure conformity are of as much or more significance than the standards themselves. They impose significant costs in manufacturing through testing, inspection, audit, and related procedures. The benefits that mitigate these costs accrue from the value added by increased buyer (or regulator) confidence that a product or service meets a standard.² *Standards, Conformity Assessment, and Trade*, op. cit., p. 17.

One inescapable conclusion to be drawn from the NRC report is that U.S. industry is completely supportive of NIST performing several key functions.

I commend the NRC report to this Committee, particularly as you consider the future of NIST.

Federal Participation in the Voluntary Standards System:

The Need for Federal Legislation

The NRC report made several recommendations for strengthening the U.S. voluntary standards and conformity assessment system, primarily by increasing government participation in and reliance on the voluntary standards community. By doing so, it noted, government can reduce both the need for federal regulation and its related costs.

Both the public and private sectors benefit from each other's technical expertise and what many believe is a more efficient and flexible system. The financial benefits to these government agencies and the taxpayers (as well as industry if it is not required to meet unnecessarily duplicative standards) are obvious.

If the U.S. government is to have a voice in the development of the standards that are at the heart of virtually every federal procurement requirement and many safety and health-related regulations, then federal resources must be devoted to support the full participation of federal employees in the standards development process. This will be especially important as federal agencies, operating with substantially reduced budgets, rely increasingly and appropriately upon private sector standards.

Similarly, if the U.S. is to maintain its leadership in international standardization in areas such as information technology and aerospace, then U.S. government representatives must participate in the development and presentation of U.S. positions that will be carried forward to the international arena. This cannot be done without the allocation of precious resources -- time and money -- to the effort.

Until now, both the government and private sector have relied on executive branch policy documents (OMB Circular A-119 and Administrative Conference Report 94-1), to encourage government to participate in and rely on the U.S. voluntary standards system.

NIST's unique technical and standards-related expertise and its role as the Chair of the Interagency Committee on Standards Policy make it an ideal coordinator and facilitator of this process.

These policy documents clearly state that federal employees are to play an active role within the U.S. voluntary standards system, and that they are to use and adopt private sector standards whenever feasible and practical. In practice, however, we find that the policy is often misunderstood or ignored at the levels at which budget decisions are made. As a result, the U.S. government's interests often are not represented at meetings in which significant decisions are made affecting U.S. competitiveness, procurements, or regulatory issues.

A strong statement from this Committee, or from the Congress as a whole, in support of the policies expressed in OMB Circular A-119 and Administrative Conference Report 94-1 would greatly strengthen reliance on the private voluntary system.

Hearings held earlier this year before this Committee's Technology Subcommittee focused on the NRC report and its recommendations, several of which dealt with NIST's role and the OMB Circular. In a related action, the Committee on Science is to be commended for *unanimously* agreeing on important standards- and conformity assessment-related language.

At your request, ANSI has been working on a nonpartisan basis with your Committee to develop legislative language that would incorporate key provisions of these policy documents into federal law.

NIST and Mutual Recognition Agreements (MRAs)

The Office of the U.S. Trade Representative estimates that elimination of technical barriers to trade (TBTs) could boost annual U.S. exports by \$200 billion or more per year. The economic wars of the Nineties are being fought in the area of standards and conformity assessment.

Mutual recognition by *national governments* of testing data, laboratory accreditation, product certifications, and quality system registrations against specific standards represents significant potential for increased trade. ANSI has been working closely with our

government and our counterparts around the world to facilitate MRA discussions, but the official negotiations are solely government-to-government.

For example, negotiations currently are underway with the European Union, with the objective of achieving mutual recognition agreements (MRAs) in 11 sectors: information technology; telecommunications products attached to public networks; medical devices; electrical safety; electromagnetic interference; pharmaceuticals; pressure equipment; road safety equipment; lawn mowers; recreational boats; and personal protective equipment such as helmets.

NIST, with its practical understanding of both private and public sector conformity assessment activities, is uniquely qualified to meet the U.S. government's need to recognize U.S. conformity assessment programs in order to fulfill U.S. obligations in connection with mutual recognition agreements being negotiated by the Office of the USTR.

For many regulated products, foreign governments will accept U.S. tests of a product's performance to a standard only if the U.S. government recognizes the quality of those U.S. tests. In our view, NIST is the only U.S. government organization that can recognize private sector accreditations for purposes of foreign government acceptance.

NIST's Role in Meeting U.S. Treaty Obligations

Through a network of national inquiry points, GATT and World Trade Organization (WTO) members are required to notify each other when considering new regulations and conformity assessment requirements that affect imports from other nations. In conjunction with its role as the U.S. GATT/WTO and ISONET inquiry point, the NIST Office of Standards Services maintains an extensive library of information about U.S., foreign, and international standards and conformity assessment requirements. This information is of great importance to U.S. businesses participating in the global marketplace and is an important early warning mechanism for addressing possible new barriers to trade.

This library, the National Center for Standards and Certification Information (NCSCI), is open to the public, responds to telephone and written inquiries, and disseminates standards information through announcements in the *ANSI Reporter*. Through its Standards Code and Information Program, Standards Services compiles directories of

public and private organizations with standards and conformity assessment activities and publishes basic informational reports on various topics.

Worldwide, this is recognized as a function of government.

NIST Participation in Standards Development

NIST also is deeply involved in both U.S. and international voluntary consensus standards development. In 1993, 380 members of NIST's research laboratory staff participated in consensus standards committees. The committees were associated with 59 domestic and 20 international standards developing organizations. In 1991, NIST staff reported 31,787 labor hours for travel and participation in domestic and international standards committees, at a total cost of little more than \$1 million⁴ -- a highly cost effective way to advance U.S. economic and consumer interests both at home and abroad.

Other NIST Services Benefit the Private Sector

NIST's Office of Technology Services oversees a wide array of offices that provide industry, government, scientists, engineers, and the general public ready access to NIST's standards, technology commercialization, measurement, technology evaluation and assessment, and technical information services. NIST's technical services provide valuable, ongoing support for industry.

NIST, NIST Laboratories, and Legal Metrology

While ANSI applauds Congressional efforts to "right-size" the federal government and privatize as many of its functions as feasible, we urge you to proceed with extreme caution when it comes to eliminating or privatizing the laboratory functions for which the National Institute of Standards and Technology is responsible.⁵

⁴Ibid., pp. 52-53.

⁵Article I, Section 8, Clause 5 of the United States Constitution provides that "[t]he Congress shall have Power ... To coin Money, regulate the value thereof, and of foreign Coin, and to fix the Standard of Weights and Measures ...". The National Bureau of Standards was established in 1901 -- twenty years before creation of the Department of Commerce -- with responsibility for developing and coordinating reference standards -- standards of weights and measures -- and it is for this function that it is best known. However, the Omnibus Trade and Competitiveness Act of 1988 created the National Institute of Standards and Technology (NIST) and assigned it a much broader and very key role: "[T]o promote U.S. economic growth by

We urge extreme caution because implementation of such proposals would have a devastating impact on the U.S. economy's technical infrastructure.

NIST laboratory research provides the measurement bedrock upon which modern society stands. Pocket cellular telephones, airbags, heat-seeking missiles, fax machines, video game players -- these products require length measurements many times smaller than the eye can see, as well as precision measurements of voltage, frequency, velocity, pressure, radiation, and temperature. NIST laboratory research continually improves how these basic quantities are measured, a process that is inseparable from the government's constitutionally assigned responsibility to maintain the nation's "weights and measures."⁶

Ongoing programs in each of NIST's eight laboratories are broad in scope and discipline. Efforts range from short-term, high-priority projects to meet immediate industrial or other government agency needs for measurements, data, and technology to long-term fundamental research designed to further the state-of-the-art in basic measurement and standards technology, maintain NIST's basic expertise, or anticipate industry's measurement, standards, and data needs five to ten years out.

While ANSI recognizes the need for privatizing many government activities, we believe, for the reasons listed below, that NIST's key laboratory functions must remain solely a government responsibility:

- Traceability. Measurement traceability to NIST, internationally recognized as the U.S. measurement authority, enables U.S. companies to demonstrate compliance with specific technical standards, an increasingly common prerequisite for doing business in foreign markets. Without NIST, many firms would be shut out of those markets or forced to acquire measurement devices from foreign laboratories, causing delays and imposing costs ultimately borne by the U.S. economy. The Defense Department and other agencies rely heavily on NIST measurement expertise, specifying that systems and components be calibrated with equipment and methods traceable to NIST.

working with industry to develop and apply technology, measurements, and standards."

⁶ The mission of NIST's laboratories is to focus "on meeting U.S. industry's needs for technology infrastructure, including standards, measurements and measurement technologies, evaluated data, manufacturing process models, product-performance tests, and quality-assurance techniques."

NIST's in-house research and development is performed in eight major organizational units: the Building and Fire Research Laboratory, the Chemical Science and Technology Laboratory, the Computer Systems Laboratory, the Computing and Applied Mathematics Laboratory, the Electronics and Electrical Engineering Laboratory, the Manufacturing Engineering Laboratory, the Materials Science and Engineering Laboratory, and the Physics Laboratory.

- **Impartiality.** Buyers and sellers of goods and services need an impartial third party to help establish credible, accurate ways to make measurements. NIST develops measurement methods, standards, and testing procedures accepted by both vendor and user, regulators and industry, and prosecutors and defense attorneys alike. Tens of billions of dollars of sales each year depend upon NIST measurement tools and techniques. No private company would have this impartiality and credibility.
- **International Clout.** The world marketplace increasingly requires manufacturers to demonstrate that their products meet specific standards before they can be traded. For many regulated products, foreign governments will accept U.S. tests of a product's conformance to a standard only if the U.S. government recognizes the quality of those U.S. tests. Otherwise the products must be tested again by the importing country, an expensive and delay-producing process. A private NIST laboratory would not have the governmental authority required by foreign governments to provide this service.
- **Metrology.** Metrology is the science of measurement, but you cannot get a university degree to learn how to do it. The primary training ground for metrology is a handful of national laboratories in the world, including NIST. Metrology is inherently diverse. Generally speaking, metrology is the application of a set of sophisticated measurement skills to a host of different problems crossing every technical discipline -- from physics, chemistry, and engineering to computer science and fire safety. No current U.S. private organization has the required metrology expertise and a broad enough range of technical disciplines to competently take over responsibility for this NIST laboratory function.
- **Proprietary information.** The development of new measurement methods and reference materials increasingly depends on access to proprietary information. Companies frequently talk with NIST researchers about proprietary processes and plans for the future so that measurement methods of the required precision and accuracy will be available when they are needed. In addition, NIST staff members regularly visit individual companies to view proprietary processes on the factory floor. This in-depth knowledge of industry's latest technologies allows NIST to develop measurement methods that benefit whole industry sectors. A private NIST would not have the necessary perceived neutrality.
- **Long-Term Commitment.** Many of NIST's laboratory functions require long-term commitment. Many of the ground-breaking measurement technologies provided by NIST researchers have taken 5 to 10 years to develop. NIST initially began work on integrated-circuit, precision voltage standards in the

late 1970s. By 1989, a U.S. company was commercializing the NIST-developed measurement technology. In 1995, the NIST technology remains the only commercialized technology for ultra-high precision voltage standards and a U.S. company dominates the world's market for precision voltmeters, in part because of the advantage of working closely with NIST during the development process. Such voltmeters are used throughout the electronics industry to calibrate equipment for making aircraft guidance systems, semiconductors, scientific instrumentation, and many other high technology products. **A private NIST would have to recover its cost on a much shorter time scale than 10 years and would not be able to undertake such long-term projects regardless of the value of the technology to be developed.**

Individual companies, hospitals, police departments, or universities -- or consortia of these organizations -- do not have the capability to maintain the nation's measurement infrastructure any more than trucking companies should be expected to build the roads they need to make deliveries.

The ultimate U.S. reference point for measurements with counterpart organizations throughout the world, NIST laboratories provide entire industries, and the whole science and technology community with the equivalent of a common language needed in nearly every stage of technical activity:

- Without NIST, electrical utilities and consumers would have no reliable source for accurate calibrations of watt-hour meters that serve 100 million homes and buildings and track nearly \$200 billion of electricity. A measurement error of just 1 percent translates into costs totaling almost \$2 billion, would be borne by consumers or utilities.
- Gas producers, distributors, processors, and consumers save about \$150 million annually from NIST research and measurement methods that improve accuracy in natural gas pipeline metering.
- Entire industries rely heavily on NIST's Standard Reference Materials for accuracy and quality assurance. The steel industry relies on over 125 different NIST measurement standards for reliability of raw materials and finished steel components that go into bridges, buildings, and other structures.
- U.S. producers and users of optical fibers depended on NIST to develop the technical foundation for more than 20 voluntary measurement standards credited with accelerating the growth of the optical fiber market and communications networks.

- The U.S. automotive industry relies on more than 350 different NIST-developed measurement tools and services for quality control systems -- everything from purity of glass and steel to reliability of fuel, highway cement, and exhaust systems.
- The aircraft industry and public rely on unique NIST facilities and expertise needed to understand metal failures such as those that caused the top of a passenger jet to rip off in flight. In similar work, NIST materials and construction expertise helped explain why an oil storage tank released 4 million gallons of oil into a Pennsylvania river, shutting down drinking water for Pittsburgh and other cities; NIST recommendations for tougher safety standards were quickly adopted by industry.
- Virtually the entire space-based communications industry has adopted NIST-developed methods to test microwave antennas, saving companies millions of dollars. One company estimates it has saved \$35 million by implementing the NIST near-field techniques.
- Manufacturers of electronic products or products with numerous electronic components use commercial versions of a NIST-developed TEM cell to check for electromagnetic interference or unwanted emissions. The automotive industry tests vehicles for radiated emissions in huge TEM cells before placing them on the market. "It saves us about three days per car in testing time," says a Ford engineer. TEM cell techniques are included as part of the electromagnetic interference standards by the Society of Automotive Engineers, the Institute of Electronic and Electrical Engineers, and ANSI, among others.
- Large segments of the U.S. medical, agricultural, food processing, paper, plastics, and building materials industries save an estimated \$500 million per year as a result of a NIST-developed method for measuring light reflection.
- The National Association of Home Builders estimates that NIST recommendations for improved plumbing standards made possible hundreds of millions of dollars in savings in materials costs for the construction industry and for homeowners from reduced water usage.
- NIST-developed smoke detector performance requirements, installation guidelines, and subsequent studies have played an essential role in establishing a \$100 million U.S. residential smoke detector market and enabled U.S. manufacturers to acquire a 50-percent share of the world market. Since 1985, the percentage of homes with at least one smoke detector has grown to about 80 percent. This has been a major factor in the dramatic reduction in fire death rate in the United States.

- Long-term efforts have paid off with NIST's newly developed Molecular Measuring Machine, a unique atomic imaging microscope with a field of view 250,000 times greater than that of current microscopes. It will provide crucial measurement support to industry and university researchers studying ways to manipulate nature's molecular architecture for practical purposes, from creating entirely new materials to manufacturing future generations of **integrated circuits**.
- NIST developed specialized equipment that the U.S. **military** uses to calibrate -- and thereby ensure the accuracy of -- range-finder and target-acquisition systems deployed on jets, helicopters, and missiles.
- Laboratory-developed, **one-of-a-kind measurement equipment** is a resource for the entire research community. For example, NIST scientists helped their counterparts at Carnegie Mellon, MIT, the University of Minnesota, and other institutions install and apply NIST-invented technology for studying the magnetic structure of materials in unprecedented detail. In industry, companies racing to develop new high-density information storage systems -- firms ranging from tiny Nonvolatile Electronics, Plymouth, Minn., to the Digital Equipment Corp. -- have collaborated with NIST on research made possible by the unique magnetic microscope.
- **Measurement traceability** to NIST, internationally recognized as the U.S. and the world's measurement authority, enables U.S. companies to demonstrate compliance with specific technical standards, an increasingly common prerequisite for doing business in foreign markets. Without NIST, many firms would be shut out of those markets or forced to acquire measurement services from foreign laboratories, causing delays and imposing costs ultimately borne by the U.S. economy.
- A DNA profiling Standard Reference Material developed by NIST in 1992 has been key to establishing the reliability of this powerful **law enforcement** tool. Another NIST SRM for a newer, faster method of DNA profiling was issued in June 1995. "We don't like to go to court unless we have standard references that we can use in our testing," says David Bing of CBR Laboratory in Boston. "And you don't want the labs that are doing the testing to develop the standards because then there is no check on their objectivity."

In **health and medicine**, measurement errors and uncertainties can kill. NIST's measurement expertise and data services and its one-of-a-kind instruments have become valuable resources for health and biomedical researchers across the country.

- The 600,000 people who undergo **radiation therapy for cancer** each year and the several million more who undergo radiodiagnostic and radiotherapeutic

procedures count on NIST calibrations, reference materials, and laboratory accreditation services to ensure the accuracy of radiation doses.

- Accuracy of clinical measurement of cholesterol levels in blood serum has improved dramatically -- to 95 percent, as compared with about 70 percent - since NIST issued a benchmark Standard Reference Material, a sample of serum containing certified amounts of human cholesterol.
- NIST-led efforts are ensuring that international monitoring of ground-level changes in ultraviolet radiation will yield accurate, reliable measurement results, enabling scientists to assess the health effects of upper atmosphere ozone depletion and the consequent increase in UV radiation.
- NIST-developed and -maintained databases ensure that biological models and the calculations they are based on use accurate, reliable data. One newly added database, for example, contains evaluated data on the properties of more than 900 lipids, a group of molecules intensely studied by pharmaceutical and food technology researchers.
- NIST research yielded reliable methods for measuring electric and magnetic fields from power systems. Widely adopted by researchers, these methods are needed to resolve questions concerning the health effects of exposure to electric and magnetic fields, asserted to increase the risk of leukemia, cancer, and other disorders.

The Defense Department relies heavily on NIST measurement, research, services, and facilities to ensure that battlefield equipment performs effectively and reliably, that military communications are not disrupted by technical failures, and that impartial expertise is available to troubleshoot complex measurement problems in advanced weapon and communication systems.

NIST produces 230 different Standard Reference Materials that allow industry, university, and government researchers to measure more accurately pollutants in air, gas, water, soil, tissue, and other types of samples. Analysis of environmental pollutants often requires a precision that would be impossible without NIST SRMs, which are used to verify the accuracy of scientific instruments and laboratory procedures.

Proposals to Transfer NIST to the National Science Foundation

Many ANSI members have expressed alarm about proposals to transfer NIST's functions to the National Science Foundation (NSF). We understand that the National Science Foundation has gone on record expressing serious concerns about these proposals.

Our concerns are in no way a reflection on NSF's abilities to perform its current functions well. Rather, ANSI members are gravely concerned because the National Science Foundation has played no role whatsoever in standardization, conformity assessment, or basic research such as that conducted in NIST laboratories. The kind of expertise that is crucial in these areas exists in one and only one place, NIST.

Conclusion

NIST is the lead U.S. government agency with expertise in the area of technology standards and industry standardization issues. This expertise is the result of NIST's many years of experience in a highly technical, incredibly complex area. This expertise exists nowhere else in government or in the private sector. And, even if the private sector were willing and able to assume all of NIST's responsibilities in these areas, it could not do so because some of NIST's important responsibilities are treaty obligations of the federal government and a matter of public good.

We urge this committee and the Congress to proceed with extreme caution with any efforts to eliminate or privatize NIST's laboratory functions, and we strongly urge you not to transfer NIST's responsibilities to the National Science Foundation.

Thank you for the opportunity to testify on these vital issues. I would be pleased to answer any questions you may have.

ANSI and the ANSI Federation

The voluntary standardization system in the United States is the most effective and efficient in the world. At the same time and almost incongruously, the system is distributed, diversified, and extremely complex. For more than 76 years, this system has been administered and coordinated by the private sector through ANSI, with the cooperation and participation of federal, state, and local governments.

The Institute is a unique partnership of approximately 1,300 companies, 250 standards developers and other professional, technical, trade, labor, academic and consumer organizations, and some 30 government agencies. Thousands of scientists, engineers, and technical experts from the private sector and government work together in technical committees to develop American National Standards. These standards provide the technical underpinnings for the health and safety of our every day lives and for our domestic and international commerce in virtually every industry, including telecommunications, healthcare, information technology, petroleum, banking, and household appliances.

It is estimated that the annual sales of ANSI company members total more than \$1.2 trillion. In addition, many thousands of companies participate indirectly in ANSI through their trade associations or technical societies.

The federal government also is a full participant within the ANSI federation, both on technical committees and in the governance of the Institute itself. Increasingly, though not consistently, government agencies are meeting their statutory obligations not by developing government-unique standards or requirements, but by actively participating in the voluntary consensus standards system and adopting the standards developed therein.

Hundreds of thousands of scientists, engineers, technical experts, and consumer representatives -- from both the private and public sectors -- work together on a voluntary basis in technical committees throughout the ANSI federation to develop standards that are the technical basis of U.S. products, services, and systems used worldwide. For example, technical committees within the federation develop the standards that form the basis for the world's preeminent fire, electrical, and building codes, enabling nations around the world to enjoy far higher levels of safety than would otherwise be possible. These and other U.S.-based international standards facilitate the sale of U.S. goods and services worldwide.

ANSI's role also is unique. In its role as the only accreditor of U.S. standards developing organizations (SDOs), ANSI ensures the integrity of the standards development process and determines whether standards meet the necessary criteria to be approved as American National Standards. ANSI's approval of these standards is intended to verify that the principles of openness and due process have been followed and that a consensus of all interested parties has been reached. In addition, ANSI considers any evidence that the proposed American National Standard is contrary to the public interest, contains unfair

provisions or is unsuitable for national use. ANSI coordination is intended to assist the voluntary system in ensuring that national standards needs are met with a set of standards that minimize conflict or unnecessary duplication in their requirements. American National Standards are kept current and relevant because all such standards must be revised, reaffirmed, or withdrawn at least every five years.

In the conformity assessment area, ANSI accredits organizations that certify that products meet certain standards. In addition, through a joint program, ANSI and the Registrar Accreditation Board (RAB) accredit organizations that register quality systems conforming to the ISO 9000 series of standards.

ANSI is the established forum for the U.S. standardization community, and is the United States representative to the two major, non-treaty international standards organizations: the International Organization for Standardization (ISO) and, through the United States National Committee, the International Electrotechnical Commission (IEC). It also represents the U.S. in the International Accreditation Forum (IAF), which has the goal of reducing duplicative conformity assessment requirements (that often serve as non-tariff barriers to trade) by providing the basis for product certifications and quality system certifications/registrations performed once, in one place and accepted worldwide. ANSI also participates in the international Quality Systems Assessment Recognition Program (QSAR). Because of the breadth of its participation in standards activities worldwide, the Institute is able to provide a central source of information and education on standards, conformity assessment programs and related activities in the U.S. and abroad.

Through active participation in regional standardization organizations such as COPANT (for Latin America) and PASC (for the Pacific Rim), ANSI provides strong advocacy for the use of U.S. standards and technology throughout the global marketplace. In doing so, we work very closely with the National Institute of Standards and Technology (NIST), the Office of the U.S. Trade Representative (USTR), the U.S. Departments of Commerce and State, and other federal agencies, as well as with hundreds of trade associations, companies, and consumer and labor organizations.

In fulfilling its roles and responsibilities, ANSI continues to pursue its mission to "[e]nhance both the global competitiveness of U.S. business and the U.S. quality of life by promoting and facilitating voluntary consensus standards and conformity assessment systems and safeguarding their integrity." In summary, ANSI ensures the integrity of the U.S. standardization system by serving as (1) an open, national forum for standards-related policy issues, (2) the only accreditor of standards developers, ISO Technical Advisory Groups (TAGs) and an accreditor of product certifiers, and (3) a primary source of information on education on standards and conformity assessment issues.

Mr. EHLERS. Thank you very much, Mr. O'Neill.
Next, Mr. Walrad.

**STATEMENT OF JOHN F. WALRAD, DIRECTOR OF LICENSING
AND PATENTS, VICKERS, INC., ROCHESTER HILLS, MI**

Mr. WALRAD. Thank you, Mr. Chairman.

My name is Jack Walrad. I am Director of Licensing and Patents for Vickers, Inc. I appreciate very much the opportunity to speak here. Vickers is a leading supplier liquid hydraulic fluid power products used in industrial plant equipment, construction machinery, and transportation vehicles of all kinds. Our market is global, and so is the competition.

Annual hydraulic industry sales worldwide are about \$20 billion. U.S. manufacturers hold a 35 percent share, or \$7 billion, which is the largest for any one nation.

Extensive use of published standards is a fact of business life in our industry and those of our customers. Key standards developers for us are ISO, ANSI, the National Fluid Power Association another NFPA, SAE, ASTM, and corresponding agencies in Europe. My job responsibilities include oversight of Vickers work in those committees, particularly in international aspects.

I want to express three convictions regarding NIST: First, the NIST labs are a singular national resource of great value. They should be maintained intact and kept current with advancing science and technology.

To illustrate, in 1992 our NFPA petitioned NIST to develop and supply a standard reference material to support test procedures standardized by ANSI in 1972 and by ISO in 1977, which are widely used in the hydraulics, automotive, and aerospace industries. The request to NIST followed a multiyear effort to interest private sources.

A NIST project was authorized and work began in February of 1993. The development has now been accomplished, and preparations to supply the material are in process. Full availability signaling completion of the project is scheduled for February of 1996.

Meantime, revisions to both the ANSI and ISO standards began in 1993 based on good early reports. The ANSI document has now been adopted, and final ISO approval is expected mid-'96.

These results represent complete success in a difficult project with high value to American industry. The NFPA project leaders and our member companies are elated at the NIST performance.

Further, NIST's prestige abroad was instrumental in winning fast ISO acceptance of our proposed revision. A less trusted source would have cost time and possible rejection.

Second conviction. The value of NIST labs lies in their competence, objectivity, accessibility, and capacity to sustain long-term studies. Preservation of that value should be an enforced requisite in any sale or other disposition.

The project just described required high competence in three specialty fields. Synergism of the complete NIST labs saved at least one full year and proportionate costs.

NIST objectivity is recognized all over the world. The attendant acceptance has high value not readily transferrable to a private owner nor easily recoverable if damaged.

American industry currently has access to NIST lab services in appropriate circumstances, and in some cases that access provides the only feasible means to a needed technological advance. Undiminished continued access, including proven ability to work with industry, must be ensured.

Long-term research with delayed and uncertain payback are sometimes important to the national interest. If the unique NIST capacity for such projects were lost, a new equivalent would have to be created within a very few years.

Third point. The role recommended for NIST in the NRC report which Tony described is important to the continued progress and success of American industry. NIST should fill that role, substantially as articulated in the report.

They should first act with ANSI as a focal contact for industry on standards and conformity assessment.

They should compile and disseminate information on those subjects.

They should initiate and lead steps to eliminate duplicated or conflicting requirements within government at all levels.

Finally, they should collaborate with ANSI to facilitate effective mutual support between the public and private sector standardization agencies.

NIST has made a good start in these needed activities, and in the process has gained an understanding of American industry needs related to standards. That head start is valuable and should not be wasted.

Thanks again for the opportunity to speak.

[The prepared statement of Mr. Walrad follows:]

**Testimony to the
U.S. House of Representatives
COMMITTEE ON SCIENCE**

**Regarding
H.R. 1756, the Department of Commerce
Dismantling Act of 1995**

by John F. Walrad
Director, Licensing and Patents
Vickers, Incorporated a TRINOVA Company

12 September 1995

Thank you for this opportunity to testify on behalf on Vickers Incorporated. My remarks focus, as Chairman Walker directed, on what should happen to NIST. An outline of my perspective will provide a context.

Perspective

Vickers is one of two operating companies of TRINOVA Corporation. We manufacture capital goods used in industrial and transportation equipment. Our products are hydraulic fluid power and electrical components --- pumps, motors, valves, cylinders and systems for power and motion control. Customer industries include machine tools, plastic processing machines, on- and off-highway vehicles, construction machinery, aircraft, marine, defense, and general plant equipment.

These markets are global, and so is the competition for them. Reported hydraulic fluid power shipments total some \$20 billion per year worldwide, of which U.S. producers supply about \$7 billion, or 35%, the largest share of any nation.

Extensive use of published standards is a fact of business life in our industry and those of most customers. Vickers success requires timely knowledge of standards we must meet and the ability to influence them when appropriate. To that end we participate actively in ISO Technical Committee 131 - Fluid power, ANSI, the National Fluid Power Association, SAE, ASTM and corresponding British and German organizations. My job responsibilities include oversight of this work, in particular as it affects international standards.

Remarks

1. The NIST Laboratories are a singular national resource of great value. They should be maintained, intact, with sufficient support to keep them current with scientific and technological advances.

In 1992 NFPA asked NIST to develop a Standard Reference Material for calibrating optical particle counters used to detect and measure abrasive contaminants in hydraulic fluids and other lubricants. These instruments are used for filter testing and fluid maintenance in hydraulic, automotive, and aerospace systems.

Related work in NFPA had produced an ANSI standard in 1972, adopted by ISO in 1977. Emergence of new optical sensors, with new light source characteristics, necessitated a traceable calibration material in the early 1980's. The request to NIST followed a 10-year effort by the NFPA and ISO project groups to achieve the needed result through private research resources. That effort failed to find any such resources that were willing and able to do the job.

In mid-1993 NIST undertook the requested project, arranged by its Office of Standard Reference Materials and performed by the Chemical Science and Technology Lab with assistance from the Computing and Applied Mathematics Lab. To date they have developed the needed material, confirmed it through round robin tests in private labs, and begun preparations to package and sell it. Initial sales are scheduled for November 1995, and full availability signalling the end of the project for February 1996.

Revisions to the ANSI and ISO standards were begun concurrently with the project, based on good early reports. The ANSI/NFPA document has now been adopted, and the final ballot in ISO is expected mid-1996.

These results represent complete success in a challenging project with high value to American industry. The NFPA project leaders who have participated throughout are elated with the responsiveness, competence, and performance of the NIST team. Our member companies who supported the program are equally pleased.

The resulting standards will help to promote new and improved technology in the affected industries worldwide, and to continue U.S. leadership as a supplier of that technology. The NIST laboratories provided indispensable help in this achievement.

As a sidelight the recognition and prestige of NIST in the technical community abroad, particularly in Europe, was a key asset in winning prompt approval of the ISO standard revision. NIST findings and recommendations were accepted with little or no question. Similar input from a less known source would have been suspect and possibly rejected.

2. The resource value of the NIST Laboratories lies in their competence, objectivity, accessibility and capacity to sustain long term studies. Preservation of that value should be an enforced requisite in the sale or other disposition of the laboratories.

The SRM project described above required high level knowledge and modern analytic equipment in three fields. The synergism of the complete NIST laboratories saved at least a year and proportionate cost in completing the work. This total competence is certainly rare, probably unique.

Objectivity of the NIST labs is recognized all over the world. The attendant credibility and acceptance have great value, which is not readily transferrable to a private owner. If once tarnished, that value may be irretrievable.

The SRM project demonstrates that American industrial interests have access to the NIST lab services in appropriate circumstances, and that in some cases those services are the only feasible means to achieve a needed technological advance. Access is of course also needed by U.S. Government agencies. Undiminished continued access must be ensured.

Long term research projects, with delayed and uncertain payback, are seldom undertaken by private laboratories. Such projects are sometimes important to the long term national or industrial interest, however. NIST is currently a key resource for conducting long term research, and the U.S. does need such a resource. If this NIST capacity were lost as a result of the dismantling, a new equivalent would have to be created within a few years.

3. The role recommended for NIST in the National Research Council report, Standards, Conformity Assessment and Trade: Into the 21st Century, is important to the continued progress and success of American industry. NIST should be assigned that role substantially as articulated in the report. Paraphrasing the report, NIST should:

- Serve as a focal contact for industry on standardization and conformity assessment matters.
- Initiate and lead actions to eliminate duplicated or conflicting requirements within government agencies at all levels.
- Compile and disseminate information on standards and conformity assessment.
- Promote the use of private sector standards and conformity assessment services in place of separately developed government documents and resources.
- Collaborate with ANSI to develop more effective mutual support between public and private agencies engaged in standardization.

These activities are needed. The government may have to undertake them within a short time in some manner. NIST has made a good start already and can implement them faster-cheaper-better than another agency that lacks such a start.

Thank you again for the opportunity to speak here. The matter before you has great importance to our company, and I appreciate the chance to comment.

Mr. EHLERS. Thank you very much, Mr. Walrad.
Next we have Dr. Hermann.

STATEMENT OF ROBERT JAY HERMANN, SENIOR VICE PRESIDENT, SCIENCE AND TECHNOLOGY, UNITED TECHNOLOGIES, HARTFORD, CT

Mr. HERMANN. Good afternoon.

I also appreciate the opportunity to comment on H.R. 1756. I am the Chairman of the Visiting Committee on Advanced Technology of the National Institute of Standards and Technology.

This advisory committee was established by the Omnibus Trade and Competitiveness Act of 1988, regularly reviews the policies, programs, and budget of the institute. This committee has nine members selected from the private sector.

In what we might call normal life, should that exist, I am also Senior Vice President, Science and Technologies, at the United Technologies Corporation, and in this position I worry about assuring the development of the company's technical resources and the full exploitation of science and technology by the corporation. I am also involved in a number of other government advisory and professional activities.

With respect to the comprehensive issue of H.R. 1756, I have contributed within my company to develop a position of strong support for the Department of Commerce or something like it. I am convinced that our Nation does need a Cabinet-level organization dedicated to the coherent use of the instruments of government for our common economic objectives.

However, as Chairman of the Visiting Committee on Advanced Technology for NIST, I believe I am most useful by focusing on the issues in the bill relating to NIST.

Let me begin by saying that I have become a strong supporter of NIST and its programs. Prior to a little over 3 years ago, I had essentially no contact with this institute, and my professional experience was only tangentially related to its activities. In the past few years I have had the opportunity to see it in action from the visiting committee perspective, and I understand much better its essential role in our society.

I have also broadened my standards-related experience by joining the board of directors of the American National Standards Institute, under Tony's leadership, and serving on the National Research Council's commission on physical sciences, mathematics, and application. This commission has oversight responsibility for the NIST board on assessments, which provides a comprehensive review of the NIST laboratories. I now feel I have a much better perspective on which to base my judgments.

The extramural programs of NIST, that is, the Advanced Technology Program, Manufacturing Extension Program, and Baldrige Award, are, in my view, sound programs contributing to the economic health of our Nation and are a wise use of the taxpayers' money.

However, their reason for being and the justification for their size, their industrial relations are, for the most part, separable from the issues of the internal laboratories of NIST, which I would like to address today.

Although I have studied the bill, I am not completely clear enough about its formula for the disposition of the functions and the laboratories to permit a thoughtful critique of its consequences. As an alternative approach, I have chosen to describe what I believe are some fundamental issues involved, with a few references to the specifics of the bill.

Let me begin by asserting, as the previous speakers did, that I believe our country must have a competent, science-based, trustworthy, and easily accessible measurements infrastructure. Without it, we cannot have the interoperability of materials in our industry, the ability to communicate about industry with ease, and the authority on industrial matters and the leading-edge national competitive advantages in new industries and technologies.

An absolutely essential element of that infrastructure is the metrology laboratory system of NIST. They provide the science and engineering basis for the physical standards upon which the whole measurement infrastructure of the United States depends. No other institution, public or private, performs this function for the United States.

The industrial sector clearly understands that this must be a centrally executed responsibility performed competently and fairly for all industry and must not become a pawn of the private sector competition.

The laboratory programs of NIST are conceived and rationalized to support this standards mission. They are not there to perform science for the sake of science, even though good science is often a byproduct of their work. Their role is totally incongruent with the role and responsibilities of the National Science Foundation. NIST is a mission agency with a key role in the operating industrial activities of this Nation.

These programs are not conceived to augment the science and technology base of the private industrial sector, even though their efforts often do support the private industrial sector. Thus cooperation between NIST and industry is extremely important to both parties. In order to make the measurement science base accessible to industry and for NIST to understand the measurement science base that will be needed by industry in the future, NIST must have an extension program of outreach cooperation with the scientists and engineers of the private sector.

You will find, therefore, a great deal of mechanisms being used to achieve this objective.

I have attached some written materials from NIST, which I see are duplicated by Mr. O'Neill's testimony. Let me just pass on to say that I have found that in describing what NIST does, it is difficult to simplify, and it turns out that you are remanded to making long lists of examples and I have not been able to escape that, and if you know how to do that, please help me out.

In addition to being a science-based authority for standards, NIST performs other important functions for this country, since it is regularly and routinely involved in the discipline and process of standards and thus has relationships with industry and other elements of the U.S. Government and foreign government agencies concerned with standards. They are an essential part of the non-

physical treaty standards and of the U.S. voluntary standards and conformity assessment system.

As Tony indicated, many of us are members of the board of directors of ANSI. I want to note that there has recently been enacted between ANSI and NIST an MOU that was at the initiative of the industrial segment of the board of directors that caused this to occur.

The bill directs that the laboratories be sold "to the private sector entities to perform substantially the same functions as were performed by the laboratories of the institute.

Personally, I do not quite understand the economic incentive for the private sector in this transaction or what purposes would be served for the government. I am a strong supporter of outsourcing government functions which can be performed better by the private sector, but I do not see any of the elements here which would make that a sensible action on the part of either the government or an element of the private sector.

This section of the bill clearly assumes that the functions of NIST which are assigned to the National Science Foundation are separable from the laboratories of NIST. That is wrong. The laboratories perform the functions of NIST. They provide the science base upon which standards can be created. They perform the outreach and knowledge transfer to industry. They are inseparable from the mission of NIST.

I am told that the disposition of options being discussed is to transfer NIST to the Department of Energy, I heard this morning. I cannot imagine why this makes sense unless the role and mission of DOE is to be materially changed.

Further, the track record of that department in conducting science and technology activities outside of its historic national security role has not been good, in my judgment. NIST, although substantially smaller, is an important asset to preserve and will not fit, in my judgment, well in the Department of Energy as it is currently constructed.

I am also told that a department of science is under consideration that might be an eventual location for NIST. I am not sure what that department will constitute, but if this department is to be focused on the objective of strengthening the science base of the United States, it does not make sense to me. It is not the purpose of NIST to strengthen the science base, and in an industrial infrastructure role, it seems to me would be incompatible with the skills and backgrounds of the leadership of such a department, but that is conjecture on the basis of what that department would look like.

In my view, NIST should be associated with a department whose mission and function is focused on the economic and industrial well-being of the Nation. Its location in Commerce today makes sense. If there is to be no Cabinet-level department responsible for using the appropriate instruments of Government to that purpose, it would be an unfortunate outcome, in my viewpoint.

In that circumstance, I would chose the U.S. Trade Rep of today's candidates as the location for NIST. At least this position is focused on our competitive economic and industrial relationships with the rest of the world. This is the context within which NIST's capabilities should be evaluated and directed.

Let me conclude by reiterating that I feel that serious damage would be done if this bill is enacted as written. A small but essential element of our industrial infrastructure would be eliminated. It will certainly amaze our trading partners and industrial competitors.

Sadly, I sense from the language being used that this action will be based on some serious misconceptions about the nature of industrial processes and the role of NIST in these processes.

Thank you, Mr. Chairman.

[The prepared statement of Dr. Hermann follows:]

Statement of Robert J. Hermann
Senior Vice President, Science and Technologies, United Technologies
and
Chairman, Visiting Committee on Advanced Technology
of the
National Institute of Standards and Technology
before the
Committee on Science of the House of Representatives

Mr. Chairman and Members of the Committee; I am pleased to have the opportunity to comment on H.R. 1756.

I am the Chairman of the Visiting Committee on Advanced Technology of the National Institute of Standards and Technology (NIST). This advisory committee, established by the Omnibus Trade and Competitiveness Act of 1988, regularly reviews the policies, programs and budget of the Institute. This committee has nine members selected from the private sector.

I am also Senior Vice President, Science and Technology at United Technologies Corporation. In this position, I am responsible for assuring the development of the company's technical resources and the full exploitation of science and technology by the corporation.

In addition, I am involved in other activities which may be of interest to the committee. I am a member of the President's Foreign Intelligence Advisory Board and the Commission on Missions and Capabilities for Intelligence; the Defense Science Board; the National Academy of Engineering; the National Research Council Commission on Physical Sciences, Mathematics and Applications; and the National Society of Professional Engineers Industry Advisory Group. I am also a member of the Board of Directors for Draper Laboratories and the American National Standards Institute (ANSI) as well as the Board of Trustees for the Hartford Graduate Center.

With respect to the comprehensive issue of H.R. 1756, I have contributed to a position of strong support for a Department of Commerce in my capacity at United Technologies. I am convinced that our nation does need a cabinet-level organization dedicated to the coherent use of the instruments of government for our common economic objectives. However, as Chairman of the Visiting Committee on Advanced Technology for NIST, I believe I can be most useful to the committee by focusing on the issues of H.R. 1756 which pertain to NIST.

Let me begin by saying that I have become a strong support of NIST and its programs. Prior to a little over three years ago I had essentially no contact with this Institute and my professional experience was only tangentially related to its activities. In the last few years, I have had the opportunity to see it in action from the Visiting Committee perspective and understand much better its essential role in our society. I have also broadened my standards-related experience by joining the Board of Directors of the American National Standards Institute and serving on the National Research Council's Commission on Physical Sciences, Mathematics and Applications. This Commission has oversight responsibility for the NIST Board on Assessments which provides a comprehensive review of the NIST Laboratories. I now feel that I have a much better perspective on which to base my judgments.

The extra-mural programs of NIST, that is, the Advanced Technology Program (ATP), the Manufacturing Extension Program (MEP), and the Baldrige Award are, in my view, sound programs, are contributing to the economic health of our nation and are a wise use of the taxpayers money. However, their reason for being, the justification for their size, and their industrial relationships are, for the most part, separable from the issues of the internal laboratories of NIST which I would like to address today.

Although I have studied the Bill, I am not completely clear enough about its formula for the disposition of the functions and the laboratories to permit a thoughtful critique of its consequences. As an alternative approach, I have chosen to describe what I believe are the fundamental issues involved with very few references to the specifics of the bill.

Let me begin by asserting that I believe our country must have a competent, science-based, trustworthy, and easily accessible measurement infrastructure. Without it, we cannot have the interoperability of materials in industry, the ability to communicate with ease and authority about industrial matters, and the leading-edge, national competitive advantages in new technologies and industries.

An absolutely essential element of that infrastructure is the metrology laboratory system of NIST. They provide the science and engineering basis for the physical standards upon which the whole measurement infrastructure of the United States depends. No other institution,—public or private—performs this function for the United States. The industrial sector clearly understands that this must be a centrally executed responsibility, performed competently and fairly for all of industry, and must not become a competitive pawn of private sector competition.

The laboratory programs of NIST are conceived and rationalized to support this standards mission. They are not there to perform science for the sake of science even though good science is often a by-product of their work. Their role is totally incongruent with the role and responsibilities of the National Science Foundation (NSF). NIST is a mission agency with a key role in the operating industrial activities of the nation.

These programs are also not conceived to augment the science and technology base of the private industrial sector even though their efforts often do support the private industrial sector. Close cooperation between NIST and industry is extremely important. In order to make the

measurement science base accessible to industry and for NIST to understand the measurement science base that will be needed by industry in the future, NIST must have an extensive program of outreach and cooperation with the scientists and engineers of the private sector. You will find, therefore, a great variety of mechanisms being used to assure that the investment being made in the NIST laboratories can be exploited by industry. There are many visiting scientists and engineers from industry working with NIST scientists and engineers. There are cooperative programs with individual companies and consortia. NIST also holds many workshops for industry on special topics. This set of relationships is sound, worthy of our pride, and is a comparative advantage for our industry.

I have attached some written materials from ^{NIST} NIST which show a variety of examples of the ways that NIST laboratories provide value and essential functions to our industry and our consumers. Since the number of ways and examples are so many and so varied, I have found that it is difficult to simplify the description of this important function. These lists of examples have been useful for me; perhaps you will find them helpful as well.

In addition to being the science-based authority for standards, NIST performs other important functions for the country. Since it is regularly and routinely involved in the discipline and process of standards and thus has relationships with industry, other elements of the U.S. Government, and with foreign governmental agencies concerned with standards, NIST has become an essential part of non-physical treaty standards and of the U.S. voluntary standards and conformity assessments system.

Some of us on the panel are a part of the nation's voluntary standards system through participation in ANSI. ANSI is the lead organization of the federation of activities that constitute the U.S. voluntary standards system. Recently ANSI and NIST signed a Memorandum of Understanding to formalize and facilitate cooperation between the government and the private sector in standards and conformity assessment activities. I want to particularly note that the impetus for this initiative was from the industrial members of the ANSI Board of Directors. They realize that the competitiveness of our nation demands that on some matters we, as a society, must act together. Dealing with standards, the standardization process, and conformity to those standards and processes is something that we must do in this globally competitive world and that no company or industry can do by itself. We can do most of the work in the private sector and that is the style of the voluntary standards system but not all countries behave as we do. We in industry often need the help of government when we cross sovereign borders. Whether it is the U.S. Trade Representative, the Department of Commerce, or NIST in the standards field, to deal with other sovereign nations sometimes requires U.S. Government and U.S. industry cooperation. We must then know how to cooperate effectively and anticipate the times and circumstances when that cooperation will be needed.

After years of wasteful squabbling on the part of both the public and private sector, we have now made significant progress in understanding, communications and mechanisms for cooperation in the voluntary standards community. Industry sees a strong role for NIST in this partnership.

The bill directs that the laboratories be sold "--to the private sector entity to perform substantially the same functions as were performed by the laboratories of the Institute--". Personally, I do not quite understand the economic incentive for the private sector in this transaction or what purposes would be served for the government. I am a strong supporter of outsourcing government functions which can be performed better by the private sector, but I do not see any of the elements here which would make that a sensible action on the part of either the government or the private sector.

This section of the bill clearly assumes that the functions of NIST which are assigned to the National Science Foundation are separable from the laboratories of NIST. That is wrong. The laboratories perform the functions of NIST. They provide the science-base upon which standards can be created. They perform the outreach and knowledge transfer to industry. They are inseparable from the mission of NIST.

I am told that one of the disposition options being discussed is to transfer NIST to the Department of Energy (DOE). I cannot imagine why that makes sense unless the role and mission of DOE is going to be materially changed. Further, the track record of that department in conducting scientific and technical activities outside of its national security role has not been very good. In my judgment, NIST, although substantially smaller, is a more important asset to preserve for our commercial interests than much of the Department of Energy Laboratory effort.

I am also told that a new Department of Science is under consideration and might be an eventual location for NIST. Since I do not know the function and form of this department, I find it difficult to know whether this makes sense. If this department is to be focused on the objective of strengthening the science base of the United States, it does not. That is not the purpose of NIST and its industrial infrastructure role would not be compatible with the skills and backgrounds of the leadership of such a department.

In my view, NIST should be associated with a department whose mission and function is focused on the economic and industrial well being of the nation. Its location in Commerce today makes sense. If there is to be no cabinet-level department responsible for using the appropriate instruments of government to that purpose, it will be an unfortunate outcome. In that circumstance, I would choose the U.S. Trade Representative as the location for NIST. At least this position is focused on our competitive economic and industrial relationships with the rest of the world. This is the context within which the NIST capability should be evaluated and directed.

Finally, I note that the bill eliminates authorization of NIST to contract for studies by the National Research Council. I am a little surprised that a bill which leaves so many major questions unanswered found this item worthy of attention. This contract supports the Board on Assessments which provides a third party peer review of the NIST Laboratories each year by national experts in each specialized laboratory field. Our Visiting Committee felt that this was such a sound concept that we have suggested to the Director of NIST that it be extended to its extra-mural programs.

Let me conclude by re-iterating that I believe that serious damage will be done if this bill is enacted. A small but essential element of our industrial infrastructure will be eliminated. It will certainly amaze our trading partners and industrial competitors. Sadly, I sense from the language being used that this action will be based on some serious misconceptions about the nature of industrial processes and the role of NIST in these processes.

Attachments:

- 1) How America Counts on NIST for Measurements: Important Facts
- 2) NIST Laboratory Program: Services and Benefits
- 3) Standards, Measurement, and the NIST Laboratories: Don't Leave your Economy Without Them



Biography of DR. ROBERT J. HERMANN

Senior Vice President, Science and Technology
United Technologies Corporation

Robert Hermann was elected Senior Vice President, Science and Technology at United Technologies Corporation in 1992. Dr. Hermann is responsible for assuring the development of the company's technical resources and the full exploitation of science and technology by the Corporation. He also has responsibility for the United Technologies Research Center and the United Technologies Microelectronics Center.

Previously vice president-systems technology and analysis in UTC's Defense and Space Systems Group, Dr. Hermann joined the company in 1982 as vice president, systems technology in the electronics sector. He was named vice president-advanced systems in the Defense Systems Group in 1984.

Dr. Hermann served 20 years with the National Security Agency with assignments in research and development, operations and NATO. In 1977 he was appointed principal Deputy Assistant Secretary of Defense for Communications, Command, Control and Intelligence. He was named Assistant Secretary of the Air Force for Research, Development and Logistics in 1979, and special assistant for intelligence to the Under Secretary of Defense for Research and Engineering in 1981.

He received B.S., M.S. and Ph.D. degrees in electrical engineering from Iowa State University. Dr. Hermann is a member of the National Academy of Engineering, the Defense Science Board, the National Society of Professional Engineers' Industry Advisory Group, chairman of the Naval Studies Board, and chairman, Executive Committee of the Navy League's Industrial Executive Board.

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HOW AMERICA COUNTS ON NIST FOR MEASUREMENTS: IMPORTANT FACTS

Created in 1901 out of economic necessity that has grown over time, the Commerce Department's National Institute of Standards and Technology is the nation's premier institution devoted to the science and practice of measurement. The agency's laboratories are a key part of NIST's portfolio of four technology programs. The laboratories develop and supply companies, universities, hospitals, and other organizations with essential measurement know-how. They develop otherwise unattainable tools that ensure confidence in the growing number of measurements demanded by the technically complex affairs of commerce, science, engineering, health, safety, defense, law enforcement, and the environment. "NIST quality" measurements are part of a universal technical language linking U.S. companies and institutions to the rest of the global economy.

NIST measurements are vital to the functioning of the entire economy, helping to ensure fairness and efficiency in the sale of more than \$2 trillion worth of goods and services.

- Accurate and uniform measurements of weight, size, volume, and other quantities maximize efficiency and promote customer confidence in the sale of goods ranging from lunch meat at the deli counter to natural gas flowing through transnational pipelines to ultrapure gases purchased by semiconductor manufacturers. The consequences of weakening the underpinnings of the national measurement system are mistrust, disputes, and costly inefficiencies at every one of the many steps leading from raw inputs to finished goods and services.

NIST tools and services are the ultimate references for the hundreds of millions of measurements made daily by U.S. companies, small and large.

- More than 350 different NIST-developed measurement tools and services are embedded into the quality control systems of the automotive industry—from small suppliers of metal parts to large refiners of gas and oil. Virtually all U.S. semiconductor manufacturers depend on NIST-developed test methods to evaluate their raw materials, processes, and products. The entire U.S. steel industry relies on more than 125 NIST Standard Reference Materials in assessing the quality of raw materials and finished products.

The top tier in the nation's measurement chain, NIST conducts research that anticipates long-term needs in basic science and engineering and responds to industry's continual demands for increased accuracy.

- NIST aims to develop measurement capabilities that are four to 10 times more accurate than the best quality-inspection methods practiced in industry. The chain of precision measurements leading to the factory floor begins at NIST. At each step along the chain—from NIST to private calibration lab or precision equipment maker, to company standards lab, all the way down to the production cell—uncertainty is introduced, necessitating the high (often, world best) levels of accuracy achieved by the agency.

- Long-term efforts have paid off with NIST's newly developed Molecular Measuring Machine, a unique atomic imaging microscope with a field of view 250,000 times greater than that of current microscopes. It will provide crucial measurement support to industry and university researchers studying ways to manipulate nature's molecular architecture for practical purposes, from creating entirely new materials to manufacturing future generations of integrated circuits.

NIST measurements, services, and expertise underpin efforts to eliminate technical barriers to trade, which could boost annual U.S. exports by \$20 billion or more.

- Measurement traceability to NIST, internationally recognized as the U.S. measurement authority, enables U.S. companies to demonstrate compliance with specific technical standards, an increasingly common prerequisite for doing business in foreign markets. Without NIST, many firms would be shut out of those markets or forced to acquire measurement services from foreign laboratories, causing delays and imposing costs ultimately borne by the U.S. economy.

"NIST quality" measurements are crucial to the performance of U.S. military equipment systems.

- The Defense Department relies heavily on NIST measurement expertise and standards, specifying that systems and components be calibrated with equipment and methods traceable to NIST.

- NIST developed specialized equipment that the U.S. military uses to calibrate—and thereby ensure the accuracy of—range-finder and target-acquisition systems deployed on jets, helicopters, and missiles.

NIST measurement research and its impartial expertise are national resources, tapped regularly to address health, safety, and environmental issues.

- NIST measurements were instrumental in identifying automobile exhaust as a major environmental source of lead in children. NIST research has yielded reliable, widely adopted methods for measuring electric and magnetic fields from power systems, essential to resolving the issue of whether exposure to the invisible fields poses health risks. NIST measurement references are used to ensure that radiation doses are administered accurately, safely, and effectively in 7 million diagnostic and therapeutic procedures performed each year.

NIST-developed measurement methods help companies transform new technologies into manufacturable products, while furthering the aims of university scientists.

- Laboratory-developed, one-of-a-kind measurement equipment is a resource for the entire research community. For example, NIST scientists helped their counterparts at Carnegie Mellon, MIT, the University of Minnesota, and other institutions install and apply NIST-invented technology for studying the magnetic structure of materials in unprecedented detail. In industry, companies racing to develop new high-density information storage systems—firms ranging from tiny Nonvolatile Electronics, Plymouth, Minn., to the Digital Equipment Corp.—have collaborated with NIST on research made possible by the unique magnetic microscope.

NIST LABORATORY PROGRAM: SERVICES AND BENEFITS

The Commerce Department's National Institute of Standards and Technology (NIST) provides the nation with unique research and services in measurement and standards matters that help industry, consumers, and the scientific community and contribute to improved public health and safety, law enforcement, and national defense. Among other roles, NIST acts as the nation's measurement laboratory—serving as a neutral third party in ways that could not be duplicated by private organizations. Examples of NIST services and benefits follow.

Industry

Higher quality products, more reliable and more flexible processes, fewer rejected parts, speedier product development, more efficient market transactions, higher levels of interoperability among machines, factories, and companies. These are some of the practical advantages that U.S. companies realize from the NIST laboratories' research, services, and standards-related activities. The ultimate U.S. reference point for measurements with counterpart organizations throughout the world, the laboratories provide companies, entire industries, and the whole science and technology community with the equivalent of a common language needed in nearly every stage of technical activity.

- Without NIST, electrical utilities and consumers would have no reliable source for accurate calibrations of watt-hour meters that serve 100 million homes and buildings and track nearly \$200 billion of electricity. A measurement error of just 1 percent translates into costs totaling almost \$2 billion, borne by consumers or utilities.
- Gas producers, distributors, processors, and consumers save about \$150 million annually from NIST research and measurement methods that improve accuracy in natural gas pipeline metering.
- Electric power grids, communications networks, banking systems, and satellite and guided missile navigation systems rely on NIST's super-accurate atomic clock for time and frequency signals. Los Angeles County, for example, saves an estimated 22 million gallons of gasoline per year and 55,000 hours of driving time each day by synchronizing traffic lights with NIST's time and frequency services.
- Entire industries rely heavily on NIST's Standard Reference Materials for accuracy and quality assurance. The steel industry relies on over 125 different NIST measurement standards for reliability of raw materials and finished steel components that go into bridges, buildings, and other structures.
- U.S. producers and users of optical fibers depended on NIST to develop the technical foundation for more than 20 voluntary measurement standards credited with accelerating the growth of the optical fiber market and communications networks.

- The U.S. automotive industry relies on more than 350 different NIST-developed measurement tools and services for quality control systems—everything from purity of glass and steel to reliability of fuel, highway cement, and exhaust systems.
- Semiconductor manufacturing equipment companies have counted on NIST measurement research and tools to drive down the size and drive up the performance of their products—enabling improvements by the makers and users of integrated circuits. Industry estimated that just one NIST project—which could not be undertaken by any single company—saved industry over \$30 million, a return of more than 100 times the cost of the work.
- U.S. engineers in aerospace, automotive, and other industries trying to take advantage of computer-aided manufacturing technologies are benefiting from NIST's management of a 26-nation effort leading to an important new data-exchange standard. In the automotive industry alone, costs due to incompatible systems are estimated to approach \$100 million.
- U.S. semiconductor manufacturers attributed 4 percent of their productivity growth over a five-year period and annual savings of up to \$500 million to NIST research.
- American companies could gain between \$20 billion and \$40 billion worth of exports if NIST succeeds in its efforts to help eliminate non-tariff-related barriers to trade such as restrictive standards and testing requirements imposed by other nations.
- The nuclear energy industry and the public depend on measurement standards developed by NIST that are essential for continued safe operation of 109 power plants. NIST develops and updates industry testing procedures and advises the Nuclear Regulatory Commission on judging the strength of reactor pressure vessels, a task that requires special measurement expertise and impartiality.
- The aircraft industry and public rely on unique NIST facilities and expertise needed to understand metal failures such as those that caused the top of an Aloha Airlines passenger jet to rip off in flight. In similar work, NIST materials and construction expertise helped explain why an oil storage tank released 4 million gallons of oil into a Pennsylvania river, shutting down drinking water for Pittsburgh and other cities; NIST recommendations for tougher safety standards were quickly adopted by the industry.
- NIST created the world's most accurate instrument to measure layers on silicon chips at thicknesses the semiconductor industry demands for precise manufacturing control. The Semiconductor Industry Association noted, "NIST is the only place in the U.S. where the broad range of measurements needed for semiconductor processing are routinely and systematically developed."
- NIST helped telecommunications companies to synchronize their transmissions to provide their users error-free connections. "By my calculation, NIST saved us almost one year in the time it took to develop the proper synchronization standard," says Rodney J. Boehm, chairman of a subcommittee of the telecommunica-

tions industry's Exchange Carriers Association. "It is imperative that NIST continue to be involved to help guide us and ensure that we use [NIST] expertise to speed up the standards process for the good of the entire industry," Boehm adds.

- Virtually the entire space-based communications industry has adopted NIST-developed methods to test microwave antennas, saving companies millions of dollars. One company estimates it has saved \$35 million by implementing the NIST near-field techniques. NIST-developed techniques for trouble-shooting and repairing complex antenna arrays also have produced substantial savings. McClellan Air Force Base in California was able to reduce repair time from as much as a year to "only a few weeks" as a result of NIST assistance.

- Manufacturers of electronic products or products with numerous electronic components use commercial versions of a NIST-developed TEM cell to check for electromagnetic interference or unwanted emissions. The automotive industry tests vehicles for radiated emissions in huge TEM cells before placing them on the market. "It saves us about three days per car in testing time," says a Ford engineer. TEM cell techniques are included as part of electromagnetic interference standards by the Society of Automotive Engineers, the American National Standards Institute, and the Institute of Electronic and Electrical Engineers, among others. TEM cells now are produced by a dozen companies.

- Large segments of the U.S. medical, agricultural, food processing, paper, plastics, and building materials industries save an estimated \$500 million per year as a result of a NIST-developed method for measuring light reflection.

- The National Association of Home Builders estimates that NIST recommendations for improved plumbing standards made possible hundreds of millions of dollars in savings in materials costs for the construction industry and for homeowners from reduced water usage.

- NIST-developed smoke detector performance requirements, installation guidelines, and subsequent studies have played an essential role in establishing a \$100 million U.S. residential smoke detector market and enabled U.S. manufacturers to acquire a 50-percent share of the world market. Since 1975, the percentage of homes protected with at least one smoke detector has grown to about 80 percent. This has been a major factor in the dramatic reduction in fire death rate in the United States, from more than 60 people per million population to fewer than 30 per million.

Law Enforcement

Since 1971, NIST has helped state and local police fight crime and lower costs by coordinating development of nearly 200 law enforcement standards. These standards include measurement methods and testing methodologies that help police make better use of evidence, ensure the quality of critical police equipment, and save tax dollars by improving police procurement.

- NIST developed the computerized system the Federal Bureau of Investigation uses to match fingerprint evidence against 30 million records, so that local police can identify and arrest suspects. NIST researchers are now working to automate

the last remaining manual step in fingerprint analysis, an accomplishment expected to save the FBI 80 percent of its current labor costs for this procedure.

- A DNA profiling Standard Reference Material developed by NIST in 1992 has been key to establishing the reliability of this powerful law enforcement tool. Another NIST SRM for a newer, faster method of DNA profiling was issued in June 1995. "We don't like to go to court unless we have standard references that we can use in our testing," says David Bing of CBR Laboratory in Boston. "And you don't want the labs that are doing the testing to develop the standards because then there is no check on their objectivity."

- For the Department of Justice, NIST developed the performance standards now used throughout much of the world to test police soft body armor. According to industry figures, more than 2,000 U.S. police officers owe their lives to body armor, resulting in savings to taxpayers of over \$800 million in death benefits and other costs.

- NIST standard test methods for radar guns and other speed-measuring devices have helped to improve substantially the accuracy of such devices. Prior to the NIST standard the reliability of radar devices was unknown and often was challenged successfully in court.

Health and Medicine

In matters of health and medicine, measurement errors and uncertainties can kill. In the case of radiation therapy, for example, an overdose can be lethal, while an underdose may fail to check the spread of a life-threatening tumor. Similarly, errors and uncertainties can undermine effective responses to public health problems, sometimes leading to erroneous conclusions that inflate risks and divert resources from legitimate public needs. As the nation's measurement authority, NIST laboratories provide services and conduct research that form much of the foundation for nationwide safety and quality-assurance systems that ensure the accuracy of health care measurements. In addition, NIST's measurement expertise and data services and its one-of-a-kind instruments have become valuable resources for health and biomedical researchers across the country. Finally, NIST experts often are called upon to speed or narrow the search for answers to suspected health problems, which often pose difficult measurement challenges.

- Accuracy of clinical measurements of cholesterol levels in blood serum has improved dramatically—to 95 percent, as compared with about 70 percent—since NIST issued a benchmark Standard Reference Material, a sample of serum containing certified amounts of human cholesterol. Greatly increased confidence in the results of cholesterol translates into better decisions on treatment and lifestyle management. "Every dollar spent at NIST for clinical laboratory standards has a multiplying effect of at least 10 times that in value for the public in improved diagnosis." —George Bowers, Hartford Hospital

- The 600,000 people who undergo radiation therapy for cancer each year and the several million more who undergo radiodiagnostic and radiotherapeutic procedures count on NIST calibrations, reference materials, and laboratory accreditation services to ensure the accuracy of radiation doses.

■ A NIST invention should significantly improve the quality of soft tissue images obtained in the more than 22 million X-ray mammography procedures performed each year. The improvement should translate into more accurate diagnoses, reducing the number of unnecessary biopsies (due to false positive results) and undetected tumors (due to false negative results). The new device, a spinoff from NIST's core competency in X-ray measurement technology, measures voltage applied to the X-ray source and the resultant energy distribution of X-rays that women receive during breast cancer screening 10 times more accurately than existing field calibration units. The new device "appears to be an almost ideal way of routinely measuring X-ray spectra from X-ray diagnostic machines."—T.J. Quinn, Bureau International des Poids et Mesures

■ NIST researchers also are developing new measurement technology with the potential to identify women at risk for breast cancer before they actually develop the disease. The new system, which measures tiny amounts of estrogen byproducts, capitalizes on an analytical technique that is more reliable, faster, and less costly than conventional methods of hormone measurement.

■ NIST studies of DNA damage by free radicals are helping uncover how these molecules promote certain cancers and other diseases. Among the benefits is a method for identifying and assessing molecular-level damage to DNA in cells and organs. Understanding the mechanism of DNA damage and repair potentially could help other researchers to develop the necessary means to prevent or repair the DNA damage in cells.

■ At the Center for Advanced Research in Biotechnology (CARB), which is sponsored by NIST, the University of Maryland, and Montgomery County, scientists have shed light on the structure for a series of important bacterial sugar-transport proteins that may help pharmaceutical companies design new antibiotics that target bacteria. CARB analyses of other proteins could be the foundation for developing more effective chemotherapy drugs as well as enzyme inhibitors that would make cancer cells more susceptible to chemotherapy.

■ NIST-led efforts are ensuring that international monitoring of ground-level changes in ultraviolet radiation will yield accurate, reliable measurement results, enabling scientists to assess the health effects of upper-atmosphere ozone depletion and the consequent increase in UV radiation.

■ NIST measurements were crucial to efforts that identified automobile emissions as a significant environmental source of lead, a toxic metal that is especially hazardous to children during neurological development. NIST's continuing support of efforts to reduce lead exposure includes more than 40 reference materials certified for lead concentration. These are used to ensure the accuracy of laboratory and field measurements of lead levels in, for example, blood and bone and of the lead concentrations on painted surfaces and in water. Reference materials containing certified levels of lead in soil samples are under development.

■ The NIST dental materials research program, a 67-year-old collaboration with the American Dental Association, continues to be the source of key enabling technologies that have helped to improve the practice of dentistry and the dental health of Americans. Some examples:

- NIST and ADA researchers developed the prototype technology leading to the air-driven turbine drill now found in virtually all dentist offices.
- A simple new shielding device developed by NIST and ADA collaborators will protect patients' healthy tissues from radiation while they undergo therapy for oral tumors and lesions. "I would not have been able to develop the new shielding method outside of NIST. By working here, I was able to draw upon the expertise of NIST metallurgists, polymer scientists, and radiation physicists."—Frederick E. Eichmiller, inventor of the new shielding technology
- A mercury-free dental amalgam developed by NIST and ADA researchers can eliminate concerns over the long-term effect of mercury-containing dental materials on public health and the environment.
- A substantially improved method for calibrating radiation doses delivered by a new neurosurgical tool called the gamma knife resulted from a collaboration involving NIST radiation experts, three oncology centers, and a New Jersey company. The calibration method is key to exploiting thin-film technology that generates pre-treatment maps precisely indicating radiation targets within the brain and radiation-dose levels within the target area.
- NIST provides important research and measurement support to the nation's health and biomedical scientists. For example:
 - NIST-developed and -maintained databases ensure that biological models and the calculations they are based on use accurate, reliable data. One newly added database, for instance, contains evaluated data on the properties of more than 900 lipids, a group of molecules intensely studied by pharmaceutical and food technology researchers.
 - NIST research yielded reliable methods for measuring electric and magnetic fields from power systems. Widely adopted by researchers, these methods are needed to resolve questions concerning the health effects of exposure to electric and magnetic fields, asserted to increase the risk of leukemia, cancer, and other disorders.
 - NIST and University of Maryland researchers have determined the three-dimensional molecular structure of a liver detoxification enzyme, aiding efforts to explain how the liver filters cancer-causing substances from the body. The accomplishment could lead to more effective chemotherapy drugs.

National Defense

The U.S. Defense Department relies heavily on NIST measurement research, services, and facilities to ensure, for example, that:

- battlefield equipment performs effectively and reliably,
- military communications are not disrupted by technical failures, and

- impartial expertise is available to troubleshoot complex measurement problems encountered during development, manufacture, and operation of advanced weapon and communication systems.

From its very beginning as the National Bureau of Standards in 1901, NIST has contributed to U.S. efforts to build and maintain the world's best and most advanced national security system. Two of the first laboratories established at NIST were devoted to providing measurement support to shepherd development of an emerging advanced technology then being eyed for military communications—the radio. Today, the NIST laboratories are building the measurement base and defining the measurement standards needed for next-generation military technologies. NIST measurement techniques and reference standards are essential quality-assurance tools. They ensure high levels of confidence in the accuracy of measurements of diverse physical quantities—from laser power for advanced guidance and weapons systems to screw-thread dimensions of “submarine safe” fasteners to the mechanical properties of aerospace alloys.

- Across its vast network of facilities and contractors, the Defense Department specifies that systems and components be calibrated with equipment and methods traceable to NIST.
- NIST's success in developing the world's most accurate voltage reference source, known as the Josephson voltage standard, is paying national security dividends. The Army, for example, now has its own Josephson standard. The primary standard provides the Army with an added level of assurance that precision weaponry and other advanced instrumentation are calibrated accurately, preventing measurement uncertainties that can result in missed targets, surveillance failures, and inaccurate data transmissions. The Army will install a version of the standard directly into some of its equipment, leading to further performance gains and estimated annual savings totaling \$3 million.
- “The system has proven to be a valuable addition to our high power microwave measurement capability, which as you know, is critical to many of the Army weapons, radars, and communications systems ... I believe your (NIST's) work ... has made significant contributions to the state of the art in high power microwave measurement metrology.”—Senior Engineer, U.S. Army Primary Standards Laboratory Directorate
- NIST developed specialized equipment that the U.S. military uses to calibrate—and thereby ensure the accuracy of—range-finder and target-acquisition systems deployed on jets, helicopters, and missiles.
- During Operation Desert Storm, NIST scientists used their near-field antenna-scanning techniques to diagnose the causes of failures in a phased-array antenna that was part of a critical communications link between the United States and the theater of operations. Instead of being sent to the factory for conventional repairs, which would have taken months, the advanced antenna was rapidly diagnosed, repaired, and used throughout the conflict. The NIST precision antenna-scanning methods have been adopted by the Defense Department.

- NIST experts identified and solved a technical problem that had led inspectors aboard a U.S. Navy vessel to reject functional infrared-seeking missiles and order unnecessary and expensive rework. The NIST personnel pegged the problem to improperly calibrated testing equipment and provided a temporary measurement standard for use aboard the ship.
- When the Air Force learned that more than half of its coordinate measuring machines (CMMs)—key pieces of inspection equipment—failed their annual recertification check for accuracy, it immediately recognized that, because of measurement errors, inspectors may have been accepting bad parts and rejecting good ones. It turned to NIST for a solution, which then discovered similar problems at commercial manufacturing plants. Laboratory researchers developed an easy-to-use tool for quickly assessing CMM performance, making daily, rather than annual, evaluations practical. The NIST innovation is becoming an important quality-assurance tool for a growing number of manufacturers inside and outside the defense industry.
- NIST's ultraprecise time-keeping services, including development and operation of one of the world's most accurate clocks, are key supporting elements of the Defense Department's Global Positioning System, a satellite-based navigation network, and are essential to many commercial activities, from synchronizing telecommunications and electric power grids to time stamping international financial transactions and commercial-aircraft voice and data transmissions.
- NIST's unique responsibility for ensuring that U.S. measurements conform with international standards helps to guarantee that U.S. weapons and communications systems achieve necessary levels of compatibility with the equipment of NATO allies and that of other countries participating in joint military operations. Such measurements include frequency and power levels of radio communication systems and IFF—Identification Friend or Foe—systems; time scale for synchronization of operations, advanced telecommunications, and navigation; and dimensions of weapons, munitions, and interchangeable parts.

Environmental Technologies

NIST supports and complements industry efforts to develop, commercialize, and use environmental technologies. NIST has a demonstrated record of providing measurement methods, materials, and technologies; sensors; and evaluated data that are key to industrial process design and control, waste minimization and processing, and all types of environmental monitoring.

- NIST produces 230 different Standard Reference Materials that allow industry, university, and government researchers to measure more accurately pollutants in air, gas, water, soil, tissue, and other types of samples. Almost 10,000 individual units of these SRMs were sold by NIST in fiscal year 1994. Analysis of environmental pollutants often requires measurements of chemical concentrations at the parts-per-million or even parts-per-billion level, a precision that would be impossible without NIST SRMs, which are used to verify the accuracy of scientific instruments and laboratory procedures.

■ Facing a ban on ozone-destroying chlorofluorocarbons and the phaseout of related refrigerants, the nation's \$17 billion air conditioning and refrigeration industry is using a NIST-developed database to calculate properties of alternative refrigerants and mixtures. More than 500 copies of the NIST database, called REFPROP, have been sold, substantially accelerating the progress the industry has made in designing systems that use more environmentally benign replacements.

■ Ten years of NIST research on the environmental effects of burning oil spills have provided state and local officials with the data they need to respond more effectively to such accidents. NIST laboratory research, field tests, and computer models have shown that more than 90 percent of spilled oil (contained with booms on open water) can be removed through burning and that soot particles from such burns are typically below hazardous levels within a few kilometers of the burn site. Mechanical cleanup of oil spills typically removes only about 10 percent of spilled oil from the water.

■ A NIST-developed system that uses microwaves to identify trace gases promises to make emissions testing much faster and easier for automotive, chemical, and environmental researchers. The automated system can measure many different chemicals directly from an emissions source in real time with sensitivities down to 10 to 100 parts per billion. The system replaces current gas emissions measurement methods that require time-consuming bagging of emissions gases and produce substantially less precise data on gas concentrations.

■ A better than tenfold improvement in the accuracy of asbestos measurements due to NIST-developed methods and SRMs has greatly decreased the number of false positive test results that erroneously indicated the need for asbestos removal. Asbestos removal cost building owners an estimated \$3 billion in 1993.

■ Rhodium is a key ingredient in automobile catalytic converters that change polluting exhaust fumes into harmless gases. A NIST Standard Reference Material is helping manufacturers and metal recyclers measure rhodium concentrations as much as 20 times more accurately than is possible with current commercial standards. This means the SRM will help eliminate measurement errors in the \$30 million world market for rhodium.

■ A related NIST SRM provides certified concentrations levels for rhodium, platinum, and palladium recovered from recycled catalytic converters. Before the SRM was issued manufacturers measuring these precious metals typically had measurement errors of about ± 8 percent. Using the NIST SRM, manufacturers can now measure these metals with a measurement error of ± 1 percent, an improvement with the potential to save the automobile industry millions of dollars.

Scientific Community

In the high-tech world, the measurement system is rapidly and constantly evolving. Length, for example, needs to be measured with increasing accuracy for precision machines to operate properly. Entirely new methods need to be developed to observe and measure phenomena related to integrated circuits and magnetic storage devices. Using specialized, often custom-built, instrumentation, NIST experts conduct a broad range of long-term basic research with the goal of advancing measurement methodology. The results of their research aid the entire scientific community, including researchers in academe, industry, and government. ---

- NIST researchers developed a source of polarized electrons that now is used widely in scientific and technological applications from studies of recording heads and media by corporate research laboratories to high-energy physics research. A second product of the NIST research was the development of the SEMPA technique used to look at the small magnetic structures in materials used in computer disks and micron-scale magnetic devices. NIST worked with researchers in industry, the military, and universities to apply SEMPA to their specific problems.
- More than 15,000 copies of NIST's Mass Spectral Database, which helps identify unknown chemical compounds, are used by academic and industrial scientists in chemical, pharmaceutical, food and beverage, rubber, petroleum, aerospace, telecommunications, and computer companies as well as hospitals, environmental laboratories, and law enforcement agencies.
- NIST researchers have achieved the coldest temperatures in the universe with lasers and magnetic traps that chill atoms to near absolute zero, far colder than interstellar space. Such experiments help to improve atomic timekeeping and can be used to advance experimental measurements since ultracold atoms are easier to manipulate than room-temperature atoms. These experiments may lead to a better understanding of quantum effects, such as superconductivity, as well as exotic forms of matter.
- Pharmaceutical companies and biological researchers are using NIST's Biological Macromolecule Crystallization Database to develop new drugs and to study protein structures. The database includes data on more than 2,000 crystal structures of 1,500 biological proteins and macromolecules. Growing protein crystals is often the first step in determining a protein's structure.
- An instrument developed at the NIST Cold Neutron Research Facility offers materials scientists in academia and industry an improved way to analyze hydrogen, which can embrittle metals found, for example, in jet engine turbine blades. NIST chemists are also developing reference standards for verifying the accuracy of analyses of hydrogen in metals.
- NIST researchers are investigating ways to tie the kilogram, the only international unit still based on a physical standard, to an invariable natural constant. The current kilogram mass standard is available in only one laboratory and can change weight due to dust and cleaning. The redefined kilogram standard would be more accurate and accessible to researchers worldwide.

- Scientists and engineers rely on atomic spectral data constants from NIST in new product development as well as to further understanding of the universe. For example, the semiconductor industry needs atomic spectral data when evaluating the characteristics of plasma gases used to etch semiconductors. Similarly, astronomers use spectral lines from stars to determine which elements are contained in a particular star.
- Using ultrafast optics and lasers, NIST physicists and chemists are opening a portal through which they can view the subtlest and quickest changes in atomic-motions. Understanding these ultrasmall, ultrafast changes could lead to new avenues for controlling chemical reactions at surfaces. This emerging field of femtosecond (quadrillionth of a second) chemistry could enable scientists to break chemical bonds selectively, spur reactions, and choose desired products.
- NIST's Synchrotron Ultraviolet Radiation Facility calibration facility is used in concert with NASA shuttle flight observations to record accurately the output of solar radiation. Data on solar radiation must be collected accurately over decades in order to frame scientifically valid regulatory policies on CFC compounds and determine the effect on stratospheric ozone.
- NIST physicists are making some of the most precise measurements ever of the neutron lifetime. Among the benefits of this research is a clearer view of one of the forces acting on subatomic particles as they cooled after the Big Bang. This so-called "weak force" is one of four forces in the "Standard Model," which physicists use to explain the behavior of particles.
- NIST's Electron Beam Ion Trap offers a window to otherwise inaccessible aspects of nature. Scientists now are using this instrument to learn more about the nature of space and time and to understand better energetic astrophysical phenomena. It creates highly exotic forms of matter by stripping most or all the electrons from atoms held in its core with a strong magnetic field.

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STANDARDS, MEASUREMENT, AND THE NIST LABORATORIES: DON'T LEAVE YOUR ECONOMY WITHOUT THEM

Next time you take a drive, pull over to a convenient spot and consider what it took to get you to buy that car. Open the hood and check out the guts of the automotive organism. Open its doors and trunk. Look underneath its chassis.

To make this piece of machinery, thousands of components had to fit together into various systems, which, in turn, had to fit together into a product that looks sleek and hums when it runs. Ungraceful contours, unobtrusive gaps between body parts, rattles, squeaks, even the way a car door feels and sounds as it opens and closes, play into buying decisions. Considering that car makers receive components and systems from thousands of suppliers—each one using their own equipment, workers, and quality control procedures—it is almost a miracle that cars roll off the lines looking as sleek and humming as calmly as they do.

What makes auto making a feat of mass manufacturing, and not a miracle, is a vast, yet unseen, infrastructure of standards and measurement protocols. A rose may be a rose may be a rose to all of humanity, but one manufacturer's thousandth of an inch or millimeter is not necessarily another manufacturer's thousandth of an inch or millimeter. Unless, of course, the measuring tools and methods they each use are calibrated and certified by common standards of the highest accuracy and reliability. The same dependence holds for every other industry whose manufacturing processes and products rely upon standard practices and accurate chemical, physical, and engineering measurements. A very short list of these measurements includes length, temperature, voltage, resistance, current, chemi-

cal composition, hardness, color, luminosity, tensile strength, radioactivity level, viscosity, and particle size.

The Supreme Court of Measurement

This is why the laboratories at the Department of Commerce's National Institute of Standards and Technology (NIST) are of prime importance in thousands of industrial settings distributed in every state of the Union. Without the standards of measurement developed and maintained by NIST laboratories, domestic industry in general would suffer a great, or even crippling, disadvantage when it comes to certifying products for ever more global markets. A ticket to international trade is the ability of a manufacturer to trace factory measurements and product specifications through a chain of standards or calibrations that ultimately are anchored to measurement bedrock, that is, to a globally recognized measurement laboratory. In the United States, that means NIST. Germany, Japan, and other industrialized countries have their own counterparts.

The importance that standards of measurement would have to the country was not lost on the 18th-century framers of the U.S. Constitution. They considered the governmental role of creating and maintaining standards of measurement—in their lingo "standards of weights and measures"—so critical that it is one of the very few government functions explicitly called for in the Constitution. How else could citizens be assured that an ounce of gold in Delaware was the same as an ounce of gold in Massachusetts?

After a century more of the industrial revolution had unfolded, the U.S. Congress reiterated the importance of creating and maintaining standards of measurement by mandating in 1901 the creation of the National Bureau of Standards, later to be expanded and renamed as NIST. Private companies wouldn't fulfill the function of making measurement standards, which was rendered all the more imperative by the rise of mass manufacturing, since investment in standards making would be hard or impossible to recoup. And while voluntary standards organizations, which have been privately created and maintained, have played an irreplaceable role in promoting compatibility in a variety of product lines, there still remains a vital function to be filled by a public agency like NIST. For one thing, private standards organizations promulgate only written standards of design or practice, not measurement standards. Moreover, NIST ensures equitable access to measurement standards. It maintains the necessary impartiality to serve as a "Supreme Court of Measurement" when disputes arise, and its global credibility is critical for U.S. firms selling goods and services abroad.

Since its founding in 1901, NIST has played these roles. It has provided U.S. industry with an enormous variety of crucial measurement services, including calibration services; "evaluated" data for assessing and certifying the performance of factory instruments such as temperature-measuring thermocouples; and now about 1,350 Standard Reference Materials—the equivalents of certified "rulers," which companies use to check the accuracy of all kinds of scientific and engineering measurements. Non-government testing organizations and laboratories also rely on NIST's measurement expertise for assistance in certifying that the products of their constituencies meet voluntary or government-mandated performance and safety specifications.

As manufacturing processes become more exacting, as factory efficiency goes up, and as more commerce is done with more and more demanding trade partners, the importance of metrology—the science of measurement—mushrooms. In trade, potential overseas partners will go elsewhere if U.S. manufacturers cannot build and test products with measurement standards that ultimately are traceable to NIST or one of the other world-class metrology labs around the globe. An estimated \$20 billion or more of trade in Europe alone is at issue. In cases where suppliers, customers, or even rival companies within an industry need a standard to base the collective development of products, NIST serves as a third-party venue with the technical expertise and proven track record of impartiality to make this kind of cooperation possible.

The Incredible Ubiquity of Measurement

These themes are on the minds of the technical community all over the world. At a 1994 meeting of the Japanese Instrument Manufacturers Federation, J. Terry Quinn, director of the International Bureau of Weights and Measures, which is located in France, spoke eloquently about the many ways confident and accurate measurement enters modern life and commerce.

"It allows high volume goods, such as crude oil or natural gas, to be traded in the secure knowledge that the millions of tons of oil or cubic meters of gas bought and sold are correctly measured from the super-tanker to the petrol pump and from the high-pressure cross-border pipeline to the domestic gas meter," Quinn said. It is to NIST, for example, that the accuracy of every watt-hour meter on the side of every home in the United States is traceable, a situation without which fair and open transaction between electrical utilities and the United States 260 million citizens would be difficult to ensure. It is also due to NIST that vendors and buyers of liquid hydro-

carbon products such as butane and propane, which are derived from natural gas, actually consummate multimillion dollar deals instead of engaging in expensive, time consuming, and acrimonious courtroom debates about how much product in fact did change hands. The technical preventative here is an extraordinarily detailed and accurate set of measurements by NIST researchers on the relationship of temperature, which fluctuates daily, to the volume of these hydrocarbon commodities being pumped from sellers to buyers. These provide a basis for agreement and for adjudicating disagreements.

Quinn listed more ways that measurements enter modern life and commerce: "It is a truism that accurate measurements are required for the efficient manufacture of components for such varied things as internal combustion and gas turbine engines, where reliability and long life depend upon manufacturing tolerances of micrometers; and in compact disc players, which incorporate lenses to focus laser light that are made to tolerances below a tenth of a micrometer." For comparison, the width of a single bacterium is roughly a micrometer. "In terms of high technology production, the list of applications requiring accurate measurement is endless," Quinn told his mostly Japanese audience.

Medicine. Take cholesterol measurements as a particularly personal example. When high levels of this blood component first were linked to heart disease in the 1970s, clinical measurements of cholesterol levels in blood serum were bound to become the basis for lifestyle-changing decisions for many thousands of people as well as for a big new business for testing laboratories. Yet the accuracy of tests at the time was no better than about 30 percent. This gaping uncertainty was due in large part to the absence of standards to serve as benchmarks for each clinical lab and as a means for revealing interlaboratory differences. Researchers at NIST developed a chole-

sterol Standard Reference Material (SRM) that quickly helped to improve the accuracy of clinical serum cholesterol testing to the 5 percent range. All serum cholesterol measurements are now traceable to this SRM. Doctors and patients can feel more confident in the actions they take based on the measurements, which amount to a multimillion dollar market in clinical analyses.

There is another arena of medical technology where accurate measurement perhaps is even more critical. The safe use of X-rays and radioisotopes used for medical imaging or cancer treatment depends upon knowing dose, which depends entirely upon accurate measurement of radiation and radioactivity levels. In the United States, labs responsible for measuring the activity levels of radioisotopes keep themselves accurate and competent, for example, by voluntarily participating in measurement round-robins coordinated by NIST using standard preparations of radioisotopes prepared and certified at NIST.

Communications. Another industry to which accurate measurement is vital is communications. Without the ability to measure time with almost unimaginable accuracy, modern global communication systems quickly would break down into a morass of crossed signals and delays. Communications satellites or optical fibers in a transoceanic communications cable can carry tens of thousands of active international links simultaneously because time scales around the world are closely coordinated to the point where the world's most accurate clocks are synchronized within about a microsecond.

The only way this millionth-of-a-second coordination and stability can occur is because researchers at NIST and the other major metrology labs in the world have been developing and maintaining ever more accurate atomic clocks. In these devices, a second is defined as the duration during which a cesium atom oscillates

9,192,631,770 times (that is more than 9 trillion cycles!) between a pair of energy states. Since this oscillation frequency is the same no matter what the temperature, humidity, or pressure happens to be, it can serve as a reliable time ruler that is the same throughout the world at every moment. No other kind of clock, whose timekeeping depends on such variable physical phenomena as the tension of a spring, the swing of a pendulum, or astronomic cycles, could have this kind of around-the-world, all-of-the-time stability.

Without atomic clocks, military missiles and other spacecraft would operate only within harrowing levels of navigational uncertainty regarding the vehicles' actual locations. Atomic clocks even have spawned entirely new commercial ventures. Although the U.S. Department of Defense established a series of 24 satellite-borne atomic clocks—part of the Global Positioning System (GPS)—for its own military navigational purposes, the GPS has become the basis for civilian applications in which air, land, and sea shippers, even technophilic wilderness hikers, can keep extremely close and relentless track of what spot on Earth they happen to be at any particular moment. GPS-based services have grown into the big-business, multibillion dollar club. This is what the present state of the art of atomic timekeeping has wrought. Each leap in the accuracy of time measurement is likely to open more possibilities in communications capacity and technology, to improve domestic and space navigation, and to open doors to unseen commercial avenues.

Manufacturing. Modern chip manufacturers now are spending \$2 billion to \$3 billion sums to build the next generation of chip-fabrication facilities. In these near future bastions of highest technology, moon-suited engineers will oversee the world's most precisely controlled machinery operating in the world's cleanest rooms to make the world's most intricate devices. A good portion of

the nation's gross national product and global economic position will depend on the smooth operation of these "microfabs." As it has for previous generations of chip making, a credit-card-sized item—called a stepper gauge—provided by NIST—will be crucial.

Each stepper gauge consists of a glass slide with several series of microscopically thin lines of chromium whose widths or line-to-line distances have been measured at NIST with an accuracy and reliability that all players in the industry can trust. These serve as minuscule calibration rulers for the many microscopic analyses that chip factory workers must carry out every day. For example, stepper gauges provide chip makers with the means of checking that the lithographic masks they use for patterning circuitry onto their chips have been prepared as designated by circuit designers. Since one mask can lead to many thousands and even to millions of chips, knowing that they are right to begin with is essential.

The stepper gauges still will serve well enough in the next round of microfabs, but they may not be up to the job five years from now. In anticipation of the electronics devices of the next century, a group of NIST researchers has been developing an entirely new kind of ruler—the Molecular Measuring Machine. This future-is-now device will be able to measure distances with an accuracy of about 2 billionths of a meter (about the size of a protein molecule) over a range half the size of a dollar bill. That may sound like an unnecessary exercise in measurement machismo, but as chip components continue to shrink, manufacturing errors even on these diminutive dimensions will spell "no sale." With tools like the Molecular Measuring Machine in hand, U.S. industry will avoid finding itself in the future merely wishing it had the sophisticated leading-edge measurement capabilities required for efficient, competitive production.

International Standards. As the marketplace for more products and services becomes more global, the role of measurement in trade stands out in stark relief. U.S. companies sold more than \$500 billion worth of goods overseas in 1994, and the world marketplace increasingly requires manufacturers to demonstrate that their products meet specific standards before they may be traded. It is through measurements of all kinds that domestic companies will be able to adapt factory processes and practices to meet specifications of foreign markets. Measurements also are at the heart of an unseen infrastructure of testing and calibration laboratories that carry out many of the certifications required by foreign countries before U.S. products can be shipped to their shores. For many regulated products, foreign governments will accept U.S. tests of a product's conformance to a standard only if the U.S. government—NIST, more specifically—backs the quality of those tests. A product's quality obviously has great bearing on its chances in a competitive market. However, it is the measurement-intensive infrastructure for demonstrating conformity to standards that allows them to enter the competition at all.

The Final Measure

In 1994, the United States invested just over 0.003 percent (\$226 million) of its GDP (\$6.74 trillion in current dollars) on its publicly funded metrology infrastructure based at NIST. NIST's roles are too varied and wide ranging for economists to quantify confidently what the economic return on this investment actually is. In his talk to the Japanese instrument makers, however, Quinn tried boiling down what metrology in general means for an industrial nation's economy—between 3 percent and 6 percent of the gross domestic product is what he estimated. For the U.S. economy in 1994, those percentages correspond to roughly \$200 billion to \$400 billion. What is clear is that NIST is a critical ingredient in this conspicuous hunk of the economic pie.

Mr. EHLERS. Thank you very much, Dr. Hermann.
Dr. Forsen.

**STATEMENT OF HAROLD K. FORSEN, VICE PRESIDENT,
DIRECTOR, BECHTEL HANFORD, INC., RICHLAND, WA**

Mr. FORSEN. Thank you, Mr. Chairman and members of the committee. I am pleased and privileged to address you today as an at-large member of the National Research Council's board on assessment of NIST programs.

My professional experience has been primarily in nuclear science and engineering, and I have spent the last 20-plus years in industry, holding technology management positions with Exxon and Bechtel Corporations. I have been associated with the Board on Assessment of NIST programs since 1989.

The board has been involved in an annual assessment of NIST laboratories and their predecessor, the National Bureau of Standards, since 1959. The board oversees the work of approximately 150 professional scientists and engineers who donate their time to perform this assessment.

Let me emphasize that the board assesses solely the laboratory programs of NIST; that is, the programs of intramural research. The board has never assessed NIST's extramural programs, such as the ATP program and the Manufacturing Extension Partnerships except insofar as those programs impact the work of the laboratories. Therefore, my remarks will focus solely on the NIST laboratories and will be not much different from what you have heard others say.

The board has consistently found that NIST laboratories to be at the cutting edge of research and development in metrology, the science of weights and measures. The quality of the staff is world-class; that is, highly qualified, well trained, creative and innovative, and dedicated to its work and to NIST and its mission. They routinely garner national and international honors from their peers.

As a result of the high quality of the staff, the research carried out at NIST is also of an extremely high quality, and much of it defines the cutting edge in its field.

For example, NIST maintains databases of kinetic and thermodynamic properties of chemicals and industrial feedstocks. These databases are routinely used by manufacturing in the chemical, biochemical, and materials processing industries to monitor and improve the quality and efficiency of their manufacturing processes.

The economic impact of these databases is difficult to quantify, but there is no doubt that NIST contributes significantly to the technological underpinnings of the chemical industry.

NIST researchers also develop the standards and protocols for data exchange that makes domestic and international computer-based communications possible. The Internet, E-mail, and the data link that support them are all based on standards and technologies developed at the NIST laboratories.

The semiconductor industry relies heavily on NIST-developed standards for line width and registration, and the need for those standards is increasing. These standards are a critical element in

enabling U.S. semiconductor manufacturers to pack more components on a single chip and increase the productivity of their fabrication plants.

The need and demand for NIST services is great. For example, in 1994 the NIST laboratories provided standard reference materials to over 2,300 U.S. firms and sold more than 6,000 standard reference data sets, provided calibration services to almost 750 U.S. businesses and accredited 850 private and public sector U.S. testing and measurement laboratories.

NIST laboratory staff participated in more than 800 national and international standard committees, entered into 133 new cooperative research and development agreements, or CRDAs, thus bringing the total number of active CRDAs to over 300, and hosted 197 guest researchers from companies and professional and trade associations, again all this in 1994.

Some seeking to downsize and limit Government's role have called for NIST to return to what they characterize as the old modest mission of weights and measures. However, the longstanding function of NIST in weights and measures cannot be described as modest.

The responsibility given to Congress in the Constitution to advance commerce by maintaining weights and measures cannot be fulfilled without the research and development now being carried out by the scientists and engineers of the NIST laboratories.

New technologies require new measurement capabilities to enable measurements of product quality and production efficiency.

The exploratory research carried out by NIST scientists and engineers seeks to anticipate the country's measurement needs for the coming decades, and their directed research programs provide measurement needs several years out. This research is necessary to keep our national system of weights and measures and our national capability in measurement technology abreast and even ahead of our international competitors.

Two factors play a large role in the quality and effectiveness of work of the NIST laboratories. first, their independence, due to lack of private sector drivers; and, second, their ability to take a long-term view.

As a neutral, Government-funded party, NIST has achieved a solid reputation for objectivity and lack of bias. The ability to work for long-term results enables NIST researchers to anticipate and perform the exploratory mission-driven research necessary to develop the standards and measurement technologies needed several years out. This is crucial. Fast reaction to global commercial competition requires the basic measurement infrastructure to be in place before challenges to U.S. industry arise.

The collective wisdom of the Board on Assessment indicates that the return for the Federal investment in the NIST laboratories is great. In the view of the board, maintaining and fully supporting the NIST laboratories represents an appropriate and necessary long-term investment in basic science and commerce.

The research carried out at NIST is necessary to maintain the U.S. system of weights and measures at the world forefront. The NIST laboratories perform their mission in metrology extraor-

dinarily well and rank among the top metrological institutes in the world.

In considering the future of NIST laboratories, this committee should consider that maintaining the quality and effectiveness of their output requires maintaining an appropriate environment; that is, one which allows top-quality researchers to anticipate and pursue the next generations of standards, measurement technology, and infrastructures through long-term and nonproprietary research in an atmosphere supportive of the basic mission of providing measurement science to promote and support U.S. commerce.

The current NIST laboratories continue the decades-long tradition of performing this mission in metrology extremely well, and this resource is perhaps the most important factor for you to consider in your deliberations.

Thank you for the opportunity to comment, and I would be glad to answer questions.

[The prepared statement of Dr. Forsen follows:]

ROLE OF THE LABORATORY PROGRAMS OF THE NATIONAL INSTITUTE OF
STANDARDS AND TECHNOLOGY

STATEMENT OF DR. HAROLD K. FORSEN
MEMBER AT LARGE, NATIONAL RESEARCH COUNCIL BOARD ON
ASSESSMENT OF NIST PROGRAMS,
FOREIGN SECRETARY, NATIONAL ACADEMY OF ENGINEERING,
AND SENIOR VICE PRESIDENT, BECHTEL CORPORATION, INC. (RETIRED)

BEFORE THE SCIENCE COMMITTEE
U.S. HOUSE OF REPRESENTATIVES

SEPTEMBER 12, 1995

Mr. Chairman and Members of the Committee:

I am pleased and privileged to address you today as an At Large Member of the National Research Council's Board on Assessment of National Institute of Standards and Technology (NIST) Programs. My professional experience has been primarily in nuclear engineering, and I have spent the last twenty years in industry, holding technology management positions with Exxon and Bechtel. I have been associated with the Board on Assessment since 1989.

The Board on Assessment of NIST Programs has been involved in an annual assessment of the NIST laboratories and their predecessor, the National Bureau of Standards (NBS), since 1959. The Board exists to review the quality and effectiveness of the NIST laboratory programs with respect to the needs of the U.S. scientific and technological communities and the NIST mission to support commerce by maintaining standards, weights, and measures. In carrying out its task, the Board oversees the work of panels of scientific and engineering experts in fields relevant to the work of the NIST laboratories. The Board currently oversees seven panels: Electronics and Electrical Engineering, Manufacturing Engineering, Chemical Science and Technology, Physics, Materials Science and Engineering, Building and Fire Research, and Information Technology. The Board and its panels are comprised of approximately 150 professional scientists and engineers who donate their time to the National Research Council to perform this assessment. In 1995, fifty-six percent of those volunteers came from the industrial sector, thirty-three percent from academe, and eleven percent from other sectors such as the government or private non-profits.

In speaking for the Board at this hearing, I first wish to point out that the Board and its panels assess solely the laboratory programs of NIST, that is, its core programs of intramural research. The Board and its panels have never assessed NIST's extramural programs such as the Advanced Technology Program (ATP) and the Manufacturing Extension Partnership (MEP), except in so far as those programs impacted the work of the laboratories. Therefore, my remarks will focus solely on the NIST laboratories, and their mission and work.

Future of the NIST Laboratories under DoC Dismantling

Many seeking to downsize and limit government's role have called for NIST to return to what they characterize as the more modest mission of weights and measures.¹ **However, the long-standing function of NIST in weights and measures should not be described as modest.** In our modern technological society, weights and measures is correctly interpreted as metrology, the science of weights and measures. The programs of the NIST laboratories are concerned with standards, measurement methods, and related technologies. The consensus opinion of the Board and its panels is that the NIST laboratories perform a service in metrology which is crucial to maintaining a competitive position for U.S. industry in the world marketplace, particularly for technologically intensive industries.

The responsibility given to Congress in the Constitution² to advance commerce by maintaining weights and measures can not be fulfilled without the research and development now being carried out by the scientists and engineers of the NIST laboratories. New technologies require new measurement capabilities. Measurement quality impacts product quality, and production efficiency. The NIST laboratories perform their mission in metrology extraordinarily well, and rank among the top metrological institutes world-wide. The success of the NIST laboratories is due to the world-class staff they have been able to recruit and maintain, and the dedication to mission and good morale of that staff.

To maintain the quality and effectiveness of the laboratories' output, it is necessary to maintain them in an environment which allows pursuit of long-term research without pursuit of commercial interests. It is also necessary for the laboratories to exist in an atmosphere that supports their basic mission of providing measurement science to promote

¹See, for example, testimony of The Hon. Murray Weidenbaum, Former Chairman, Council of Economic Advisors, before the Senate Governmental Affairs Committee on July 27, 1995.

²Article I, Section 8 of the Constitution gives Congress the "power...to coin Money, regulate the Value thereof, and of foreign Coin, and fix the Standard of Weights and Measures."

commerce. The current NIST laboratories continue the decades long tradition of performing this mission in metrology extraordinarily well, and that, perhaps, is the most important thing for this Committee to consider in its deliberations on the future of the NIST laboratories.

Quality of Laboratories

The Board on Assessment and its associated panels have consistently found the NIST laboratories to be at the cutting-edge of research and development in metrology. Overall the staff, whose scientific and engineering professionals number approximately 1600, are highly qualified, well-trained, creative and innovative, and dedicated to their work and to NIST and its mission. Despite decades of relatively flat funding preceding recent increases, and despite the politically uncertain atmosphere in which they exist as a government agency, the overall morale of the staff is very good, and they demonstrate a strong pride in the Institute and in their own work. The reports of the Board and its panels consistently describe the staff as "leading experts in their fields", "world-class", "a national asset." In the last year staff have garnered such national honors as awards from the Institute for Electrical and Electronics Engineers, the American Physical Society, and the Association for Women in Science and Engineering. Another member of the staff was named a member of the National Academy of Sciences, bringing the total number of NIST scientists and engineers in the National Academy of Sciences and the National Academy of Engineering to eight. As a result of the high quality of the staff, the research carried out at NIST is of an extremely high quality, and much of it defines the cutting-edge in metrology.

In addition, many of the facilities of the laboratories are unique. These facilities not only serve NIST's primary mission, but since many are open to researchers from outside NIST, they also further other sectors of the U.S. science and technology infrastructure. The premier example of such a facility is the NIST nuclear reactor. In fiscal year 1994, U.S. researchers from 48 industrial laboratories, 86 universities, and 35 government laboratories utilized the reactor's

capabilities for neutron research.³ The Board has consistently found this facility to be extremely well managed and very safely operated.

Effectiveness of NIST Laboratories

In its 1995 evaluation (see attached report), the Board on Assessment found that NIST maintains its tradition of effective research. For example, NIST maintains databases of kinetic and thermodynamic properties of select chemicals and industrial feedstocks. These databases are routinely used by manufacturers in the chemical, biochemical, and materials processing industries to monitor and improve the efficiency of their manufacturing processes. NIST has developed advanced spectroscopic techniques that enable the determination of molecular species in chemical process control streams. This technology is fairly new, but as it becomes more widely adopted it promises to enhance the productivity of chemical manufacturing. NIST has developed a reliable, low cost method of characterizing the length and molecular weight of organic polymers. The economic impact of NIST's contribution to the U.S. chemical industry is difficult to quantify, but there is no doubt that NIST contributes significantly to the technological underpinnings of that industry, which is a world leader with a trade surplus of \$18 billion in 1994⁴.

NIST researchers developed the standards and protocols for data exchange that make domestic and international computer-based communications possible. The Internet, email, and the data links that support them are all based on standards and technology that were developed in the NIST laboratories.

Likewise, NIST research and standards development contributes substantially to the U.S. semiconductor industry. As a result of the rapid pace of technological change in this industry and

³*NIST Reactor: Summary of Activities, October 1993 through September 1994*, NISTIR 5594, National Institute of Standards and Technology.

⁴*Chemical and Engineering News*, June 26, 1995, pp. 68-69

the large investments required in order for manufacturers to remain competitive, the industry relies heavily on NIST-developed standards and the need for those standards is increasing. The NIST laboratories have delivered new standards for linewidth and registration with submicron resolution and are actively engaged in developing even more precise standards which will be required by industry in the near future. These standards are a critical element in enabling U.S. semiconductor manufacturers to pack more components on a single chip and increase the productivity of their fabrication plants.

The need for national standards in the area of biotechnology processes and products is large and growing. NIST has recently delivered new standards for DNA matching. NIST-developed standards and methodologies are utilized by the biotechnology industry as fast as they are made available and the laboratories are working diligently to increase their output in this area.

NIST has been a leader in developing the tools required to integrate information technology into the manufacturing process. NIST researchers developed STEP, the Standard for the Exchange of Product model data, that has been accepted as the national standard for product data exchange. According to the 1995 National Critical Technologies Report "two key factors affecting the future of CIM [Computer Integrated Manufacturing] will be the battle for dominance of operating systems and the adoption of international data standards...STEP is the emerging international standard...and nearly all manufacturers recognize it as the future protocol for data transfer [and] translation in industry."⁵ The development of STEP within the United States almost certainly gives U.S. manufacturers an edge in its implementation, and in fact the first firm to take advantage of the increased efficiency and product data sharing made possible by STEP was a U.S. auto manufacturer.⁶

NIST researchers are actively engaged in developing standards and measurement techniques that will facilitate the growth of emerging industries. For example, NIST scientists

⁵*National Critical Technologies Report*, Office of Science and Technology Policy, Executive Office of the President, March 1995.

⁶*U.S. Autoscene*, September 20, 1993.

have developed standards and methodologies to characterize strain in bulk superconductors. Controlling strain is a key factor in the development of reliable, low cost superconducting wire. The NIST laboratories have been developing improved standards for video interoperability and performance criteria for flat panel displays--activities which address the needs of new sectors of technical commerce and trade.

As a result of the laboratories' efforts to push the envelope of measurement science, new technologies have emerged. For example, research conducted at NIST in the pursuit of more precise standards of time and frequency contributed to the technology that undergirds the Global Positioning System (GPS), which is an integral part of our national defense infrastructure and also finds widespread use in commercial navigation. The market for civilian GPS devices and services is estimated to be \$2.3 billion worldwide and is growing rapidly; it is expected to exceed \$11 billion by the year 2000⁷.

The need and demand for NIST services is great. For example, in 1994 the NIST laboratories provided Standard Reference Materials to over 2,300 U.S. firms, sold more than 6,000 Standard Reference Data sets, provided calibration services to almost 750 U.S. businesses, and accredited 850 private- and public-sector testing and measurement laboratories. NIST laboratory staff participated in more than 800 national and international standards committees, entered into 133 new Cooperative Research and Development Agreements (CRADAs), bringing the total number of active CRADAs to more than 300, and hosted 197 guest researchers from companies and professional and trade associations.⁸

Factors Influencing Quality and Effectiveness

⁷*The Global Positioning System: Charting the Future*, National Academy of Public Administration, 1995, p. 15.

⁸Figures for 1994 demand for NIST services from NIST publication *Delivering Results: A Progress Report from the National Institute of Standards and Technology*, May 1995.

Several attributes of the current organization and management of the NIST laboratories stand out as important to enabling their quality and effectiveness. The two most critical are the laboratories' lack of private sector drivers and their capability to take a long-term view. Both of these factors provide NIST researchers with broad latitude in proposing mission-related research. This leads to an atmosphere capable of attracting and retaining the highest quality scientists and engineers. The lack of commercial drivers helps NIST achieve its solid reputation for objectivity and lack of bias. This is crucial to obtaining industrial acceptance of NIST research. The ability to work for long-term results enables NIST researchers to anticipate and perform the exploratory research necessary to enable the standards and measurement technologies needed many years out. This is crucial. If a new metrological technology is not ready before the commercial need for it arises, it will be too late. The new, much-touted global marketplace requires fast reaction to competitors from the industrial research and development establishment, and a fast reaction requires the basic measurement infrastructure to be in place before a challenge to U.S. industry arises.

The Board of Assessment does not have the expertise necessary to quantify the return on investment to the taxpayer for the federal investment in the measurement infrastructure which the NIST laboratories represent. However, the collective wisdom and experience of the Board and its panels indicates that such return is great. As an government-funded organization that is independent of private sector objectives, the NIST laboratories have built up effective programs of long-term research with the reputation for objectivity that leads to acceptance in both national and international standards setting arenas. In the view of Board and its panels, maintaining and fully supporting the NIST laboratories represents an appropriate and necessary long-term investment in basic science, and in the needs of commerce.

Thank you for the opportunity to appear before you today. I hope my testimony will be useful to your deliberations, and I will be happy to answer any questions you might have.

**AN ASSESSMENT OF THE
NATIONAL INSTITUTE OF STANDARDS AND
TECHNOLOGY PROGRAMS
--FISCAL YEAR 1995**

Board on Assessment of NIST Programs
Commission on Physical Sciences, Mathematics, and Applications
National Research Council

NOTICE: The project that is the subject of this report was approved by the Governing Board of the National Research Council, whose members are chosen from the councils of the National Academy of Sciences, the National Academy of Engineering, and the Institute of Medicine. The Board and Panel members responsible for the report were chosen for their special competences and with regard for appropriate balance.

This report has been reviewed by a group other than the authors according to procedures approved by a Report Review Committee consisting of members of the National Academy of Sciences, the National Academy of Engineering, and the Institute of Medicine.

The National Academy of Sciences is a private, nonprofit, self-perpetuating society of distinguished scholars engaged in scientific and engineering research, dedicated to the furtherance of science and technology and to their use for the general welfare. Upon the authority of the charter granted to it by the Congress in 1863, the Academy has a mandate that requires it to advise the federal government on scientific and technical matters. Dr. Bruce Alberts is president of the National Academy of Sciences.

The National Academy of Engineering was established in 1964, under the charter of the National Academy of Sciences, as a parallel organization of outstanding engineers. It is autonomous in its administration and in the selection of its members, sharing with the National Academy of Sciences the responsibility for advising the federal government. The National Academy of Engineering also sponsors engineering programs aimed at meeting national needs, encourages education and research, and recognizes the superior achievements of engineers. Dr. Harold Liebowitz is president of the National Academy of Engineering.

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The National Research Council was organized by the National Academy of Sciences in 1916 to associate the broad community of science and technology with the Academy's purposes of furthering knowledge and advising the federal government. Functioning in accordance with general policies determined by the Academy, the Council has become the principal operating agency of both the National Academy of Sciences and the National Academy of Engineering in providing services to the government, the public, and the scientific and engineering communities. The Council is administered jointly by both Academies and the Institute of Medicine. Dr. Bruce Alberts and Dr. Harold Liebowitz are chairman and vice chairman, respectively, of the National Research Council.

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Preface

Since the transformation of the National Bureau of Standards into the National Institute of Standards and Technology (NIST) in 1988, the Board on Assessment of NIST Programs has seen the institution undergo major changes and has witnessed yearly its evolution toward its expanded role. At the time of this review, which is the Board's 37th annual assessment of the laboratories, the political environment suggests significant changes for NIST may once again be forthcoming.

The institution that is now NIST has for nearly a century provided important support for U.S. commerce and industry. Traditionally this support has included not only the obvious fundamental standards and weights and measures, but also equally critical related standards and standard reference materials, measurements, measurement technology, and technical databases. No other organization in the United States is capable of providing this support; indeed, NIST is among a handful of laboratories worldwide whose combination of an extremely talented technical staff and detachment from commercial objectives enables the development of these data and technologies. As an organization well known for its technical and commercial objectivity, NIST has also been able to convene competing industrial interests to reach consensus on voluntary industry-wide standards, and to form consortia to solve industry-wide technical problems that limit U.S. international competitiveness.

The benefit provided to the U.S. economy by NIST programs and services is both direct and indirect. Industries based on new technologies have recently been developing at an unprecedented rate, and many have required the specialized technical data, measurement technologies, and standards provided by NIST in order to flourish. For example, benefits to both large and small companies can be traced to NIST-developed technology for fiber optics, telecommunications, and integrated circuits. In some cases, entirely new industries and markets have been the unanticipated results of NIST research. For example, the commercial availability of low-cost navigation technology based on the Global Positioning System would not be possible without the improvements in precision time measurement pioneered by NIST scientists responsible for maintaining the time standard. In addition, many products are not accepted in certain overseas markets without meeting requirements for traceability to standards and measurements certified by the government of their country of origin. In other words, traceability to NIST standards and measurements is an internationally recognized seal of quality.

Given the current political debate on the fate of the Department of Commerce, and proposed legislation that would significantly reorganize NIST and its functions, the Board makes two observations. First, it is not possible for the nation to maintain government-certified standards, weights, and measures without the technical activities of the NIST laboratories. The cadre of highly qualified scientists and engineers at NIST and the work they carry out are absolutely essential to maintaining the U.S. standards and measurement system at the leading edge of international competitiveness. Even those activities of the laboratories that are not directly aimed at fundamental standards or measures maintain the level and breadth of resident expertise necessary to respond to new and perhaps unanticipated standards and measurement needs. Second, rather than detracting from the traditional functions of NIST, the expanded role and new programs NIST has assumed since 1988 have augmented that function in a positive manner. In

particular, the Board has noted a synergy between the NIST laboratories and the Advanced Technology Program, which has stimulated appropriate new research directions in the laboratories and helped identify emerging needs for standards and measurement services.

This report contains the detailed assessment of the NIST laboratories conducted by the Board and its panels during fiscal year 1995. The assessment was carried out by a total of 144 U.S. scientists and engineers from academic, industrial, and other research concerns who volunteer their time to the Board and its panels. Chapter 1 of this report assesses the NIST laboratories as a whole, focusing on the topics of the quality and effectiveness of the technical programs, the laboratories' priorities and priority-setting process, their impact on industry and U.S. international competitiveness, the adequacy of their equipment and facilities, the effectiveness of the new NIST Industry Fellows Program, and the status of the laboratories' database activities. This overview was generated by the Board's review of the findings of its panels, which are given in Chapters 2 through 8, and by its discussions with NIST management. The panels reviewed each laboratory during visits by the panel members and during 2- to 3-day on-site reviews at which laboratory management presented plans, programs, and results. The appendixes of this report describe the functions of NIST, its organization, and the Board's statement of work.

On behalf of the Board on Assessment of NIST Programs and its panels, I would like to express our appreciation to NIST's director and to the laboratory directors, program managers, and staff for their cooperation in preparing the specific materials required to accomplish a timely review and for their rapid response to our requests for information. Their cooperation and support through this process have been vital to the timeliness and quality of our work.

Wilmer R. Bottoms

Chair, Board on Assessment of NIST Programs

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Chapter 1
The State of the Laboratories

The Board on Assessment of NIST Programs and its panels were asked by NIST's director to address six points in the fiscal year 1995 assessment:

- Quality and effectiveness of current technical programs;
- Priorities and priority-setting process;
- Status of equipment and facilities, including current and future needs;
- Impact on industry and how that impact is measured;
- Implementation of the new NIST Industry Fellows Program; and
- Work with data programs.

The reports of the panels, which assess each laboratory of NIST in detail, follow in Chapters 2 through 8. In this chapter, the Board addresses the state of the laboratories as a whole with respect to the six points enumerated above. This overview is based on attendance by Board members at panel meetings, on the reports of the panels to the Board, and on discussions with NIST laboratory management.

QUALITY AND EFFECTIVENESS OF TECHNICAL PROGRAMS

Quality and effectiveness, although related, are essentially different. The quality of a technical activity is determined by characteristics such as rigor, originality and creativity, scientific relevance, and accuracy. The effectiveness of a technical activity is gauged by factors such as its impact, practicality, responsiveness (including timeliness), and cost-effectiveness.

Across all of the NIST laboratories the *quality* of the technical work is for the most part very good to excellent. Most of the work is also highly *effective*, although some high-quality work could be more effective if resources were better allocated against priorities.

Quality

The panels assessing the laboratories found many of the technical programs to be of the highest quality, as evidenced by the following representative examples chosen from the panels' reports. In the Electronics and Electrical Engineering Laboratory (EEEL) Semiconductor Electronics Division, work using scanning capacitance microscopy to provide shallow junction profiling of semiconductor surfaces to better than 10-nm resolution is world class. Similarly, EEEL's Electronic Technology Division's work, for example, its research on the effect of strain on critical current in bulk superconductors, is at the leading edge of such research worldwide. EEEL researchers were awarded an *R&D Magazine* R&D 100 Award for development of a thermal converter that will extend the range and precision of the current national standard. Most Materials Science and Engineering Laboratory (MSEL) programs are excellent, and several, such as those of the Materials Properties Group and the Polymer Division, rank among the best in the world. The quality of NIST's laboratory programs is further manifested by the collaborators they attract. MSEL has seven welding-related cooperative research and development agreements (CRADAs) and leads a consortium on precision casting. Eighty percent of the work of the

Statistical Engineering Division in the Information Technology Laboratory (ITL) involves collaborations with NIST scientists from other laboratories, and personnel from this division are continually sought for new collaborations. More details of the panel's assessments of these programs are given in the panel reports, which follow as Chapters 2 through 8 of this report.

The quality of NIST's technical programs is a reflection of the quality of NIST's scientists and engineers who are often described in superlative terms in the panel reports. For example, the staff of the Precision Engineering Division of the Manufacturing Engineering Laboratory (MEL) is acknowledged as being "of the highest quality" and as including "a number of researchers who are internationally recognized as leading experts in their fields." The Chemical Kinetics and Thermodynamics Division of the Chemical Science and Technology Laboratory (CSTL) is described as "a key national asset." Staff of the Electromagnetic Technology Division of EEEL are seen as "an asset for NIST and for the nation. Simply stated, there is not a comparable center of excellence elsewhere." Moreover, there is ample evidence of the external recognition of the quality of NIST staff. This year, the Institute of Electrical and Electronics Engineers bestowed its Morris E. Leeds award on two EEEL staff members, a CSTL staff member was named a fellow of the American Physical Society, the director of the Physics Laboratory was given the Women in Science and Engineering Lifetime Achievement award, and a member of the Physics Laboratory staff was named a member of the National Academy of Sciences, bringing the total number of NIST scientists and engineers in the National Academy of Sciences and the National Academy of Engineering to eight. These are only a few of the many awards garnered by NIST personnel since the Board's 1994 assessment.

Effectiveness

The panels found that NIST technical programs meet a wide variety of recognized needs for standards, metrology, and measurement technology. For example, CSTL's development of ozone measurement calibration services addresses a critical need in environmental and atmospheric applications. A multidisciplinary, multilaboratory group has initiated work on the reliable calibration of residual gas analyzers. No reliable calibration method currently exists for these analyzers, despite their widespread use in the semiconductor industry. The construction industry is being assisted by efforts to develop a test for corrosion of reinforcing steel in concrete, by measures of composite material performance, and by development of methods to assess the freeze-thaw resistance of concrete, programs ongoing in the Building and Fire Research Laboratory (BFRL) and MSEL. Biosensors show great promise for increasing selectivity and for decreasing the cost of detection of certain chemical species, but industrial applications are limited because current devices lack sensitivity and stability. CSTL is working to remedy these deficiencies and to improve device reliability, potentially enabling a new and useful measurement technology. This is a classic example of the metrology role NIST plays for both established and emerging industries.

However, the panels also found a few instances in which high-quality activities did not achieve their full potential for effectiveness. For example, BFRL's program to develop construction technology, guidelines, and performance standards to reduce losses from natural disasters is of high technical quality, but the assessment panel was unable to discern a guiding

strategy for this work. The technical quality of MSEL's dental materials research is good, but the panel questioned whether the work addresses a critical need. Across the laboratories, instances were identified of the need for management decisions to better match goals and objectives with resources. Some groups, for example, are attempting to cover too many unrelated areas or have technical objectives that are unrealistic compared to resources. Also apparent was an occasional reluctance to turn promptly to new, practical problems. For example, the new atomic force microscope developed in MEL is being used solely as a research tool rather than being applied to critical industrial measurement problems. Similarly, ITL's Information Systems Engineering Division may be holding on to some programs past the point at which they could be successfully turned over to industry.

In several instances the success of projects seems threatened because staff with critical knowledge are near retirement or particular staff skills are lacking. Renewing such skills should be an ongoing process through recruitment as well as continuing education and renewal of technical staff. This concern is discussed in more detail below under "Resources."

The Board emphasizes that the situations described in the two preceding paragraphs are the exception rather than the rule at NIST. Action by management can mitigate many such instances without additional resources. Specifically, if goals exceed the resources available to meet them, the goals can be modified, but must be modified with a view to external demands. Similarly, staff retirement is foreseeable, and recruitment of replacements must be aggressive and systematic. Good technical staff generally need training to become good managers, and greater emphasis on management training programs, much like those established in many industrial firms, could facilitate rapid improvement of managerial skills. At all levels of NIST, more value could be placed profitably on all aspects of management, e.g., establishing priorities; hiring, evaluating, and promoting staff; allocating resources; identifying and reaching out to customers; and increasing staff ownership of mission, priorities, and strategic plans.

The report *Setting Priorities and Measuring Results at the National Institute of Standards and Technology* (NIST, January 1994) describes how NIST sets priorities, evaluates performance, and measures impact. The Board's assessment of the quality and effectiveness of the technical programs indicates that the NIST laboratories set priorities well. In particular, outreach to customers and identification of appropriate research problems are carried out effectively. In cases in which improvement is needed, it is in translating formal statements of needs and priorities into projects addressing those needs. Some NIST research staff could better meld their personal interests and expertise with the needs and priorities of NIST's customers. Although CRADAs have been emphasized as a means to work collaboratively with industry, the value of completed CRADAs should be assessed in terms of NIST's mission and priorities in order to improve the effectiveness of future agreements. The progress report *Delivering Results* (NIST, May 1995) corroborates these ideas in its focus on measuring overall impact rather than evaluating individual projects.

Opportunities exist for NIST to take leadership roles in areas where recognized technical problems are clearly within the scope of NIST's core mission but where no coherent industrial leadership exists. Examples include international standards for commercial superconductors, metering and measurement standards for the deregulated electric power industry, and performance standards for roofing materials. Management should consciously address such opportunities and decide whether to commit the necessary resources to exploring them.

PRIORITIES AND PRIORITY-SETTING PROCESSES

Recent Board recommendations have been consistent in urging that laboratories implement formal strategic planning processes, both within and across the laboratories. The Board is pleased with the management's response thus far to these recommendations. Such processes are being implemented and are beginning to work within most laboratories. EEEL in particular has done a commendable job in implementing a formal priority-setting process that is explicit and allows objectively for a balance between low-risk and high-risk programs. Other laboratories are developing metrics that are linked to strategic goals and to an overall planning process. Some have drawn from the experience of NIST's Advanced Technology Program for guidance in designing metrics. Two laboratories, BFRL and MSEL, benefit from the aggregate views gained by their directors as chairs of National Science and Technology Council subcommittees. The recently initiated Information Technology Laboratory (ITL), being formed through a merger of the former Computer Systems Laboratory and the former Computing and Applied Mathematics Laboratory, has begun the process of formulating a strategic plan by developing a formal mission statement. In general, all laboratories appear vigorous in soliciting industry input and recommendations for programmatic and strategic planning purposes. This external focus and industry coupling are vitally important to keeping NIST programs current and relevant.

Despite recent progress, however, the job is not finished. The Board strongly encourages all laboratories to continue refining their strategic planning processes and urges their management and staffs to use these plans in their day-to-day activities. The selection of projects should be made less subjective; priority-setting processes can be more objective and focused. It is not sufficient for projects to be selected simply because they fit a laboratory's mission. Every project carries an opportunity cost and should be judged in part on what value is forfeited by not supporting some alternative project. Also, laboratory directors can better adjudicate conflicts in setting priorities if they directly involve their division management and staffs in setting project priorities.

In addition to improving decision processes for authorizing new programs, objective criteria need to be developed for terminating programs that do not deliver the returns expected or that have reached their natural maturity. Every funded project should be deliberately reaffirmed each year to ensure that the overall program is as effective as possible. Otherwise, programs can continue as though they have lives of their own, consuming resources that could be better placed elsewhere. On the basis of the progress made in the past two years, the Board is optimistic that both the level and the uniformity of planning processes in the laboratories will continue to improve.

The Board also urges that each laboratory develop its own formal program road maps, including milestones signifying major accomplishments that are anticipated. Many industrial companies have found that the process of establishing such road maps aids overall program focus and engages more people directly in the planning process. Road maps should be reviewed and revised annually; they should never be regarded as rigid. They should be somewhat general and must be open to targets of opportunity as they appear.

Looking beyond the individual laboratories, it is clear that there would be great benefit from extending planning processes across laboratories. Interlaboratory programs have been in

place at NIST for many years. However, until recently flat budgets meant that the laboratories were heavily dependent on funding from other agencies and thus were highly opportunistic in competing with each other for funds. With recent increases in directly appropriated funds, a much more open attitude is now developing between the laboratories regarding cooperative strategy setting. As a result, a greater opportunity exists for the laboratories as a group to be more focused and strategically driven. The new Laboratory Council, composed of the directors of the major operating units--that is, of the laboratories and NIST's Technology Services unit--is a sign of this new attitude and opportunity. The members of the Laboratory Council are working closely together to recommend to NIST's director how funds might be best used to optimize their value across the Institute. This Council can be a powerful force in knitting the laboratories together strategically. The Board is particularly pleased that the Laboratory Council has set a high priority on projects that transcend the laboratory structure. As new opportunities emerge, such as the need for a NIST role in developing superconductivity standards and in responding to changes in the national electric power industry, they can best be exploited by planning across laboratories. To capitalize fully on this opportunity, appropriate incentives need to be created to encourage and reward collaboration among staff of different units.

The successful collaboration of ITL and MSEL in material modeling and the coordination of thermometry research between CSTL and the Physics Laboratory are good examples of how focusing on a problem can overcome disciplinary boundaries. Interdisciplinary research is often most effective when it addresses an external problem upon which the different disciplines can focus, and against which to judge the efficacy of the techniques of each discipline. Technical problems falling within the NIST charter but not fitting neatly within the NIST organizational structure might more often be identified and addressed by a problem-oriented planning approach. Such an approach might be fruitful in coordinating potentially duplicative research, such as the controls research being carried out in both the Automated Production Technology and Intelligent Systems divisions of MEL.

RESOURCES

Human Resources

For several years, the panels have made reference in their reports to a dependence on nonpermanent staff such as retirees or postdoctoral fellows for carrying out crucial programs, including some fundamental standards work. In some cases, these programs rely on the expertise of a single person. Most programs at NIST have now reduced reliance on these nonpermanent staff. However, essential programs that continue to rely heavily on this type of personnel are in danger of losing critical expertise. The laboratories should identify those areas in which they intend to have a strong presence in the next decade and should develop a strategic plan for ensuring the necessary human resources. In its recruiting NIST should take into account that more team effort and industrial interactions are now required of its staff. New staff should be hired on the basis of both scientific excellence and the ability to work well in teams and with industrial partners.

Equipment and Facilities

The current status of NIST facilities and equipment is very good overall as reflected in reports from the staff and the panels. A major capital improvement project has been initiated to upgrade and modernize the laboratory buildings at both the Gaithersburg, Maryland, and Boulder, Colorado, sites, a project costing several hundred million dollars with an implementation extending into the next decade. Construction of "NIST North," a facility just off the Gaithersburg campus to be leased as office and computing facilities during on-campus construction, is well under way. Preparations for on-campus construction and renovations continue. The highest priority is construction of a new chemistry laboratory in Gaithersburg. The current facility, originally slated for renovation, has been found to have serious problems with its fume hoods and ventilation systems and cannot be cost-efficiently renovated to function safely as a chemistry laboratory. The building plan also calls for construction at Gaithersburg and Boulder of advanced laboratory space that provides for the increased control of vibration and climate necessary for performing measurements and developing measurement technology at and exceeding today's state of the art. Construction of these facilities will also help relieve overcrowding at both the Gaithersburg and Boulder facilities. Major problems would result if this program were canceled or substantially delayed.

The Board identified a list of major facility needs beyond NIST's current plan. The biotechnology laboratory housed at the Center for Advanced Research in Biotechnology (CARB; a joint facility with the University of Maryland) is in need of expansion. This relatively new program has been very successful and represents an important growth area for NIST.

NIST's large fire test facility is inoperable. Verification of fire models to be used in fire prevention and in the development of performance-based fire codes depends on the ability to conduct large-scale fire tests. The Board believes that this work is essential, and a facility with the required capability needs to be available to NIST researchers, whether at NIST or elsewhere.

Virtual reality, visualization, imaging, and video conference research facilities should be improved to advance the research activities in these areas. Effective use of video conferences will facilitate communication with industry partners as well as enhance the capability and overall productivity of staff divided between Boulder and Gaithersburg campuses, and soon at off-site facilities in Gaithersburg.

The Board compliments NIST management on the responsible use of resources to enhance the capabilities of its research reactor facility and to assure this facility's availability as a first-rate thermal and cold neutron source well into the next century. With a major upgrade of the reactor's cold source nearly complete, this facility will be able to resume operation and better serve its large academic and industrial user clientele in the areas of materials science, polymer science, chemistry, physics, and biology. NIST's commitment to the safe and reliable operation of this reactor and to its relicensing in the near future serves as a welcome model to other agencies responsible for major user facilities.

Specific smaller equipment needs are discussed in the laboratory assessments in Chapters 2 through 8 of this report.

INDUSTRIAL IMPACT

The Board is unanimous in affirming that staff awareness of industrial needs is good and that the industrial impact of NIST laboratory activities has increased steadily. Measurable evidence of the significant impact of NIST's programs on the international competitiveness of U.S. industry was observed during the 1995 assessments, including growth in both national and international standards activities by NIST staff, increased participation in and leadership of industrially oriented workshops and committees, expanded cooperation with industry through CRADAs and industrial research associates, continued transfer of technology from the NIST laboratories to U.S. companies, the establishment of the first generation of Industry Fellows (see "Industry Fellows Program" below), quality publications authored by NIST's scientists and engineers, and expansion of NIST production of standard reference materials and standard reference data for use by industries. In addition, a long list of anecdotal evidence of the positive impact of NIST's programs on industry was observed and validated.

For example, in MEL an enhanced precision piston turning capability and an enhanced open architecture machine controller were transferred to industry. The well-focused Computer Integrated Construction program in BFRL is gaining broad acceptance among engineers, builders, suppliers, owners, and computer-aided design vendors and will have an ongoing positive impact on the construction industry. Industry support for BFRL's building automation and control networks (BACnet) has also grown and now represents a solid majority of the building controls industry. A number of industries are applying MSEL-derived methods for design with brittle materials to applications including aircraft windows, capacitor materials, laser chips, optical fibers, and ceramic-to-metal seals. Furthermore, the NIST-led powder characterization program involves 36 industrial participants, and EEEL's activities in semiconductor metrology provide direct support to the U.S. semiconductor industry in concert with the *National Technology Roadmap for Semiconductors* (Semiconductor Industry Association, San Jose, Calif., 1994; commonly known as the *SIA Roadmap*).

While these examples give a qualitative indication of positive industrial impact, the Board continues to search for quantitative metrics. Merely totaling the number of CRADAs or Industry Fellows is not an adequate measure of the impact the laboratories are having on U.S. industries. Those counts do represent valuable industrial cooperation on a case-by-case basis, but such numbers could clearly be driven to excess if used as the *only* measure. NIST administrators need to identify additional ways of measuring the cost-benefit to the U.S. economy of NIST's activities to assure U.S. competitiveness in the international marketplace. This effort is especially important as NIST's basic mission--and the funding provided by Congress to support it--is under review. The experience of NIST's Office of Applied Economics in evaluating ATP proposals could be of direct benefit to this effort.

NIST's programs have the greatest impact in instances in which specific industrial sectors have clearly identified their needs for metrology and other NIST-related technologies; an example is NIST's work in conjunction with the *SIA Roadmap* cited above. NIST efforts to assist other key industrial sectors in identifying their present and future needs are quite appropriate and will likely enhance NIST's effectiveness in meeting industrial needs. To be most effective during the next several years, therefore, NIST needs to expend significant effort in identifying the industrial constituencies it seeks to serve, and couple that effort with calls to those constituencies to provide

firm data regarding the value of NIST-based contributions to both their international competitiveness and their profitability. This effort will be especially important in the information technology area in which NIST's reorganization will create entirely new opportunities for it to provide support to a key segment of the U.S. technology base.

While broadly based statements of industrial needs are useful in providing guidance to the laboratories, they cannot supplant the role of NIST's managers and staff in anticipating long-term needs for standards and technology. For example, assessment of the needs of the time and frequency industry two decades ago would not have anticipated the requirement for extremely high frequency stability (one part in 10^{14}) that is currently enabling operation of the Global Positioning System and other navigational and communications systems. Rather, the consistent pursuit by NIST staff of improvements in fundamental measurements and standards was key to this development. Continued pursuit of the leading edge in fundamental measurements and standards will keep NIST positioned to meet unanticipated technological challenges that U.S. industry will continue to confront in the global marketplace.

In its 1993 and 1994 reports, the Board recommended that the NIST laboratories develop a set of guidelines for application of quality principles, or total quality management (TQM), to research and development activities. The Board made this recommendation not only as a suggestion for improving R&D processes within NIST, but also because the availability of TQM guidelines for R&D could improve industrial R&D processes. As the home of the Malcolm Baldrige Quality Award, NIST seems the proper testing ground for such a project. Yet, the Board and panels see no evidence of the use of TQM in the NIST laboratories, even though the Electricity Division of EEEL is serving as a pilot for such a project. The Board is aware that TQM was originally developed for manufacturing purposes but believes that much of the TQM philosophy is appropriate for the management of research and development and that a wisely managed TQM program will have the flexibility needed for R&D. In making the latter point, the Board recognizes that TQM develops metrics to measure continuous improvement, whereas research often seeks revolutionary change leading to entirely new measures of performance. The Board encourages the NIST laboratories to accelerate their development and application of TQM to their work.

INDUSTRY FELLOWS PROGRAM

The Industry Fellows Program is an important and timely step forward for NIST. This program, announced in May 1994, encourages NIST scientists and engineers to make visits of at least three month's duration as industrial guest researchers. NIST will benefit greatly from balancing the flow of industrial scientists that visit it by encouraging its own staff to visit industry. This program should provide an effective mechanism to increase understanding of industry needs and to enhance communication between NIST staff and industry. This program can also be utilized to expose current and potential NIST managers to sound industrial management practices.

Because the program is new, it is too early to draw definitive conclusions regarding its impact. Most laboratories have yet to establish strong programs to take advantage of the initiative. EEEL, which had placed three Fellows in industry by the end of February 1995, is an

exception and is commended by the Board. MEL, CSTL, and MSEL have each placed one Fellow. The other laboratories have yet to place anyone in this program.

NIST management should consider several mechanisms to encourage participation in the program. Foremost, management must ensure that NIST's incentive structure has no bias against participation in the Industry Fellows Program. In fact, participation should be considered as a favorable factor in promotions and annual evaluations of participants and their managers. NIST management should work to attach prestige to the program. Institute-wide seminars given by recent Fellows, with introductions by top management, should describe the Fellows' experiences during their participation and provide feedback on consequences for their work and careers since their return. The Board commends management's decision to reduce the minimum assignment time from the original six months to three months to increase the flexibility of the program.

DATA PROGRAMS

Data programs and NIST have been closely linked for many decades. The Standard Reference Data (SRD) Act of 1968 created the Standard Reference Data program at the National Bureau of Standards, now NIST. This program is dedicated to the evaluation and dissemination of technical data. The SRD program currently sponsors or distributes 36 numeric databases.¹

The activity of the laboratories in data programs is highly variable. Nineteen of the currently distributed databases originated in CSTL. The five data centers and four data projects currently active in CSTL account for about 50 percent of the SRD program funding allocated within NIST in 1994 and 1995, and they brought in about 75 percent of the total income from database sales. These databases address key industry needs and represent world standards in the quality of the information they contain. They have a profound positive influence on productivity and cost control for the chemical and chemical processing industries. The Physics Laboratory and the Materials Science and Engineering Laboratory are also heavily involved in data programs. The formal SRD programs of the other laboratories are minimal.

The disparity in data activity across the laboratories may be partially explained by the fact that the subject matter of some of the laboratories is more conducive to the need for databases. However, all the laboratories produce data, even if some of it does not fit the historical definition of standard reference data. The Standard Reference Data program and the laboratories not currently active in the data programs should examine the potential usefulness of their data to industry and the formats that would allow the data to be most easily adopted. For example, data sets currently disseminated by other means by laboratories such as EEEL, ITL, and BFRL should be examined for inclusion in the Standard Reference Data program.

Appropriated funding for the SRD program has been nearly flat for at least 10 years. Constant-dollar funding has declined by nearly a factor of two between 1984 and 1994. This level of funding is itself a concern. At present, income from the sale of databases is expected to cover

¹Figures concerning the SRD program, its activities, and its funds were obtained from the internal NIST report, *A Survey of Database-Building and Related Activities at the National Institute of Standards and Technology*, January 1995.

the cost of dissemination and of the SRD program administration so that the majority of the appropriated funds can be devoted to database development and updating. As the nature of databases and the means of their distribution change as a result of advances in information technology, other issues arise. If databases are put on-line, mechanisms will be needed to control dissemination of the information, and a means of charging for access will have to be developed to ensure recovery of dissemination costs. If the databases are instead distributed without charge, the desired increase in the user base will not produce a gain in revenue to the program.

Criteria need to be developed for the selection of new databases. If a decision is made to expand the definition of standard reference data to include systems as well as materials, a definition of standard reference data for systems will be needed. This definition will have to address the appropriateness of self-generating data sets such as those used for protocol testing, data sets used as the basis for establishing interoperable system compatibility, or data sets used to establish basic device capability, for example. Customer need should play a key role in these determinations.

NIST should address these issues in a review of its overall database activity. The recent internal NIST survey of database activities cited above is a sound beginning for this review and should be the start of a process that leads to development of a strategic plan in this area.

RECOMMENDATIONS

- To improve the effectiveness of some programs, NIST laboratories should give more attention to the improvement of such management functions as balancing program objectives against resources, planning for personnel needs, and obtaining staff buy-in to strategic objectives.
- NIST laboratories must continue their efforts to improve their strategic plans and priority-setting processes, considering opportunity costs, objective criteria for program termination, and opportunities to serve less organized or vocal sectors of industry. Formal road maps, which are more general than strategic plans, would be helpful in this process.
- NIST laboratory management must work to close the loop between the strategic planning and priority-setting activities that are generally well done, and project implementation, evaluation, and conclusion that have not been emphasized.
- The Board encourages the NIST laboratories to accelerate their development and application of total quality management to their research and development activities.
- NIST management should encourage participation in the Industry Fellows Program by ensuring that participation is rewarded in the incentive structure and by taking actions to attach prestige to the program.
- NIST should carry out a comprehensive review of its database activity, with the objective of developing a strategic plan in this area.

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Aluminum Company of America | Sandra M. Lambert
Citicorp |
| Herbert D. Benington
Consultant to UNISYS | Martin C. Libicki
Institute for National Strategic Studies |
| Mary Ellen Bock
Purdue University | Carl Machover
Machover Associates Corporation |
| Allen L. Brown, Jr.
Xerox Corporation | Samuel P. Marin
General Motors Corp. Res. & Dev. Center |
| Dona Crawford
Sandia National Laboratories | Jill P. Mesirov
Consultant, Belmont, MA |
| Dorothy E. Denning
Georgetown University | Stewart D. Personick
Bell Communications Research, Inc. |
| Pamela G. Doctor
Battelle Pacific Northwest Laboratories | Jerome Sacks
National Institute of Statistical Sciences |
| Edward A. Feigenbaum
Chief Scientist of the Air Force | David F. Shanno
Rutgers University |
| Avner Friedman
University of Minnesota | Daniel L. Solomon
North Carolina State University |
| James George
Los Alamos National Laboratory | Ivar Stakgold
University of Delaware |
| Andrew S. Grimshaw
University of Virginia | Raymond T. Yeh
International Software Systems Inc. |
| Carl M. Harris
George Mason University | Eddie L. Zeitler
Fidelity Investments |

Mr. EHLERS. Thank you very much, Dr. Forsen, and I do commend the panel for their efforts to condense their comments, and I encourage the remaining members to attempt to do the same.

Mr. Cheatham is next.

STATEMENT OF SAMUEL D. CHEATHAM, VICE PRESIDENT, CORPORATE STRATEGIC INITIATIVES, STORAGE TECHNOLOGY CORP., LOUISVILLE, CO

Mr. CHEATHAM. Thank you, Mr. Chairman.

My name is Samuel E. Cheatham.

I am Vice President of Corporate Strategic Initiatives at Storage Technology Corporation. I am primarily responsible for business development, especially in the areas of domestic and foreign alliances as well as standardization strategy for the corporation.

Thank you for inviting me to talk about the proposals under consideration affecting the National Institute of Standards and Technology. I understand that the focus of this panel is the importance of NIST activities relative to U.S. business and pending legislation affecting the future of NIST.

My intent is to provide several perspectives on the existence and importance of the cooperative linkage between the private and public sectors as they affect U.S. business.

The global environment today places a broad and increasingly stringent set of requirements on manufacturers to demonstrate compliance with specific standards as a condition of trade. The right of governments to set requirements determining the basis on which it might accept goods and services for installation, consumption, and use within its jurisdiction is well recognized. These requirements are receiving expanded endorsement by foreign governments today.

The U.S. must have a recognized government authority to provide peer-level discussions and negotiations when issues arise as a result of these foreign government endorsements.

In some countries, a practice is employed in which government creates a body responsible for administration of a legally enacted broad regulatory concept. Government then empowers that body to designate standards compliance procedures, certification, and the like.

Without a government linkage, in essence providing peer-to-peer level discussions, the private sector is at a significant disadvantage. All indicators today signal an increase in this environment, coinciding with support and sponsorship from foreign governments.

NIST is a critical link in two of the present missions of the Department of Commerce. The first is promotion and development of U.S. business in increasing foreign trade; the second is improving U.S. technological competitiveness.

Both mission statements allow for NIST to provide the cooperative linkage between the private and public sectors necessary to compete in world trade.

I personally am very involved in the U.S. standardization infrastructure, a private sector activity conducted with cooperative participation from various government agencies. This infrastructure is comprised of many private sector standards developers, both working independently and cooperatively with the American National

Standards Institute, or ANSI. ANSI is a focal point for the U.S. in international standards-related matters promoting U.S. interests worldwide.

I believe the U.S. system of standards development serves the national interest well, supporting both economic and public interests.

In April of 1990, I provided testimony to a Department of Commerce-chartered hearing on NIST and the Government's role in standards-related activities. The central theme of that testimony was the critical importance of public and private sector cooperation in these matters for the good of U.S. business.

Foreign governments will accept U.S. tests of many regulated products compliance with a standard only if the U.S. Government recognizes the quality of those tests. Currently, NIST is the only U.S. Government organization that can recognize private sector accreditations for purposes of foreign government acceptance.

The U.S. must have a recognized government authority to provide peer-level discussion and negotiations when issues arise as a result of these foreign government endorsements. In some countries, a practice is employed where government creates a body responsible for administration of a legally enacted broad regulatory concept.

In conclusion, I strongly support congressional efforts to trim the Federal Government, privatizing many of its present functions. In pursuit of these objectives, large organizations with long tenure will come under close scrutiny as they would in a corporate environment in a like situation. I do, however, urge caution in addressing those sections of the NIST and its laboratories that are closely tied to U.S. industry.

Within the U.S., the Department of Defense, law enforcement agencies and other government agencies, together with many industrial sectors, are critically dependent on NIST.

As illustrated in earlier examples, caution should be exercised in the reassignment of former DOC responsibilities. We must maintain focus on the primary mission of these agencies where they affect U.S. business.

A need exists for cooperative link between private and public sectors. Based upon my numerous years of involvement in all facets of standardization, I recommend that NIST continue with the synergistic organizations required to be effective in standardization, compliance procedures, certifications, and technology as they relate to U.S. business.

A possible solution to where NIST should reside due to the dismantling is as an independent establishment. Such an establishment could be defined as the U.S. standardization and technology agency or, in deference to earlier discussions, as a U.S. standardization and science agency.

In implementation, of these changes, I believe that provision for an advisory panel associated with the proposed legislation should be considered. This panel would consist of executives and decision-making experts in affected areas of U.S. business. The charter of this panel would be to recommend appropriate action as it affects U.S. interests and objectives of the proposed legislation.

Thank you, Mr. Chairman.

[The prepared statement of Mr. Cheatham follows:]

*U.S. House of Representatives
Committee on Science*

on

*National Institute of Standards and Technology
Regarding H.R. 1756*

September 12, 1995

*Samuel D. Cheatham
Storage Technology Corporation*

Statement of

Mr. Samuel D. Cheatham

Vice President
Corporate Strategic Initiatives
Storage Technology Corporation

before the

U.S. House of Representatives
Committee on Science

on

**The National Institute of Standards and Technology regarding H.R.
1756**

September 12, 1995

Mr. Chairman and members of the committee, thank you for inviting me to talk about proposals under consideration affecting the National Institute of Standards and Technology (NIST). I understand that the focus of this hearing is the importance of NIST activities relative to U.S. business and pending legislation affecting the future of NIST.

I would like to provide several perspectives on the existence and importance of cooperative linkage between the private and public sectors as they affect U.S. business. The world environment today places a broad and increasingly stringent set of requirements on manufacturers to demonstrate compliance with specific standards as a condition of trade. The right of government to set requirements determining the basis on which it might accept goods and services for installation, consumption and use within its jurisdiction is well recognized. These requirements are receiving expanding endorsement by foreign governments. Two current examples are the ISO 14000 series of "Environmental Management Standards," (a series of standards which will deal with a company's system for managing its operations as they impact the environment) and the Japan Accreditation Board requirements on software quality schemes. The

latter is currently "on hold" due to effective opposition from U.S. government and industry. It is expected that compliance will ultimately become an "added cost of doing business" on the international front as did ISO 9000 standards.

The U.S. must have a recognized government authority to provide peer level discussions and negotiations when issues arise as a result of these foreign government endorsements. In some countries, a practice is employed in which government creates a body responsible for administration of a legally enacted, broad regulatory concept. Government then empowers that body to designate standards, compliance procedures, certification and the like. Without a government linkage i.e., providing peer to peer level discussions, the private sector is at a significant disadvantage. I see no reason to believe that issues requiring the cooperative linkage between U.S. private and public sectors, are diminishing. In fact, all indicators are that they are increasing, together with support and sponsorship from foreign governments.

NIST is a critical link in two of the present missions of the Department of Commerce (DoC). The first is promotion and development of U.S. business and increasing foreign trade. The second is improving U.S. technological competitiveness. Both mission statements allow for NIST to provide the cooperative linkage between the private and public sectors necessary to compete in world trade.

I am very involved in the U.S. standardization infrastructure, a private sector activity conducted with cooperative participation from various government agencies. This infrastructure is comprised of many private sector standards developers working independently, as well as with the American National Standards Institute (ANSI). ANSI is a focal point for the U.S. in international standards related matters, promoting U.S. interests worldwide. ANSI is the recognized U.S. member body to the International Organization for Standardization (ISO), and through the U.S. National Committee to the International Electrotechnical Commission (IEC). ANSI is also the U.S. member body to the Pacific Area Standards Congress (PASC) and to the Pan American Standards Commission (COPANT). I believe the U.S. system of standards development serves the national interest well, supporting both economic and public interests. The effectiveness of U.S. business in the global environment is greatly enhanced by working with government in strengthening the national voluntary standards system.

In April of 1990, I provided testimony to a Department of Commerce chartered hearing on NIST and the government's role in standards related activities. The central theme of this testimony was the critical importance of public and private sector cooperation in such matters for the good of U.S. business. This was further supported in a 1995 report from the National Research Council, titled, "Standards, Conformity Assessment, and Trade: Into the 21st Century." Continued progress is evidenced by the cooperative MOU signed between NIST and ANSI on July 24, 1995.

Foreign governments will accept U.S. tests of many regulated product's compliance with a standard *only* if the U.S. government recognizes the quality of those tests. Currently, NIST is the only U.S. government organization that can recognize private sector accreditations for purposes of foreign government acceptance.

Conclusion

I support Congressional efforts to "trim" the federal government, privatizing many of its present functions. In pursuit of these objectives, large organizations with long tenure will come under close scrutiny, as they would in a corporate environment in a like situation. I do however, urge great care in addressing those sections of the NIST and its laboratories that are closely tied to U.S. industry. Another point where cognizance must be maintained concerns identity. Many foreign entities identify points of governmental involvement and influence with departmental names such as NIST. Fragmentation of this public/private sector infrastructure linkage will have significant adverse impact on many sections of the U.S. economy.

Within the U.S., the Department of Defense, law enforcement agencies, and other government agencies, together with many U.S. industrial sectors, are critically dependent on NIST measurement and reference materials. The credibility of these deliverables would be severely compromised if the tie to U.S. government was lost.

As illustrated in examples stated earlier, caution should be exercised in the re-assignment of former DoC responsibilities. We can ill-afford dilution of focus on these responsibilities where they affect U.S. business.

Recommendation

A need exists for a cooperative link between private and public sectors where international and domestic requirements are involved. I recommend that NIST continue with the synergistic organizations required to be effective in standardization, compliance procedures, certification, and technology, relative to U.S. business. A possible solution as to where NIST should reside due to the dismantling, is as an independent establishment. Such an establishment could be defined as the U.S. Standardization and Technology Agency.

Implementation

Provide for an advisory panel associated with the proposed legislation. This panel would consist of executives and decision making experts in affected areas of U.S. business. The charter of this panel would be to recommend appropriate action as it affects U.S. interests and objectives of the proposed legislation.

*U.S. House of Representatives
Committee on Science
on
National Institute of Standards and Technology
Regarding H.R. 1756*

September 12, 1995

APPENDICES

- 1) Testimony, National Institute of Standards and Technology Hearing, 4/5/90, Samuel D. Cheatham
- 2) Report, Government's Role In Standards-Related Activities: Analysis of Comments, NISTIR 4367, 7/90, Walter G. Leight
- 3) Report, Standards, Conformity Assessment, and Trade: Into the 21st Century, 7/11/95, International Standards, Conformity Assessment, and U.S. Trade Policy Project Committee
- 4) News Release, NIST and ANSI Sign Agreement to Strengthen U.S. Competitiveness Through Voluntary Standards System, 7/24/95, Roger Rensberger, NIST/Marilyn Hernandez, ANSI

National Institute of Standards & Technology Hearing
04/05/90

Good morning Mr. Chairman, ladies and gentlemen. My name is Samuel D. Cheatham, Vice President of Engineering responsible for Tape and Library Systems at Storage Technology Corporation in Louisville, Colorado. We are a \$1 billion worldwide corporation engaged in design, development, sales and service of high performance large capacity information storage and retrieval systems for medium and high performance system environments.

I appreciate this opportunity to provide testimony concerning the U.S. standards program. I have been directly involved in the standards development and application process for approximately 11 years, and in the electronics business for over 25 years.

The current ANSI standards development process benefits from contributions by a wide range of participating producers and consumers, allowing standards to be developed which have the widest practical application.

I believe the governments' proper role in standards is to support and participate in the process and be responsible for trade policy and assurance that trade barriers are not created. The government sector should also assist in information transfer and communication within the domestic and international standards community. The EEC, via EC '92 represents a challenge to U.S. leadership in international standards. We must work as a team.

The NIST mission is often cited as the only federal laboratory with the primary mission of aiding U.S. industry. While there are areas of industry where this fundamental requirement is probably met, there are instances where it can be more effective. A major reason for this situation is inadequate coordination of NIST Standards reference material support being provided for standards developed under the ANSI process.

Participation by the Director of NIST in ANSI board activities has recently improved and needs to be sustained. NIST and ANSI need to be more closely linked at the policy and priority level.

An organizational link is needed between NIST and ANSI. One way that this could be accomplished would be to formalize the working partnership between the Director of NIST and the President of ANSI. This would help assure proper NIST support provisions for standards developed under the public sector process. Timely and adequate support for developed standards is critical to their implementation and effectiveness.

Computer Sciences and Technology traditionally receive the lowest level of funding in allocation of the NIST budget. This remains true in the 1991 budget request as well.

During 1987 & 1988 lack of funding priority for a reference material project generated a need for an industry solicitation campaign to co-fund the effort with NIST. I was personally involved in this solicitation campaign. Correspondence and meetings with NIST appealing for a minor reallocation to cover this shortfall were to no avail. This amount constituted less than .002% of the NIST budget!

This situation illustrates the point that the key process requirement, leadership in standards implementation support was lost in a miniscule budget fight. Priority coordination with ANSI is fundamental. This example ties to one area where the U.S. still has a good international position in trade. The United States has traditionally been the worldwide leader in establishing standards for data processing products. Priority support of reference material development is one key ingredient required to maintain this leadership position.

TRADE VALUES: (approximate) ..

- o Peripheral products - worldwide 50b/1990, 80b 1993 (domestic is approx. 55%).
- o Removable media
 - Domestic Growth Rate 13% year
 - Worldwide

ADDITIONAL POINTS FOR CONSIDERATION ARE:

I believe that the current infrastructure between the private sector and government, working as partners, is effective in U.S. standards setting activities and global competitiveness. Our challenge is to strengthen support provided for implementation of those standards.

There needs to be a supportive relationship between the private sector and government to effectively handle EC 92 conformance testing and certification. Without such a relationship U.S. made products will suffer limitations in their access to European markets.

Restructure of ISO/IEC voting and operations is needed to ensure that ISO/IEC participation remains as a viable forum for expression of U.S. interests in European and Global markets. A key part of this effort is to change the inequitable voting leverage of the EC through their having 13 votes versus 1 for the U.S.

SUMMARY AND CONCLUSION:

The ANSI system of standards development is strong and effective. The U.S. Government needs to strengthen focus on U.S. trade policy and coordinate government agency participation in standards development efforts. Government should provide strong application support of voluntary standards rather than altering the current standards development process.

GOVERNMENT'S ROLE IN STANDARDS-RELATED ACTIVITIES: ANALYSIS OF COMMENTS

Walter G. Leight

**U.S. DEPARTMENT OF COMMERCE
National Institute of Standards
and Technology
Office of Standards Services
Gaithersburg, MD 20899**

July 1990



**U.S. DEPARTMENT OF COMMERCE
Robert A. Mosbacher, Secretary
NATIONAL INSTITUTE OF STANDARDS
AND TECHNOLOGY
John W. Lyons, Director**

ABSTRACT

The National Institute of Standards and Technology, supported by a panel of standards experts from other agencies, conducted a hearing on April 3-5, 1990, to gather information, insights, and comments relating to improving U.S. participation in international standards-related activities and to identify possible Government actions. Oral presentations were made by 65 organizations and individuals; written submissions were received from 257 others. Thorough review of the hearing transcripts and the complete supplementary written record reveals a number of areas where the private sector and the Federal Government should take constructive actions, especially with respect to coordinating mechanisms for conformity assessment processes.

Acknowledgments

The author wishes to acknowledge the significant contributions of the members of the hearing panel for their penetrating questions and subsequent review and comment on the analysis. Special thanks are also due to the following members of the staff of the NIST Office of Standards Services for their help in studying and digesting the voluminous record associated with the hearing: Maureen Breitenberg, Patrick Cooke, John Donaldson, Albert Tholen, Terrance Troy, and Eric Vadelund.

Finally, we are all indebted to the very large number of members of the standards and conformity assessment communities whose thoughtful comments and suggestions will contribute to improvements in standards-related processes and improved acceptance of U.S. goods in foreign markets.

Government's Role in Standards-Related Activities:

Analysis of Comments

BACKGROUND:

In view of the growing importance of international standards in commerce among nations, and recognizing the rapid changes taking place in the European Community and elsewhere throughout the world, the National Institute of Standards and Technology (NIST) on November 27, 1989, announced a hearing to be held in Washington, D.C. on April 3, 1990. As described in the Federal Register notice (see Appendix A), the primary purpose of the hearing was to gather information, insights, and comments related to improving U.S. participation in international standards-related activities and to identify possible Government actions.

The notice posed a number of topical questions to stimulate discussion of U.S. standards, testing, certification, and other practices that affect the acceptance of products in foreign markets. In particular, NIST sought information concerning weaknesses that require strengthening, suggestions for improvement, and expressions of views on potential models for government-private sector interactions, such as the Standards Council of Canada or any others. The notice specified a deadline of March 22, 1990, for requests to present views at the hearing or for submittal of written comments by those who might be unable to attend the hearing in person.

A large number of inquiries were received concerning the Standards Council of Canada and the nature of potential models for the United States. A letter (See Appendix B) was prepared on December 20, 1989, and given wide distribution, stating "... the following general model is put forth as but one possibility; it is presented as a concept to aid those wishing to comment or to serve as a basis for modification." A menu of functions suggested items that might be included in a "Standards Council of the United States of America" should such a council be established. Many recipients of the letter apparently assumed that this was a specific proposal offered by NIST for the formation of "SCUSA."

Due to the large number of requests to make oral presentations, NIST published a second Federal Register notice on April 2, 1990 (see Appendix B), to announce that the hearings would extend from April 3 through April 5, 1990, and that the record of the meeting would be held open for sixty days following (to close of business June 5, 1990) to allow all interested parties the opportunity to comment.

Oral presentations were made before a panel of Government standards experts from NIST, the Department of Commerce's International Trade Administration, the Departments of State and Agriculture, and the

Food and Drug Administration. (See Appendix C for a listing of panel members.) A total of 65 individuals and representatives of organizations spoke before the panel: each was allotted 10 minutes for the presentation. Panel members, bringing technical perspective based on their specific expertise, then raised questions to elicit any necessary clarifications. Panel participation was aimed at assisting NIST in acquiring adequate information on which to base recommendations for possible Government actions.

Three volumes of transcripts of the hearing^{1,2,3} were prepared; they are individually available for purchase from the National Technical Information Service, 5285 Port Royal Road, Springfield, VA 22161, (703/487-4650) and have also been deposited for review in the U.S. Department of Commerce Central Reference and Records Inspection Facility, Room 6628, Hoover Building, Washington, DC 20230, (202/377-3271). Supplementary materials submitted by some presenters and written comments from other interested parties are also available for review in the Departmental Central Reference and Inspection Facility.

In addition to listening to the oral presentations, professional staff members of the NIST Office of Standards Services carefully reviewed the transcripts, supplementary written submissions, and all other written comments. The ensuing analysis is summarized in this report. The following sections describe the nature and numbers of respondents, the extent to which each group addressed standards and conformity assessment issues, needs for improvement expressed by respondents, and recommendations for action.

THE COMMENTERS

A total of 70 requests were received from those interested in making oral presentations; of these, 65 appeared at the hearing. Due to the extension of the hearings to three days, it became desirable to group presentations in accordance with similarity of function rather than follow the chronological order of receipt of requests or other arbitrary arrangements.

Changes to scheduled days and/or particular times for appearing were permitted upon written request and acquiescence of all affected parties. The only such change was in response to a

¹Transcript of Hearing on Improving U.S. Participation in International Standards Activities - First Day: April 3, 1990, NTIS Order PB# 90204702, \$31.00.

²Transcript of Hearing on Improving U.S. Participation in International Standards Activities - Second Day: April 4, 1990, NTIS Order PB# 90207150, \$31.00.

³Transcript of Hearing on Improving U.S. Participation in International Standards Activities - Third Day: April 5, 1990, NTIS Order PB# 90204694, \$31.00.

request by the American National Standards Institute (ANSI) to the American Society for Testing and Materials (ASTM) to make the first presentation. ASTM acceded to ANSI's request and spoke second; the Society of Automotive Engineers (SAE) agreed to take the later slot previously assigned to ANSI.

Five requesters did not appear to make their presentations as scheduled, but they all took advantage of the opportunity to place their statements into the record through written submissions. It should be emphasized that the substantive merit of the comments of all submissions, oral and written, were given equal consideration.

Consideration was given to substantive merit in the same important due process sense that every consensus standards committee treats the substance of negative votes. In the search for possible improvements and for identification of potentially useful Government actions, no views were minimized by reason of the identity or size of the source. Since the hearing was not intended for votes, whether weighted or not, on specific issues, care should be exercised when viewing the statistics presented in subsequent tables. The columns have been structured by types of individuals and organizations, each of whom volunteered to submit comments, hence the data are not commensurate nor necessarily representatives of the larger population. As a consequence, the right-hand columns labelled "Totals" should be used to obtain an overall sense of the opinions offered only when the intercolumnar variability is low.

Written submissions were received from 257 individuals and organizations. However, one was retracted since its author recognized a conflict in his identification with his corporate employer while speaking only for himself. Five other written submissions duplicated earlier material received from the same organization, one from the same individual. On the other hand, comments received from separate major operating divisions of large parent corporations were considered to be independent of one another.

Table 1
Types and Numbers of Commenters

Standards Developers	22
Committees/Technical Advisory Groups	14
Trade and Professional Organizations	104
Private Companies	115
Laboratories and Certifiers	13
Individuals	40
Newsletters	2
U.S. Government Agencies	7
<hr/> Total submissions	<hr/> 317*
*Does not include 4 duplicates, 1 withdrawn	

Table 1 shows the number of commenters in several categories, but the distinctions between listed types are not clear-cut. For example, many organizations fit into two or more categories, such as standards developers that are also certifiers or testers, and trade or professional associations that are major producers of standards. For the purposes of this analysis and discussion, all organizations with a substantial standards development activity have been grouped as standards developers.

It was also difficult to determine whether each of the various associations, private companies, or laboratories is small, medium, or large. In general, the standards developers and the trade and professional organizations have very large memberships. Lacking evidence to the contrary, we assume that the speakers and writers expressed views for their groups. There was more difficulty in discerning whether other commenters spoke for themselves or for their organizations. It was assumed that a set of comments received on company letterhead was an official organizational submission unless, as was sometimes the case, the writer or the company issued a disclaimer and characterized the submission as that of the individual.

Testing laboratories and certifiers were considered together, as shown in Table 1. For ease of presentation, results will be presented in subsequent tables and discussions for standards developers and committees grouped in the same column, but with separately identifiable inputs. Data from the newsletters are similarly presented in conjunction with those from individuals.

It is noteworthy that ANSI conducted a vigorous campaign to solicit comments from its members, utilizing memoranda and press releases from its Washington office. This campaign was productive and is to be commended for evoking a sizable response and a clear enunciation of the sentiments of a substantial number of individuals and organizations concerned with standards matters. Their views were fully considered for the purposes of the ensuing analysis. Expressions of support for ANSI and opposition to "Government takeover" of U.S. standardization activities were often stated in identical phrases and word-for-word sentences in different letters.

SUBJECTS OF COMMENTS

As can be seen from Table 2, more than 90% of all commenters, essentially in all categories, addressed the standardization process. Less than one-third of the total expressed opinions about conformity assessment, defined here as any or all of the functions of testing, certification, quality assurance, or other demonstration of product conformance to applicable standards. The higher percentages of comments on conformity assessment came from standards developers, associations, and laboratories and certifiers.

Table 2.
Comment
Profile

	Standards Developers/ Organizations/Comm.	Trade & Professional Associations	Companies	Laboratories & Certifiers	Individuals/ Newsletters	Government Agencies	Totals*
Number of Commenters	22/14	104	115	13	40/2	7	317
Comments on Standardization Only	12/14	57	85	2	27/1	4	202
Comments on Standards and Conformity Assessment	10/0	39	24	10	5/0	1	89
Total Comments on Standardization	22/14	96	109	12	32/1	5	291
Comments on Conformity Assessment Only	0/0	4	3	1	0/0	1	9
Comments on Conformity Assessment and Standards	10/0	39	24	10	5/0	1	89
Total Comments on Conformity Assessment	10/0	43	27	11	5/0	2	98
Miscellaneous Comments Only	0/0	4	3	0	9	1	17

*Does not include four duplicated submissions nor one withdrawn.

Almost two-thirds of all commenters discussed only standardization, whereas only nine spoke to conformity assessment without commenting on standardization.

Seventeen submissions, about half from individuals, addressed neither the standardization nor the conformity assessment process. The subjects of those letters, referred to in Table 2 as "Miscellaneous Comments Only," concerned metrication or such topics of parochial interest to the writers as the conduct of special studies or other thoughts that do not bear directly on international standards-related or trade-related activities.

THE STANDARDIZATION PROCESS

Considering the comments on the standardization process, as shown in Table 3, two-thirds of the commenters (207 of 291) endorsed "the voluntary process" for developing standards in the United States, with strong support manifested in almost all categories. "The system ain't broken" was a frequently encountered statement. The comments were not always clear regarding the object of the support: only some of the commenters specified the current system; others referred to the private sector or to a voluntary process in which both Government and the private sector participate; and still others named ANSI or specified standards developers.

Relatively small numbers opined that the "system is broken" and needs replacing; that it needs fixing, but that changes should come from within; or that ANSI's performance is inadequate. A few commenters spoke in favor of a strong Government role or Government oversight of the standards development process.

The data in the upper portion of Table 3 indicate that about half of the supporters of "the voluntary process" also expressed support for ANSI as the coordinator of standards-writing in the U.S. and/or its performance as the U.S. Member Body in the International Organization for Standardization (ISO) and its companion role in supporting the U.S. National Committee (USNC) for the International Electrotechnical Commission (IEC); 15 specifically announced support for "ANSI's position" with respect to the hearings. Of the standards developers, only two specifically endorsed ANSI.

Approximately one-third of the commenters stated strongly that Government experts should participate in the standards development process as experts, but not as controlling forces, and more than 20% encouraged governmental cooperation with the private sector.

The comments categorized above have been segregated in the table since there is considerable evidence that a large number of commenters participated in what they perceived to be a plebiscite on whether the U.S. standardization process should remain voluntary or be taken over by the Government.

Table 3.
Comments on
Standards Process

	Standards Developers/ Organizations/Comm.	Trade & Professional Associations	Companies	Laboratories & Certifiers	Individuals/ Newletters	Government Agencies	Totals
Number of Commenters on Subject	22/14	96	109	12	32/1	5	291
Endorse "Voluntary System;" "Not Broken"	19/7	74	80	7	17/0	3	207
Pro-ANSI	2/5	39	34	2	11/1	1	95
Endorse ANSI Position	0/0	5	9	0	1/0	0	15
Encourage Government Cooperation with Private Sector	8/0	27	25	0	3	2	66
Encourage Government Expert Participation	12/0	36	39	3	10	4	104
Any or All of Forgoing Expressing Only Support of the Status Quo	2/6	29	48	0	17/1	2	106
Present System Needs Fixing from Within	2/0	2	10	1	1/1	0	17
Voluntary System "Is Broken"	2/1	0	4	2	1/0	0	10
Anti-ANSI	2/1	1	4	2	2/0	0	12
Governmental Role is Needed	4/0	8	3	2	4/0	0	21
Government Oversight is Needed	1/1	3	2	4	3/0	0	14

Many letters arrived as the June 5, 1990, deadline was approaching, a substantial number of which in effect stated only that the writer supported the voluntary system and/or ANSI's role. Some of these added comments on Government expert participation or cooperation. Several of the near-last-minute commenters presented critiques and refutations of comments critical of ANSI that had been submitted by others prior to the March 22, 1990 deadline and deposited in the Central Reference and Records Inspection Facility.

STANDARDS PROCESS: NEEDS FOR IMPROVEMENT

Slightly more than 60% of those who commented on the standards process identified specific problem areas and needs for improvement. Table 4 reveals that virtually all the standardizing organizations, as well as the laboratories and certifiers, gave thoughtful comments on problems faced by actual or potential participants in international standardization activities.

The difficulty most frequently reported relates to the cost of participating, including travel and dues. One-third of those making substantive comments on the process favored Government subsidies through grants to participants or payment of dues to international organizations. Almost one-fourth of those commenting on improvement needs proposed tax credits or other tax incentives to organizations that participate in international standards activities. About 10% expressed the opinion that Government should pay its "fair share" when its experts participate in the process. These three views of Government payments are not mutually exclusive: some respondents expressed more than one of those views.

To some extent, the opinions on financial underwriting by the Government to increase participation in international activities are at variance with the idea that the present process is working well and should not be tampered with by the Government. Moreover, some commenters specifically cited the dearth of Federal funding under current budgetary restrictions as precluding any attempt by the Government to play a larger role, and some specifically opposed governmental funding lest it lead to controls. Additional comments suggested the need for business and industry to develop more or better mechanisms for private sector funding.

There was considerable recognition of the Government's role in setting policy and negotiating with foreign governmental entities. For example, many commenters spoke specifically of the Government's participation in the GATT Standards Code Committee and efforts to minimize or eliminate technical barriers to trade related to standards. About 10% of those commenting substantively on the subject of conformity assessment addressed the need for greater coordination among Government agencies.

Table 4.

Improvement Needs:
Standards Process

		Standards Developers/ Organizations/Comm.	Trade & Professional Associations	Companies	Laboratories & Certifiers	Individuals	Government Agencies	*Totals*
Number of Commenters on Process	20/8	67	61	11	15	3		185
Government Should Subsidize	10/5	18	16	6	4	0		59
Government Should Pay Fair Share as Participant	4/0	6	6	1	0	0		17
Tax Credits or other Tax Incentives	6/3	15	15	2	0	0		41
No Government Subsidy - No Controls	3/0	2	2	0	0	0		7
Government Should Serve as Negotiator Abroad	5/2	20	12	3	1	0		43
Government Sets Policies	2/1	4	4	0	1	0		12
Government Should Coordinate Intra-Govt.	4/0	7	4	1	2	1		19
Increased Educational and Informational Programs	7/0	23	15	2	3	1		51
U.S. Should Adopt International Standards	1/1	11	9	1	1	1		25
U.S. Should Harmonize Domestic and International Standards	3/0	6	10	0	0	0		19
Government Should Increase its Use of Voluntary Standards	6/0	7	3	0	1	0		17
Less Domination by Large Organizations	1/2	1	6	1	5	0		16
Government Should Promote U.S. Standards Abroad	4/0	2	2	0	0	0		8
Need for a New Commission on Process	2/0	2	0	1	4	0		9
Need Better Coordinating Mechanism	1/0	1	2	2	2	0		8
Government Should Recognize ANSI	2/0	1	2	0	2	1		8

The need for increased efforts in disseminating information and conducting educational programs was stressed by approximately 25% of those commenting on possible improvements in the standardization process. Responsibility for these efforts was variously assigned to Government, the private sector, or both, with particular attention to the necessity of convincing high level corporate management of the desirability of supporting participation in international standards activities.

About 15% of the associations and private companies supported the concept that the United States should adopt international standards in lieu of distinctive domestic standards. Approximately 10% of all commenters on improvement needs enunciated the desirability of harmonizing domestic standards with international standards; about the same percentage believe that the Government should increase its use of standards developed by the private sector; and about 5% favor governmental promotion abroad of standards developed in the United States.

Almost 10% of this group complained about domination of the process of standardization by large companies. Five percent called for the establishment of a new commission to study the system and recommend changes; a comparable number proposed that the Government officially recognize ANSI, but an equal number proclaimed the need for a better coordinating mechanism than now exists.

THE CONFORMITY ASSESSMENT PROCESS

Table 5 summarizes the pertinent thoughts of almost 100 commenters on the process of conformity assessment; about 80% addressed the roles of Government and the private sector. In sharp contrast to the comments on the standardization process, about 50% of each category of commenters on conformity assessment stated that Government must play a major role, and another 12% favored private sector cooperative support for Government's role. The remaining 20% of those commenting on this subject expressed the view that the conformity assessment process should be conducted within and by the private sector.

As the lower portion of the table indicates, commenters cited a need for a coordinating mechanism for testing and certification; almost as many expressed the view that coordination of all conformity assessment functions is required. A few respondents recognized the need for a quality system for testing and certification, and a like number proposed establishment of a Government program for registration of quality systems.

Table 5.
Comments on
Conformity
Assessment Process

	Standards Developers: Organizations	Trade & Professional Associations	Companies	Laboratories & Certifiers Individuals	Government Agencies	Totals*	
Number of Commenters on Subject	10	43	27	11	5	2	98
Government Must Play Major Role	4	19	11	7	4	2	47
Government Role with Private Sector Participating	1	6	4	1	0	0	12
Private Sector Function	1	8	8	0	0	0	18
No Comments on Roles - Miscellaneous Comments Only	4	10	4	2	1	0	21
Coordinating Mechanism Needed for Testing and Certification	1	8	4	5	4	0	22
Coordination Needed for all Conformity Assessment Functions	1	6	2	4	1	0	14
Quality System Needed	1	2	1	1	0	1	6
Government Registration of Quality Systems Needed	0	2	2	1	1	0	6
International System Needed	0	0	1	1	0	0	2

CONFORMITY ASSESSMENT PROCESS: NEEDS FOR IMPROVEMENT

As shown in the upper portion of Table 6, many of those who commented on conformity assessment problems referred to the "uneven playing field" abroad, that is, the fact that U.S. products are faced with added difficulties in marketing in other countries in contrast to the conditions applied to local products. Moreover, difficulties are alleged to stem from the mismatch of foreign regulation of products to which only voluntary standards apply in the United States. (Conversely, some U.S.-regulated products are not regulated in other countries.) The four commenters who remarked on the fragmentation of the attestation system in the United States echoed a thought frequently heard from foreign exporters and Government officials, namely that the plethora of Federal, state, and local code authorities throughout the United States makes it extremely difficult to ascertain and follow all the relevant rules for selling in the U.S. market.

Comments on the need for U.S. Government negotiation and consummation of bilateral agreements were frequently registered. Most foreign governmental entities require attestation of conformity by Government-accredited laboratories and certifiers within their own borders, hence also from U.S. manufacturers and exporters. In fact, very many of the commenters raised the question of "notified bodies," European testing or certification entities officially recognized by the national governments of EC member countries. Particular interest was expressed on the subject of whether domestic testing and certifying organizations in the United States might attain recognition from the EC.

As was observed with respect to the standardization process, a few commenters complained about domination by large firms and suggested that action be taken to protect small and medium-sized laboratories. Other suggestions included development of a U.S. certification mark, Government subsidies or tax incentives, and an increase in educational and informational programs. Five submitters proposed a Federal Commission to study needs for new coordinating mechanisms.

CONCLUSIONS AND NIST PROPOSALS FOR ACTION

After thorough examination of the hearing record and consideration of the merits of comments made by the many and varied parties who volunteered their opinions, the NIST Office of Standards Services has drawn the conclusions listed below and, as shown in bold-face type, makes the following proposals for actions that may be taken by the executive branch of Government or by the private sector.

Table 6.

Improvement Needs:
Conformity Assessment

	Standards Developers Organizations	Trade & Professional Associations	Companies	Laboratories & Certifiers	Individuals	Government Agencies	Totals*
Number of Commenters on Process	10	43	27	11	5	2	98
"Uneven Playing Field" Abroad	1	7	5	3	0	0	16
Mismatch in U.S. & Foreign Systems	2	6	7	2	0	0	17
U.S. System is Fragmented	0	4	0	0	0	0	4
Government Should Set Policies	1	0	0	0	0	0	1
Government Should Negotiate	1	9	3	0	0	0	13
Government Should Develop and Sign Bilateral Agreements	1	8	3	1	0	1	14
Reduce Domination By Large Organizations	0	1	0	3	0	0	4
U.S. Certification Mark is Needed	0	0	0	2	1	0	3
Government Should Provide Funds or Incentives	2	0	0	0	0	0	2
Increased Educational and Informational Programs	0	2	1	0	0	0	3
New Commission Should Study Subject	1	2	0	0	2	0	5

A. STANDARDIZATION

- o The magnitude of the response and the intensity of expression of sentiments about the U.S. voluntary standards process clearly indicates that the private sector opposes any significant changes to the current standards development system. At the same time, many commenters recognized a need for improvements but stated a desire to take internal steps necessary to correct any weaknesses.
 - * The private sector should establish (a) oversight mechanisms to monitor performance and (b) permanent quality management systems.
- o The increasing worldwide use of international standards has been acknowledged, along with the recognition of need to participate actively in international standardizing activities.
 - * The Government and the standards-writing community should develop a close working relationship on policy matters in which the Government has a clear role to play.
 - * Government and the private sector should increase informational and educational efforts to convince business executives of the value of participating in domestic and international standards-related efforts.
 - * The U.S. standards community should consider appropriate private organizational actions to meet the increasing competition for volunteers to participate in domestic and international standardization activities and to compensate for losses anticipated in sales of domestic documents.
 - * The Interagency Committee on Standards Policy should further improve intra-governmental coordination, encourage increased participation by Government experts in domestic and international standards committees, and establish policy for agencies to pay a fair share of expenses for such committee participation as may be appropriate.
 - * The Government and the private sector should take steps to implement the policy of using international standards when available.

- o Funding constraints deter participation in international standardization activities, especially for small and medium-sized companies. Some associations pool resources to prevent domination by monied interests and to assure the best possible expert representation.

- * The private sector should intensify its efforts to achieve broader support from its own constituency.

B. CONFORMITY ASSESSMENT

- o There is widespread recognition of the need for government-to-government negotiations and bilateral agreements for mutual acceptance of the results of conformance assessment activities.

- * The Government should (a) intensify negotiating efforts to ensure foreign acceptance of products based on testing and certification performed within the United States; (b) obtain acceptance of U.S. products abroad under the principle of "national treatment;" and (c) seek implementation of the concept of EC recognition of notified bodies in this country.

- o Many private companies, trade associations, laboratories, and certifiers see a need for coordinating mechanisms for testing, certification, laboratory accreditation, quality systems, and/or other methods of conformity assessment. However, the nature of appropriate mechanisms is not clear, nor may a single mechanism suffice for different sectors of the economy.

- * The Government should sponsor or co-sponsor with interested parties from the private sector a series of workshops with various industry sectors to specify more precisely the needs for coordination and representation of U.S. conformity assessment interests abroad. Then appropriate systems should be developed to meet these needs and to promote effective application of these mechanisms in behalf of U.S. manufacturers and exporters. Particular consideration should be focussed on the division of responsibilities between Government and the private sector in a cooperative mode of operation.

*Under national treatment foreign entities are dealt with on the same basis as domestic entities.

National Institute of Standards and Technology

Improving U.S. Participation in International Standards Activities; Opportunity for Interested Parties to Comment

AGENCY: National Institute of Standards and Technology, Commerce.

ACTION: Notice of hearing.

SUMMARY: This is to advise the public that the National Institute of Standards and Technology (NIST) will hold a public hearing to gather information, insights, and comments related to improving U.S. participation in international standards-related activities and to possible Government actions.

DATE: The hearing will be held at 9:30 a.m. on Tuesday, April 3, 1990.

FOR FURTHER INFORMATION CONTACT: Dr. Stanley L. Warsaw, Director, Office of Standards Services, National Institute of Standards and Technology, Administration Building, Room A-603, Gaithersburg, MD 20899; (301) 975-4000.

SUPPLEMENTARY INFORMATION: The Secretary of Commerce is required to oversee and promote U.S. participation in international standards activities under Section 413 of the Trade Agreements Act of 1979. That legislation also authorizes the Secretary of Commerce to make appropriate arrangements to ensure adequate representation of U.S. interests as necessary.

Consistent with the Secretary's responsibilities and the growing importance of international standardization to the United States, NIST will hold a public hearing to solicit views and recommendations concerning the Government's role. The central purpose of the hearing is to assess the current situation and to seek suggestions for improvement, especially regarding mechanisms for coordinating U.S. participation in international standards activities. Government policy is to improve the acceptance overseas of U.S. technology and manufacturing practice and to promote more effective U.S. contributions to international standardization, certification, quality assurance, and testing activities.

The hearing is expected to include expressions of views on potential models for government-private sector interactions, such as the Standards Council of Canada or any others. Views are solicited with respect to currently experienced effectiveness and the likely improvements from possible changes in procedures or areas of responsibility.

The following representative subjects may be discussed by participants in the hearing. They are offered as general guidelines to stimulate contributions from interested parties, but are not intended as limitations on subject matter or documented points of view.

Overview

Does the U.S. standards system, as presently constituted, adequately serve the Nation's trading needs in today's international climate? Identify any weaknesses that require strengthening.

Is there adequate participation by representatives of the public and private sectors? In other countries governments play a more formal role in standards. Are their systems more effective than ours? What should be the U.S. Government's role? If more coordination is needed among the many U.S. interests concerned with standards and trade, what changes might be beneficial? Is the Standards Council of Canada a model which the United States should consider?

Standards Participation

Does your organization send representatives to participate in international standards committee meetings? On a regular and continuing basis? Cite mechanisms which permit such participation and describe deterrents and possible techniques for improvement.

Who in your organization has responsibility for international standards activities? Describe the degree to which committee organization and procedures facilitate or hinder adequate participation and compare with efforts from other countries. Is the current U.S. standards infrastructure sufficiently supportive of and adequate for your organization's interests? Suggest any mechanisms that might improve the situation for your organization.

Are you an active participant in one or more technical advisory groups (TAGs)? Is there broad and adequate representation from the various U.S. interests? Describe the success or failure of the TAG in providing the needed forum for developing the U.S. position, and the ability of U.S. delegates to gain international acceptance of a U.S. TAG position. What factors contribute to success and/or failure?

How can we best ensure appropriate technical and financial support for international standardization activities? Should the Government help finance

participation, especially by small and medium-sized companies?

Standards Usage

What is the relative utility of domestic and international standards for your operations? What standards do you use for trading in foreign markets? Describe any problems you encounter with language, units of measure, obsolescence, etc.

Have you encountered any standards-related trade barriers? Document experiences.

Testing and Certification

Describe any problems associated with acceptance of your products in foreign markets, including any burdensome testing or re-testing that you have experienced. Do you rely on any existing agreements for acceptance of U.S. test data? Do you use the services of domestic testing and certification bodies, and have you relied on self-certification for either domestic or foreign sales?

Describe any barriers to the acceptance of your product in foreign markets, including the role of testing. What is the impact of the cost of testing and/or certification on your gaining product acceptance? What strategies do you recommend for improving export potential?

The information and comments obtained from the public hearing will be used to make recommendations to the Secretary of Commerce to improve the effectiveness of U.S. participation in international standards-related activities, coordination with the private sector, and delegation of any appropriate responsibilities to achieve these objectives.

The hearing will be held at 9:30 a.m. on April 3, 1990, in the Auditorium at the U.S. Department of Commerce, 14th Street and Constitution Avenue, N.W., Washington, DC 20230. Persons who wish to participate in the hearing must submit a written request to Dr. Stanley L. Warsaw, Director, Office of Standards Services, National Institute of Standards and Technology, Administration Building, Room A-603, Gaithersburg, MD, 20899. Requests should contain: (1) The person's name, address, telephone and facsimile numbers, and affiliations; (2) the number of participants; (3) the reason for attending; and (4) a list of points to be discussed. Oral presentations will be limited to topics specified in the written requests. Individuals who are unable to attend the hearing may submit written comments

to Dr. Stanley Warshaw at the above address. Both requests and comments must be received by March 22, 1990. Those persons wishing to appear at the hearing will be notified of the time allotted for their presentations.

Dated: November 21, 1989.

Raymond G. Kemmer,

Acting Director.

[FR Doc. 89-27080 Filed 11-24-89; 8:45 am]

BILLING CODE 5010-10-01

assessment of the return on investment expected by ITI.

DOC Position: The Department considers the free use of POSE by the GOS to constitute a dilution of the distributorship rights provided CSA. Therefore, the free use of POSE, minus the royalty percentage which would have been paid ITI, was considered in our calculations to be part of the financial return to ITI.

Comment 8: Respondents argue that the Department's use of "best information available" in the preliminary determination was inappropriate. Respondents contend that because both the original proposal and the revised business plan were submitted prior to the preliminary determination, the Department was provided with all information requested.

DOC Position: The Department disagrees with respondents and believes that the use of best information available for the preliminary determination was justified. Prior to the preliminary determination, the Department issued three deficiency questionnaires. The third deficiency questionnaire was issued two weeks before the preliminary determination thereby providing respondents with one final opportunity to provide information repeatedly requested previously. In each of these questionnaires, we specifically asked for certain critical information necessary for our preliminary determination. Respondents either did not answer our questions or provided superficial answers which were of little use to the Department. Consequently, the Department was forced to use the best information available in its preliminary determination.

Comment 10: Respondents argue that the Department erred in its preliminary determination by using the prime rate plus a spread in the present value calculation. Respondents contend that the 13-month interbank rate plus a spread of 1/2 percent should be used in the present value calculation in the final determination.

DOC Position: The Department disagrees. The Department used in its calculations for this determination a commercial long-term interest rate (i.e., the prime rate without any spread) in its calculations. This rate is the most appropriate measure on the record of this investigation of an average long-term commercial interest rate. No spread was added to the prime rate because statistical information on an average long-term rate was unavailable and because information obtained at verification indicated that long-term interest rates are both above and below the prime rate.

Comment 11: Petitioner argues that through the National Information Technology Plan, which is being implemented by NCB, the GOS has effectively targeted the computer and software industry with a number of export-oriented programs. Petitioner contends that the ITI development of POSE is an export program in accordance with the National Information Technology Plan.

Respondents argue that ITI is not an export promotion department of NCB. Respondents contend that it is the Industry Development Department (IDD) of NCB that has the export promotion function. Respondents further argue that the Department in its verification report erroneously links IDD with ITI to give the impression that ITI shares in the export promotion function of IDD. Furthermore, ITI did not impose an export requirement on CSA as a condition for receiving POSE, but that the need to export was mutually recognized as a prerequisite for ensuring commercial success.

DOC Position: Information on the record demonstrates that one objective of the National Information Technology Plan is the development of a strong export-oriented information technology industry. Furthermore, it is also clear from information on the record that it is ITI's intention to share its results in applied research with the local industry so that they can be commercialized into products for export.

Verification

We verified the information used in making our final determination in accordance with section 770(b) of the Act. During verification we followed standard verification procedures including meeting with government and company officials, examining relevant documents and accounting records, tracing information in the responses to source documents, accounting ledgers and financial statements, and collecting additional information that we deemed necessary for making our final determination. Our verification results are outlined in detail in the public versions of the verification reports, which are on file in the Central Records Unit (Room B-069) of the Main Commerce Building.

Suspension of Liquidation

In accordance with section 703(d) of the Act, we are directing the U.S. Customs Service to terminate suspension of liquidation on all entries of CASE software from Singapore and cancel the continuous entry bond which covered the lump sum equivalent of the

estimated net bounty or grant calculated in the preliminary determination.

ITC Notification

Since Singapore is not a "country under the Agreement" within the meaning of section 701(b) of the Act, and the merchandise under investigation is dutiable, section 303 of the Act applies to this investigation. Therefore, the ITC is not required to be notified.

This determination is published pursuant to section 705(d) of the Act (19 U.S.C. 1671(d)).

Dated: March 29, 1990.

Edc I. Gerliakal,
Assistant Secretary for Import
Administration.
[FR Doc. 90-7446 Filed 3-30-90; 8:45 am]
BILLING CODE 3510-05-01

National Institute of Standards and Technology

U.S. Participation in International Standards Activities; Opportunity for Interested Parties To Comment for the Record

AGENCY: National Institute of Standards and Technology, Commerce.

ACTION: Notice of meeting.

SUMMARY: On November 27, 1983, the National Institute of Standards and Technology announced a meeting to gather information, insights, and comments related to U.S. participation in international standards-related activities and to possible government actions. (See Federal Register, Vol. 48, No. 28, November 27, 1983, page 48795.) Due to the large number of requests to make presentations, the National Institute of Standards and Technology announces that the meeting will be extended from one day, April 3, 1990, to three days, April 3, 4 and 5, 1990. The record of the meeting will be held open for sixty days following the meeting to allow all interested parties the opportunity to comment. Comments must be received by close of business June 8, 1990.

DATES: The meeting will be held on three days, April 3, from 8:30 a.m. to 5 p.m., and April 4 and 5, from 9 a.m. to 5 p.m.

FOR FURTHER INFORMATION CONTACT: The written comments received regarding the April 3-5, 1990, hearing on U.S. Participation in International Standards activities will be on file after April 5, 1990, in the U.S. Department of Commerce Central Reference and Records Inspection Facility, Room 6622, Hoover Building, Washington, DC 20230.

(202/377-3271), for the individual's perusal or copying. Copies of the text of the hearing can be obtained from the National Technical Information Service, 5285 Port Royal Road, Springfield, VA 22161, (703/487-4650); a copy of this text will also be made available in the same DOC Reference and Records Inspection facility after April 25, 1990. Additional written comments should be sent to Dr. Stanley L. Warshaw, Director, Office of Standards Services, National Institute of Standards and Technology, Administration Building, Room A-600, Gaithersburg, MD 20899, (301/975-4000). ADDRESSES: The meeting will be held in the Auditorium at the U.S. Department of Commerce, 14th Street and Constitution Avenue NW., Washington, DC 20230.

Dated: March 28, 1990.

John W. Lyons,

Director.

[FR Doc. 90-7492 Filed 3-30-90; 8:45 a.m.]

BILLING CODE 5010-10-01

National Oceanic and Atmospheric Administration

Conservation Plan for Northern Fur Seals

AGENCY: National Marine Fisheries Service, NOAA, Commerce.

ACTION: Notice of availability and request for comments.

SUMMARY: The National Marine Fisheries Service has completed "A Conservation Plan for Northern Fur Seals, *Callorhinus ursinus*", as required by section 115(b) of the Marine Mammal Protection Act, and is requesting public comments.

DATE: Comments must be submitted on or before May 2, 1990.

ADDRESSES: Written requests for copies and comments on the Conservation Plan should be mailed to Dr. Nancy Foster, Director, Office of Protected Resources and Habitat Programs, NMFS, 1335 East-West Highway, Silver Spring, Maryland 20910.

FOR FURTHER INFORMATION CONTACT: George Cranmore, 301-427-2289.

Dated: March 27, 1990.

Nancy Foster,

Director, Office of Protected Resources and Habitat Programs, National Marine Fisheries Service.

[FR Doc. 90-7501 Filed 3-30-90; 8:45 a.m.]

BILLING CODE 5010-02-01

Marine Mammals NMFS, Southwest Fisheries Center (P77# 33); Modification No. 2 to Permit No. 680

Notice is hereby given that pursuant to the provisions of §§ 216.33(d) and (e) of the Regulations Governing the Taking and Importing of Marine Mammals (50 part 216) and § 220.24 of the regulations on endangered species (50 CFR parts 217-222), Scientific Research Permit No. 680 issued to the NMFS, Southwest Fisheries Center P.O. Box 271, La Jolla, California on August 16, 1989 (54 FR 55221), as modified on December 18, 1989 (54 FR 52975), is further modified as follows:

The following species are added to Section A.1:

Species	Maximum total take
Blainville's beaked whale (<i>Mesoplodon densirostris</i>)	240
Hubbs' beaked whale (<i>Mesoplodon carl. hubbsi</i>)	240
Gray's beaked whale (<i>Mesoplodon grayi</i>)	240
Peruvian beaked whale (<i>Mesoplodon peruvianus</i>)	240
Unidentified beaked whales (<i>Mesoplodon</i> sp.)	240
Bottlenose whale (<i>Hyperoodon</i> sp.)	240
Beard's beaked whale (<i>Barardius beardi</i>)	240
Cuvier's beaked whale (<i>Ziphius cavirostris</i>)	240
Dwarf sperm whale (<i>Kogia simus</i>)	240
Sperm whale (<i>Physeter macrocephalus</i>)	240
Puppy sperm whale (<i>Kogia breviporci</i>)	240
Minkie whale (<i>Balaenoptera acutirostris</i>)	240
Bryde's whale (<i>Balaenoptera edeni</i>)	240
Blue whale (<i>Balaenoptera musculus</i>)	240
Fin whale (<i>Balaenoptera physalus</i>)	240
Sai whale (<i>Balaenoptera borealis</i>)	240
Humpback whale (<i>Megaptera novaeangliae</i>)	240

Section B.1 is replaced by:

1. This research effort shall be conducted by the means, in the areas and for the purposes set forth in the application and the modification request.

Section B.2 is replaced by:

2. If one endangered animal is killed or two soendangered animals are killed as a result of the biopsy procedure, or if usable samples are not obtained from at least 75 percent of the animals darted, the Holder shall suspend his research and the experimental protocol shall be reviewed and, if necessary revised to the satisfaction of the Service, in consultation with the Commission.

Issuance of this modification, as required by the Endangered Species Act of 1973, is based on the finding that such modification: (1) was applied for in good faith; (2) will not operate to the disadvantage of the endangered species which are the subject of the modification; and (3) is consistent with the purposes and policies set forth in

section 2 of the Act. This modification was also issued in accordance with and is subject to parts 220-222 of title 50 CFR, the National Marine Fisheries Service regulations governing endangered species permits.

This modification becomes effective upon publication in the Federal Register.

Documents in connection with the above modification are available for review by appointment in the following offices:

Office of Protected Resources and Habitat Programs, National Marine Fisheries Service, 1335 East West Highway, Room 7324, Silver Spring, Maryland 20910 (301/427-2289); and Director, Southwest Region, National Marine Fisheries Service, 300 South Ferry Street, Terminal Island, California 90731 (213/514-6196).

Dated: March 27, 1990.

Nancy Foster,

Director, Office of Protected Resources and Habitat Programs, National Marine Fisheries Service.

[FR Doc. 90-7502 Filed 3-30-90; 8:45 a.m.]

BILLING CODE 5010-02-01

Marine Mammals; Issuance of Permit to Mr. Mats Amundin (P460)

On February 18, 1990, notice was published in the Federal Register (55 FR 5644) that an application had been filed by Mr. Mats Amundin, Zoologist, Kolmerden Zoo, 616 00 Kolmerden, Sweden, for a permit to export one (1) baby sperm whale (*Physeter catodon*), including all soft tissues for scientific purposes.

Notice is hereby given that on March 23, 1990 as authorized by the provisions of the Marine Mammal Protection Act of 1972 (16 U.S.C. 1361-1407), the Regulations Governing the Taking and Importing of Marine Mammals (50 CFR part 216), the Endangered Species Act of 1973 (16 U.S.C. 1531-1544), and the regulations governing endangered fish and wildlife permits (50 CFR parts 217-222), the National Marine Fisheries Service issued a Permit for the above taking subject to certain conditions set forth therein.

Issuance of this Permit, as required by the Endangered Species Act of 1973, is based on a finding that such Permit (1) was applied for in good faith; (2) will not operate to the disadvantage of the endangered species which are the subject of the Permit; and (3) is consistent with the purposes and policies set forth in section 2 of the Endangered Species Act. This Permit is issued in accordance with and is subject to parts 220 through 222 of title 50 CFR,

APPENDIX B

PANEL MEMBERS

Dr. Stanley I. Warshaw
National Institute of Standards and Technology

Mr. Walter G. Leight
National Institute of Standards and Technology

Mr. John L. Donaldson
National Institute of Standards and Technology

Mr. John McCutcheon
U.S. Department of Agriculture

Mr. Phillip B. White
Food and Drug Administration

Mr. Earl S. Barbely
U.S. Department of State

Ms. Wendy Moore
U.S. Department of State

Mr. Charles Ludolph
International Trade Administration
U.S. Department of Commerce

Mr. Tom Crider
U.S. Department of Agriculture

APPENDIX CLIST OF COMMENTERS1. ORAL TESTIMONY

James Pearse, Manuel Peralta, Jeff Smith
American National Standards Institute

Joseph O'Grady
American Society for Testing and Materials

Oscar Fisher, Melvin Green
American Society of Mechanical Engineers

Marco Migliaro, Andrew Salem
Institute of Electrical and Electronics Engineers

William Calder
Instrument Society of America

Ben Johnson
Industry Applications Society

James Decker
American Society of Civil Engineers

Richard Alley
American Welding Society

Russell Hahn, Robert Lanphier
American Society of Agricultural Engineers

Anthony O'Neill, Arthur Cote, Daniel Piliero
National Fire Protection Association

Michael Miller, Dennis Stupak, Robert Flink, Mort Levin
Association for the Advancement of Medical Instrumentation

James Bihr, Richard Kuchnicki, William Tangye, Paul K. Heilstedt
Council of American Building Officials

Thomas Flint
American Plywood Association

David Grumman, Frank Coda, Jim Heldenbrand
American Society of Heating, Refrigerating and Air
Conditioning Engineers

Harry Sheetz, Jim French
American Institute of Aeronautics & Astronautics

John Mason
Society of Automotive Engineers

Ronald Reimer
U.S. Natl. Committee of the IEC

Tom Castino, Joe Bhatia
Underwriters Laboratories

Herbert Wilgis, Milton Bush
American Council of Independent Laboratories

Richard Schulte
American Gas Association

Walter Poggi
Retlif Testing Laboratories

Richard Feigel
Hartford Steam Boiler Inspection & Insurance Co.

Leonard Frier
MET Electrical Testing Company

Peter Guzman, James Tucker, Earl Gmozer
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Preface

Product and process standards, as well as methods to ensure conformance to these standards, have important implications for economic progress and public welfare. They also are increasingly important to global commerce. We hope this book will serve as a reference document for public policy. It begins with a discussion of the relationship between standards, product testing, certification, and world trade. The volume then examines the role and responsibilities of U.S. government and industry in the system. Emerging trends in key international policies and programs are also addressed. The report concludes with a set of recommendations both to strengthen the U.S. domestic system and to enhance U.S. interests in overseas markets.

The National Research Council of the National Academies of Science and Engineering was asked by Congress in P.L. 102-245 to study these issues (Appendix B). The Council's Science, Technology, and Economic Policy Board provided the forum through which the study was initiated. A panel of experts provided oversight of the resulting study and the professional staff work which produced the final report.

The report addresses an extremely important set of goals for national policy. These involve removing ineffective and duplicative rules and regulations that govern testing, certification, and laboratory accreditation. Urgent reform is needed in national conformity assessment policy. This will come about, in part, through changes in the mandate of the National Institute of Standards and Technology. This report also discusses ways in which the United States can promote open trade by removing standards-related barriers to trade and mechanisms to better support U.S. exports in world markets. The U.S. should aggressively eliminate barriers to global trade embedded in discriminatory foreign policies and practices. At the same time, we should lead the international community in creating a global network of mutual recognition agreements by governments with differing national conformity assessment systems.

Numerous individuals provided advice and assistance throughout the project. Most importantly, John Godfrey and Patrick Sevcik deserve great credit for their outstanding work. The committee served with extraordinary dedication to the success of this effort. Many individuals in government provided assistance to the project, especially those at the National Institute of Standards and Technology and the Office of the U.S. Trade Representative. Numerous experts in industry and universities also provided briefings, important information, and other assistance in our work. This is particularly true of those affiliated with the American National Standards Institute and other U.S. standards bodies.

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Executive Summary

The United States is the most productive and competitive nation in the world.[1]

This fact is based on a high degree of efficiency in the domestic economy. In particular, significant progress has been made over the past several decades to foster a competitive economic environment for workers and firms. Initiatives by both industry and government to restructure the nation's productive capacities and promote microeconomic efficiencies have resulted in many benefits. This includes an acceleration of technological advance. We have eliminated many unnecessary rules and regulations that block U.S. firms and workers from taking full advantage of our creativity, industrial infrastructures, and technological edge. The United States has led the world in removing regulatory controls in the transportation, energy, and telecommunication sectors, for example. Continued progress, however, is needed if we are to move forward into the twenty-first century and achieve higher levels of productivity and economic growth. This progress will come, in part, through aggressive and targeted efforts to remove the remaining costly, inefficient, and unnecessary barriers to industrial production embedded in the U.S. national standards and conformity assessment system.

As we approach the year 2000, national welfare and economic strength will also increasingly center on the advantages the United States enjoys in global commerce. In addition to reform of the domestic economy, we need ever more innovative methods to promote goods and services overseas. The U.S. government must also continue to exercise leadership in the international community by aggressively removing the remaining barriers to trade. *A high-level focus by government and industry on standards and conformity assessment policy is one way of reaching these goals and promoting a more productive national economy.*

This report offers a comprehensive analysis of these subjects and the relationships among industrial production, standards, and conformity assessment. It provides recommendations to support both domestic policy reform, and the continued success of U.S. products in global markets. The information and data presented here support the conclusion that *in most instances, the U.S. standards development system serves the national interest well*. There is, however, evidence to indicate that *our domestic policies and procedures for assessing conformity of products and processes to standards require urgent improvement*.

At the same time, we must recognize the strategic importance of standards and conformity assessment systems in supporting national trade objectives. In order to address the new international dynamics of global trade, *an innovative U.S. trade policy to meet challenges of the post-Uruguay Round trading environment is required*. This should involve an integrated strategy by the U.S. government to link standards, conformity assessment, and trade. Our policies should aggressively seek to reduce standards-related barriers to trade. This involves both unilateral action through U.S. trade law and a new commitment to international negotiation aimed at mutual recognition by governments of conformity assessment systems.

The following summarizes the report's conclusions and recommendations, which are outlined in detail in each chapter of the report. An extensive discussion of the implications of these recommendations is included in Chapter 5.

CONFORMITY ASSESSMENT

The U.S. conformity assessment system has become increasingly complex, costly, and burdensome to national welfare. Unnecessary duplication and complexity at the federal, state, and local levels result in high costs for U.S. manufacturers, procurement agencies, testing laboratories, product certifiers, and consumers.

Government agencies should retain oversight responsibility for critical regulatory and procurement standards in areas of public health, safety, environment, and national security. The assessment of product conformity to those standards, however, is performed most efficiently and effectively by the private sector. Government should act only in an oversight capacity. The government should evaluate and recognize private-sector organizations that are competent to accredit testing laboratories, product certifiers, and quality system registrars.

RECOMMENDATION 1: Congress should provide the National Institute of Standards and Technology (NIST) with a statutory mandate to implement a government-wide policy of phasing out federally operated conformity assessment activities.

NIST should develop and implement a National Conformity Assessment System Recognition (NCASR) program. This program should recognize accreditors of (a) testing laboratories, (b) product certifiers, and (c) quality system registrars. By the year 2000, the government should rely on private-sector conformity assessment services recognized as competent by NIST.

RECOMMENDATION 2: NIST should develop, within one year, a ten-year strategic plan to eliminate duplication in state and local criteria for accrediting testing laboratories and product certifiers. NIST should lead efforts to build a network of mutual recognition agreements among federal, state, and local authorities.

After 10 years, the Secretary of Commerce should work with federal regulatory agencies to eliminate remaining duplication through preemption of state and local conformity assessment regulation.

STANDARDS DEVELOPMENT

The U.S. standards development system serves the national interest well. In most cases, it supports efficient and timely development of product and process standards that meet economic and public interests. Federal government use of the standards developed by private standards organizations in regulation and public procurement has many benefits. These include lowering the costs to taxpayers and eliminating the burdens on private firms from meeting duplicative standards in both government and private markets. Although not every public standard can be developed through private-sector processes, government should rely on private activities in all but the most vital cases involving protection of public health, safety, environment, and national security.

Current efforts by the U.S. government to leverage the strengths of the private U.S. standards development system, as outlined in the Office of Management and Budget (OMB) Circular A-119, "Federal Participation in the Development and Use of Voluntary Standards," are inadequate. Effective, long-term public-private cooperation in developing and using standards requires a clear division of responsibilities and effective information transfer between government and industry. Improved institutional mechanisms are needed to effect lasting change.

RECOMMENDATION 3: Congress should enact legislation replacing OMB Circular A-119 with a statutory mandate for NIST as the lead U.S. agency for ensuring federal use of standards developed by private, consensus organizations to meet regulatory and procurement needs.

RECOMMENDATION 4: The director of NIST should initiate formal negotiations toward a memorandum of understanding (MOU) between NIST and the American National Standards Institute (ANSI). The MOU should outline modes of cooperation and division of responsibility between (1) ANSI, as the organizer and accreditor of the U.S. voluntary consensus standards system and the U.S. representative to international, non-treaty standard-setting organizations and (2) NIST, as the coordinator of federal use of consensus standards and recognizing authority for federal use of private conformity assessment services. NIST should not be precluded from negotiating MOUs with other national standards organizations.

In addition, all federal regulatory and procurement agencies should become dues-paying members of ANSI.

Dues will support government's fair share of ANST's infrastructure expenses.

INTERNATIONAL TRADE

Expansion of global trade is increasingly important to domestic economic growth, productivity, and high-wage employment opportunities in the United States. The reduction of barriers to international commerce and aggressive promotion of U.S. exports must continue to be the fundamental objectives of a post-Uruguay Round trade strategy. At the multilateral level, the Uruguay Round of the General Agreement on Tariffs and Trade (GATT) achieved significant progress in reducing barriers related to discriminatory standards and national product testing and certification systems.

There is evidence to indicate that the growing complexity of conformity assessment systems in many nations threatens, however, to undermine future global trade expansion. U.S. exporters face high costs in gaining product acceptance in multiple export markets. Many nations impose duplicative, discriminatory requirements for product testing, certification, and quality system registration. The European Union's (EU's) mechanisms for approving regulated products, in particular, continue to pose serious barriers to expanded export opportunities for U.S. firms. Clearly, the severity of these obstacles varies by industry sector. From a national perspective, it is important, however, to achieve a rapid, negotiated removal of EU barriers. This will serve both to expand trade opportunities with our European partners, and to help promote the success of similar negotiations between the United States and other trading partners, especially those in the emerging economies of the Asia Pacific Economic Cooperation (APEC) forum.

Agreements between governments to recognize national conformity assessment mechanisms have a great potential to facilitate trade. A network of global mutual recognition agreements (MRAs) would enable manufacturers to test products once and obtain certification and acceptance in all national markets. At the regional level, for example, a successful conclusion to discussions within the APEC forum on an MRA would provide significant new opportunities for U.S. trade expansion in rapidly growing markets of Asia.

RECOMMENDATION 5: The Office of the U.S. Trade Representative (USTR) should continue ongoing mutual recognition agreement negotiations with the European Union. The USTR should also expand efforts to negotiate MRAs with other U.S. trading partners in markets and product sectors that represent significant U.S. export opportunities. Priority should be given to conclusion of MRAs on conformity assessment through the Asia Pacific Economic Cooperation forum.

As noted above, negotiations between the United States and the EU toward mutual recognition of conformity assessment mechanisms merit the continued high-level support of government, specifically the Office of the USTR. It is possible, however, that negotiations with Europe may not reach a timely or successful conclusion. Under these circumstances, failure by the Europeans to remove trade barriers in conformity assessment within a reasonable time period should lead to unilateral action by the United States, as authorized under our trade laws. Moreover, the USTR should use the full potential of targeted action on a unilateral basis under our laws, as appropriate, to remove barriers in other markets.

RECOMMENDATION 6: The USTR should use its authority under Section 301 of the Trade Act of 1974 to self-initiate retaliatory actions against foreign trade practices involving discriminatory or unreasonable standards and conformity assessment criteria. In particular, if U.S.-EU negotiations do not succeed within two years in securing fair access for U.S. exporters to European conformity assessment mechanisms, the USTR should initiate retaliatory actions under Section 301.

Innovative export promotion programs, in combination with a systematic policy to lower trade barriers, have the potential for significant, long-term economic benefit. By providing technical assistance to countries in emerging markets as they construct modern standards and conformity assessment systems, the United States has a unique and

valuable opportunity to facilitate future world trade.

RECOMMENDATION 7: NIST should develop and fund a program to provide standards assistance in key emerging markets. The program should have four functions:

- (a) provide technical assistance, including training of host-country standards officials, in building institutional mechanisms to comply with the Agreement on Technical Barriers to Trade under the Uruguay Round of the GATT;
- (b) convey technical advice from U.S. industry, standards developers, testing and certification organizations, and government agencies to standards authorities in host countries;
- (c) assist U.S. private-sector organizations in organizing special delegations to conduct technical assistance programs, such as seminars and workshops; and
- (d) report to the export promotion agencies of the Department of Commerce (such as the U.S. and Foreign Commercial Service) and the USTR regarding standards and conformity assessment issues affecting U.S. exports.

ADDRESSING FUTURE CHALLENGES AND OPPORTUNITIES

The nation's ability to anticipate and respond to new developments in standards and conformity assessment will influence our future in many ways. There is the urgent need for increased federal data gathering and analysis on standards and conformity assessment. We require an ongoing capacity to analyze the economic effects of developments in domestic and international standards and conformity assessment systems. This new capacity would support improvements not only in our domestic systems, but also in our ability to monitor and anticipate international developments in key emerging areas such as environmental management standards.

In addition, wide dissemination of information to U.S. firms about standards and certification requirements in global markets is needed to improve prospects for future U.S. export expansion. Detailed and readily available information about international developments is especially important for our small and medium-size firms wishing to compete in global export markets.

RECOMMENDATION 8: NIST should increase its resources for education and information dissemination to U.S. industry about standards and conformity assessment. NIST should develop programs focusing on product acceptance in domestic and foreign markets. These efforts should include both print and electronic information dissemination, as well as seminars, workshops, and other outreach efforts. Programs should be conducted by NIST staff or by private organizations with NIST cooperation and funding.

RECOMMENDATION 9: NIST should establish a permanent analytical office with economics expertise to analyze emerging U.S. and international conformity assessment issues. The office should evaluate and quantify the cost to U.S. industry and consumers of duplicative conformity assessment requirements of federal, state, and local agencies. To support the work of the USTR and other federal agencies, including those involved in export promotion, it should also collect, analyze, and report data on the effects of foreign conformity assessment systems and regulations on U.S. trade.

RECOMMENDATION 10: The USTR's post-Uruguay Round trade agenda, including work through the World Trade Organization, should include detailed analysis and monitoring of emerging environmental management system standards and their potential effects on U.S. exports. Technical assistance should be provided to USTR by NIST:

NOTE

1. For a comprehensive discussion of U.S. economic performance relative to other industrialized nations, see; the *Annual Report of the World Economic Forum*. Davos, Switzerland, 1994. Data series reported annually by the Bureau of Labor Statistics (BLS), U.S. Department of Labor on "International Comparisons of Manufacturing Productivity," and BLS data on relative levels of real gross domestic product (GDP) per employed person are relevant to cross-national comparisons of U.S. productivity and output. Numerous data sets which reveal relative competitive positions of the United States in service and manufacturing sectors are reported by the Organization for Economic Cooperation and Development and the World Bank in annual publications.

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NEWS RELEASE

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FOR IMMEDIATE RELEASE**NIST AND ANSI SIGN AGREEMENT TO STRENGTHEN U.S.
COMPETITIVENESS THROUGH VOLUNTARY STANDARDS SYSTEM**

GAITHERSBURG, MD., July 24, 1995 -- In an effort to support U.S. competitiveness, economic growth, health, safety, and the protection of the environment, the Commerce Department's National Institute of Standards and Technology (NIST) and the American National Standards Institute (ANSI) have signed a memorandum of understanding (MOU), to enhance and strengthen the national voluntary standards system.

The agreement was signed by NIST Director Dr. Arati Prabhakar and ANSI President Sergio Mazza.

"Both NIST and ANSI agree on the need for a national approach to develop the best possible international standards to strengthen U.S. competitiveness," Prabhakar said. "This approach requires the best technical efforts of the United States in standards development to ensure that U.S. needs and interests are considered as international standards are developed."

The MOU cites the need for better communications within and between the private sector and the federal government to ensure the timely flow of information, and the need for improved liaison to facilitate decision-making and implement actions on standards at the national and international levels. According to both ANSI and NIST, it is critical that affected U.S. regulatory agencies have the opportunity to contribute to the development and implementation of national and international voluntary standards.

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Mazza stated that, "the MOU will facilitate and strengthen the recognition of ANSI and the entire U.S. voluntary standards community at the international and national levels. This MOU ensures that ANSI's representation of U.S. interests is recognized by other players on the international scene while increasing the effectiveness of federal agency participation in the international voluntary standards-setting process. It will also improve domestic communication among both private and public sector parties in the U.S. on voluntary standards issues."

NIST and ANSI agree jointly that ANSI is the recognized U.S. member body to the International Organization for Standardization (ISO), and through the U.S. National Committee to the International Electrotechnical Commission (IEC). ANSI also is the U.S. member body to the Pacific Area Standards Congress (PASC) and to the Pan American Standards Commission (COPANT). As the U.S. representative to these bodies, ANSI convenes delegations and appoints technical groups of a broad spectrum of experts from the United States in all deliberations of relevant boards, individual technical committees, and working groups.

NIST's role, as delegated by the Secretary of Commerce under OMB Circular A-119 and the Trade Agreement Act of 1979, is to coordinate federal activities in voluntary standards. NIST coordinates standards activities with responsible government agencies to ensure that they are aware of private voluntary activities and that the private sector is cognizant of regulatory agency responsibilities. The MOU recognizes the regulatory responsibilities of individual agencies and does not preempt the statutory regulatory responsibility of any federal agency nor take away any authority from any federal agency to pursue its legislated regulatory programs.

Under the MOU, NIST is responsible for developing and implementing means for facilitating, coordinating, and communicating information on voluntary standards activities among government agencies. NIST is also responsible for ensuring that the federal agencies are aware of ANSI activities within ISO, IEC, or other private sector, international standards bodies such as PASC and COPANT.

NIST is responsible for facilitating information exchange between federal agencies and the private sector on voluntary standards activities. It must work with these entities to ensure that U.S. interests can and do participate appropriately in international standards activities to strengthen U.S. competitiveness in global markets.

ANSI is a private non-profit membership organization that coordinates the U.S. voluntary standards system, bringing together interests from the private and public sectors to develop voluntary standards for a wide array of U.S. industries.

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ANSI is the official U.S. member body to the world's leading standards bodies-- the international Organization for Standardization and the International

Electrotechnical Commission via the U.S. National Committee. The Institute's membership includes approximately 1,300 national and international companies, 39 federal, state and local government agencies, 289 professional, technical, trade, labor, consumer and institutional organizations.

As a non-regulatory agency of the Commerce Department's Technology Administration, NIST promotes U.S. economic growth by working with industry to develop and apply technology, measurement and standards.

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Mr. EHLERS. Thank you very much, Mr. Cheatham.
Next is Mrs. Mayhew.

STATEMENT OF JEAN G. MAYHEW, CHAIRMAN, NTIS ADVISORY BOARD, DIRECTOR OF INFORMATION SERVICES, UNITED TECHNOLOGIES RESEARCH CENTER, EAST HARTFORD, CONNECTICUT

Mrs. MAYHEW. Thank you, Mr. Chairman.

My name is Jean Mayhew, and I am Director of Information Services at United Technologies Research Center.

I appreciate the opportunity to address this committee on the topic of the National Technical Information Service, commonly known as NTIS. I am speaking as Chairman of the NTIS Advisory Board and as a customer of NTIS services for 23 years.

NTIS is the most comprehensive collection of government scientific and technical information in the Nation. Its collection of 2.5 million documents reflect billions of dollars of Federal investment in research and development. Every day thousands of citizens turn to NTIS as a central point of access for technical information.

If the past 50 years of technology development are to be the building blocks for the next century, NTIS must remain a national asset within the government. Therefore, the NTIS Advisory Board advocates the reorganization of NTIS as a government corporation.

Government corporation status provides NTIS the necessary flexibility to operate as a small business rather than a bureaucracy. I appreciate the comments that the chairman made earlier about many independent agencies and the need to duplicate their overhead services. I think there are ways around this concern, and I would also like to point out that at this time NTIS for some time has operated, and we advocate that it will continue to operate, independent of tax-generated appropriated funds.

In other words, the customers pay for the services of NTIS through the purchase of products.

Government corporation status would give NTIS the flexibility to operate as a small business free of bureaucratic barriers. This agency has been hampered by the lack of authority to control its own personnel, procurement, budget, and related business affairs. The establishment of an NTIS board of directors affiliated with this government corporation would also ensure the accountability and associated oversight that we know in the private sector.

With NTIS as a government corporation, the government retains full policy control of NTIS to assure that the public good functions are maintained. This government corporation status assures continued permanent access to this comprehensive collection of Federal scientific and technical documents.

The variety of information formats, whether it is online, through CD-ROM, microfiche or paper copy, provides citizens with options as to how to access these resources. These choices are critical in avoiding further disenfranchising those already disadvantaged in the information age.

As proposed in H.R. 1756, the disadvantages of an NTIS collection sold to the private sector are many. The NTIS collection of documents lacks copyright protection. This lack of copyright puts the purchaser of the collection at a disadvantage because its products

can be legally reproduced by its competitors. There is little motivation to maintain a comprehensive collection of resources when there is no competitive advantage to the owner.

In addition, once the NTIS collection falls into the hands of the private sector, there is no guarantee that these documents, which represent significant Federal investment, would be managed in the best interests of this Nation.

Many of the strongest scientific and technical information companies who might ultimately control this collection in the private sector are based external to the United States.

I want you to think about the headlines that have appeared in the media in the last 6 weeks about the reorganization and the re-ownership of the various television stations. You will find comparable events happening throughout the information industry, and if you want to think about the impact of a privatized NTIS, think of 5 years from now.

If this collection falls into the hands of a foreign company, it would be at their discretion to decide which documents would actually remain available to the public, how much we would pay for them, or whether they could be destroyed. Not a happy thought.

Government corporation status preserves the numerous advantages of NTIS as a Government agency while adopting the best practices of a small business.

In conclusion, information access has become a global benchmark in evaluating a nation's scientific and technical development. Relinquishing NTIS to the private sector would be a step backwards for the United States. The knowledge gained during the last 50 years of Federal R&D investment would no longer be a national asset on which future generations could build.

NTIS reorganized as a Government corporation, however, has the flexibility of a small business without the traditional bureaucratic barriers. This scenario preserves the NTIS model of cost recovery, serving the public independent of tax-generated appropriated funds.

Thank you.

[The prepared statement of Mrs. Mayhew follows:]

NATIONAL TECHNICAL INFORMATION SERVICE (NTIS):
THE SCIENTIFIC AND TECHNICAL MEMORY OF THE NATION

JEAN G. MAYHEW

DIRECTOR OF INFORMATION SERVICES
UNITED TECHNOLOGIES RESEARCH CENTER

CHAIRPERSON, NTIS ADVISORY BOARD

on

H.R. 1756, THE DEPARTMENT OF COMMERCE DISMANTLING ACT OF 1995

SEPTEMBER 12, 1995

OVERVIEW

- *A small business owner in Maryland is looking for information on lubricants.*
- *A college student in Texas is searching for government information over the Internet.*
- *An engineer in Silicon Valley needs a federal information standard on wiring and cables.*

The National Technical Information Service (NTIS) is the scientific and technical memory of the nation. It is to NTIS that these people often turn. Its clearinghouse of approximately 2.5 million documents represents the aggregate collection of our national efforts in energy, aerospace, environmental, and defense technologies as well as many other critical topics.

Each day thousands of citizens seek out NTIS as a central point of access to federal scientific and technical information. For fifty years, NTIS has set the world standard for facilitating access to the people of the nation. Through Fedworld, it is now recognized as a leader in making federal information available over the Internet.

What separates NTIS from other government agencies with similar missions? First of all, its level of service and efficiency is exemplary as cited in [From Red Tape to Results: Creating a Government that Works Better & Costs Less](#). Secondly, it receives no federally appropriated funds; its revenues must be sufficient to be self-sustaining, but its prices must be kept low enough to preclude the profits associated with the private sector.

H.R. 1756 calls for selling the assets of NTIS. The disadvantages to this approach are many and were widely discussed in the mid-1980's. By privatizing NTIS, its mission and collection of information is no longer in the public interest; its access to federal agencies is limited; and it loses its status in dealing with other governments to obtain information for dissemination within the United States.

The preferred alternative of reorganizing NTIS as a government corporation (see Scenario 2) gives Congress the opportunity of maintaining the advantages of the existing organization while incorporating best practices from the private sector.

SCENARIO 1: A PRIVATIZED NTIS

An NTIS in the private sector loses many of the benefits that reflect its strength as the scientific and technical memory of the nation. For example, its mission and collection of information is no longer a national asset and therefore becomes subject to the priorities of a single owner. The people have a right to this information; after all, they paid for its creation through the thousand of federally sponsored research projects reflected in the collection. It will also lose its internal access to federal agencies as well as its ability to link effectively with information sources in foreign governments.

- **The NTIS Collection Lacks Copyright Protection.**

NTIS documents are not copyrighted. The Information Industry Association has taken a strong position that government publications should remain in the public domain. This public policy puts the purchaser of the NTIS collection at a disadvantage because its products can be legally reproduced by competitors. There is little motivation to maintain a comprehensive collection of resources when there is no competitive advantage to the owner.

- **The Most Comprehensive Collection Of Government Scientific And Technical Information Is No Longer A National Asset.**

Once the collection falls into the hands of the private sector, there is no guarantee that access to this information would be managed with the best interests of this nation in mind. Many of the strongest scientific and technical information companies who might ultimately control this collection in the private sector are based external to the United States.

Should NTIS become part of the private sector, the collection could easily be broken apart, losing its comprehensiveness. For example, documents that are infrequently used may be discarded. However, to the engineer or scientist trying to resolve a technical problem, these seldom-used documents may suddenly become essential. During the Gulf War, several documents from the mid-1960's were overnight-delivered to an engineering firm faced with a particularly challenging situation supporting our troops. These documents had not been retrieved for many years, but were available when needed because of NTIS.

Congress represents the interests of the nation as a whole in guiding the evolution of NTIS in the information age. It can set expectations for operations that reflect the best practices of the private sector. Congress can also assure that these scientific and technical reports that reflect the investment of billions of federal dollars are preserved.

- **NTIS Is No Longer Able To Readily Obtain Documents From Other Nations.**

As a government agency, NTIS is able to obtain scientific and technical information from other governments. These governments would not be as likely to establish the same relationships with a private sector organization. Thus a critical path to non-U.S. scientific and technical information would be lost to the nation.

- **Access To Federal Agencies Is Limited.**

Federal agencies have forged relationships with NTIS as a government entity to facilitate citizen access to their resources. Should NTIS become a part of the private sector, these relationships would have to be re-negotiated under a different set of laws and regulations. Inter-agency partnerships take on a new dimension when one of the partners moves to the private sector.

SCENARIO 2: NTIS AS A GOVERNMENT CORPORATION

NTIS as a government corporation gives it the latitude to benefit from being in the public sector while having the fiscal and managerial accountabilities inherent in private enterprise.

- **Government Corporation Status Provides NTIS The Necessary Flexibility To Operate As A Small Business Rather Than A Bureaucracy.**

NTIS has been hampered by the lack of authority to control its own personnel, procurement, budget and related business affairs. Government corporation status would give NTIS the flexibility in these areas to operate as a small business free of bureaucratic barriers. The establishment of an NTIS Board of Directors would ensure the accountability and oversight associated with the private sector.

Government corporation status preserves the numerous advantages of NTIS as a government agency while adopting the best practices of a small business.

- **The Government Retains Full Policy Control Of NTIS To Assure That The Public Good Functions Are Maintained.**

The NTIS Government Corporation assures continued permanent access to the comprehensive collection of federal scientific and technical documents. The variety of information formats (online, cd/rom, microfiche, paper copy) provides citizens with options in accessing these resources. While not always sufficiently profitable to be maintained in the private sector, these choices are critical in avoiding further disenfranchising those already disadvantaged in the information age.

SUMMARY

Information access has become a global benchmark in evaluating a nation's scientific and technical development. Relegating NTIS to the private sector would be a step backwards for the United States. The knowledge gained during the last fifty years of federal R&D investment would no longer be a national asset on which future generations could build.

NTIS reorganized as a government corporation, however, has the flexibility of a small business without the traditional bureaucratic barriers. This scenario preserves the NTIS' model of cost recovery, serving the public independent of tax-generated appropriated funds.

Mr. EHLERS. Thank you so much. I think you get the prize for coming closest to the five-minute limit. [Laughter.]

Mr. Duncan.

STATEMENT OF DANIEL C. DUNCAN, VICE PRESIDENT GOVERNMENT RELATIONS, INFORMATION INDUSTRY ASSOCIATION, WASHINGTON, DC

Mr. DUNCAN. Well, I will not try and compete with Mrs. Mayhew, but perhaps I can help the Committee out by keeping my remarks brief.

The Information Industry Association appreciates the opportunity to offer its views on H.R. 1756, and in particular Section 206(c) which mandates the sale of the National Technical Information Service within 18 months after the effective date to a private-sector entity.

I bring a specific but important concern before the Committee today. Namely, the manner in which efforts to dismantle the Department of Commerce, and particularly plans to change the nature of NTIS, will affect the important information activities of these agencies.

Many of our members provide products which incorporate some information generated by the government. Therefore, the manner in which government maintains and makes available its vast stores of information is of critical importance to the Information Industry as a whole.

Of all the information activities undertaken by the Department of Commerce—and there are many—NTIS has a unique role. IIA is concerned that the elimination of NTIS might adversely affect the availability to the general public of valuable scientific and technical data created and gathered by a number of federal agencies precisely at a time when science and technology are increasingly important for the growth and competitiveness of the national economy.

Without the central repository and dissemination functions performed by an entity like NTIS, the public would not have access to a great deal of esoteric but valuable information that was created at taxpayer expense, but that otherwise might not be of sufficient interest for agencies to actively provide on their own.

IIA does not take a position, however, on whether NTIS should be privatized. Our concern, rather, is that as Congress considers H.R. 1756, it make certain that the vast stores of information contained within the various agencies of the Department of Commerce, including NTIS, be made available in accordance with the government information policies and practices that have helped to make our Nation the most open and democratic society in the world.

The experiences of IIA member companies have led the Association to formulate a set of guidelines for agencies to follow in allowing access to government information, and in setting dissemination policies.

These principles have been embraced over the years by various courts and legislative bodies, and on October 1st, 1995, they will become statutory mandates under the Paperwork Reduction Act of 1995, Public Law 104-13, passed earlier this year by Congress.

Among the tenets behind this law are three of primary importance:

First, the authors of the Act recognized that federal government information is public, and that the government has an affirmative obligation to ensure the flow of public information between government and citizens, including the private sector.

Second, the law makes clear that government agencies shall not discriminate either in allowing access to or in directly disseminating their information, whether such agencies act on their own or through officially designated agents in the public or private sector.

Finally, PL 104-13 mandates that the Federal Government shall not control how public information can be used, or decide who may use it.

Any person who has acquired public information should be free to use it, sell it, or otherwise disseminate it for any legal purpose without paying any additional fees or royalties to the government.

In passing Public Law 104-13, Congress embodied principles that are necessary to ensure First Amendment values, to implement the long-standing prohibition on copyright for works of the Federal Government, and to encourage sound agency information dissemination policies.

The Act also prohibits agencies from avoiding or discriminating in their information dissemination responsibilities by using a third party to undertake such activities.

IIA has criticized NTIS in the past because of the manner in which we believe it has abused its role as an agency created strictly to stand in the shoes of taxpayer-funded Executive Branch entities by simply collecting and disseminating data the original agencies have already gathered.

In March, the Association submitted written testimony to the Committee's Subcommittee on Technology, and I would be happy to supply a copy of that statement to all Committee members.

Briefly, I would mention only a few concerns that remain relevant:

First, we continue to believe that NTIS uses an overly broad definition of "scientific and technical information" that translates into agencies' funneling unnecessary information activities through NTIS rather than disseminating them directly to the public.

In addition, three other practices raised the greatest concern among IIA members and will remain issues for the Committee to address in determining NTIS's future.

The agency clearly ran afoul of the tenets behind Public Law 104-13 by seeking to restrict any redissemination of its bibliographic data base, by writing licensing agreements with private-sector vendors that demanded downstream royalty payments, and by demanding user fees for some of its data far in excess of its own costs for disseminating the information.

NTIS has continuously stated that the Paperwork Reduction Act, and particularly its proscription that government data be made available at a reasonable cost, will make it impossible for the Agency to operate solely with the fees it collects.

IIA disputed this notion in its testimony this March and still believes it to be erroneous. In the future, NTIS or its successor could act equally irresponsibly under the same reasoning and with simi-

lar unsatisfactory results unless Congress maintains a watchful eye.

Thus, in relation to the proposals contained in H.R. 1756, IIA strongly urges that Congress assure that the principles embodied in Public Law 104-13 apply to any successors to current agencies.

IIA holds this view, whether the decision is made to transfer NTIS's or any other agency's information functions elsewhere in the government, whether these functions are provided by private-sector companies under contract or other arrangements, or whether Congress decides to create public corporations from various existing agencies as was proposed recently by Secretary Brown.

We would specifically suggest that any law that reformulates agencies under the Department of Commerce include statutory requirements that successor entities must abide by the information policy provisions of Public Law 104-13, and be subject to Section 105 of the 1976 Copyright Act which specifically precludes copyrighting any Federal Government information.

In this manner, Congress would reinforce its commitment to the long-standing principles incorporated into the Paperwork Reduction Act of 1995, and make certain that all who wish to acquire information gathered by the Federal Government are treated fairly and that the public is not under-served.

Thank you.

[The prepared statement of Mr. Duncan follows:]



INFORMATION INDUSTRY ASSOCIATION

Testimony
of the
INFORMATION INDUSTRY ASSOCIATION

before
THE HOUSE COMMITTEE ON SCIENCE
Hearing
on
H.R. 1756, the Department of Commerce Dismantling Act of 1995
September 12, 1995

Presented by
Daniel C. Duncan
Vice President, Government Affairs

Mr. Chairman and Members of the Committee, my name is Dan Duncan and I am Vice President for Government Affairs at the Information Industry Association (IIA). The Association appreciates the opportunity to provide testimony today as you consider aspects of H.R. 1756, the Department of Commerce Dismantling Act of 1995. IIA has long had an interest in the efficient functioning of government, particularly as its activities affect the free flow of information from agencies, legislatures and courts to the public, including private sector providers of information.

As the Committee is aware, Section 206(c) of H.R. 1756 mandates the sale of the National Technical Information Service (NTIS) "within 18 months after the effective date ... to a private sector entity intending to perform substantially the same functions as were performed by ... [NTIS] immediately before such effective date." This provision of the bill is what brings IIA before you today.

IIA is the leading trade association of companies involved in the creation, distribution and use of information products, services and technologies. Our 500 corporate members range from large multinationals to entrepreneurial start-ups and include traditional and electronic publishers, database producers and providers, interactive online service providers, computer manufacturers, software developers, and telecommunications providers. Many of our members provide products which incorporate some information generated by government. Therefore, the manner in which government maintains and makes available its vast stores of information is of critical importance to IIA as a whole.

Of all the information activities undertaken by the Department of Commerce -- and there are many -- NTIS has a unique role in that its principal purpose is to collect and

disseminate valuable scientific and technical data created and collected by a number of federal agencies. IIA shares concerns that have been raised that the elimination of NTIS might adversely affect the availability of this type of data to the general public at a time when science and technology are increasingly important for the growth and competitiveness of the national economy. Certainly, Congress's original purpose in creating NTIS remains worthy. Undoubtedly, NTIS has helped provide a crucial function in collecting and disseminating esoteric, but valuable, scientific and technical information, created at taxpayer expense, that otherwise might not be of sufficient interest for agencies to actively provide on their own.

However, IIA does not take a position on whether NTIS should be privatized. Our concern, rather, is that as Congress considers H.R. 1756, it make certain that the vast stores of information contained within the various agencies of the Department of Commerce, particularly NTIS, be made available in accordance with the government information policies and practices that have helped make our Nation the most open and democratic in the world.

IIA AND THE ISSUE OF GOVERNMENT INFORMATION POLICY

A federal information dissemination policy that assures a variety of sources of government information has been one of IIA's paramount public policy goals since its founding in 1968. The Association works actively to assure that information companies can continue to play their roles in meeting diverse market demands for government data.

Private industry participation in this area has aided greatly in assuring that government is not left as the sole supplier of information about itself and has thus greatly reduced the risk of censorship and misinformation.

Information generated or held by government -- whether by executive, legislative or judicial agencies and officials -- is a valuable resource that provides people with knowledge of their government, society and economy. Access to such information is the *sine qua non* of participatory government. It furthers informed public debate and thereby fosters better decision-making to help accomplish both public and private goals.

The information industry has responded to this need for knowledge by acquiring government data, adding value to it and disseminating it to its customers. Thousands of private sector information products and services, created by companies large and small, are based in whole or in part on public information. Information companies add value to federal government information in a variety of ways: by assembling, arranging, and organizing it in useful manners; by combining it with information from other sources; by adding indices and annotations; and by updating and expanding databases to make sure that they are comprehensive, timely and accurate. Information companies then make these value-added products available to the public in convenient, useful and user-friendly formats and media, and provide ongoing customer service, including training and technical assistance. In short, a mature information industry that meets a wide variety of market demands has developed around the rich and diverse resource of federal government information and has enhanced greatly the public's ability to exercise its right to know.

The experience of IIA member companies in this area is extensive. Their activities in many nations and at all levels and branches of government led IIA to formulate a set of guidelines for agencies to follow in allowing access to government information and in setting dissemination policies. These principles have been embraced by Congress, the executive branch and the courts, because they benefit all citizens by fostering the widest possible availability of federal information from a diversified group of private and public institutions.

Preserving this diversity and encouraging continuing creativity depends on a solid framework like that detailed in IIA's government information policy principles. This framework has three main tenets.

First, as determined broadly by the courts and endorsed through executive branch policies, federal government information is public. The Freedom of Information Act has created a broad right of access to public information. It, along with other public access statutes, provides unambiguous devices for access by citizens -- private and corporate -- to information created with taxpayer dollars. These laws and regulations enforce the obligation on the part of government -- as envisioned by our Nation's founders -- to ensure the flow of public information between government and citizens.

A second tenet is no less important: the government shall not discriminate either in allowing access to or in directly disseminating its information. When government -- whether directly or through officially designated agents -- acts otherwise, there is an enormous risk of discrimination and censorship.

Third, government should not control how public information can be used or decide who may use it. Because the public's use of government information is a right, not a privilege, any person who has acquired public information should be free to use it, sell it, or otherwise disseminate it for any legal purpose without paying any additional fees or royalties to the government.

THE PAPERWORK REDUCTION ACT OF 1995

The principles outlined above were incorporated into law earlier this year with the passage of the Paperwork Reduction Act of 1995 (PRA), now Public Law 104-13, effective October 1, 1995. P.L. 104-13 clarifies federal executive agency information dissemination activities by outlining both the responsibilities that agencies must fulfill and those actions from which agencies should refrain. The Act enjoys the wide support of those groups who helped promote its passage -- the information industry, as well as consumer groups, non -profits and libraries -- for it outlines specific practices agencies have undertaken in the past and which they must now avoid in order to assure the widest possible dissemination of the data they make available. Specifically, the law states:

With respect to information dissemination, each agency shall ... not, except where specifically authorized by statute[,]... establish an exclusive, restricted, or other distribution arrangement that interferes with timely and equitable availability of public information to the public; restrict or regulate the use, resale or redissemination of public information by the public; charge fees or royalties for resale or redissemination of public information; or establish user fees for public information that exceed the cost of dissemination...

In passing PRA, Congress embodied principles that are necessary to ensure First Amendment values, to implement the long-standing prohibition on copyright in works of the federal government, and to encourage sound agency information dissemination policies. These policies are intended to be operative for every agency, unless the statute under which a particular agency carries out its information dissemination activities *specifically directs* a different policy.

Of particular importance to the subject matter before the Committee today, P.L. 104-13 also prohibits agencies from avoiding or discriminating in their information dissemination responsibilities by using a third party to undertake such activities. Thus, the Act makes clear that its guidelines apply whether agencies themselves distribute data or whether they use a third party source to accomplish this goal.

NTIS ROLE AS THIRD-PARTY DISSEMINATOR

It has been in the context of NTIS's role as an agency created strictly to "stand in the shoes" of taxpayer-funded executive branch entities by collecting and disseminating scientific, technical and engineering information that IIA has criticized the agency in the past. As recently as March of this year, the Association submitted written testimony to this Committee's Subcommittee on Technology. That statement, which I would be happy to make available to all Committee Members, detailed several particular actions by NTIS which many in the private and public sectors believe have impaired the free flow of the

information contained in its repository. To briefly review IIA's chief concerns, we noted that NTIS:

- incorporated in regulations to implement the Advanced Technology Technology Preeminence Act ("ATPA" P.L. 102-245) an overly broad definition of scientific and technical information from a 1954 Comptroller General's opinion that allowed NTIS to gather far more data than was originally intended by Congress and that requires review in any reformulation of the agency;
- appeared to encourage exclusive arrangements with private sector companies that might have precluded timely and equitable distribution of data to the public, an issue which we believe NTIS addressed satisfactorily in a later communication to the Subcommittee;
- sought to restrict redissemination of its renowned bibliographic database;
- wrote licensing agreements with private sector vendors that demanded downstream royalty payments; and
- established user fees for some of its data far in excess of its own costs for disseminating the information.

I have not highlighted these problems again today in order to further criticize NTIS, for I am happy to report to the Committee that since passage of PRA and the Technology Subcommittee's hearing this spring, IIA has seen a willingness on the part of NTIS to rethink some of these practices. Anecdotal evidence from some IIA member companies indicates that NTIS is acting much more responsibly and cooperatively in providing scientific and technical data to private sector redisseminators for inclusion in their information products. Yet, the record for compliance with the spirit and principles of P.L. 104-13 is by no means completely satisfactory, and I would respectfully ask that the Committee keep that record in mind as it considers the future of NTIS or any other agency under the Committee's jurisdiction that provides valuable data to the public.

NTIS has continuously stated that the P>L. 104-13 -- particularly its proscription that government data be made available at a reasonable cost -- will make it impossible for the agency to operate solely with the fees it collects. IIA disputed this notion in its testimony this March and continues to encourage the agency to abide by the spirit of the Act in order to avoid hampering even wider availability of the government's scientific and technical data. In the future, NTIS or its successor could act equally irresponsibly, with similar unsatisfactory results, unless Congress maintains a watchful eye.

IIA remains concerned that NTIS and other federal agencies must begin complying with the spirit and letter of Public Law 104-13, no matter what future Congress may determine for them. Thus in relation to the proposals contained in H.R. 1756 for the privatization of NTIS and other information activities under the auspices of the Department of Commerce, IIA strongly urges that Congress assure that PRA principles apply to any successors to current agencies. There is no question that PRA should apply, if the decision is made to transfer NTIS's or any other agency's information functions elsewhere in the government, as some have suggested. Similarly, IIA believes that private sector companies under contract or otherwise designated to provide dissemination services for agencies must abide by P.L. 104-13. These companies would simply "stand in the shoes" of federal agencies who are obligated to disseminate their data, and in such a position they should rightfully be subject to PRA provisions.

Finally, the principles should apply if Congress decides to create public corporations from various existing agencies, as was proposed by Secretary Brown at a hearing before the Senate Committee on Commerce in August. Creation of a public

corporation may raise some additional concerns about the effectiveness of continued congressional oversight over agencies that operate solely on a fee-funded basis. However, if Congress includes PRA-type statutory restrictions in any laws altering the current status of agencies and oversees those activities diligently, the principles behind PRA -- to ensure wide availability of information created at taxpayer expense, maintained by agencies, and essential to citizens -- would be protected.

Should Congress determine that it is in the best public interest to privatize NTIS, IIA would appreciate the opportunity to work with the Committee in crafting language to accomplish this goal while guaranteeing that the public and other private sector disseminators can acquire the same data on timely and equitable terms and conditions.

We would respectfully suggest that any law that reformulates agencies under the Department of Commerce include statutory requirements that successor entities must abide by the information policy provisions of P.L. 104-13 and be subject to Section 105 of the 1976 Copyright Act, which specifically precludes copyright in any federal government information. In this manner, Congress would reinforce its commitment to the long-standing principles incorporated into the Paperwork Reduction Act of 1995 and make certain that all who wish to acquire scientific and technical information gathered by the federal government are treated fairly and that the public is not underserved.

CONCLUSION

A cornerstone principle of the American democratic tradition has been disclosure of government information in a timely and cost-efficient manner so that citizens can make informed choices. The most important step in accomplishing this goal is to assure that government itself acts responsibly to actively disseminate the data it has collected. Just as important to successful disclosure of government information are private sector redisseminators, who provide various products to the general public and thereby maintain the diversity of sources of information about government that is essential in a democratic society.

At a time when Congress is seeking to decrease the cost of government and to offer better and more efficient services to all Americans through innovative programs, IIA would respectfully caution that our elected representatives not overlook the importance of maintaining unfettered access to data collected and maintained by the government. With respect to H.R. 1756, IIA remains concerned as to how enactment of such a law would affect generally the information activities of any Department of Commerce agency but particularly as privatization of NTIS might hamper the availability of an especially valuable repository of taxpayer-funded scientific and technical information. From IIA's perspective the question is not so much whether these crucial government functions are transferred to other agencies, sold or contracted out to the private sector, or moved to new public corporations. Rather, the information industry's concern is that timely and equitable

access to these government information sources is maintained and that the ability of the private sector to add value to them for the public good is not endangered.

In passing the Paperwork Reduction Act of 1995, Congress established clear statutory guidelines for all government agencies to follow in formulating information policies. The Act laid the groundwork for an even greater amount of government data to flow to the public through a variety of sources, and the potential effectiveness of the Act should not now be undermined by overlooking the need to include PRA-type principles in laws affecting the future of agencies that disseminate information.

IIA, as the primary representative of private sector providers of publicly-held information, has long sought to assure the existence of a competitive and diverse marketplace for all information, including that generated by government. The Association and its members would be pleased to work with the Committee as it proceeds with important government reforms to help assure that government information continues to be widely accessible and that it is disseminated by agencies and their successors in a timely, fair and equitable manner.

Thank you.

Mr. EHLERS. Thank you very much, Mr. Duncan.

And thank you to the entire panel for the cogent and appropriate remarks.

We will now turn to the Committee for questions.

Mr. Brown.

Mr. BROWN. Thank you very much, Mr. Chairman.

May I engage the attention of the last two witnesses, since you are dealing with a subject that I have been involved with for some time, and I missed the opportunity to hear the others for which I apologize.

You particularly, Mrs. Mayhew and Mr. Duncan, probably recall the activities of this Committee in the 1980s dealing with this subject in which we went into the question of whether it should be privatized or corporatized or, you name it.

We had quite a few hearings on this, and actually I thought the results of that were quite productive in terms of improving the operations of NIST, and I still think that is the case.

Incidentally, while I am thinking about it, I just received, a couple of hours ago, a letter from one of the people who was involved in that effort during the 1980s who became a member of the first NIST Advisory Board under Secretary Mosbacher in 1991, and who expresses his ideas, and I would like unanimous consent to include that in the record, if I may.

Mr. EHLERS. Without objection, so ordered.

[The letter follows:]

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September 12, 1995

The Honorable George E. Brown, Jr.
U.S. House of Representatives
Rayburn House Office Bldg.
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FAX: 202-225-8671

Dear Congressman Brown:

It is my understanding that a proposal to privatize NTIS, the National Technical Information Service, will be brought before the Science Committee during its deliberations on H.R. 1756 this week. I am dismayed to see this issue, which should have been buried in the late 1980s, surfacing again. You worked actively with other members of the former Science, Research and Technology Subcommittee to prevent NTIS privatization at that time, and your help is needed again.

The Office of Management and Budget made repeated attempts to privatize NTIS between 1983 and 1989, using six different rationales to justify an indefensible case. Members on both sides of the aisle rejected OMB's ill-founded logic, prohibiting privatization of NTIS by passing the Omnibus Budget Reconciliation Act of 1988 and the National Technical Information Act of 1989.

During the privatization controversy of the late 1980s, I was invited to testify twice before the former Subcommittee on Science, Research and Technology. As the head of a large branch library at West Virginia University with an on-site NTIS document collection, I opposed NTIS privatization as a threat to engineering education, academic research, regional economic development and U.S. competitiveness.

In 1991, I was appointed to the first NTIS Advisory Board by former Commerce Secretary Mosbacher. As a result of input from that board, NTIS has substantially modernized its operations and pursued new markets---including the academic sector---for the technical reports it receives from U.S. and foreign government research. During my two terms on the board, the in-flow of reports increased from about 70,000 per year to over 100,000, largely as a result of the American Technology Preeminence Act's mandate that copies of completed research reports be deposited with NTIS. That mandate was one of the recommendations in my testimony in the late 1980s, and I was delighted to see it enacted into law.

One result of my input to the NTIS leadership has been the development of an NTIS-higher education partnership. The NTIS database became available over the Penn State Libraries' online

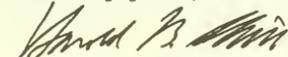
system, LIAS, in June 1995, making Penn State only the second university in the country---Georgia Tech is the other---providing access to this unique resource. Electronic document delivery of titles stored on NTIS's ADSTAR optical storage system to Penn State is anticipated in the near future. The presence of the NTIS database in the Penn State Libraries' online system is an asset supporting education, research and economic development in this State, and I hope it will be the pilot project for similar partnerships in other States.

There is a legitimate need to reduce Federal expenditures in a number of areas, and the 104th Congress has addressed that need very aggressively. However, NTIS is a national asset which costs the taxpayers nothing and is, by virtue of its mandate to acquire and archive both American and foreign technical reports, a resource which cannot be adequately replicated by the private sector.

I urge you to vigorously oppose any proposal to privatize NTIS, either wholly or in part. A spin-off of this agency to the private sector would damage corporate, government and academic research, jeopardize the preservation of scientific/technical knowledge, and threaten an emerging university/NTIS partnership which should advance education and economic development throughout the country.

Thank you for giving your most thoughtful consideration to the preservation of NTIS as a unique governmental asset which benefits small and large business, governmental laboratories, and academic teaching and research. It is unfortunate that you must again provide leadership to prevent the privatization of NTIS, but it is critical that you do so. I will be glad to provide further information if that would prove useful.

Sincerely yours,



Harold B. Shill, Ph.D.
Head, Division of Library and
Information Services

*P.S. - I am glad that you are still on
this Committee.*

Mr. BROWN. Now may I just ask as a general point, do either of you sense any great disagreement between the two statements that you have made?

Mrs. MAYHEW. Actually, no.

Mr. BROWN. I did not see any—

Mr. DUNCAN. No, I do not believe so.

Mr. BROWN [continuing]. In reading them. You both agree that the agency is, while not perfect, is trying to improve its operations.

Mr. Duncan, you indicated they started off on the wrong track not too long ago, but they have come back into line.

Mr. DUNCAN. Yes, Congressman.

Mr. BROWN. You are both suggesting, as I understand it, that the function continue; and, that if it is privatized, protections be written into the Act which ensure that they continue to follow the existing requirements of law with regard to dissemination, and with regard to copyright.

Mr. DUNCAN. Exactly.

Mrs. MAYHEW. Yes, sir.

Mr. BROWN. So what do we gain if we abolish it, or privatize it?

Mrs. MAYHEW. We do not gain; we lose. That is the point.

Mr. BROWN. All right. I just wanted to see if we are clear on that.

Mr. DUNCAN. Well, Congressman, I really do believe it is up to the judgment of Congress to determine whether or not this agency should remain a part of the Federal Government—

Mr. BROWN. Yes.

Mr. DUNCAN [continuing]. And, if so, where it should be in the Federal Government.

Mr. BROWN. Yes.

Mr. DUNCAN. But I do believe that if Congress' intent in keeping up its clear attention paid earlier this year to dissemination policies of all agencies, and keeping in mind that any information that NTIS now or a successor of NTIS would have is public information, that we will win in the long run.

Mr. BROWN. Yes.

Well the question you raised, Mr. Duncan, about maybe accumulating too much information—I think you raised that question?

Mr. DUNCAN. Yes.

Mr. BROWN. Was just the opposite in the 1980s. We were concerned that they were not routinely getting access to all of the scientific research documents being produced by the other agencies. So we wrote certain requirements that we thought would help to solve that problem.

Mr. DUNCAN. Right.

Mr. BROWN. We did not anticipate that they would be flooded by unnecessary information that could be more readily disseminated by the originating agency. But if that is a problem, I think we could probably do something to correct that.

Mr. DUNCAN. Well, I think the problem stems, Congressman, from the definition that is used for "scientific, technical, and engineering information." It is a definition that stems from a 1954 Comptroller General's Opinion.

We have urged before that this be reviewed. I think that might help resolve some of the problem.

I would not want to leave the Committee with the impression, however, that NTIS has been acting extremely irresponsibly in this matter. I think it is also part of the agencies responsibility to make certain that they disseminate their information on their own whenever possible.

Mrs. MAYHEW. May I address that point?

Mr. BROWN. Yes.

Mrs. MAYHEW. The definition of the information needed for an engineer to be productive in today's society is very different than it was let's say in the 1950s.

There is a new mode of operation in the 1990s that talks, oh, it started with the concept of simultaneous engineering, concurrent engineering, and it has gone on to the point where an engineer does not operate in a vacuum in his or her use of technical information.

They are required, in order to design products or advance technology, to take into account the market forces that will influence the product development. It is along those lines that some information has been handed over at NIST that perhaps would not have been there in previous decades.

But it makes absolute sense when you take a look at the new functionality of today's engineers.

Mr. BROWN. Well if I may just conclude, Mr. Chairman, I have not been here since 1954, but almost that long, and I can assure you that there has been a revolution in both the whole field of information sciences and the definition of "scientific, technical, and engineering information" as well, and we need to constantly review and assure ourselves that we are maintaining some reasonable relationship to actual needs that we perceive here.

Mr. DUNCAN. I would agree, Congressman, and I would say that after 50 years it is time to take a new look.

Mr. BROWN. Yes.

Mr. EHLERS. Thank you, Mr. Brown.

Ms. JOHNSON, do you have any questions?

Ms. JOHNSON. I think they have been pretty much answered, but for the last 10 years for example there has been a real attitude that privatization would not be a welcome thing for the agencies as far as the public is concerned, as well, and I was going to ask what has changed that would, as things do change, to make it more suitable for privatization?

Mrs. MAYHEW. I cannot think of any change in the information industry that would make privatization of NIST practical. I would be the absolute last person to get before this Committee and talk about copyright of federal documents. It is contrary to the Nation's best interest.

Actually, that is the single most important element that would make the privatization of NIST a practical proposal.

Ms. JOHNSON. Okay. Thank you.

Mr. DUNCAN. It is very clear that there has been a prohibition on copyright of any Federal Government information, generally speaking, since the 1976 Act.

Even should a private company take over NTIS functions, it could not copyright the information that is in store there created by federal agencies.

I think one thing that has changed, Congresswoman, in the last nine months is passage of the Paperwork Reduction Act, which makes it very clear what dissemination and access policies are to be in place for any Federal Government information.

That was not in place when we, as an Association, opposed privatization of NTIS in the late 1980s.

Ms. JOHNSON. Thank you.

Mr. EHLERS. Do you have any further questions, Ms. Johnson?

Ms. JOHNSON. No.

Mr. EHLERS. Ms. Johnson yields back the remainder of her time.

Before I ask my questions, or make my comments, I have a request from Chairman Walker that several matters be entered into the record.

Without objection, a letter from the National Science Foundation, one from the Oceanographer of the Navy, from Kodak, from the American Dental Society, plus other materials he may wish to enter, will be entered into the record.

[The information referred to appears in the Appendix.]

Mr. EHLERS. To conclude this hearing, I have just a few comments and questions.

I found it striking that the majority of you in your testimony—in fact, I would dare say all of you—say that you do not agree with the provisions of the bill in terms of its handling of NIST and where it is going to go, and some of the other agencies involved.

I gather, though, that the suggestion of most of you is that if there is a change it would be in an independent agency, and that would be the best option.

What was unspoken throughout this, I get the impression that none of you favor the basic premise of the bill, and I am asking you to respond to that rather directly.

Do you favor the dismantling of the Department of Commerce and the movement of the scientific agencies into other areas, whether NSF, DOE, or into an independent agency status? Or do you prefer keeping it the way it is within the Department of Commerce?

Mr. O'Neill.

Mr. O'NEILL. Thank you, Mr. Chairman.

That question has been discussed, as you can imagine, among the members of the American National Standards Institute, which I am representing. ANSI does not have a position relative to where NIST—and in specific this panel's charge was to talk to NIST. We do not have a position relative to the disposition of NIST within the Federal Government.

However, the ANSI membership, which as I mentioned earlier is some 1300 companies, some 250 active standards-developing organizations, and several government agencies, all have discussed, and we have come forward with criteria that we feel is very important with the consideration of this Committee and the Congress in the disposition of the answer to that question.

First of all, the NIST, or that function, must in our view be focused on and tied in with American industry and American competitiveness in a global economy.

It must support the needs of standardization and conformity assessment that these industries, standards' developers, must need to compete in that global economy.

Also, it has been doing an excellent job of coordinating our federal agency activities on, for example, converting from government-written standards to non-government private sector developed national consensus standards.

This is the will of the Congress. This is the will of the last three Administrations, as characterized under OMB Circular A-119.

The amount of savings that have accrued from this effort to convert from, for example, mill specs to private-sector developed standards is incalculable. There are numerous examples that the members of ANSI can supply to the Committee as to how cost effective this is. NIST is the agency that is designated by the Administration to coordinate that activity.

NIST, or the agency that we are talking about, must be marked by an impartiality and neutrality. It cannot be a procurement agency or a regulatory agency, in our view.

And the last point is very obvious, and it has been mentioned all day today. That agency must have a track record of technical expertise and experience.

So, Mr. Chairman, the bottom line as far as ANSI's membership is concerned is that NIST has, and in our view continues to be needed to support American industry and its competitiveness in a global market.

But specifically to answer your question, we do not have a position relative to those alternatives that have been suggested in testimony.

Mr. EHLERS. Mr. Walrad.

Mr. WALRAD. Thank you.

I understood your question to be what do we feel about the bill in total.

Mr. EHLERS. The basic premise of the bill.

Mr. WALRAD. As a member of the ANSI Company Member Council Executive Committee, I would like to endorse what Tony said. But I would like to comment on the other.

The portions of this bill that deal with the disposition of NIST seem very hasty, to be blunt. The failure to think through the point that Mrs. Morella raised this morning, for example. Man, that is bad.

I have no competence to comment on the Commerce Department as whole—

Mr. EHLERS. All right.

Mr. WALRAD [continuing]. But if the part on NIST is indicative of the rapidity of the bill, go slowly, please.

Mr. EHLERS. Thank you.

Dr. Hermann.

Dr. HERMANN. I do not subscribe to the form or the philosophy of the bill as it is presently constructed. I am not quite sure how competent I am to judge on the whole of the Commerce Department, but from what I know I would say, yes, Commerce may not be a thing of great beauty—I guess you referred to it as the hall closet—I am not sure I would wish to be defending that the Com-

merce Department be exactly as it is, but on the other hand I am not sure that abolishing it is the right answer.

That is, we the country, whether it be the government or its national leaders in some other form, need to get our strategy together as to what it is we are trying to do. The notion that we need no cabinet level capability to bring together the instruments of government to act on our behalf in a competitive world does seem to me to be wrong.

So whether it is this Commerce Department or some other Commerce Department, or some other title, it does seem to me that the philosophy is wrong.

I do share the conviction that we need to balance the budget. I share Mr. Chrysler's conviction that we are foisting a burden on our children that is immoral, and I am confident that Commerce and many other of our Departments can be reduced and economies can be applied—and that is not a copout in my case. I would be happy to discuss specifics, and the numbers are much, much larger than Commerce—but I do think that we need a mechanism for us to act together.

There is a requirement that we as free people in an entrepreneurial and free enterprise mode are going to operate in a world where we are less than 5 percent of the population, and less than 15 percent of the economic activity and need to find a way to act together on behalf of our citizens, and to let the system be totally moved around by the private sector competition I believe is not correct.

We believe there are some roles for government that may be minimum, but there needs to be a place to do it.

Thank you.

Mr. EHLERS. Thank you.

Dr. Forsen.

Dr. FORSEN. Clearly the Board on Assessment nor the National Research Council has looked at the bill as a bill. On the other hand, as an individual I would comment that the treatment that the bill reflects on dismantling the NIST by transferring functions to another agency, and then selling laboratories, reflects a lack of understanding of what it takes to do the research and to carry out the mission that that laboratory has, or those laboratories have.

If that is indicative of the bill, then I would not comment on it. I would say I could not support it.

Mr. EHLERS. Thank you.

Mr. Cheatham.

Mr. CHEATHAM. Yes. Thank you, Mr. Chairman.

The first thing I would like to say is that obviously with the intent of the bill, and with the need to trim the size of the Federal Government, everything is going to come under scrutiny as it would in a corporation in a like environment.

So I think an auditing and refocusing of activities within the context of activities within the DOC to assure that they are properly aligned with present-day and future objectives of U.S. business especially in the context of global competitiveness would be in order.

I think in the process of doing this, maintaining the focus link between the private and public sectors as viewed by foreign governments is ever more important and critical to our future in the glob-

al business environment because of the examples I mentioned earlier wherein these activities are receiving expanding government endorsement in the foreign environment.

Without that government linkage and sponsorship, that puts us at a significant disadvantage.

Mr. EHLERS. Thank you.

Mrs. Mayhew.

Mrs. MAYHEW. I have had numerous discussions with my peers over the last five years about all of the anguish that goes along with fiscal responsibility and re-engineering.

It is very rare in industry that, under these guises, a board of directors decides that the best way to fulfill the mission is to actually take apart the organization and actually sell it off, throw it away, or decide there is no need for it.

So that common sense tells me that there are other approaches to accomplishing fiscal responsibility and reorganization other than dismantling the Commerce Department.

Mr. EHLERS. Thank you.

Mr. Duncan.

Mr. DUNCAN. Yes. The IIA has taken no position on whether the Department of Commerce should be dismantled. I think that reflects the split within the industry.

Certain functions of the Department are very helpful to industry. There is no doubt about it. Some of the functions and activities the Department has endorsed and has undertaken over the last few years have been very troublesome to the information industry.

I think that what we need to do is look at those portions of the Department that are very well serving the American public, including private industry. As an advocate for commercial expansion and competitiveness overseas, I think the Department has done a generally good job in that area.

I think we need to look at those areas in which they are not doing such a good job and leave it to Congress to decide whether it is best to shrink the Department, eliminate the Department, or transfer portions to other sections of the government or the private sector.

Mr. EHLERS. Thank you, very much.

I have no further questions, but once again I want to thank all of you for your patience in enduring the entire hearing. We appreciate your comments; they are very valuable to me and to the Committee as a whole. Thank you, very much.

With that, the meeting stands adjourned.

[Whereupon at 3:05 p.m., the meeting was adjourned.]

[The following material was received for the record:]

Statement of the Honorable George E. Brown, Jr.
on the Department of Commerce Dismantling Act
September 12, 1995

Mr. Chairman:

In 1988, when the Committee on Science rejected the idea of privatizing the National Technical Information Service, our colleague Sherry Boehlert in an eloquent statement reminded the Committee of the logic of Alice in Wonderland: "Sentence First, Verdict Afterwards." As Sherry said "NTIS - or really its users -- have been sentenced to privatization, despite the verdict of numerous studies, each determining that the agency should remain within the government.

I am afraid Alice in Wonderland logic has returned with a vengeance sweeping up not just NTIS but also the Department which houses it. Why else would we find ourselves even giving a hearing to legislation that would cut out our Department of Commerce when our trade deficits are at a record high, abolish a highly touted manufacturing partnership with local institutions when we are trying to move more programs to the local level, abolish the weather service in hurricane season, or kill a program that has greatly increased corporate spending on long-range research when we are advocating increases in long-range research. Unfortunately, the verdict is probably in on the other side of the aisle as we rush pell-mell to report this legislation in time for inclusion in what has been called the train wreck. I cannot think of a more appropriate location.

I sent out a series of questions to a large number of business leaders and academics who have worked with the Department of Commerce to get their opinion on this legislation and in general they are as appalled by this legislation as I am. I have received upwards of fifty responses, many detailed, almost all thoughtful. I ask that they be inserted in the record of this hearing. They document that large parts of the U.S. business community relies on the various services of the Department of Commerce and that their elimination will bring harm to our economy. They also provide a much wider cross-section of opinion than is possible in one hasty hearing, so I urge my colleagues to give careful consideration to what these letters say.

In closing, I would also like to bring to the attention of my colleagues the statement and attachments provided by a distinguished witness which the majority chose not to accommodate this morning. Our colleague John Dingell, who was Chairman of the Committee on Commerce for 14 years, asked to be the lead-off witness in today's hearing, a courtesy we generally have extended to Members of Congress. His schedule would not permit his testifying later in the day. I feel it is unfortunate that the Committee chose not to accommodate him because he knows a great deal about this Department and its history. I, therefore, ask that at this point Mr. Dingell's letter to Mr. Walker and myself

be made part of the record and that we honor his request that the accompanying materials be made part of the record as well.



**American
Mathematical
Society**

Washington Office:
1527 Eighteenth Street, NW, Washington, DC 20036
Telephone: 202-588-1100, FAX: 202-588-1853
Internet: amsdc@math.ams.org

September 13, 1995

The Honorable George E. Brown, Jr.
U.S. House of Representatives
Washington, DC 20515

RE: HR 1756 Bill to abolish the Dept of Commerce

Dear Congressman Brown:

I would like to call your attention to two recent letters written to Members of Congress in support of NIST, one signed by the presidents and directors of eighteen major scientific societies and the other by twenty-five recipients of the Nobel Prize in Physics. In deliberations concerning the Department of Commerce I fear that the importance of the role NIST plays in the nation's research and development enterprise is lost. NIST serves as a vital link between basic scientific research and technological innovation.

Sincerely,

Cathleen Syngé Morawetz
President, American Mathematical Society

The American Physical Society

One Physics Ellipse, College Park, MD 20740-3844 (301) 209-3269

President

C. Kumar N. Patel
University of California, Los Angeles

September 11, 1995

The Honorable George E. Brown, Jr. (D-CA)
2300 Rayburn House Office Bldg.
Washington, DC 20515

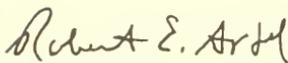
Dear Representative Brown:

As presidents and directors of professional societies representing more than 1,000,000 experts in engineering and in the mathematical, physical and medical sciences and with concern for the strength of the nation's scientific enterprise, we urge you to maintain federal support for the laboratories of the National Institute of Standards and Technology.

The NIST laboratories uniquely serve the broad scientific and technical community. Scientists and engineers from nearly every state in the country come to the NIST laboratories to carry out their research. Consequently, the NIST laboratories have a strong record of contributing to the nation's technological and scientific competitiveness and are a crucial component of the nation's long-term basic research.

We recognize that your effort to balance the budget is forcing tough choices regarding the Department of Commerce. However, the laboratories operated by NIST and funded by the Department of Commerce are a vital scientific resource for the nation and should be preserved in the process of downsizing the federal government.

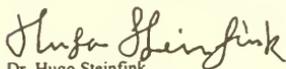
Sincerely,



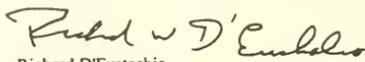
Dr. Robert E. Apfel
President
Acoustical Society of America



Dr. Guy Simmons
President
American Association of Physicists in Medicine



Dr. Hugo Steinfiak
President
American Crystallographic Association



Richard D'Eustachio
President
American Dental Association

Lyman Physics Laboratory
Harvard University
Cambridge, MA 02138

Telephone: 617-495-2864
Fax: 617-496-5144 or 617-495-0416

September 11, 1995

As recipients of the Nobel Prize in physics, we are writing to emphasize the essential role to the nation of the NIST laboratories and to urge that federal funding for these facilities be maintained in the process of downsizing or reorganizing the Department of Commerce.

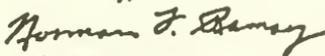
In support of NIST's fundamental task to provide unique measurement capabilities for industry, NIST's laboratories carry out the basic research that is essential for advanced technology. They provide the know-how to maintain and improve our measurement and calibration capability in areas such as time, power and materials, and in health and medicine. It is unthinkable that a modern nation could expect to remain competitive without these services.

The NIST laboratories carry out research for the Department of Defense and many other branches of the federal government. Their facilities are used by scientists from across the nation, and their staff includes some of the nation's leading scientists and engineers.

Measurements and standards techniques from the NIST laboratories have been estimated to save the nation billions of dollars annually through their use in industries such as electrical power, semiconductor manufacturing, medical, agricultural, food processing, and building materials. The loss of these laboratories would be a serious blow to our long-term technological capability and to our national enterprise in basic research.

We urge you to make every possible effort to preserve this national treasure.

Yours truly,



Norman F. Ramsey
Higgins Professor of Physics, Emeritus

Phillip W. Anderson

Phillip W. Anderson
Princeton University

Ivar Giaever
Rensselaer Polytech Institute

J. Robert Schrieffer

J. Robert Schrieffer
Florida State University

Hans A. Bethe

Hans A. Bethe
Cornell University

Russell A. Hulse

Russell A. Hulse
Princeton University

Clifford G. Shull

Clifford G. Shull
Massachusetts Institute of
Technology

Nicolaas Bloembergen

Nicolaas Bloembergen
Harvard University

Henry W. Kendall

Henry W. Kendall
Massachusetts Institute of
Technology

Joseph H. Taylor

Joseph H. Taylor
Princeton University

James W. Cronin

James W. Cronin
University of Chicago

Leon M. Lederman

Leon M. Lederman
Fermilab

Charles H. Townes

Charles H. Townes
University of California, Berkeley

Hans Dehmelt

Hans Dehmelt
University of Washington

Arno Penzias

Arno A. Penzias
AT&T Bell Laboratories

Steven Weinberg

Steven Weinberg
University of Texas, Austin

Jerome I. Friedman

Jerome I. Friedman
Massachusetts Institute of
Technology

Edward M. Purcell

Edward M. Purcell
Harvard University

Kenneth G. Wilson

Kenneth G. Wilson
Ohio State University

Val L. Fitch

Val L. Fitch
Princeton University

Burton Richter

Burton Richter
Stanford University

Robert R. Wilson

Robert R. Wilson
Columbia University

Sheldon Lee Glashow

Sheldon Lee Glashow
Harvard University

Arthur L. Schawlow

Arthur L. Schawlow
Stanford University

C.N. Yang

C.N. Yang
SUNY at Stony Brook

Roland W. Schmitt

Dr. Roland W. Schmitt
Chair
American Institute of Physics

Cathleen Synge Morawetz

Dr. Cathleen S. Morawetz
President
American Mathematical Society

John Graham

John Graham
President
American Nuclear Society

Kumar Patel

Dr. Kumar Patel
President
American Physical Society

Daniel Schnakenberg

Dr. David Schnakenberg
Executive Officer
American Society for Clinical Nutrition

Arthur J. Atkinson

Dr. Arthur J. Atkinson
President
American Society for Clinical
Pharmacology and Therapeutics

John H. Weaver

Dr. John Weaver
President
American Vacuum Society

Ping

Dr. Cornelius J. Pings
President
Association of American Universities

Robert A. Laudise

Dr. Robert A. Laudise
President
Federation of Materials Societies

Paul E. Almeida

Paul E. Almeida
President
International Federation of Professional
and Technical Engineers

Richard Herman

Dr. Richard Herman
Chair
Joint Policy Board for Mathematics

Kenneth A. Ross

Dr. Kenneth A. Ross
President
Mathematical Association of America

Jerold Roschwalb

Jerold Roschwalb
Director
National Association of State Universities
and Land-Grant Colleges

Margaret H. Wright

Dr. Margaret Wright
President
Society for Industrial and Applied Mathematics

The American Physical Society
 One Physics Ellipse, College Park, MD 20740-3844 (301) 209-3269

The following organizations endorse the statement made by the presidents and directors of professional societies urging Congress to preserve federal funding for the NIST laboratories.

James E. Sawyer

James E. Sawyer
 Chair
 American Association of Engineering Societies

Richard C. Levin

Richard C. Levin
 President
 Yale University

Geri Marullo

Geri Marullo
 Executive Director
 American Nurses Association

John V. Lombardi

John V. Lombardi
 President
 University of Florida

Dinah F. Orr

Dinah Tettenham Orr
 Executive Director
 Parkinson's Disease Foundation

Victoria F. Haynes

Victoria F. Haynes
 Vice President of Research and Development
 BF Goodrich

Thomas R. Horgan

Thomas R. Horgan
 Executive Director
 New Hampshire College
 and University Council

L S Edelheit

Lewis Edelheit
 Senior Vice President
 General Electric

Jerome B. Komisar

Jerome B. Komisar
 President
 University of Alaska System

Julliane Grace

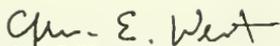
Julliane Grace
 Vice President
 The Perkin-Elmer Corporation

P. Bruce Pipes

Bruce Pipes
 Deputy Provost
 Dartmouth College

Leroy Fringerson

Leroy Fringerson
 CEO
 TSI Incorporated



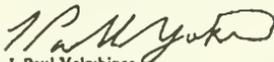
Olehn E. West
President
Greater Austin Chamber of Commerce



Marianne Scipione
Vice President
United States Surgical Corporation



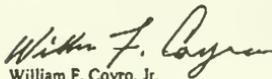
Margaret E. Mahoney
President
MEM Associates, Inc.



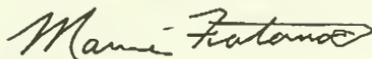
J. Paul Yokubinas
President
Healthdyne Inc.



Dwight Carlson
President
Perceptron Inc.



William F. Coyro, Jr.
CEO
National Tech Team Inc.



Maria A. Fatarone
Director
Human Nutrition Research Center
Tufts University

AERODYNE RESEARCH, Inc.

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(508) 663-9500 Fax (508) 663-4918

September 6, 1995

The Honorable George E. Brown
Committee on Science
U.S. House of Representatives
Suite 822 O'Neill House Office Building
Washington, D.C. 20515-6301
(via fax: 202-225-3895)

Dear Congressman Brown:

I am delighted to respond to your request for comment about the potential impact of H.R. 1756, the Department of Commerce Dismantling Act, as introduced by Rep. Chrysler. In particular, I want to address the serious harm which would be inflicted on the nation's domestic science and technology capabilities if current proposals to drastically reduce funding for and/or to "privatize" or otherwise significantly disrupt the functions of two of the jewels of our country's core scientific competence: the laboratory and reference data and materials functions of the National Institute of Standards and Technology (NIST) and the Environmental Research Laboratories (ERLs) of the National Oceanic and Atmospheric Administration (NOAA).

I make these comments as the president and CEO of a private sector research, development and high tech instrumentation company with a 25 year history of successful contributions to strengthening our nation's defense, environmental health and industrial competitiveness. I also draw on my own experience which includes six years of service on the National Academy of Science's (NAS) Assessment Panel for NIST's Laboratory of Chemical Science and Technology and as a member and former chair of the NAS Committee on Atmospheric Chemistry, which reviewed many of NOAA's programs in global change and air quality research.

First, let me comment on the concept that either the NIST research laboratories or the NOAA ERLs should, or even could, be sold to the private sector. To be blunt, the people proposing this course of action cannot know anything about the scientific research carried out in these labs, about the role of this research in the development and commercialization of advanced technologies or about the high technology component of the nation's private sector. Let's be clear about the value of both the NIST and NOAA labs - these are among the very best labs run by the federal government. During my career it has been my privilege to work with many fine scientists and engineers from government, academic and industrial labs, including a large number of staff from both the NIST and NOAA labs. The creativity and productivity of the NIST and NOAA laboratory scientists are equal to that found in the finest academic and industrial labs and, in my view, significantly exceed the norm for much better funded federal labs run by the Department of Defense, the Department of Energy or even NASA. The scientists and engineers staffing these labs are not "government hacks" but rank among the best technical professionals in the nation. They have dedicated their careers to serving the nation, in most cases at significantly lower recompense than they could have earned in the private sector, and deserve much better treatment than to be declared surplus government property.

However, despite their high quality, these labs are not suitable for the private sector. The

research they perform so admirably is predominantly of a fundamental, ground-breaking nature. This is precisely the type of research that US corporations, with the sole exception of the biotechnology/pharmaceutical industry, are busy eliminating from their own laboratories. Very little of the NIST or NOAA research will yield commercial or environmental advantage for a decade or more. In the 1960s or even 1980s, AT&T, IBM, DuPont or Exxon might have picked up some of the slack which will quickly appear if these labs are eliminated or downsized. However, without their work to draw on, U.S. industry may very well be blindsided as key advances leading to industrial or environmental technology breakthroughs are discovered and developed outside the country. Their work is extremely valuable, is not duplicated by other government supported labs, and is precisely the type of fundamental effort which should form the core of federally supported R&D. While academic/non-profit labs and private R&D companies like mine could fill some of the void their demise would create, transferring their work, or labs themselves, to the private sector would not save federal funds. No private sector organization is going to assume responsibility for the labs or their functions without substantial, long-term guaranteed federal support. In addition, the thought that the National Science Foundation is an appropriate home for the critical NIST standard reference data and standard reference materials programs demonstrates a profound misunderstanding of both these programs and the nature and purpose of the NSF.

Second, let me comment on the Technology Administration's ATP and MEP programs. As a scientist and a businessman it distresses me to watch these programs come under fierce attack on purely philosophical and/or political grounds. I believe both science and business is far better served by a pragmatic experimental approach to determine the government's proper role in technology development and dissemination. Are ATP and MEP perfect? -certainly not. Are they an effective use of tax dollars? - let's do controlled, thoroughly reviewed experiments to find out. Continue the experiments started two years ago for a few more years at a modest level, then look hard for signs of competitive commercial payoff. I know, because my company helped, that government funded R&D enabled us to develop the most technologically sophisticated and deadly effective electronic battlefield capability in the world. I do believe, with that accomplished, the main threats to our national well being are now in the economic and environmental arenas and I know of no natural law which says that thoughtfully channeled government R&D funding cannot lead to useful advantage in these areas. Let's see if ATP and MEP can pick and empower technical and economic winners, rather than just rely on a religious conviction that they cannot. The required investment is very modest compared to both the defense R&D investment we routinely make and to the potential payoff. I can testify that the modestly funded SBIR technology development program has enabled my company to invent, develop, demonstrate and commercialize advanced environmental technology which has resulted in our first significant export sales (over 3/4 of a million dollars worth to Europe in the past two years). We believe that the SBIR program is a successful technology program that has provided crucial seed R&D funding for the suite of hardware and software products that will help guarantee our company's future.

Finally, let me comment on the FY '96 budget cuts which the House has programmed for NIST and NOAA. Any cut in the NIST or NOAA laboratory budgets is truly shortsighted. In both the technology development and environmental research areas a majority of this Congress seems to have decided that what we don't know can't hurt us. It seems as if we have suddenly replaced the eagle with the ostrich as our national bird!

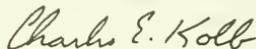
For instance, four years ago I served on a Congressionally mandated NAS study to determine why the 1970 Clean Air Act had not led to an improvement in the photochemically produced ozone levels in our nation's urbanized regions. A key finding of that NAS study stated clearly that until we had performed a basic and systematic research program to determine the detailed causes of photochemical smog we would be unlikely to devise the cost effective regulatory strategies required to protect our citizens' health. After four years of preparation the Environmental Protection Agency has been able to devise a well planned and absolutely crucial research program, the North American Research Strategy for Tropospheric Ozone (NARSTO), which includes strong

participation and funding from both the electric power and automotive industries as well as Canada and Mexico. As planned for FY '96 initiation, NARSTO relies on several NOAA ERLs for critical field and laboratory experimental capabilities as well as key atmospheric modeling efforts. These activities were to be supported by NOAA's Health of the Atmosphere initiative under their Long-Term Climate and Air Quality budget line item. In the recent House floor action the funding for this budget line item has been slashed far below both its FY '95 level and the administration's FY '96 request. Without these funds NOAA activities supporting both NARSTO and climate change issues will have to be severely curtailed. The knowledge we forgo now will only make mitigating both air quality and climate change problems that much harder and more expensive in the future. Having their heads buried in the sand won't protect shortsighted people's lungs from poor quality air or their backsides from enhanced ultraviolet induced sun burns and skin cancers due to a thinner stratospheric ozone layer. Adequately funding NOAA's Long-Term Climate and Air Quality research efforts might well be critical to protecting both their lungs and their backsides.

A thoughtful examination of both the NIST and NOAA R&D budgets as recently passed by the House would reveal many other instances of extreme shortsightedness. It is truly a tragedy in the making that thoughtful examination appears to be something which those setting current budget priorities have decided to do without.

Please feel free to call (508-663-9500, x290) or e-mail (kolb@aerodyne.com) me if you have any questions or require further comments.

Sincerely,



Charles E. Kolb
President



Clifford H. "Ted" Rees, Jr.
President

September 6, 1995

The Honorable George E. Brown, Jr.
Ranking Minority Member
Committee on Science
U.S. House of Representatives
Suite 2320 Rayburn House Office Building
Washington, D.C. 20515-6301

Dear Mr. Brown:

This letter responds to your August 14, 1995 letter requesting the views of the Air Conditioning and Refrigeration Institute (ARI) on proposed legislation seeking to dismantle the U.S. Department of Commerce. ARI appreciates this opportunity to bring the views and experiences of the industry on this important issue to the attention of the Committee.

ARI is the national trade association representing the manufacturers of over 90% of U.S.-produced central air conditioning and commercial refrigeration equipment. The industry represents one of the few industrial sectors enjoying a trade surplus, exporting over \$4 billion worth of equipment annually. According to the most recent Census figures, employment in the industry totalled 119,000 individuals nationwide in 1991.

In general, ARI strongly supports many of the Department of Commerce's activities that are performed on behalf of industry at large and the air conditioning and refrigeration industry in particular. Staff provide important information and services to ARI and its members, and several subagencies perform critical functions for the industry. It provides a focal point for U.S. trade activity and provides support services to the Office of the United States Trade Representative (USTR) in trade negotiations, since USTR is not sufficiently staffed to handle the job on its own. Commerce monitors and implements U.S. trade laws, and trade agreements such as the North American Free Trade Agreement. U.S. industry benefits from having a department to provide a counterbalance to Japan's Ministry of International Trade and Industry (MITI) and the well-funded, aggressive trade agencies of the European Union. In short, the health and market share of U.S. air conditioning and refrigeration manufacturers may decline if the services currently provided are eliminated.

4301 North Fairfax Drive, Suite 425, Arlington, Virginia 22203-1627
(703) 524-8800, Telex 892351, Telecopier (703) 528-3816

The air conditioning and refrigeration sector is a recent participant in NIST's Advanced Technology Program (ATP), so it is premature to offer success stories. However, industry participants expect that a number of ATP projects will enable them to accelerate technology development and better position themselves in the international marketplace. The financial support provided by the ATP is enabling industry to undertake higher-risk research that has potential for greater results than any individual company would otherwise do on its own.

The Commerce Department's International Trade Administration (ITA) assists the industry in resolving trade disputes and in lowering trade barriers restricting the market access of ARI members' products. The ITA's Foreign Commercial Service (FCS) posts in Beijing, Tokyo, Munich, Riyadh and elsewhere have supported ARI trade missions and delegations and have paved the way for U.S. participation at important foreign trade exhibitions. In addition, the ITA's Trade Development Division develops statistics and prepares foreign market research and other informational materials which ARI members use for business planning purposes.

While ARI strongly supports Congressional efforts to reduce the costs and scope of the federal government, we urge the Committee to exercise caution in its review of the Department of Commerce so that good programs that benefit American industry and citizens are not eliminated. Should you have questions or require further information, please don't hesitate to contact me.

Sincerely yours,



Clifford H. "Ted" Rees, Jr.
President

cc: Members, House Science Committee

AMERICAN ASSOCIATION OF LAW LIBRARIES



WASHINGTON AFFAIRS REPRESENTATIVE

Robert L. Oakley*Director of the Law Library & Professor of Law
Georgetown University Law Center*

September 14, 1995

Honorable Robert S. Walker
Chairman, Committee on Science
United States House of Representatives

Dear Representative Walker,

The American Association of Law Libraries (AALL) is a nonprofit educational organization headquartered in Chicago with over 5,000 members nationwide. Our members respond to the legal and governmental information needs of legislators, judges, and other public officials at all levels of government, corporations and small businesses, law professors and students, attorneys, and members of the general public.

On behalf of AALL, I am writing today to express our concerns related to the provision in H.R. 1756 to privatize the National Technical Information Service (NTIS) and to request that a copy of this letter be placed in the record of the hearing on this issue. NTIS serves as the central clearinghouse for the collection and dissemination of scientific, technical, engineering and business-related information produced by the Federal government, and thus, paid for by tax dollars. As a self-supporting entity, NTIS receives no appropriations and its funding comes solely from the sale of its products and services.

The NTIS collection focuses on the environment, health, medicine and business, all areas of prime concern to students, researchers, the private sector and the American public. Many of these resources are available nowhere else, including from the issuing agency. The NTIS collection includes more than 2.6 million documents dating from the early 1920's. Through its indexing and abstracting service, NTIS provides permanent access to this vast historical collection as well as to current reports.

In addition, the collection has grown substantially since passage in 1992 of the American Technology Preeminence Act when agencies were mandated to supply scientific and technical information (STI) to NTIS. In 1994, NTIS added more than 80,000 new reports to the collection. An innovative user of new technologies, NTIS has been remarkably successful in developing online capabilities for improved access to and dissemination of the STI collection. The FEDWORLD system is a model in providing agency information in a timely and efficient manner.

Due to the mandate that NTIS be self-supporting, this vast collection is available for the most part only through a sales program. STI is not actively disseminated to the public and thus the value of these resources to the business, research and academic communities is not fully realized. We believe that this situation would be exacerbated if NTIS were to be privatized with the result that public access to these important government reports would be

even more limited than it is today. Further, we doubt that a private sector entity would continue to preserve and provide access to the older scientific and technical materials.

However, the determining question relative to the future of NTIS must not be one of deciding whether or not the agency should be privatized. The decision should be based on how best to provide the public with equal, equitable and timely access to STI resources. In the past, the Government Printing Office and NTIS have discussed means to include NTIS documents in the Federal Depository Library Program (FDLP). Unfortunately, efforts to disseminate STI to the public through the almost 1400 Congressionally-designated federal depository libraries have never been successful.

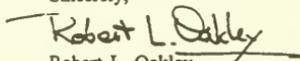
As part of the National Performance Review, the Federal government is undergoing a careful examination of how agencies can deliver information and services to the public with more efficiency and lower costs. Concurrently, the 104th Congress is involved in critical debate that will determine how the public obtains government information in the future. We believe that NTIS must be carefully examined within this broader context.

During the recent debate on H.R. 1854, the Legislative Branch Appropriations bill, Congress announced its intent to review Federal information policy issues. Pursuant to S. Rept. 104-114, the Public Printer has initiated a study to examine the Federal Depository Library Program and current information laws, regulations and policies. The study will include recommendations on how information not currently available to the public through the FDLP could become so in a more electronically-based environment. The question of how to make the NTIS collection available to the public should be resolved through either the GPO or a similar Congressionally-mandated study.

NTIS provides a critical and unique function within the government which we do not believe could be properly carried out by a non-government entity. Rather than remove the rich and comprehensive collection of the government's scientific and technical resources to the private sector, Congress should determine means to more effectively disseminate STI to the public in a timely, efficient and low-cost manner.

We urge members of the House Science Committee to strike Sec. 206 (c) to privatize NTIS from H.R. 1756. We propose instead that the Committee recommend a comprehensive study to examine all the issues, including how the government's scientific and technical information produced by tax dollars can be made more accessible to the American public. Thank you for your consideration of this important issue.

Sincerely,



Robert L. Oakley
American Association of Law Libraries
Washington Affairs Representative

cc: Honorable George Brown, Ranking Minority Member, House Science Committee

AMERICAN METEOROLOGICAL SOCIETY

Hdqters: 45 Beacon Street, Boston, MA 02108 - 3693 (617) 227-2425

Richard E. Hallgren, Executive Director Kenneth C. Spengler, Executive Director Emeritus



Washington Office:
 1701 K Street, N.W., Suite 300
 Washington, D.C. 20006 - 1509
 (202) 466-6070
 Facsimile: (202) 466-6073
 OMNET: R. Hallgren

September 5, 1995

The Honorable George E. Brown, Jr.
 U.S. House of Representatives
 822 O'Neill House Office Building
 Washington, DC 20515

Dear Congressman Brown:

Thank you for requesting comments on H.R. 1756, The Department of Commerce Dismantling Act, especially with regard to the future mission and structure of NOAA. I was deeply involved in the atmospheric and oceanic prediction programs of NOAA from its beginning in 1970 to 1988, initially as Associate Administrator for Environmental Monitoring and Prediction and for my last decade at NOAA as Director of the National Weather Service. I was at NOAA Headquarters about half of that period and the other half I was an in line component, so I saw the operation from above and below.

The questions you included in your letter provide a very good framework for commenting on H.R. 1756 and the future of NOAA. In light of my experience and background, I will comment primarily on operational and research activities related to environmental prediction.

1. I believe from a prediction point of view the case for NOAA was sound when it was formed and is even more so today. From the beginning in 1970, the structure of NOAA provided an opportunity to move forward more effectively with air-sea interaction research, climate modeling (the Geophysical Field Dynamics Laboratory was and still is the world leader in climate modeling and developed the first ocean model) and numerical prediction research. In addition, NOAA made it much easier to move ahead with satellites and buoys to serve the needs of both atmospheric and oceanic prediction and the CO₂ monitoring network the world relies on today. More recently, the development of seasonal to annual prediction capability was led nationally and internationally by NOAA with most line components playing a role under the leadership of the Office of Global Programs at Headquarters. With the need to better manage our fisheries resources, NOAA provides an excellent structure to develop a capability to predict fish stocks building on the observation and prediction programs for the physical and chemical aspects of the atmosphere and ocean. It would be a very serious setback to separate the atmosphere and ocean

The Honorable George E. Brown, Jr.
September 5, 1995
Page 3

improved severe weather and flood warnings with an arbitrary cut of any percentage, let alone 25%, is wrong and the best way I know to reduce the effectiveness of government programs and further undermine confidence in government generally. The right way is to complete the implementation of the modernization — AWIPS has proceeded much too slowly with delaying micromanagement from Commerce — and then identify additional changes that may be possible and result in lower costs.

Although H.R. 1756 proposes privatizing of some activities, it does not err as some other legislation has with regard to separating the severe weather and flood warning system from the public forecast. A warning is simply a forecast that involves the safety of people. One does not say first, "I shall now prepare a severe weather or flood warning." The process is to prepare weather forecasts on a regular basis and when the situation involves severe weather or flooding, the forecast is labeled a "watch" or a "warning". Thus the weather forecast for the cities and counties of the country literally are part of the warning process and cannot be separated.

4. We should not be terminating NOAA's coastal and estuarine science programs. In fact, we should be expanding these programs. This nation must move forward with a comprehensive science and assessment coastal program. The future of this country is linked in a major way to our coastal and estuarine waters. We are now in a position to be able to understand these vital components of our ecosystem and NOAA with its people and structure should lead the national effort in cooperation with other federal agencies, states, universities, etc. Solid and sound science and assessment programs are needed to eliminate unnecessary, ineffective regulations and ensure when regulations are in place that they are environmentally wise and cost effective.

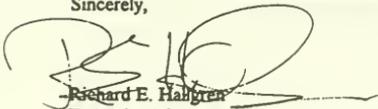
5. To simply transfer the National Weather Service to Interior would most likely have a severe impact on NWS's ability to carry out its mission. The agency in Interior most similar to the NWS is the U.S. Geological Survey which is presently having very significant problems. On the other hand, if a Department of Natural Resources was established, all of NOAA should be transferred to the new department. Many benefits could flow from this arrangement, such as the hydrology program of U.S. Geological Survey connecting with the hydrology program of the NWS, the mapping functions of USGS connecting with the charting and geodetic functions of the National Oceans Survey and many other connections in the areas of coastal and marine activities. I personally favor all of NOAA, including NWS of course, becoming part of a "real" department of Environment in which the leadership consists of science-based individuals, not lawyers who specialize in writing regulations. If a new Department of Science were to be created that includes environmental services, most, if not all, of NOAA would fit nicely. To put NWS and NOAA into Transportation or Energy as these departments are structured today would not be wise in my opinion. So I guess the bottom line of my view is that unless there is a new department of Science, Natural Resources or Environment, NOAA and NWS would be best served in the status

The Honorable George E. Brown, Jr.
September 5, 1995
Page 4

of an independent agency, although I do worry that it could get lost in the bureaucratic and political infighting.

In summary, NOAA's science and services are important to the country. They should continue to evolve, not be dismantled.

Sincerely,



~~Richard E. Halgren~~
Executive Director



Washington Office
1015 15th Street, N.W., Suite 600
Washington, D.C. 20005-2605
(202) 789-2200

September 6, 1995
ASCE File: U-99

The Honorable George E. Brown Jr.
Ranking Minority Member
Committee on Science
2320 Rayburn House Office Building
Washington, DC 20515-6301

Dear Congressman Brown:

On behalf of the more than 115,000 members of the American Society of Civil Engineers (ASCE) working in the private, public and academic sectors I am responding to your August 31, 1995 letter to Harvey Bernstein, President, Civil Engineering Research Foundation (CERF) concerning H.R. 1756, the Department of Commerce Dismantling Act. As you know, CERF was established by and is closely affiliated with ASCE, the country's oldest national engineering organization.

ASCE has a deep and long-standing interest in the vital activities of the Building and Fire Research Laboratory (BFRL) of the National Institute of Standards and Technology (NIST). Although the U.S. construction industry is quite large, accounting for approximately 13% of the Gross Domestic Product, or \$800 billion annually; this industry is highly fragmented, characterized by low profit margins and dominated by small firms. Moreover, global competition looms as a defining measure of national economic prosperity in the 21st Century. Our primary international competitors are making the necessary commitments to R & D investment and are forging strong industry-public sector partnerships to develop new construction related technologies, move them into practice and further penetrate global markets. It is unfortunate that the current authorization/appropriation process for FY 1996 will fund the BFRL at the \$13 million level. Clearly a stronger, not a weaker federal commitment to this key lab is warranted.

Moving the BFRL to the Department of Energy makes no sense to ASCE because this lab's research activities extend well beyond the energy industry to public works infrastructure and construction in general. The public would be better served if the BFRL remained at NIST in the Commerce Department or if NIST were to become an independent agency.

While ASCE is a strong supporter of federal civilian R & D investment in general, and stronger private-public linkages in particular, we have no specific position on termination of the



*Civil engineers make the difference
They build the quality of life*

Advanced Technology Program (ATP) or the Manufacturing Extension Partnership (MEP). However, CERF does view the ATP and MEP as potentially promising programs in helping CERF further its mission of accelerating the movement of new and advanced technologies into the U.S. construction market place.

ASCE is unaware of any entity that is willing to purchase the BFRL. Again, because of the highly fragmented nature of the U.S. construction industry, as well as the large percentage of small design and construction firms, selling this lab does not appear to be a viable option. Furthermore, the activities of the BFRL are not being duplicated anywhere in the private sector or in other agencies. The BFRL has unique world-class facilities; renowned expertise in structures, building materials and building environments; and access to advanced technologies. If anything the BFRL should be viewed as a federal priority. We were deeply disappointed when the House Science Committee passed H.R. 1870, the American Technology Advancement Act of 1995, without authorizing the modest \$6 million construction and building initiative proposed by the Clinton Administration. This initiative would have raised the BFRL's annual budget to only \$19 million.

If the House-passed appropriations bill for the Department of Commerce, which eliminates funding for ATP and cuts funding for the MEP, is enacted, then it appears that the proposed reorganization of NIST in H.R. 1756 would achieve minimal if any savings to U.S. taxpayers.

In the absence of a thorough examination and hearings by the Congress, ASCE is very uneasy about the notion of transferring NIST's critical standards and measurement functions to the National Science Foundation (NSF). NSF's core mission, which it performs admirably, is to support university-based research. Much of the nation's basic civil engineering research is supported by NSF research grants. In our view, however, the case has yet to be made that NSF has the close relationship to industry, expertise or resources necessary to carry out NIST's standards and measurement programs.

Lastly, a 25% cut to the BFRL's very modest \$13 million budget would be extremely harmful to the lab's on-going research and an unequivocal public policy blunder contrary to U.S. interests.

We appreciate the opportunity to provide these comments to the committee. Unfortunately, the short notice for responding to your questions precluded a more informative reply. If you have any questions, or need additional information, please contact Mr. Casey Dinges, Director, Government Relations, ASCE at (202) 789-2200.

Sincerely,



Stafford E. Thornton, P.E.
President



AMERICAN SOCIETY
FOR TRAINING AND
DEVELOPMENT

DELIVERING PERFORMANCE IN A CHANGING WORLD

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September 5, 1995

Hon. George E. Brown, Jr.
Ranking Minority Member
Committee on Science
U.S. House of Representatives
2320 Rayburn HOB
Washington, D.C. 20515-6301

COMMENTS ON H.R. 1756

Dear Congressman Brown:

We appreciate the opportunity to comment on H.R. 1756, the Department of Commerce Dismantling Act, in order to discuss the importance of some of these programs to the work of the American Society for Training and Development (ASTD). ASTD is a national professional association of over 58,000 members responsible for workplace education and training in American companies. From this perspective, ASTD provides research, information and policy recommendations to do with workforce skills development, the integration of the workforce with new technology, work processes for the use of technology and other issues affecting the competitiveness of American companies.

ASTD has worked extensively with the Manufacturing Extension Partnership Program in NIST and to a lesser degree with the Office of Technology Policy in the Technology Administration. We have found the following:

Manufacturing Extension Partnership Program:

- o the MEP centers provide information and technical assistance for small and medium sized manufacturers which consultants and larger companies do not or cannot provide, including needs assessments, advice on skills development and where and how to find necessary help and other important human resource issues.
- o the MEP centers have made a significant difference in creating awareness among small and medium-sized manufacturers of the importance of skills development and the connection of employee training to the firm's successful performance
- o the MEP centers, and the MEP Program within NIST have been very successful in acting as broker and clearinghouse for national organizations concerned with issues of competitiveness and workforce development, for local consultants and community colleges, and for smaller companies themselves.

Congressman Brown
September 5, 1995
Page Two

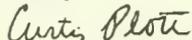
o much of the positive response to the work of the NIST MEP Program on a national level and to the centers on a state and local level has to do with the fact that they are not allied with private sector interests.

Office of Technology Policy

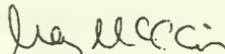
o the Office of Technology Policy has played a key role in drawing diverse constituencies together to understand the integration of technology with employees in the workplace, an issue of importance and complexity and one which is not well understood.

We believe that these and other functions with NIST and the Technology Administration are critical to the competitive interests of American business. We urge the continued authorization and funding of these programs.

Sincerely,



Curtis Plott
President and CEO



Mary McCain
Vice President



JAMES A. THOMAS
President

September 8, 1995

George E. Brown, Jr.
Ranking Minority Member
U.S. House of Representatives
Committee on Science
Suite 2320 Rayburn House Office Bldg.
Washington, DC 20515-6301

Dear Congressman Brown, Jr.:

My comments regarding H.R. 1756 are specifically related to the role of NIST as a participant in the process of developing needed voluntary consensus standards through ASTM and other private sector organizations.

NIST has been a major contributor to the success of many standards development programs in ASTM ranging from construction materials to advanced ceramics. Several hundred NIST staffers are currently involved in our committee work and in the deliberations essential to the creation of standards to serve governmental as well as private sector needs. We at ASTM attach great importance to their participation, and I hope you will consider this as you deliberate on H.R. 1756.

Sincerely,

James A. Thomas

JAT/mah



James W. Mitchell
Director
Sourcing, Reliability & Ecology
Research Laboratory

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September 6, 1995

The Honorable George E. Brown, Jr.
Committee on Science
Ranking Minority Member
822 O'Neil HOB
Washington, DC 20515

Dear Mr. Brown:

This letter is a response to your invitation to provide comments to be considered by the Committee on Science, as it scrutinizes H.R. 1756 (The Department of Commerce Dismantling Act). The response includes personal views, which are confined to the impact of the Act on NIST. Over the past three decades I have acquired knowledge of NIST as an institution; formed convictions about the uniqueness of its core functions in measurements, standards and reference data; and developed an awareness of its impact on the industrial sector. During this period, direct involvements with NIST have included: collaborations as an industrial research associate, multi-year participation as an advisory board panelist, service as co-chairperson and chairman of advisory panels, and as a practicing scientist who depends on the use of NIST developed methodology, technology, expertise and facilities.

My personal perspectives are derived from the previously enumerated experiences. These personal views do not represent an AT&T corporate view. Thus, my comments must not be attributed to AT&T. The AT&T institutional perspective about H.R. 1756 can only be derived from the Office of the Chairman and CEO.

Sincerely,

A handwritten signature in cursive script that reads "James W. Mitchell".

James W. Mitchell
Director
Sourcing, Reliability & Ecology
Research Laboratory

Atts. (2)

IMPACT OF H.R. 1756 ON NIST**James W. Mitchell**

The extremely controversial aspect of the Act includes: NIST laboratories would be sold to the private sector, and its standards and measurement functions (including the Malcolm Baldrige Quality Award) would be transferred to the National Science Foundation.

CURRENT STATE

NIST has the development of reliable metrology as a national responsibility. Metrology---the development of methods and tools and their application for reliable measurements---has universal impacts, for example, on the efficiency and yield of manufacturing, the preservation of the environment, in the diagnosis of disease, on the maintenance of health, in determining the safety of food and drugs, and assessing the reliability of products and services. Because NIST is a national institution, it has been able, when required, to place reliability and accuracy before profit, to command the respect to serve as the mediator for resolving measurement-based conflicts between agencies, and to execute impartial judgements on other important issues.

NIST is uniquely successful as an institution providing standard and measurement protocols. These protocols are vital to a large cross-section of the industrial sector. NIST also generates accurate experimentally derived reference data and information required to sustain and expand the national scientific knowledge base utilized by the academic community. Also, various centers within NIST depend upon the core function of the measurement, standard and reference component of the institution to support research and development. A fractured NIST, the proposed privatized version, would be a less potent entity with restricted profit potential.

POSSIBLE EVOLVED STATE

A privately owned NIST, including the measurement and standards component, would provide broad based core functions to sustain national competitiveness, while being operated as a commercially profitable corporation. The impeccable execution of measurements required for certification of standards and reference materials and obtaining scientific reference data with exactly known error limits are expensive, highly expertised functions. Obtaining adequate profit margins for performing these imbedded base functions executed by NIST is problematic. It is likely that one would need to transform the existing NIST institution into a contract research, mega-measurement, automated service facility in order to sustain a commercialized, profitable privatized corporation. Ultimately, there is a high probability that the nation would lose the vital core function of the traditional NIST entity without continued, long term government support of the privatized version.

COMMENTS

James W. Mitchell

1. The fusion or transfer of NIST's standards and measurement functions to NSF has serious incompatibilities. The institutional cultures and customer-bases are completely orthogonal. The NIST component has an industrial customer-base and an institutional culture focused on the development and practical applications of methods of analysis, while NSF has an academic customer-base and an institutional culture driven by supporting the generation of fundamental knowledge. Each customer base (technology and science) is vitally important and would be supported best by an agency that appropriately values the respective missions.
2. Various centers within NIST depend upon the core functions of the measurements and standards component of the institute to execute their research and development. A fractured NIST with a separated measurements and standards function is a less potent institution with limited profit potential restricted to contract research.
3. In order to sustain a profit-based private business, an intact privatized NIST entity would need to be converted into a contract research, mega-measurement, automated service facility. In this environment the base functions of new methods development and research to advance metrology for national technology needs are likely to be eroded significantly.
4. NIST, as a government supported institution, executes a national responsibility in development and applications of metrology. It places reliability and accuracy before profit, commands respect as a mediator for resolving measurement-based conflicts between agencies, certifies the capabilities of regulatory and clinical facilities, and serves as an impartial judge on important issues. Seldom, if ever, has a privatized facility been able to function across the board in these ways.
5. If the Department of Commerce is abolished, the nation could be served best by establishing NIST as an independent agency. It would also be possible to advantage the strengths of NIST in reliable measurements to underpin the development of characterization methods now executed separately within the EPA, FDA and other agencies. NIST develops metrology for a very broad focus (technology, materials, etc.). However, a one mission agency would not be an appropriate host for the broad-based NIST programs.
6. The NIST nuclear reactor is a national resource providing vital functions not sustainable in a commercial setting. It is the single reactor tool in the country that is well characterized and optimized for conducting a host of accurate measurements of elements at exceedingly low levels and for performing nuclear measurements science research. This facility is a key to retaining US competitiveness within the area of accurate characterization of ultra high purity materials and the reliable identification of environmental toxins at vanishingly small levels. Privatization of the reactor is likely to force the emphasis away from materials, and environmental characterizations, and trace methods development, to the more profitable and less complex areas of the creation of isotopes for medical diagnostics.



Automotive Industry Action Group
26200 Lahser Road, Suite 200
Southfield, MI 48034
Phone: (810) 358-3570
Fax: (810) 358-3253

September 6, 1995

Hon. George H. Brown, Jr.
Ranking Member
Committee on Science
2320 Rayburn HOB
Washington, D.C. 20515-6301

Re: HR1756

Dear Congressman Brown,

I am writing to voice my support for the National Institute for standards and Technology (NIST) and its core program of technical research and standards support.

The Automotive Industry Action Group (AIAG) is a not-for-profit trade association of North American vehicle manufacturers and suppliers. The majority of our members are small and medium sized firms that produce small parts and sub-assemblies for U.S. and foreign automotive manufacturers. AIAG is a globally recognized forum for encouraging communication, standardizing business practices, reducing costs and providing education to benefit the entire auto industry.

NIST is an important partner to AIAG and the industry we represent. Our standards for quality, information exchange and product consistency must support the global operations of the U.S. auto manufacturers. The U.S. auto industry contributes the largest share of the \$300 billion worth of U.S. goods sold overseas. NIST's certification for regulated products is recognized world-wide and that means that U.S. goods can flow without the delays created by re-testing in a foreign lab. NIST's "third-party" role in accelerating the development of critical new standards guarantees that U.S. auto suppliers will lead the world in deploying products and processes that conform to the latest standards.

As an example of how NIST and AIAG have worked together to assist suppliers to our industry, I would like to tell you about a new initiative we have taken to reduce the cost and time required to exchange information between large manufacturers and their smaller suppliers in the auto industry. For years the costly and error-prone process of exchanging product data has been a major impediment to reducing the cost and time required by U.S. firms to design and manufacture new products. It also prevents smaller supplier firms from participating in the design process and thereby from gaining a greater portion of the profitable business of design and development of new products for the automotive market. In the business of developing new tooling for production, data exchange errors can increase the cost of tooling by 25 percent and increase the time it takes to deliver by 40 percent.

The U.S. automotive industry is leading the way in adopting a new world-wide standard for product data exchange called STEP (the STandard for the Exchange of Product model data). AIAG has acted with leadership to get this job done through a participative pilot program that will involve many of our smaller members along with the leading firms in the industry. The pilot, called AutoSTEP, will ensure that the STEP standard not only meets the needs of the large car companies, but also the special needs of smaller suppliers. This new standard will reduce the capital costs for smaller companies and open up many new opportunities for them.

NIST and its industrial partners have led the way in developing STEP. Now NIST is putting crucial resources into our project to make sure that the entire automotive industry benefits from this standard.

I want to ask you to consider very carefully the unique contribution that NIST standards and testing programs make to U.S. industry in supporting the development of critical standards and making sure that U.S. products are recognized world-wide as conforming to those standards.

Sincerely,

A handwritten signature in cursive script that reads "Ted Merrill". The signature is written in dark ink and is positioned above the printed name.

Ted Merrill
Executive Director

BIPM

BUREAU INTERNATIONAL DES POIDS ET MESURES

Le Directeur

25 August 1995

Mr George E. BROWN
U.S. House of Representatives
COMMITTEE ON SCIENCE
822 O'Neill HOB
WASHINGTON D.C. 20515
(U.S.A.)

Dear Mr Brown,

I am replying to your invitation to comment on H.R. 1756.

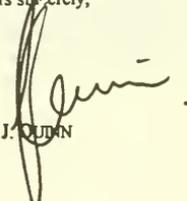
Insofar as its implementation may affect the metrology and standards work of the National Institute of Standards and Technology (NIST), I would like to draw your attention to the following :

- Metrology is an essential part of the infrastructure of today's world.
- The economic success of most manufacturing industries is critically dependent on how well products are made, a requirement in which measurement plays a key role.
- Human health and safety depend on reliable measurements in diagnosis and medical treatment.
- The protection of the environment from the short-term and long-term destructive effects of industrial activity can only be assured on the basis of accurate and reliable measurements.
- Physical theory is reliable only to the extent that its predictions can be verified quantitatively and this calls for measurements of the highest accuracy.

The way in which the measurement infrastructure is organized and how it is paid for are, of course, matters for individual governments to decide. What is sure, however, is that an advanced industrial economy must have access to measurement standards, the government and industry must have access to advice on measurement matters, there must be experts qualified to represent national interests on international bodies concerned with measurement and, finally, there must exist the research base in measurement science without which none of this is possible.

The existing research base in measurement science provided by the NIST is a unique national asset. Its fragmentation, as appears to be proposed in H.R. 1756, could have serious and long-term deleterious effects for American science, industry and commerce.

Yours sincerely,


T.J. QUINN

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The logo for Carnegie Mellon University, consisting of the words "Carnegie Mellon" in a serif font, enclosed in a tilted rectangular border.

Department of Electrical
and Computer Engineering
Carnegie Mellon University
Pittsburgh, Pennsylvania 15213-3890
412-268-7400
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Robert M. White
Professor and Department Head

September 8, 1995

Congressman George Brown
House Committee on Science
822 O'Neill HOB
Washington, D.C. 20515

Dear Congressman Brown:

This is in response to your letter of August 28 asking for comments on H.R. 1756.

When I am asked what my major accomplishment was during the three years I served as Under Secretary of Commerce for Technology, my answer is the establishment of the Technology Administration. Having spent 19 years in industry, I felt it was important that there be a focal point within the Federal Government for technology issues of concern to industry, and I was honored to be given the opportunity to establish that organization. When I arrived in Washington in the spring of 1989, the National Bureau of Standards had just been renamed NIST and given the new mission of supporting US competitiveness, the National Technical Information Services was in debt, and the Office of Technology Policy were severely underfunded. By the end of the Bush Administration, NIST had successfully launched the Advanced Technology Program (ATP) and established seven regional Manufacturing Technology Centers (MEPs); NTIS had become a profitable organization with the mandate to serve as the focal point for all federal technical information (in fact, in 1992, NTIS was the only Commerce agency to receive an unqualified audit!); and the Office of the Assistant Secretary for Technology Policy had become recognized throughout the federal government for its contribution to technology transfer, intellectual property rights, technology financing and international technological cooperation.

I still believe very strongly in the need for an organization like the Technology Administration. If it were not for the Technology Administration, Japan would have exploited a great deal of US manufacturing research in the early 90s; if it were not for the TA, intellectual property protection would not be a part of international Science and Technology Agreements. And the list goes on. Our government is based on checks and balances and such a process is necessary even within the executive branch. Commerce technology issues are very different from those of Defense or Energy.

Now let me address some of your specific questions.

1. Does it make sense to move NIST's labs to DOE? Absolutely not. The "Galvin Report" describes DOE's management structure as "counterproductive." To put NIST into DOE would jeopardize NIST's strong ties to US industry. Furthermore, NIST's mission is not consistent with that of DOE.
2. I don't think of TA as providing services and expertise as much as providing incentive, through matching funds, for such services to be available where they would not be otherwise. Having visited most of the original MEPS, I believe they serve a very useful and necessary function. If these were competing with private versions, as some argue, then we would expect to see such private versions in cities without MEPS. This is not the case.

With regard to the ATP and SBIR, SBIR grants often represent the first step in a technology development. There are numerous examples, such as NVE in Minneapolis, that began with an SBIR grant, then expanded with ATP funding, and finally obtained venture capital or support from a larger corporation.

Incidentally, I believe the House should reconsider its decision to eliminate ATP. This program has demonstrated its uniqueness in stimulating industrial partnerships, in bringing universities closer to industry, and in accelerating the development of important technologies. I believe we need a variety of mechanisms for developing technology. ATP is one such mechanism, along with SBIR grants, tax incentives, etc. It is, or was, a relatively small part of the total federal R&D investment portfolio.

3. Privatizing NIST's primary metrology function would be a disaster for the United States! NIST is the "keeper of the flame" for all of our fundamental physical capabilities. NIST, for example, not only provides the nation with accurate time,

but has carried out the research necessary to continuously increase the accuracy of time by a factor of ten every seven years and has done this for over fifty years! Tell me another research laboratory that has this track record?

4. The Director of NIST has to report to someone. As it is now, he reports to the U/S for Technology who reports to the Secretary of Commerce. If you move NIST somewhere else, I doubt he would report directly to a Secretary, so you don't save anything. The overhead associated with NIST is much less than any of the other federal laboratories.
5. Transfer NIST to NSF? Absolutely not! NSF is run by program managers who rotate in from universities for two or three years. To place a highly professional organization with ongoing ties to American industry under what has traditionally been an academic funding agency would be a disaster.
6. When I left office, 50% of NIST's budget was funded by other agencies of the Federal Government. The reason for this was that those agencies saw the importance of NIST's contributions to measurement science. NASA, for example, had no where else to turn for help in devising a measurement technique for the O-rings in its shuttles. I continue to believe that all of NIST's metrology activities should be supported by direct appropriation. This practice of going around to other agencies to make up the difference is extremely dangerous, particularly as other agency budgets are being reduced. So a cut of 25% would only worsen an already bad situation. I am enclosing an article I wrote shortly after leaving office on the importance of metrology to the nation.
7. The Nation needs a focal point on trade, just as it does in technology. I found that having these two functions within the same department was synergistic. ITA provided support to us on a number of international missions, and there were issues such as international standards where it was critical that we work together.

Sincerely,



Dr. Robert M White

Enclosure
RMW:hrr

Competitive measures

Technology will not advance as freely as before unless more attention is paid to metrology, a pillar of national competitiveness

In the 1980s, as global competition for high-stakes, high-technology markets intensified, theories and analyses explaining notable successes and failures abounded. The attempt to comprehend the performance of products, companies, or even entire nations—and to predict what would be required to compete globally in the high-tech markets of the future—seemed to take every possible factor into account. The roles of consortia, precompetitive research, manufacturing technologies, automation, management structures, the empowerment of shop-floor employees, and even the salaries of chief executive officers were but a few accorded exhaustive treatment in books, articles, and reports.

But somehow, and notwithstanding the tens of thousands of pages written on competitiveness in the last five or six years, one crucial factor has indeed been overlooked: metrology.

What does metrology—the science and technology of measurement—have to do with prosperity in competitive high-technology markets? One might as well ask what tuning up has to do with the success of an orchestra, or why stopwatches are of any use in Olympic training.

Most people would agree that quality is a cornerstone of competitiveness. Yet quality is often a function of manufacturing precision, which is in turn a function of dimensions, tolerances, and, in the final analysis, measurements. One example that many people can relate to concerns the automotive industry. Several years ago, when it was the fashion to compare U.S. automobiles unfavorably with those from Japan, a recurrent factor was differences in how their doors opened and closed.

The U.S. car doors, on average, required 76±58 newtons to open, while the Japanese doors took only 31.±9 N. In the worst case

Robert M. White, Carnegie Mellon University

for the U.S. vehicles and best for the Japanese ones, this difference corresponds roughly to a factor of six in perceived quality (34 N versus 22 N). The variations in force correspond to variations in the tolerances of the dimensions of door assemblies, which correspond to variations in dimensions of panels from which the doors are assembled, which correspond to variations in the dimensions of the dies with which panels are stamped from sheet metal.

For all its importance in modern manufacturing, the term "metrology" is, unfortunately, likely to be associated with artifacts—the platinum-iridium meter bar and the kilogram mass in Paris, for example. But the reality is that metrology is a sophisticated and dynamic endeavor, and one upon which technological industries increasingly depend. One need not be an expert in semiconductor fabrication or laser surgery to realize that success in either field demands accurate measurements.

Still, it is rare to read or hear in any country about the vital need to maintain a strong national position in metrology. Meanwhile, commercial and scientific applications are pushing the state of the art in measurement techniques in most advanced countries, particularly the United States. It is becoming steadily clearer that if technology and commercial industries are to go on

erment. In France, for example, standards, measurement, and metrological research are carried out by the famed Bureau Internationale de Poids et Mesure in Sèvres; in Germany, the corresponding organization is the Physikalische-Technische Bundesanstalt (PTB). In Japan, most of this activity falls within the purview of the Ministry of International Trade and Industry (MITI), mainly in the National Research Laboratory of Metrology, under MITI's Agency of Science and Industrial Technology.

FEDERAL CASE. In the United States, Congress established NIST's forerunner, the National Bureau of Standards, in 1901, changing it with providing the measurement techniques that U.S. industry would need to function in a technological environment. NIST still develops fundamental standards for base units (length, time, and electricity, for example). But the lion's share of its efforts is now devoted to work on units derived from the fundamental ones and to supporting specifications that matter to U.S. industry.

Nonetheless, a brief review of the status of metrology in just the length category reveals the precarious state of this critical area of research. Take quantum-dot, -wire, and -well devices, for example. These devices owe their unique and extremely useful properties to their ability to manipulate individual charges, typically electrons. In fact, some experts believe these devices will be the garden-variety electronic components of the next century. But making them will require manufacturing tolerances and measurements as yet unavailable.

For example, to maintain 5 percent tolerance in a quantum-dot diode 10 nm in diameter—a parameter already realized in U.S. and Japanese laboratories—production measurement would need an accuracy four times better than the tolerance, or 0.125 nm. Then NIST, for ease in transferring this kind of production measurement accuracy, would have to be able to make measurements four times more accurate, to within 0.03 nm.

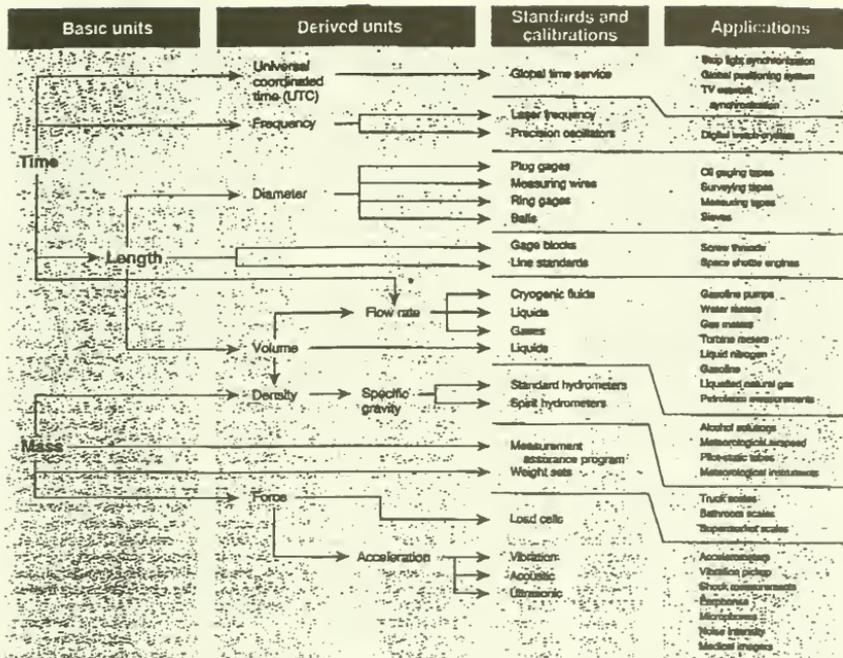
Measurements such as this would be on an atomic scale and are almost unimaginable at present. The present limit on accuracy in length measurements is about 1 nm, realized by NIST's molecular measuring machine. In other words, metrological support of the manufacture of this kind of quantum device will require accuracies

U.S. funding for R&D in metrology has hardly increased for the last 15 years

advancing unfettered in these countries, more attention will have to be paid to metrological research and support.

In the United States, for instance, annual spending on research and development, both corporate and Government-funded, has risen from around \$85 billion to around \$170 billion over the last 15 years. At the same time, laboratory R&D at the National Institute of Standards and Technology (NIST) in Gaithersburg, Md., has held essentially constant at roughly \$170 million.

In most advanced countries, metrology, like basic research, has long been recognized as a responsibility of the central gov-



Q1 All standards are derived from a few fundamental units, good examples of which are time, length, and mass. This measurement pyramid, employed by the National Institute of Standards and Technology, shows the measurement transfer chain, from basic units to those derived for everyday applications.

more than 30 times better than the present limit. Herculean efforts will be needed if such accuracies are to be achieved.

More conventional forms of microelectronic fabrication will also demand much more precision from metrological support. Consider the emerging projection lithographic techniques exploiting point X-ray sources. Most experts believe the aspheric X-ray mirrors for these systems will have to be accurate to within 1 nm; the optical techniques for producing—or measuring—this kind of accuracy do not yet exist.

Another burning issue in length metrology concerns its support for the magnetic data-storage industry. The pole-tip of a magnetic head is specified to be recessed from its surroundings by less than 0.025 μm , and the industry requires inspection-measurement systems to be calibrated to a factor of 10 better—that is, 2.5 nm.

Normally, this kind of measurement is performed by a profiling microscope, which is calibrated by step-height standards. With

the minimum factor of four times better for the NIST step-height standard, this requires accuracy of 0.6 nm, about twice as good as what is possible right now. Although the industry has been making do with the step-height standards, these systems will certainly cease being even marginally adequate as tolerances shrink.

In fairness, it should be noted that although NIST does not have all of the standards and measurement methodologies necessary to meet some current and future needs, the institute is working hard in key areas. Hopefully, enough resources will be allocated for the institute to do a timely and creditable job.

Good examples of the need to support time and frequency metrology are plentiful in the telecommunications industry, which is relying more and more on digital, optical-fiber systems requiring highly precise and coordinated timing between sender and receiver. The precision of this coordinated timing must increase as the data rates and

traffic volumes increase. Lost information, typically in the form of dropped bits, is the penalty for imprecise timing between sender and receiver.

To explain how this happens, a little background is in order. Although the word synchronization, implying the matching of time, is commonly used in digital telephony, it is not correct, strictly speaking. The digital telephone system is actually based on synchronization, the matching of frequency. In digital packet-switched communications, the data are buffered at intermediate points, with some extra bits (called stuffing) in the packets to allow for different clocking rates. If the clocks at the receiving and transmitting ends are poorly synchronized (have excessively different frequencies), the packet buffers overflow and bits are dropped. This is usually how data are lost.

In the Synchronized Optical Network (Sone), now being installed in parts of the United States, the synchronization requirements are such that frequencies must match to within one part in 10^{10} – 10^{12} . Such a requirement already pushes the state of the art in timing and frequency-matching. The problem is that some telecommunications experts now feel that if the de-

to requirements for communications systems keep on escalating, true synchronous operation will eventually be required. This will impose even greater demands than those associated with Sonet.

PHYSICS PRIMER. Most metrological units are derived from a very small number of base units. As anyone who paid attention in physics class knows, acceleration is derived from length and time; work, from length and force (the latter from mass and acceleration). Each unit has associated with it an internationally agreed-upon technique for defining that unit, as well as one or more secondary measurement techniques, which are developed and calibrated by agencies such as NIST to make measurement more convenient (Fig. 1).

To take a simple example, temperature is defined in terms of black-body radiation. Obviously, if you want to know the temperature of your oven, you would rather not have to rely on a black-body device. Here a secondary measurement device—a thermometer—is preferable. NIST and standards organizations in other countries develop and calibrate such secondary measurement techniques.

In effect, most metrological applications involve a measurement chain, from a highly accurate, fundamental standard to field measurements made routinely in support of industry or commerce. As an example, take electric power. NIST is the source of all U.S. electric power and energy measurements, and it calibrates about 100 transfer-standard meters for the country's utilities every year to an accuracy of 0.005–0.05 percent. These meters are used to calibrate test instrumentation, accurate to 0.1 percent, which is used to test and calibrate the meters affixed to every home.

By state law, these meters must be accurate to within 2 percent, although the general utility practice is to provide meters with less than 0.5 percent error. Even small errors, in this case, can translate into huge sums of money. There are some 111 million consumer meters installed in the United States, which monitor the site of some \$180 billion worth of electricity every year.

SHORTER CHAIN. Increasingly, companies are eager to see the measurement chain reduced; they would like to realize standards in their own laboratories with accuracies approaching those of the fundamental standards. In particular, industries working at the cutting edge of electronic instrumentation have found the need to maintain standards in their own calibration laboratories that are virtually as good as NIST's.

One such standard is the volt. Fundamental standards in electrical metrology are being refined more and more through quantum-mechanical effects, which govern the physical behavior of matter on the atomic or sub-atomic scale. Accordingly,

the volt is now defined through the use of the Josephson effect, which refers to the tunneling of electron pairs through a weak connection between superconductors; and Josephson-junction array standards are used to define the standard volt.

NIST has already provided 1- and 10-V Josephson-junction array standards to several U.S. companies and laboratories, and is working with other companies to develop a commercial U.S. source of array standards. Of course, different companies need such precision for different reasons. One of the more dramatic cases of a commercial need for access to the highest-level standards involved Hewlett-Packard Co.

Just as NIST was completing development of the 10-V Josephson-junction array, the Palo Alto, Calif.-based company was working on a high-precision multimeter, model number 3458A, and needed a way to check the instrument's linearity. The best conventional standards available had an accuracy of one part in 10^6 —not good enough for the company because that happened to be the accuracy they were aiming for with the new product. Only the developmental 10-V array system, with its accuracy of one part in 10^9 , could do the job.

This 10-V standard is a microelectronic chip fabricated by means of the same basic processes (lithography, etching, and so on) used every day for countless commercial integrated circuits. The chip serves in effect as a frequency-to-dc converter, changing a very precise frequency (that of the easily accessible Loran-C precision frequency reference) into a useable voltage.

An unexpected offshoot of the new volt and ohm quantum standards may be the 'electronic' kilogram

Input microwave energy is fed to a number of arms, or strings, of Josephson junctions, each terminated in a characteristic impedance to prevent reflections back up the arm. The goal is to expose each junction to the same microwave environment as its neighbors. The dc potential is developed across large pads at the top and bottom of the chip.

In round numbers, the NIST chip incorporates 20 000 junctions and constitutes one of the most complex Josephson-junction chips ever built. The latest versions are fabricated using a niobium-tri-layer superconducting technology.

After learning of the array project, Hewlett-Packard approached NIST for permission to use the developmental 10-V sys-

tem to evaluate its multimeter. The product's accuracy was confirmed, and shortly thereafter, HP announced availability of the precision multimeter. Later, the company acquired a 10-V array standard from NIST for production-line measurements.

For now, however, the Hewlett-Packard case remains the exception rather than the rule, and for most of U.S. industry the voltage measurement chain is somewhat longer. At the top is the NIST Josephson-junction array standard. It is used to calibrate either the zener-diode reference standards or a Weston electrochemical cell, both of which laboratories employ as voltage standards. NIST uses two groups of working cells as a double check, along with a calibrated resistive divider for the zener references, to calibrate the zeners or the standard cells for laboratories all over the United States.

Each of these references has advantages and disadvantages for commercial applications. The zeners are noisier but more robust, and the standard cells are quieter but easily disturbed by electrical or thermal changes.

Because of the industrial demand for higher accuracy, several Josephson-junction array systems are already being used in industrial laboratories and in those of the departments of Defense and Energy. Proper operation of these systems can improve both precision and accuracy by several orders of magnitude.

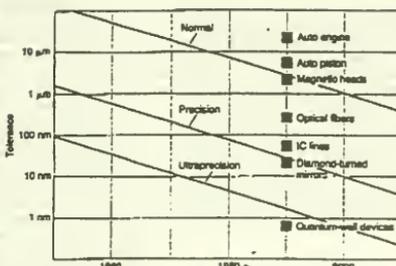
THE ELECTRONIC KILOGRAM. The volt is not the only electrical unit now defined through a quantum standard. The ohm is also defined in terms of an effect, called quantized

Hall resistance, which was discovered only 15 years ago. The effect is associated with the fact that electrons confined to two dimensions, as in a metal oxide semiconductor structure in a magnetic field, have discrete energy levels. The Hall voltage of such a structure shows plateaus as a function of gate voltage. This corresponds to a Hall resistance that equals Planck's constant divided by the square of the electron charge.

One unexpected side benefit of these new resistance and voltage quantum measurement standards may be yet another standard, for mass, which might be called the "electronic" kilogram. Right now, the standard ampere is defined in terms of how much current must flow in two wires in order to produce a known force between those wires. NIST implements this definition by balancing the electromagnetic force on a wire coil in a magnetic field against the gravitational force on a standard mass.

Since the ampere can be defined in terms of the volt and ohm (which are in turn determined by quantum effects), the ampere balance could be used, in reverse, to determine mass. Achieving this new goal would have the highly desirable effect of replacing the only remaining artifactual stan-

[2] These manufacturing tolerances are the characteristic, or mean (red), actually (or predicted to be) achievable in the various dimensional regimes. In seven critical manufacturing areas, different tolerances (blue squares) were demanded in 1990.



standard among the fundamental units. The challenge to experimenters is to identify all possible factors that can affect the measurement even below part-per-million levels, so as to eliminate, minimize, or compensate for these influences.

CRITICAL DIMENSION. Perhaps even more than electrical metrology, dimensional metrology is closely related to industrial competitiveness. Exactness of dimensions is fundamental to the manufacture of all kinds of goods, including airplanes, automobiles, videocassette recorders, communication systems, and computers.

The basic dimensional unit is the meter, defined as being the length of path traveled by light in vacuum in the time interval $1/299,792,458$ of a second. Although the meter is defined in terms of the speed of light, the *de facto* standard for dimensional metrology is realized by a stabilized helium-neon laser. The degree of accuracy attainable depends on the stability of the laser.

For an unstabilized, free-running helium-neon laser, overall length measurement uncertainty is at best about one part in a million, because of the uncertainty in the vacuum wavelength of its red-orange light. Even with stabilized lasers, uncertainties in the value of the index of refraction of the air along the laser beam path impose a limit of about one part in 100 million. Similarly, uncertainty in the international temperature scale at the standard temperature of 20°C constrains accuracy to no better than about one part in a billion (10^9). Finally, even the best available iodine-stabilized helium-neon lasers have uncertainties on the order of 1 part in 10 billion.

Of course, in this kind of accuracy is not called for in every industrial application. Consider the trends on tolerances in the machining industry. The dimensional measurements in this industry can be divided into three regimes (the specific tolerances associated with each are shown in Fig. 2):

- Normal, which includes products made by conventional milling and turning and measured by coordinate measuring machines.
- Precision, as in products made from diamond turning machines and requiring interferometer systems for length realization.
- Ultraprecision, characterized by devices fabricated by atom- and ion-beam machining and requiring scanning tunneling micro-

scopes (STMs) for verification. As might be expected, the tolerances permissible for specific applications are declining (Fig. 2).

Engine blocks are in the normal machining regime. In 1980 the required machining accuracy was $25\ \mu\text{m}$. In the year 2000 it will be $1\ \mu\text{m}$. Japanese automobile manufacturers require a $7\text{--}8\text{-}\mu\text{m}$ tolerance for their new engines—a pair with the precision required for fine watches! The U.S. state of the art in automobile manufacturing requires only $12\text{-}\mu\text{m}$ tolerance for transmission housings, clutch covers, engine blocks, and cylinder heads. Even though these tolerances are not as exacting as those applied in the Japanese industry, the coordinate-measuring-machine requirements for the automotive manufacturing industry are already pushing NIST's capabilities.

Coordinate measuring machines (CMMs) are a definite weakness in U.S. industrial metrology. These robot-like machines have an arm with three axes of movement, each axis being governed by an interferometer for high linear accuracy. This accuracy is maintained through regular calibrations with step gages, which are pieces of metal with a precisely machined step, or notch. As manufacturing processes demand ever higher precision, CMMs are becoming a more familiar presence on the shop floor.

At Caterpillar Inc. in Peoria, Ill., for example, a recent modernization of the manufacturing plant included greater use of CMMs on the factory floor for verifying design requirements. So the company was disconcerted to find that "obtaining length standards of adequate accuracy, certified by NIST, for use in certification and ongoing verification of our new CMMs is a problem of ongoing concern," according to B. P. Sorel, a vice president of the company.

Sorel said that Caterpillar was forced to use step gages certified by the FTE, the German standards bureau. Like their counterparts in other countries, U.S. executives prefer not to rely on non-domestic organizations for critical metrological certifications. The reasons for this preference are not surprising, and include the greater convenience and, oftentimes, more favorable economics of using domestic services, as well

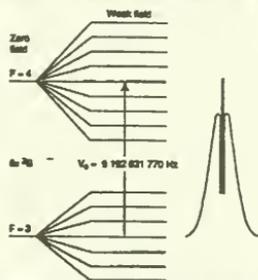
as fear of becoming dependent on a source over which the company has no control and against which it has little recourse if problems arise.

In a letter to NIST about the step gages, the Caterpillar vice president wrote that "the current situation is unacceptable...We cannot afford the cost and time of continuing to send reference artifacts to Europe for certification."

Likewise, there are unmet needs for reference measurements in the ultraprecision regime, notably in support of the development of new technology. Of particular concern is metrological support for the various competing lithographic techniques (ultraviolet, X-ray, and electron-beam) being improved or developed for the fabrication of future ultralarge ICs.

In general, adequate metrological support for IC fabrication requires dimensional measurement errors less than one fourth of the specification being measured—fine width, for example. However, "our current capabilities are marginal with respect to this standard and we are severely limited in our ability to develop $0.25\ \mu\text{m}$ technology," according to a recent report from the Photomask Division of E. I. du Pont de Nemours & Co. in Wilmington, Del.

While the scanning tunneling microscope (STM) is widely known as an imaging system, it can also be used to produce nanometer-scale structures. The same probe tip that produces high-resolution spatial imaging of molecular-scale structures can do-



[3] The most accurate determinations of time typically employ a cesium clock. The atoms of cesium have one electron in their outer shell, and the possible energy levels this electron can occupy multiply in the presence of a weak magnetic field. For example, the levels labeled $F=3$ and $F=4$ split up into seven and nine sublevels, respectively. The arrow indicates the energy-level transition used in the operation of the cesium clock and caused by the absorption of a very narrow, spike-shaped spectrum of microwave energy. The spectrum peaks at ν_0 , a frequency known to great precision and exploited for the highly accurate time measurements.

ble as a tool for nanofabrication. Perhaps the best-known demonstration of this capability was the infinitesimal "IBM" logo created at the company's Yorktown Heights, NY, research laboratory a year ago.

The IBM demonstration was basically publicity for its high technology, but some researchers have great faith that nanofabrication will lead to many useful new products, such as better and cheaper solar cells, advanced materials, medical treatments, and soil- and water-cleansing agents. NIST, for example, has already experimented with an STM probe on hydrogen-passivated materials, producing stable nanometer-scale structures that might be suitable as the basis for extremely dense ICs. Being in the nanometer realm, these devices would be roughly a hundred times smaller than today's IC features.

As a final note on dimensional metrology, it is worth pointing out that NIST periodically compares its measuring capabilities with those of other laboratories. For example, NIST recently performed a comparison between its own meter measurement, based on interferometry, and one of the meter bars, No. 12924, of the Bureau Internationale de Poids et Mesure. The measurement was accurate to within 0.02 part per million of the mean of the measurements of other international laboratories.

TIME AFTER TIME. Time standards may not be as tightly linked to competitiveness as the dimensional and electrical metrics. Nonetheless, temporal metrology has been the subject of intense activity and several advances lately. In its Boulder, Colo., laboratory, NIST can measure time with an accuracy of four parts in 10^{16} —far beyond what everyday applications demand but vital for global positioning using satellites.

Most clocks, especially the very accurate ones, are based on frequency standards. A clock, typically, is little more than a mechanism that counts and accumulates the cycles of a frequency standard, and usually displays the result. Even rudimentary clocks built about 335 years ago were based on this principle—their frequency standard was a pendulum. Today, most clocks use a quartz crystal as their frequency base.

The performance of frequency standards is usually described in terms of accuracy, reproducibility, and stability. Accuracy is the degree to which a measured or calculated value conforms to some specified value or definition. Reproducibility is the extent to which there is agreement among a set of independent devices of the same design after adjustment of appropriate parameters in each device. Alternatively, it is the ability to reproduce a previous value. Stability refers to the frequency- or time-domain behavior of a process.

Since 1967, the basic unit of time, the second, has been defined in terms of the quantum mechanical relationship between the

frequency of electromagnetic radiation and the difference between energy states of an atom. Specifically, one second is defined as "the duration of 9 192 631 770 periods of the radiation corresponding to the transition between the two hyperfine levels of the ground state of the cesium-133 atom."

Cesium is chosen because its electronic structure is relatively simple, consisting of a single unpaired electron in its outermost shell (6s). The hyperfine energy levels associated with this single outer electron arise from its coupling with the nuclear magnetic moment (Fig. 3). This structure is used to

A U.S. company
was forced to
use step gages
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standards bureau

lock the frequency of a microwave oscillator. Other reasons for using the cesium atom to define the second include the convenience of the microwave frequency of the transition, the relative insensitivity of the chosen transition to the magnetic field, and the low value of the cesium melting point, making it easy to create a beam of cesium atoms at temperatures below 100°C.

This approach has been improved over the years, to the point where current methods use an optical pumping scheme for selecting a particular pair of hyperfine energy levels. Laser-pumping all of the atoms into the proper atomic state has a number of advantages. It greatly enhances the output signal-to-noise performance, since the older state-selection techniques based on separation in a magnetic field threw away 15/16 of the atoms fleeing the cesium oven. It also obviates the transverse dispersion problems associated with magnetic deflections that cause the atoms to spread and then refocus as they go through the microwave cavity. Lastly, the spectrum of such optically pumped cesium atoms is highly symmetrical, almost eliminating any effects of line distortion due to neighboring transitions.

In addition, the ultimate accuracy of the method is improved if selected atoms, as they go through the microwave cavity, are interrogated with microwave fields having two different frequencies. This leads to a very narrow peak, or structure, at the center of the absorption (Fig. 3). Norman Ramsey proposed this structure as part of his work on oscillatory mechanisms and their application to atomic clocks, for which he shared the Nobel Prize in physics in 1989.

Within the next few years, further gains in accuracy may be possible with a new kind of clock based on cooled mercury ions. The

mercury ion behaves in much the same way as the cesium atom, except it has a very narrow electronic transition in the optical range. This offers the opportunity for a much more accurate clock, provided that the mercury ions can be cooled to temperatures very close to absolute zero. New techniques have been developed, using the pressure of optical radiation, to cool ions contained by an electromagnetic trap.

Quality in manufacturing is ultimately reflected in the accuracy and precision of the product. The examples presented here show that metrology lies at the frontiers of science and technology—witness the fact that today's standards for voltage and resistance are based on phenomena discovered in 1962 and 1978, respectively. To take a newly discovered phenomenon and raise it to an international standard on such short notice reflects the incredible pace of technology. It indicates that metrology is constantly under pressure to advance the state of its art. Yet despite this critical dependence upon metrology the U.S. investments in the field have remained flat for 15 years.

President Bush's 1992 budget called for doubling the laboratory budget of NIST over five years. This was also the Clinton-Gore campaign position. But unless the science and technology communities begin to work more closely with Congress to articulate the importance and meaning of metrology, budget increases will be unlikely. The upshot will be that U.S. engineers and researchers will cease to be able to measure the quantities necessary to reestablish and maintain their country as a leader of technological industry.

TO PROBE FURTHER. "Challenges to NIST in dimensional metrology: the impact of tightening tolerances in the U.S. discrete-part manufacturing industry" (National Institute of Standards and Technology internal report 4757) is available from the National Technical Information Service in Springfield, Va. "Frequency standards and clocks: a tutorial introduction" (National Bureau of Standards technical note 616) is available from NIST's Time and Frequency Division, Boulder, Colo., or the Government Printing Office, Washington, D.C. 20402.

ACKNOWLEDGMENTS. The author would like to express special thanks to several members of the staff at the National Institute of Standards and Technology: Thomas Beckley and James Roberts, of the Program Office; Dennis Swyt, chief of the Precision Engineering Division; Donald Sullivan, chief of the Time and Frequency Division; and Alan Clark, staff member of the Electricity Division.

ABOUT THE AUTHOR. Robert M. White (F) is head of the department of electrical and computer engineering at Carnegie Mellon University in Pittsburgh. He served in the Bush administration as under secretary of commerce for technology. ♦

CATERPILLAR

Caterpillar Inc.

100 NE Adams Street
Peoria, Illinois 61629

August 28, 1995

The Honorable George E. Brown, Jr.
Ranking Minority Member
House Committee on Science
822 O'Neill House Office Building
Washington, DC 20515

Dear Congressman Brown:

As requested in your August 11, 1995 letter to Egon Wolff, Director of Materials Research and Development, enclosed is the statement by Caterpillar Inc. for inclusion in the hearing record on H.R. 1756, the Department of Commerce Dismantling Act.

Sincerely,



Rita L. Castle
Issues Analysis Manager

jb

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STATEMENT BY CATERPILLAR INC.
ON H.R. 1756
THE DEPARTMENT OF COMMERCE DISMANTLING ACT
SUBMITTED TO THE
COMMITTEE ON SCIENCE
U.S. HOUSE OF REPRESENTATIVES
WASHINGTON, DC

Caterpillar Inc., headquartered in Peoria, Illinois, is the world leader in the design, manufacture and marketing of earthmoving, construction and material handling machinery. We are also a major worldwide supplier of diesel and spark-ignited engines used in a variety of on-road and off-road applications.

We understand that H.R. 1756, the Department of Commerce Dismantling Act of 1995, under consideration by the Committee includes the elimination of the National Institutes of Standards and Technology external grant programs, including the Advanced Technology Program (ATP). Caterpillar Inc. has been an active participant in the Advanced Technology Program (ATP) and believes it provides a necessary bridge between basic high risk research and enabling technologies that are essential to the competitiveness of U.S. industries.

As a global supplier of heavy equipment -- operating primarily from a U.S. manufacturing base -- we compete in the world marketplace on the basis of performance differentiation...added value through better performance and reduced life-cycle costs. We know the importance of technology development and deployment maintaining our competitive edge. But increasingly, our competitors in technology development are large government funded consortia rather than individual companies.

The Advanced Technology Program (ATP) accelerates technologies that, because they entail significant risk upstream of product development, are unlikely to be developed in time to compete with rapidly changing world markets without such a partnership of industry and government. By sharing the cost of such projects with both large and small companies and with teams, the ATP serves as a catalyst for industry to pursue promising technologies.

Without this government involvement, the pace and scope of research programs as well as the ultimate commercial value of the technology will be significantly undermined.

In December, 1994, NIST announced six new focused technology programs based on "white papers" submitted by industry and workshops held around the country. The projects will be cost-shared and carried out by industry. A five-year government investment of \$785 million is expected to leverage an equal investment by industry. Caterpillar was involved in the development of the Materials Processing For Heavy Manufacturing, a five-year \$145 million program to develop and demonstrate innovative materials processing technologies that will help U.S. heavy manufacturing companies make longer lasting, more reliable and more efficient products.

There are those in Congress that argue that this research should be conducted by the private sector without federal partnering. But consider this scenario. You have just developed a surface treatment to make metal parts less vulnerable to wear, corrosion and fatigue. However, the material processing is too difficult and therefore unattractive to end users, such as heavy off-road equipment manufacturers, because its cost remains at a level they cannot afford to pay. Yet, only market demand by those very same users can justify your company to commit research and development resources to make the technology simpler and affordable. The result...the technology remains on the laboratory shelf despite its promise to greatly increase the durability, reliability and ease of maintenance of vehicles, machinery, power generation equipment, and other big-ticket items.

With the assistance of the ATP through a 50-50 cost shared program, Caterpillar is heading a team of companies and universities in developing the manufacturing process to cost-effectively apply this surface treatment to a variety of products. The successful completion of this three-year program will result in more durable differentiated power trains, significantly reduced owning and operating costs and environmentally friendly corrosion protection.

Ironically, development of public-private partnerships to minimize risk and maximize return is a concept well understood...and practiced successfully...by our European and Japanese competitors. In fact, the ATP Material Processing for Heavy Manufacturing initiative was modeled after similar initiatives led by Japan's Ministry of International Trade and Industry (MITI).

If the Department of Commerce is to be downsized or dismantled, we must provide an alternative "home" for these valuable partnership programs that are critical to U.S. manufacturers competing successfully as the low-cost, quality supplier of choice.

For U.S. companies and U.S. taxpayers, the return on investment in technology research and development will be a secure and expanding job market and a stronger U.S. economy.

We hope that these comments are useful as the Committee continues its discussions on H.R. 1756 and other legislation affecting the Department of Commerce.

August 28, 1995

Council on Competitiveness

September 8, 1995

The Honorable George E. Brown
U.S. House of Representatives
Committee on Science
Suite 2320 Rayburn HOB
Washington, DC 20515-6301

Dear Congressman Brown:

Thank you for allowing me to offer my comments on H.R. 1756, the Department of Commerce Dismantling Act. I would like to first provide general comments on the Department of Commerce, its functions and importance, and follow this with answers to several of the important questions you ask.

Position on the Commerce Department

While no department can be exempted from necessary downsizing, the complete dismantlement of the Commerce Department needs to be weighed against the valuable functions it performs. A number of these functions do not necessarily have to reside with the Commerce Department. As long as their objectives are preserved, they could just as well reside elsewhere. However, there are some functions that need to remain in a department solely dedicated to trade, industry and the domestic economy. Such functions include promoting exports and trade, negotiating with foreign entities, safeguarding the environment, intellectual property and national security, and maintaining vital economic statistics, to name only a few areas. It is unfortunate, and quite ironic, that in an era of intense international competition we would cut the one department which has been more successful now than ever before at promoting U.S. competitiveness.

More specifically, I believe the Commerce Department plays a particularly instrumental role in the following areas:

- 1) **Trade** -- The effects on trade of H.R. 1756 are significant. ITA is slated to be eliminated completely, with no plans for transfer to another agency or even privatization. This would be severely detrimental to our export promotion efforts, and, ultimately, to industry. The Department of Commerce, through the International Trade Administration, is the lead agency for promoting U.S. exports and trade. It assists exporters, through its domestic and foreign field offices, in developing an export strategy and finding foreign markets, it negotiates with foreign governments to open international markets, and it acts as the one voice for industry in the trade policy arena. This is at a time when trade has become increasingly vital to the growth of our economy and industries.

Furthermore, transfer of export licensing procedures to the State Department will complicate the approval process by burying this function in already-thick layers of bureaucracy. It could also lead to downsizing the importance of economic considerations during license review, as political and military considerations will take precedence.

- 2) **Technology** — The core standards function of the National Institute of Standards and Technology (NIST) is essential to the innovation process of the country and is used heavily by government and private industry. In addition, NIST's promotion of R&D cooperation between government and industry helps U.S. companies improve their manufacturing ability and product quality.
- 3) **Other** - We must not forget the importance of several other Commerce programs. Specifically, the Economics and Statistics Administration (ESA) follows and maintains the economic data and statistics which are vital to tracking and gauging economic growth. In addition, the Patent and Trademark Office (PTO) is essential to protecting new technologies, providing incentive to commercial development, and furthering global trade.

While I believe that Congress needs to cut the budget deficit, by cutting needless costs and streamlining government programs, I also believe it is imperative for us to retain the programs that are most effective at promoting the strengths of the U.S. economy in a suitable agency.

Responses to Specific Questions on H.R. 1756

- 1) The Technology Administration provides the only direct technology input and industrial perspective into the economic and R&D decision making processes. It serves as a facilitator for bringing together the many contributors of technology from within the government to formulate a strategic trade plan or program in the area of technology and its commercial utilization. The Technology Administration is also a convenient and necessary information source for following and understanding how the international community is advancing in technology development and end-use applications

We need to also understand that industry is composed of small companies that need to have the capacity to help themselves. Part of this capacity is based on accessing the technology expertise residing in federal departments and agencies. In fact, since the creation of the Manufacturing Extension Program (MEP) in 1988, we have begun to see the creation of a network connecting private industry, especially small companies, to needed sources of information. We must also understand that ATP and MEP are two entirely different programs. While MEP provides a network of assistance and technological advice to the private sector, ATP is much more geared to partnership programs between companies of all sizes, and, at times, universities. The Small Business Innovative Research (SBIR) program is different from the other two. It concentrates on funding proprietary research activities for small companies. The three programs cannot be traded off against each other. Each one needs to be judged on its own merit and its own necessity.

- 2) Privatizing any government function can have many merits. However, with regard to NIST, selling or privatizing its laboratories and functions, as called for in H.R. 1756, would deprive us of an independent source that can assess and evaluate standards development nationally and internationally. It might be more efficiently run as a privatized institution, although that is still questionable since NIST's efficiency is much higher than that of the DOE labs. At the same time, government financial support would not get eliminated even if it were privatized.

There is one more point that needs to be considered should NIST be privatized. Because NIST is today and would continue to be co-funded by private industry, eliminating government as a neutral R&D performer would put NIST's credibility in doubt. Also, there would be no

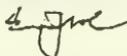
reductions in federal spending if the government were to purchase the same services from private laboratories. In fact, it is not clear that the government would not incur greater expenses and increase federal spending to pay for the higher costs related to the added profit margins that would undoubtedly be charged by the private sector.

Finally, there are no functions with the same geographic reach in any other government agencies or the private sector, as those in the NIST laboratories. However, there are certainly areas of programs that overlap or are also being worked on by other government or private sector research organizations.

- 3) Every once in a while we need to reevaluate the missions of and streamline organizations, both public and private. A bureaucracy whose overhead costs grow beyond its needs should be cut. This must be done instead of eliminating effective programs. The proposed reorganization, as outlined in H.R. 1756, focuses too much on cutting valuable programs instead of unnecessary overhead and bureaucracy.
- 4) Transferring the standards measurements function to the National Science Foundation (NSF) is ill-advised. The NSF has a completely different mission from NIST, deals with a different set of problems, and maintains different relationships with R&D communities. Specifically, the NSF works with universities, while NIST works with industry. Also, NSF is not permitted by legislation to manage its own laboratories. NIST, unlike the DOE laboratories, has civil service employees and no contractor as an intermediary. This would have to change if NIST were to become part of NSF. Due to the smaller size of NIST, versus a DOE multiprogram lab, adding the contractor function would only add to the bureaucracy and may not be cost effective.

I hope these comments are helpful.

Sincerely,



Erich Bloch
Acting President



NASULGC National Association of State Universities and Land-Grant Colleges

September 7, 1996

Honorable George Brown
 Ranking Minority Member
 House Committee on Science
 822 O'Neill House Office Building
 Washington, D.C. 20515

Dear Rep. Brown:

I am writing in reference to your August 15 letter to NASULGC President C. Peter Magrath regarding NASULGC's views on H.R. 1756, legislation to abolish the Department of Commerce. NASULGC is honored to have this opportunity to work with you and the other members of the Committee on this matter.

Enclosed is prepared testimony by Dr. Christopher D'Elia on behalf of the Association. As you will note, Dr. D'Elia chairs NASULGC's Board on Oceans and Atmosphere and is one of the nation's leading authorities on NOAA and its programs.

I hope that this statement will make an important contribution to Congress' efforts to reshape our federal system to make it more efficient and less costly. NASULGC looks forward to continuing to work with the Committee on this and other important science policy issues. Please do not hesitate to let me know if there is ever anything I can do for you.

Sincerely,

Kerry D. Bolognese
 Kerry D. Bolognese
 Assistant Director, Federal Relations
 Marine and Environmental Affairs

cc: Hon. Robert Walker, Chairman, House Science Committee
 Dr. C. Peter Magrath, NASULGC President
 Dr. Christopher F. D'Elia, Director, University of Maryland Sea Grant Program

Enclosure



NASULGC National Association of State Universities and Land-Grant Colleges

**PREPARED STATEMENT
OF DR. CHRISTOPHER F. D'ELIA
COMMITTEE ON SCIENCE
SEPTEMBER 12, 1995
H.R. 1756**

INTRODUCTION

Mr. Chairman, I am pleased to have this opportunity to provide testimony on H.R. 1756, legislation to abolish the Department of Commerce. I want to commend you for your leadership in conducting this hearing and on your efforts to ensure that the science and technological capabilities of this country remain second to none.

I am Dr. Christopher F. D'Elia. I am providing this statement on behalf of the National Association of State Universities and Land-Grant Colleges (NASULGC). I have a long and active involvement in the Association. I currently chair the Association's Board on Oceans and Atmosphere, and actively serve on a variety of its councils and commissions. I am currently Director of the Sea Grant College Program at the University of Maryland, and Professor, Chesapeake Biological Laboratory, at the University of Maryland's Center for Environmental and Estuarine Studies. I am a marine scientist with over two decades of experience in the field. I was program director of the Biological Oceanography Program at NSF from 1987 - 1989.

NASULGC MISSION

Founded in 1887, NASULGC is the nation's oldest higher education association. Currently the association has over 180 member institutions -- including 17 historically black institutions -- located in all fifty states, with a total of 2.9 million students. NASULGC universities include 31 of the top 45 universities in total science and engineering R&D spending, and have educated approximately half the members of Congress in the recent past.

The Association's overriding mission is to support high quality public education through efforts that enhance the capacity of member institutions to perform their traditional teaching, research, and public service roles -- roles which reflect a strong commitment to investing in the development of America's greatest resource: its people.

MAJOR POINTS

Mr. Chairman, I would like to highlight the fundamental points of NASULGC'S message. I will expand upon in my testimony in answering the specific questions posed by the Committee.

- NASULGC's primary concern is that National Oceanic and Atmospheric Administration remain intact and fully developed into the integrated earth-systems research and service agency envisioned by the Stratton Commission. The existence of DOC is an issue we will not be able to address at this point. Nor will we be able to comment on whether DOC is

an appropriate home for NOAA. We have no fundamental objection to this organizational relationship, as long as it attends to the Agency's needs and is engaged in its operations. We believe there is great merit to the idea of establishing a Hoover-like commission, which proposed reforms for the U.S. government bureaucracy after World War II, to review the whole structure of the federal government for fundamental change.

- This is an excellent juncture at which to consider modernizing and restructuring NOAA, and to undertake a structured and rational personnel plan and downsizing. NOAA's current structure does not enhance its ability to function as an integrated earth-systems agency, and results in much inter-line office bickering. We should now avail ourselves of the opportunity to implement reforms which would make it a leaner, more efficient, better organized and effective Agency. Now is the time for Congress and the Administration to work together toward simplifying NOAA's structure, consolidating like functions, and cross-integrating disciplines.
- NOAA's regulatory functions often impede and sometimes supersede crucial information-gathering research and service activities. These information needs, research and service activities are vitally important to our nation, for example, improved weather forecasting and improved understanding about the functioning of oceanic and coastal ecosystems. We believe that serious thought should be given to moving NOAA's regulatory functions to other agencies, and to mandate mechanisms for information transfer from NOAA to these regulatory agencies. The "wet" side of NOAA is particularly subservient to regulatory crises, which are often politically charged, and can cause enormous disruption. There is an inherent contradiction here because excellent information is the basis of sound regulatory decision making. However, it is not always a good idea to have the regulatory needs drive the information-gathering functions of an agency. NOAA is not primarily a regulatory agency and its regulatory activities should be minimized. Alternatively, as a regulatory agency, EPA needs both a strong internal science base as well as information support from other federal and non-federal sources. De-emphasizing NOAA's regulatory duties will avoid the "fox guarding the henhouse" syndrome.
- The universities have an exceptional role to play in the process of modernizing and restructuring NOAA while at the same time improving its effectiveness as an information agency. Closer NOAA/university ties would benefit the nation immensely. The establishment of an Office of Extramural Programs within the Office of the Chief Scientist, for example, could help foster these ties.

CONTRIBUTIONS OF RESEARCH UNIVERSITIES

Mr. Chairman, I want to emphasize the opportunities universities present to help you reduce the size and cost of government, while maintaining those services the American people demand. Unlike many foreign countries which have relied primarily on government laboratories for scientific development, our society looks to the universities as the essential source of scientific talent -- and of the education of future scientists and technicians. Other successful U.S. mission

agencies -- the Department of Agriculture, the Department of Defense, NASA and the National Institutes of Health -- have aggressively utilized university capabilities in pursuit of their missions. They invest heavily not only in specific research and educational activities, but also in the infrastructure and basic health of the university scientific enterprise. In return, the universities provide major dividends to the agencies for their investments. The national and international agricultural revolution, the development of remarkable anti-submarine warfare capabilities, the explosion of space science and engineering, and the extraordinary advances in medical science and technology have all been significantly derived from university research. This research, and the educational base associated with it, has in turn further led to significant new industrial capabilities, thus providing a continuing economic return on investment in addition to the contributions to agency missions and the public welfare.

University research is known to offer the following advantages:

- high degree of quality control through peer review and other external review processes;
- "matching" investment by states and private sources in university infrastructure;
- education of future scientists and engineers through the involvement of students in the research enterprise;
- flexibility in the utilization of federal capabilities, as funds can be reallocated to new needs and new talent once goals are met, and not used to subsidize federal facilities and personnel dedicated to prior needs;
- catalyzes new directions in research, because of the decentralized nature of universities, long before the federal administrative structure recognized potential opportunities;
- close association with states and grass roots scientific research, where most new discoveries emanate; and,
- objectivity, not driven by regulatory pressures.

Continuing efforts to redefine the relationship of the Federal government to the public and private sector, necessitated in large part by unsustainable Federal budgetary trends, present extraordinary opportunities for both strengthening the existing and creating new cost-effective partnerships between the Federal government and universities. Creative federal/university partnerships have contributed significantly to the nation and offer much for the future. Expanding and enhancing these partnerships will foster the national goal of a more efficient and productive Federal government by providing policy makers high quality research at lower cost to address society's most compelling issues. The country's investment in higher education continues to provide not only the incalculable dividends associated with a better educated workforce, but also the tangible

benefits that meet daily human and economic needs.

EFFECTS OF H.R. 1756 ON NOAA

Mr. Chairman, NASULGC has been asked to respond to the following questions:

1) In 1969, the Stratton Commission recommended the establishment of an "earth sciences" agency, which eventually led to the creation of NOAA by Executive Order. Are there still compelling reasons -- scientific, managerial or operational -- to maintain an integrated "earth science" agency to address oceanic and atmospheric issues? Are there still compelling reasons for such an agency to subsume research, operations, and enforcement functions?

The latest research on the interrelationship between the oceans and atmosphere and its effects on weather and climate makes a compelling case for maintaining NOAA as a single entity. In fact, we believe it is even more valid today than it was when the Stratton Commission made its recommendation.

NOAA research has clearly shown that crucial links exist between the "weather" of the ocean and the "weather" of the atmosphere. Without coupled information from both the atmosphere and ocean, weather forecasts and outlooks of more than a few days would be impossible. I want to emphasize the point that the ocean and atmosphere which surround the United States are at once great resources and the sources of great hazards. For example, the US probably has the roughest, most violent weather of any industrialized nation -- hurricanes, tornadoes, blizzards, extensive flooding. National security in the broad sense requires an agency such as NOAA.

The close natural coupling of the oceans and atmosphere in the Earth system argues that research in these areas should be the responsibility of one agency in the federal government. Otherwise, undesirable, expensive and inefficient inter-agency overlap and competition will develop. Such redundancy and duplication is exactly what this bill, this Congress and the Administration are attempting to reduce. Transferring direct responsibility for NOAA's programs in Oceanic and Atmospheric Research research to the National Weather Service would place an earth-system research mission in a weather-focused, service oriented agency. We believe this would degrade the overall research effort, tend to isolate ocean research from the ocean science community, and also probably eliminate important long-term climate research. At the same time, it is clear that coupled ocean-atmosphere events affects our every day lives, as evidenced by El Nino, Hurricane Andrew, the 1993 Storm of the Century and Midwest floods. The strong hurricane/tropical storm activity over the past 6 weeks illustrates the need to keep NOAA's oceanic and atmospheric sides together in a close working relationship.

The ocean remains one of our greatest mysteries in many respects. Knowledge of world ocean circulation is essential for understanding and predicting short-term and long-term climate variability. Recent collaborative research by oceanographers and atmospheric scientists on how

ocean dynamics – heat transport and storage, salinity levels, chemical constituents and buoyancy, exchanges between the ocean interior and boundary -- affect climate are improving our ability to make accurate forecasts. In recognition of this complex web of interactions between ocean and atmosphere, NASULGC universities have been integrating these disciplines. Several years ago NASULGC transformed its Marine Board into a Board on Oceans and Atmosphere to provide significantly increased opportunities for the oceanographic and atmospheric research communities to interact. The upcoming NASULGC annual meeting in Orlando, Florida will feature a major session on understanding the impacts on society of climate changes that demonstrates the value of this collaboration.

2) What would the effect of selling or privatizing NOAA laboratories and functions as called for in H.R. 1756? What private sector entities, if any, would be likely to carry on the functions of those laboratories and facilities? What functions of the NOAA laboratories, if any, are duplicated by other agencies or the private sector? If the federal government were to purchase the same services from private labs, would there be significant reductions in federal spending?

NOAA's Environmental Research Labs (ERLs) are among the finest research institutions in the world. They conduct integrated fundamental research which improves our understanding of oceans and inland waters, space, and the atmosphere. They provide NOAA with its state-of-the-art observational and predictive capability for weather forecasting and for addressing compelling societal needs regarding our coastal and fisheries resources. The ERLs provide a long-term commitment for the maintenance of observing systems and monitoring networks, and for the development of predictive models. They also provide the mechanism for transferring the results of research into NOAA's operational services. The ERLs have established a close cooperative relationship with universities through 9 joint institutes. These university-based institutes offer broad capabilities and programmatic flexibility to provide the scientific understanding of the processes resulting in climate/atmospheric/coastal changes.

NOAA labs have made some major discoveries which have benefitted the entire nation. The labs have provided the research to enable the prediction of El Nino 18 months in advance, saving the agricultural industry an estimated \$2.7 billion. The Tropical Ocean Global Atmosphere (TOGA) Program enabled the understanding of El Nino and its implications. An enormously successful program, TOGA combined university and ERL research and was funded by NOAA and NSF. In addition, NOAA-supported research was responsible for discovering the ozone hole and is now engaged in finding substitutes for ozone depleting chemicals, vital to maintaining the competitiveness of U.S. industry in world markets. NOAA-supported scientists have recently made startling discoveries in rural surface ozone, which if reduced by 25% will increase crop yields by \$1 billion.

Let me also take this opportunity to highlight some recent developments regarding NOAA research which have been reported in the press. NOAA has instituted new technologies which increased hurricane predictability by 20 percent. This is particularly timely in light of the fact that

1995 is the most active hurricane season on record. NOAA is also involved in a multi-agency effort to identify concentrations of volcanic debris in the atmosphere and alert the airlines. It has been determined that volcanic debris has caused some major airline safety problems. The latest NOAA research on carbon sequestration has shown that there is a greater ability of terrestrial ecosystems in northern latitudes to absorb atmospheric carbon. The policy implications of this revelation to deal with global warming may mean that simple and inexpensive measures to enhance forest or plant coverage can indeed make a significant difference in stabilizing the earth's carbon cycle.

Let me emphasize that NOAA's work on the linkage between oceans and atmosphere is unique to its mission and does not duplicate the activities of NSF or NASA in this area. The research done by these three agencies is vital and it would simply make no sense scientifically to combine their activities.

The privatization of NOAA labs concerns us, not because we are philosophically opposed to it, but because we feel it must be approached in a careful and systematic way. We believe there are certain functions of NOAA that should be considered for privatization. In fact, depending on the model proposed, universities could manage, or be partners in a research arrangement to manage, some of the laboratories. Some universities already have cooperative agreements with nearby NOAA laboratories that provide services and personnel in support of the labs' research missions. These could likely be expanded to cover certain management functions. In this scheme, NOAA would continue to support the research at the labs, which would be run by non-federal organizations. This is an idea worth considering, for which there is precedence, but it would have to be implemented very carefully to make sure we do not lose unique facilities or talented people which have caused many important discoveries. In any privatization effort, it is important that the labs' fundamental mission be kept clearly in mind -- responsiveness to the research and development needs of the NOAA service agencies, such as the National Weather Service.

Our reservations regarding the privatization of the labs are practical. Most, if not all research at NOAA's Environmental Research Labs is primarily mission-driven, in direct support of the Agency's mandate in weather services and coastal and fisheries management. Transfer of these activities would run a very real risk of leaving a critical agency mission with a research void. It is questionable that private sector/profit oriented entities could provide the services that the labs now provide. Who in the private sector would support the excellent long-term research in the NOAA labs, such as the climate work at Geophysical Fluid Dynamics Lab or the ozone work done in the Aeronomy Lab? Similarly, who would perform the "bridge" functions -- transforming research findings into practical national solutions -- as done by the Forecast Systems Laboratory and the National Severe Storms Laboratory? These are troubling questions. Long term research benefits the entire nation, not just a single or a few industries, and is a legitimate function of government.

NOAA provides observational systems, ground-based and satellite, that are used by every weather

forecast provider in the country, including broadcast media, private firms (such as AccuWeather), and other government operations. In addition NOAA's official forecasts are frequently used by broadcast media in their service to the public with little modification.

NOAA also is responsible from a legal perspective for severe weather warnings, including tornadoes, hurricanes, and flash floods. No private entities have been willing to accept the legal responsibility for these warnings. Without NOAA's data dissemination activities, the entire US weather forecasting infrastructure would collapse.

3) Would the proposed reorganization and funding reductions have an adverse effect on the quality, accuracy and timeliness of weather forecasts and warnings? How would H.R. 1756 affect the NWS plans for modernization?

We believe that the current bill could lead to a general slackening of momentum of the NWS modernization and would inevitably adversely affect quality, accuracy, and timeliness of forecasts and warnings. The NWS is at a critical stage. Modernization of its technology is well along, with deployment of several key observing systems moving toward completion. However, restructuring -- realignment of its human resources to use this technology -- is only the beginning. The "people costs" of the proposed reductions should not be overlooked. Modernization of the weather service is dependent on attracting and retaining the very best young meteorologists. A stable, supportive environment is necessary for them to gain the experience base necessary to take full advantage of the new technology that has been deployed.

NOAA must continue its installation of new technologies and restructuring of the field operations of the NWS if our society is to realize the enhanced human safety and real economic benefits valued at 8 dollars for every one dollar spent. In addition to NWS modernization, a well-coordinated national weather research and technology program -- the US Weather Research Program -- is required to develop the understanding, techniques and systems necessary to translate scientific findings and new observational data into fundamentally improved short-term forecasts. NOAA's weather research activities are focusing on a void in the fabric of our national scientific, technological and economic research strategy regarding storm-scale weather -- weather that produces major threats to life, property, and economic growth. The implications for agriculture, transportation -- especially air safety -- and resource management are enormous.

Further, NOAA needs to begin now to invest in technologies for the future. For example, the WSR-88D Doppler Weather Surveillance Radars now being deployed should already be considered for upgrading -- adding dual polarization would greatly enhance its ability to measure rain and snowfall, while rehosting its software to make it platform independent would make it much more flexible for incorporation of future improvements. We should recall that it took from 1965 to 1982 to perfect the technology now being deployed in the WSR-88D's. If we are to avoid delays in the future, NOAA should be starting today to develop the successor radar for

deploy in 2015.

H.R. 1756 could jeopardize improvements in evacuations for hurricanes, preparedness for tornadoes, and coastal forecast of wind, waves and storm surges, all of which have critical safety and economic implications. It would also choke off the longer term research, which is essential in understanding the earth as a system and the relationship between current weather trends and changes in the global and regional climate.

4) What are the impacts of terminating NOAA's pollution research and estuarine and coastal assessment research? Does such research duplicate research at other federal agencies or at universities? Would the proposed termination of such research have any adverse effect on the ability to make rational regulatory decisions about ocean or estuarine pollution or natural resource management?

While NOAA may coordinate some of its marine, coastal and pollution activities with other agencies, its contributions and research are unique and not duplicative of what is being done elsewhere in the Federal government. Nor could its activities be easily assumed by another bureaucracy with a totally different mission. EPA, for example, is a regulatory agency and does not have NOAA's breadth and depth of technical expertise in ocean and coastal science. There is real value in separating research and regulatory functions in government. NOAA's pollution research takes an integrated approach by studying both the atmospheric and marine dimensions of the problem and showing the relationship between the two.

NOAA's expertise in marine processes, coastal management, ecosystem dynamics and the issues between states, federal government and industry is highly integrated. The Department of Interior has no similar capability. For example, the termination of funding for the Sea Grant College Program as a result of H.R. 1756 would constitute a great loss to this nation in marine science, education, research and outreach. Sea Grant's peer-reviewed, highly cost-leveraged work, through an extensive state and local grass roots system, has led to some of this country's most important advances in aquaculture, water quality, habitat restoration, marine biotechnology and engineering, sound coastal development and management, and marine and seafood safety.

H.R. 1756 would also most likely destroy the strong Federal-state-academic partnerships established over the past five years through the Coastal Ocean Program, and would eliminate coastal ecosystem, habitat and fisheries oceanography studies, and the technology initiatives embodied in our coastal remote sensing and Coastal Forecast System projects. This will lead to a decline in predictions of fishery ecosystem dynamics and the complex effects of multiple stresses on coastal and marine living resources. Support for the National Undersea Research Program, which is the only program to conduct in situ investigations in the oceans and Great Lakes, would also disappear under H.R. 1756. By placing investigators undersea to conduct research not possible through a lab or on ships, NURP has made unique and significant contributions to the management of marine resources through its work on the chemical, biological, physical, and geological processes of the global oceans. Should we not send humans into the sea for research

as we send them into space?

Terminating the National Marine Fisheries Service grants authority would end an important source of research necessary to understand the ecological foundation of our nation's fisheries upon which to predicate the rebuilding of fish stocks. Universities, industries, state agencies and others provide scientific, economic, social, and technical information via the grants. The Agency uses these data in its calculations. Ending this system, without providing an alternative, coupled with the elimination of support for other fishery commissions and entities would leave a hole so vast that individual states could not possibly fill. Inevitably more fish stocks would collapse, resulting in more economic and social distress in affected communities.

The National Research Council report, "Priorities for Coastal Ecosystem Science," provides some excellent recommendations for the type of science and research in which this nation should be engaged to address the critical marine biological issues. I strongly recommend this report to the Committee. The recommendations in the report include:

- the development of indicators of biological status and processes, reflexing ecosystem health and integrity;
- the use of advanced *in situ* observation systems coupled with the application of remote sensing to provide insight on ecosystem behavior on appropriate time and space scales;
- investigations of the effects of modifications of land use and water flow and associated material fluxes and transformations on watershed and coastal regional scales;
- research on the relationship of physical phenomena to ecosystem structure and function and the interaction of ecosystem structure and function;
- research, modeling, and monitoring to support effective restoration or rehabilitation of degraded habitats and sustained yield of coastal ecosystems; and,
- development of models and the understanding behind them, of atmosphere-watershed-coastal ecosystem interactions for use in ecosystem management.

5) Would the transfer of NWS to the Department of the Interior have any impact on the ability of NWS to carry out its mission? Are there other agencies which might be better suited to house NWS if the Commerce Department is abolished, or are there agencies to which NWS should not be transferred? What is your opinion of moving NOAA programs to the Department of Energy or a new Department of Science? Should NOAA be established as an independent agency if the Department of Commerce is eliminated?

Separating NWS farther from the ocean side of NOAA, by moving it to Interior, will represent a

great loss of opportunity to improve service to the public, as it would come at a time when science is just beginning to puzzle out important ocean-atmosphere connections. As I argued earlier, the inherent ocean-atmosphere coupling in the earth system suggests keeping things together.

If the Department of Commerce were abolished, the question of where NOAA should be located is not as pressing an issue as ensuring that NOAA is NOT split apart. While NASULGC has not yet done an in depth study of where NOAA should go if DOC is terminated, our initial thoughts lean heavily toward making it an independent agency. However, we are open to considering other cabinet department options. NASULGC has yet to take an official position on a Department of Science. However, we have expressed reservations regarding the potential for such a Department to be so centralized that it jeopardizes the diversity of research, which is the strength of the American system, and that it separates the science from the mission of the agencies using that science. Until we see a specific bill, it is difficult to form a more comprehensive position, as we readily admit these concerns could be addressed in the legislation creating a Department of Science. As I stated earlier, the idea of establishing a Hoover-like commission to review the whole structure of the federal government for fundamental change is appealing.

RECOMMENDATIONS

Mr. Chairman, as I have tried to point out, NOAA is responsible for providing services to this country which are critical to our overall economic well-being and physical safety. Like any agency, NOAA has strengths and weaknesses. NASULGC's Board on Oceans and Atmosphere deals daily with NOAA and has, I believe, developed a fairly good understanding of where the greatest need for improvements are. The university community, through associations like NASULGC, CORE (Consortium for Oceanographic Research and Education), and UCAR (The University Corporation for Atmospheric Research), wants to assist Congress in making wise decisions on the directions that change will take. Let me reiterate and re-emphasize that the concept of NOAA is even more valid today than it was when the agency was created, even though NOAA's execution of this concept has not always met expectations.

Last year, NOAA and the nation's universities held a major partnership conference to address the most important issues regarding NOAA's scientific capabilities and to initiate a process for NOAA to utilize more effectively the vast scientific, technical and research resources of our schools of higher education. To date, not a great deal of progress has been made, but we are encouraged by recent developments within the agency indicating a fuller appreciation of the potential benefit of a closer partnership with universities. **It is our perspective that H.R. 1756 could cripple NOAA's extramural programs and partnership with universities, while it is this partnership which could and should be a major player in reforming the agency and its activities.**

We urge the Committee to consider the following areas in deciding NOAA's future:

- **Do not split NOAA apart** - Throughout the testimony, I have discussed how critical it is to keep NOAA's oceans and atmosphere components together. I will not elaborate further, but will only stress that this is our most fundamental and important recommendation.
- **Closer NOAA-University Partnership** - We firmly believe that NOAA could receive higher quality research product at a lower cost by better using our nation's colleges and universities. This would allow NOAA to cut budgets, reduce personnel and become more efficient and make it a stronger, more productive agency. The National Weather Service's effort to co-locate offices and facilities on university campuses and the work with UCAR on COMET (Cooperative Program for Operational Meteorology, Education and Training), and the new NWS office at North Carolina State University in coastal zone forecasting and the joint institutes are examples of model programs in which everyone wins and which Congress should support.
- **Supplementing NOAA's Labs** - NOAA should look at a much stronger extramural grants program across the board to supplement -- but not replace -- the NOAA laboratories. The labs must survive, but if they are scaled back, an extramural grants program will be an important step to ensure their continued excellence.
- **Keep NWS and its supporting labs together** - The key laboratories, including -- but not exclusive to -- the National Severe Storm Lab and the Forecast System Lab should be moved with the NWS if the Congress decides to split NWS from NOAA.
- **Establishment of an Office of Extramural Programs in NOAA** - The office would encompass Sea Grant, NURP, Coastal Ocean Program, USGCRP, and other cross-cutting activities and promote the extension and greater use of the existing effective federal/university partnerships that are necessary for the implementation of NOAA's missions. NOAA's grants process is very cumbersome and inefficient. Reforms in this area would improve NOAA's ability to benefit from valuable extramural research.
- **Remove many of the regulatory and enforcement functions from NOAA** - This will make NOAA more efficient and will permit it to concentrate on the basic role of "service" in the broad sense. The research functions -- basic and applied -- follow as necessary elements to maintain the service functions at the cutting edge of what technology and scientific knowledge allow. Too many times it seems the enforcement or regulatory function appears to conflict with the "service" function. NOAA should support an enforcement or regulatory agency, but be independent of it.
- **Broader links with private industry** - NOAA's operational elements (e.g., NWS) should be given expanded mandates/charters to develop broader links with private industry, with any necessary funds to be leveraged appropriated by Congress. For example, the commercial wind engineering and dispersion modeling communities often

feel ignored by NOAA, especially since NWS has not been able to respond to their pleas regarding programming of the new Automated Surface Observing System, due to the high costs for reprogramming. The "environment," specifically ocean and atmosphere, is an area where the US has a technological lead in many respects. NOAA should be a key player with private industry in improving US economic competitiveness in this area. While NOAA's ERLs engage in some limited activities in this regard, particularly in the instrumentation and software development areas, the activity in general is spotty and not well-focused.

- **Contract out fleet operations** - Because of the increasing costs of its oceanographic fleet operations, it may be more cost-effective for NOAA to contract out its oceanographic research with an organization such as University-National Oceanographic Laboratory System (UNOLS.) Currently UNOLS has excess fleet capacity, including available ship time on brand new navy-built vessels at operational costs far below that of NOAA. It is difficult for the university community to see the need for redundancy in this sector. In addition, contracting out vessel support would be an excellent example of partnership.
- **Review NOAA's nautical and aeronautical charting responsibilities** - An official panel should be established to review all charting activities to determine which are suitable for NOAA, other federal agencies, and /or the private sector. There are proposals to transfer aeronautical charting to FAA, for example. In addition, concerns have been raised over the provision in H.R. 1756 transferring to the Defense Mapping Agency responsibility for civilian nautical mapping and charting. A panel could sort out the fundamental questions involved in these issues.

Again, Mr. Chairman, let me thank you and the members of the Committee for the opportunity to provide NASULGC's views on the implications for NOAA of dismantling the Department of Commerce. NASULGC will continue to study this issue and welcomes an ongoing dialogue with the Committee and with Congress as the future of these agencies is shaped.



GOVERNMENT MARKETING
National Place, 1331 Pennsylvania Ave., N.W., Suite 1331 North, Washington, D.C. 20004
(202) 638-6000 FAX: (202) 638-0820

The Honorable George E. Brown, Jr.
Ranking Minority Member
Committee on Science
2320 Rayburn House Office Building
Washington, DC 20515

Dear Congressman Brown,

Thank you for your letter of August 29, 1995 regarding H.R. 1756. Our company has had extensive experience with some of the programs and offices in the Department of Commerce which you mention in your letter. We welcome this opportunity to provide our views. Our comments will correspond with the paragraphs in your letter.

1. Cray Research has worked for many years with NIST and NOAA, in particular. As you know, our supercomputers and parallel processing computers are uniquely valuable in supporting scientific operations, research and administrative activities in both agencies and their laboratories. Both NIST and NOAA laboratories have a world class reputation for their research and are regarded internationally as scientific leaders. At best, it is unclear whether any benefit would be derived by transferring these laboratories to another department.

2. Our corporation has not had any first hand experience working with the programs you cite under the Technology Administration.

3. Based on our experience, we are not aware of any duplication of NIST laboratory activities in the private sector or in other agencies. Since we are not aware that the same services are available from the private sector, we cannot comment on whether purchase of such services would yield any savings. Privatizing NIST laboratories does not seem to make

much sense, since many of their activities are unique standard-setting services that seem more appropriate as a government activity than as a private sector service from the standpoint of potential conflicts of interest. And since there is little evidence that these activities are in fact appropriate for the private sector.

4. Our company has no first hand knowledge of the ATP and MEP programs.

5. The corporate experience with NIST is in the support of advanced science and technology programs through high performance computational capabilities. There is not an advantage to the nation to merge the mission of NIST with that of NSF. Each is critical for US leadership in science and technology. It will be detrimental to the nation to attempt to reconcile the fundamental differences in missions. The NSF mission of basic research is as important as the applications, operations, and services mission of NIST. NIST operating as an independent agency if preferable to such an awkward merge.

6. A 25% cut for an agency that provides such unique service seems to be arbitrary unless based on solid reasoning and analysis. Since we are not privy to the reasons for such a cut, it is difficult to make useful comments.

7. Trade is an area of vital interest to Cray Research, Inc. and one in which we have unusual experience, since we are the foremost US exporter of supercomputing technology. We have received valuable and aggressive assistance from the Department of Commerce and its Export Administration and International Trade Administration in support of our foreign sales goals. We feel strongly that this helps level the playing field with foreign competitors that often receive more direct kinds of support from their respective governments. The trade functions carried out by the Department of Commerce are important to the success of US industry abroad. Terminating these agencies, reducing their funding or relocating them to an agency where they are neither appreciated nor supported is not in the interest of US industry from our perspective.

In addition, NOAA has been extremely supportive in promoting US industry abroad in weather and climate activities. NOAA is seen as the international leader in these fields, and its support internationally has

been very important to us and other companies that function in related fields.

It is generally accepted that the United States is the world leader in scientific and technological advancement. An important part of the basis for this is the research and development investment that the United States government makes over the long term, both within the civilian and defense sectors. Private research and development historically, and for economic reasons, focuses on shorter term objectives. The two approaches in partnership are what has made our nation and US corporations uniquely the technology development leaders worldwide. It would be shortsighted in the extreme, and put US industry at a competitive disadvantage in the global economy, to reduce arbitrarily the US investment in research and development. We urge you and your colleagues to consider all proposals in light of these concerns.

We appreciate the opportunity to provide these observations and would be happy to respond to any additional questions or information needs you may have.

Sincerely,



William N. Bartolone
Senior Director,
Legislative/Federal Programs .



Design Institute for
Physical Property Data
of the American Institute
of Chemical Engineers

IN REPLY PLEASE ADDRESS

George H. Thomson
356 Fleetwood Dr.
Bartlesville, OK 74006
Tel 918 333-7176
Fax 918 335-3201
Email: GHThom3201@aol.com

7 September 1995

Hon. George E. Brown, Jr.
Committee on Science
U. S. House of Representatives
Suite 2320 Rayburn House Office Building
Washington, D. C. 20515-6301

Dear Mr. Brown:

T. B. Selover, Technical Director of the Design Institute for Physical Property Data (DIPPR)[®], one of the Sponsored Research groups of the American Institute of Chemical Engineers has asked me to reply to your letter of 14 August requesting our comments on H. R. 1756, the Department of Commerce Dismantling Act. DIPPR, which has been in existence since 1979, is a consortium of some forty organizations, including both large and small chemical companies, which represent a broad spectrum of the chemical industry.

As I have had little or no experience with many of the organizations you mention in your letter, I will limit my comments to those I know something about.

NIST

The idea of selling the NIST laboratories to the private sector is ridiculous, particularly at a time when industry is cutting its own laboratories. I think you would find it impossible to give NIST away.

I don't think either NSF or DoE would be good places for NIST's standards and measurement functions because their missions and cultures are quite different from those of NIST and the transfer of activities would produce a less effective organization. In response to some of the questions asked in item (4) of your letter, no, I don't think NSF has the expertise, close relationship with industry, resources, or inclination to carry out the NIST programs. Congress could give NSF the resources, of course, but I think that would waste money and probably not improve the present situation. Since these standards activities are closely related to business, the Department of Commerce seems an appropriate place for them. I cannot comment on a Department of Science which does not exist yet, but I think there is some merit to the idea of establishing NIST as an independent agency.

I, personally, would like to see NIST's Standard Reference Data Program (SRDP) and Chemical Science and Technology Laboratories (CSTL) considerably strengthened. I think they are useful to

American science and technology. They function well in the Department of Commerce, so I would leave them there if that Department continues to exist.

The great advantage NIST has over many other governmental laboratories is that it knows how to work with industry. DIPPR has had a very good relationship with SRDP and CSTL for a number of years. We are both interested in assembling high-quality data for use in science and engineering, so we share resources, expertise, and data. Although the SRD Program has never had much money, it used to help us greatly with small grants from time to time, and CSTL supports some of the DIPPR projects.

Technology Transfer and NTIS

There seems to be a strong feeling in the Federal Government that industry is not benefitting from federally-funded research as much as it "should". I'm not sure that industry feels as strongly about this. It may be that this is an example of the "not invented here" syndrome, or perhaps there is a feeling that the orientation of the national laboratories, in particular, to high-cost, defense-related research may make it difficult for them to produce results of interest to industry. In addition it seems to me that the Federal Government technology transfer efforts are uncoordinated.

The National Technical Information Service seems to me to be a useful organization. It could continue to be useful if privatized. Privatization is *not* a universal cure, however. The important things for NTIS are to keep the supply of information flowing and prices relatively low.

In response to item (2) of your letter: As I noted above it would be virtually impossible to find someone to buy NIST or to operate it unless it came with substantial Federal funding. The current management philosophy of American industry seems to be that, rather than spend even relatively small amounts for the type of data NIST provides, it will do without this information until the next crisis occurs. There are a few organizations such as DIPPR which produce small amounts of data, but not enough to replace NIST's output. If the SRD Program were privatized, its products would probably be much more expensive. A private publisher would certainly not have the close relationship with industry which the SRDP does, but more importantly, would not have the special relationship with the producers of the data which SRDP does.

The Federal Government could not purchase the services which NIST supplies from industry, because industry cannot supply them any more.

In reference to item (5): you might as well eliminate NIST completely as cut it 25%.

I hope these comments will be of some help. If I can do anymore, please contact me.

George H. Thomson
Vice-Chair, Technical Committee

cc: E. Buck, DIPPR
T. B. Selover, DIPPR



DUQUESNE UNIVERSITY
ROCKWELL HALL • PITTSBURGH, PA • 15282-0104

THOMAS J. MURRIN, DEAN
A.J. PALUMBO SCHOOL OF BUSINESS
ADMINISTRATION
TELEPHONE (412) 396-5156
FAX (412) 396-5304

September 5, 1995
FAX TO: 202-225-3895
(3 Pages)

Representative George E. Brown, Jr.
Ranking Minority Member
Committee on Science
U.S. House of Representatives
Washington, DC 20515

Dear Representative Brown,

Many thanks for this opportunity to respond to your welcome letter of August 28!

As you can see from my attached Bio, I've been fortunate to have had senior level experiences in Business, Government and now In Academe. I have lived overseas — and I've visited 45 countries. This allows me to provide an informed opinion on H.R. 1756.

In a word, it is mindless!

It would do substantial damage to our Nation's crucially important efforts for Economic Growth, Global Competitiveness and an Improving Standard of Living!

Therefore, I vigorously urge that it be voted down in its entirety!

Good Luck!

God Bless!

Most sincerely,

Thomas J. Murrin
Dean

Attachment
TJM:nlj

THOMAS J. MURRIN

Thomas J. Murrin was named Dean of Duquesne University's A. J. Palumbo School of Business Administration; effective January, 1991 — after serving for 18 months as Deputy Secretary of the U. S. Department of Commerce; nominated by President George Bush and confirmed by the U. S. Senate.

At the Department of Commerce, Murrin was deeply involved in a variety of executive activities — including the 1990 Decennial Census; the Malcolm Baldrige National Quality Award and its initial application within the Commerce Department; the modernization of the National Weather Service and the new Advanced Technology and Manufacturing Center Programs. As "Acting Secretary" for Secretary Mosbacher, Murrin attended Cabinet and other top level meetings with President Bush, Vice President Quayle and other senior Federal Government Executives.

Since returning to Pittsburgh, he continues to promote Quality and Competitiveness initiatives as a member of the Executive Committee of the D.C.-based Council on Competitiveness and as a Board Member of several organizations including Motorola and the Duquesne Light Company. Tom has become a nationally-recognized proponent of Total Quality Management in Academe — with numerous invited presentations across the Country.

At Duquesne's Business School, he has helped to develop innovative programs to distinguish its teaching and research — particularly in the increasingly important field of Global Competitiveness and Economic Growth. In 1993 and 1994, Faculty-Industry Study Trips were made to Japan and Germany — and in 1995 to Nicaragua and the Dominican Republic.

During his earlier involvement with educational institutions, Murrin was Distinguished Service Professor of Technology and Management at Carnegie Mellon University; Chairman of the Board of Trustees of Duquesne University; a member of the Board of Trustees of Fordham University; and served on the National Board of "Cities In Schools."

As part of Murrin's community service activities in Pittsburgh, he led a successful fund-raising effort at Mercy Hospital where he was Chairman of the Board for nine years — and participated in similar efforts at Duquesne University and for United Way Drives. Murrin was the Honorary Chairman of several successful fund-raising drives during recent years — and currently co-chairs the Cities-In-Schools fundraising effort.

Recruited to the Westinghouse Electric Corporation as a graduate student in 1951, Murrin initially worked as a manufacturing/materials engineer. Over the next 36 years, he served in various positions with Westinghouse — including European Manufacturing Representative based in Geneva, Switzerland; corporate vice president of Manufacturing; senior vice president of the Defense and Public Systems Group; and president of the Public Systems Company. Murrin retired in 1987 as president of the

THOMAS J. MURRIN

Page 2

firm's highly regarded Energy and Advanced Technology Group — an organization with nearly \$5 billion in annual sales. As a member of the Westinghouse Management Committee from 1974 until his retirement, Quality and Productivity Improvement were elevated to key corporate initiatives under his guidance. During his Westinghouse career, he travelled to more than 40 countries.

Building on his extensive foreign travel and study of industrial operations, Murrin served as a U.S. delegate to the NATO Industrial Advisory Group, headquartered in Brussels, Belgium. He was a member of the Defense Policy Advisory Committee on Trade of the Department of Defense and served as chairman of DPACT's Subcommittee on Trade Relations with Japan.

He was the first chairman of two prestigious advisory committees to the Federal Government; i.e., the Board of Overseers of the Commerce Department's Malcolm Baldrige National Quality Award, and the Defense Department's Defense Manufacturing Board. Murrin was a member of the President's Commission on Industrial Competitiveness — and chairman of the Board of Governors of the Aerospace Industries Association.

A native of New York City, Murrin received a bachelor of science degree in physics from Fordham University in 1951 where he was a starting tackle under Coach Vince Lombardi; has done graduate work at several universities; and is a Fellow of the National Academy of Engineering. He was born April 30, 1929, and is married to the former Dee Coyne of New York City. The Murrins have eight children and four grandchildren and live in the North Hills of Pittsburgh.

Among Murrin's honors are the Order of Merit, Westinghouse Electric Corporation; Annual Achievement Award in Business, and the Encaenia Award, Fordham University; National Leadership Award, American Productivity Center; James Forrestal Memorial Award, National Security Industrial Association; Election to the National Academy of Engineering; Manufacturing Management Award, Society of Manufacturing Engineers; Hall of Fame, Cardinal Hayes High School; Honorary Degree of Doctor of Management Science, Duquesne University; the Excellence In Manufacturing Award; National Security Industrial Association; Appointment as a Fellow of the World Academy of Productivity Science; the 1994 Pittsburgh Man Of The Year Award In Education; and in 1995, an Honorary Doctorate of Humane Letters from Fordham University.

4/30/95

DURON
PAINTS & WALLCOVERINGS

August 17, 1995

The Honorable George E. Brown, Jr.
Ranking Minority Member
Committee on Science
U.S. House of Representatives
Suite 2320 Rayburn House Office Building
Washington, DC 20515-6301

Dear Congressman Brown:

Thank you for your letter of 11 August 1995, asking us at Duron to comment on H.R. 1756 which proposes to change the structure and function of the Technology Administration.

Founded in Washington, D.C. in 1949, Duron, Inc. manufactures architectural paints and coatings in factories located in Beltsville, Maryland and Atlanta, Georgia. Our products are marketed through 207 company-operated stores located east of the Mississippi River from Pennsylvania south to Florida, as well as through 150 independently-owned retail dealerships. This year, Duron's sales will exceed \$210,000,000, making us a mid-sized company among American paint manufacturers. From our inception, we have grown strongly and successfully by focusing on providing quality products and quality service to professional painters, and our company's approach to the marketplace has been strongly influenced by this quality orientation.

In our relationship with NIST, we have sought a partnership that would allow us to participate in the technologically complex effort to develop a standardized method of predicting and testing the service life of protective coatings, a key to determining coating quality. Such a complex effort would not be possible for a company of our size without participation in NIST's Cooperative Research and Development Agreement (CRADA) on Service Life Prediction. We have been very pleased with the program, which is focused, productive, timely, and produces clear results. It has enabled us to tap the resources available within NIST for assisting the development of business technology otherwise denied to small businesses like ours, and we are therefore highly concerned about the ill-advised bill H.R. 1756, which would dismantle one of the few agencies of the federal government of true use to small business.

In response to your specific questions:

1. We believe the federal government should play an active role in making federal technology expertise available to the private sector. We think that NIST has proven itself to be well positioned and organized to play this role. Duron is not experienced in many of the NIST external programs

DURON, INC.

BELTSVILLE HEADQUARTERS/MANUFACTURING • 10406 TUCKER STREET • BELTSVILLE, MARYLAND 20705-2297 • (301) 937-4800
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such as ATP and MEP, but we are quite familiar with and strongly support NIST's CRADA program which has supplied impressive, useful and productive results in the short time we have been participants. In two decades of our experience, trying unsuccessfully to forge similar links with academia, we have never experienced such a successful partnership as with our CRADA program with NIST.

2. We believe that efforts to privatize NIST would destroy its unique capabilities.

Somewhere within its massive bureaucracy, the United States government needs to maintain a research capability which can span the dimension from basic research to commercial application. Such a program requires a broad, well-integrated set of research resources which supports creative programs focused on the development of commercially-applicable technology. Privatization would inevitably limit the scope of such resources, focusing attention upon return on investment, rather than on useful creativity. Farming out portions of the research resources would inevitably raise costs and impair the smooth integration of the research process. In this regard, we are not aware that NIST's essential functions are duplicated by other government agencies, or for that matter by the private sector. We have found NIST to be unique in its capabilities, the focused talents of its people, the range of specialties accessible on one campus, and the practical focus of its programs made available for further business development.

3. We are not able to comment on this question.

4. The role of standardization and measurement is quite different from that of basic research.

Attempts to combine these functions will inevitably cause one to be strongly subordinated to the other. We do not believe that the National Science Foundation, whose basic role is to support university-based research, has the resources, expertise, nor the orientation to carry out NIST's functions. It certainly does not have the industry relationships needed to effectively continue NIST's work. If it is to be reorganized, the Department of Commerce should be structured to meet the real needs of American business, to enhance productivity and to boost competitiveness, rather than simply eviscerated to meet politically expedient short-term goals. We would like to see the Commerce Department reformed along these lines, with NIST remaining under its control so that NIST can concentrate on its central mission: rapid commercialization of technology for the benefit of American business.

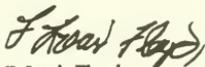
5. There is little point in speculating on which programs would be damaged by a 25% cut in NIST's programs. Clearly, it would lose capability, skills, and flexibility in meeting the needs of its constituencies. We do not think that such a cut is in the long-term best interests of our nation.

6. In summation, we feel that the elimination of the Department of Commerce would cause major erosion in our government's ability to create focused programs relating to the broad areas presently covered, including trade. We should be trying to hone our competitiveness and improve our productivity, rather than dismantling one of the few federal government resources which is truly useful to American industry.

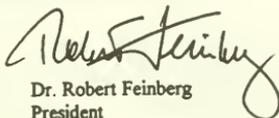
For all of these reasons, we hope that H.R. 1756 will be abandoned in favor of legislation that reforms and improves the functioning of the Department, instead of simply killing it off without regard to the useful role waiting to be filled to ensure a healthy future for American business.

Yours sincerely,

DURON, INC.



F. Louis Floyd
Technical Vice-President



Dr. Robert Feinberg
President

RF/eb

EX:EXTRUDEHONE™Lawrence J. Rhoades
President*Innovation In The Pursuit Of Excellence™*

September 6, 1995

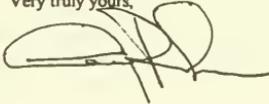
VIA FAX #202-225-3895 AND EXPRESS MAIL

The Honorable George E. Brown, Jr.
Ranking Minority Member
U.S. House of Representatives
Committee on Science
822 O'Neil H.O.B.
Washington, DC 20515

Dear Congressman Brown:

Enclosed are my comments and answers to specific questions relating to HR 1756
that you requested in your letter dated August 11, 1995.

Very truly yours,



l/jenc.

Re: *U.S. House of Representatives*
Committee on Science
Letter Request by George E. Brown, Jr.,
Ranking Minority Member,
dated August 11, 1995 relating to H.R. 1756

Reply by:
Lawrence J. Rhoades, President
Extrude Hone Corporation

GENERAL COMMENTS:

I am grateful for this opportunity to share my thoughts on and experiences with the Commerce Department activities that would be affected by H.R. 1756. I understand the pressures on Congress to reduce both the budget deficit and taxes. I can accept that the most obvious approach to achieving these objectives is to reduce spending. But I urge care and contemplation before wielding an axe that may cut deeply into the muscle—not the fat—of the American economy.

The budget deficit is impacted, of course, by tax revenues as well as expenditures, and it is the difference between the two that matters. Cutting expenditures that generate many times their cost in tax revenue perversely *increases* the deficit. And, it is not higher taxes that American businesses and workers object to, but rather taxes that take a high percentage of their earnings. If the expenditures funded by those taxes provide the catalyst to generating higher business profits or substantially higher productivity supporting higher real wages, they will be welcome and will generate more tax revenue without "raising taxes." The point is that this is not a "zero sum" game where every "winner's" prize is matched by a "loser's" loss. It is a mission of "value creation" (much like the activities of business itself) in which the infrastructure facilitating commerce among the economy's private sector participants plays as important a role in providing a U.S. national competitive advantage as the U.S. workers and businesses themselves do. Only the Federal government is in a position to share in the value created for all the beneficiaries of the infrastructure improvement through its taxing authority. The private sector creators of the improvements are able to capture for themselves only a small fraction of what the benefits will generate in increased tax revenue. Much of America's national competitive advantage is drawn from its infrastructure: transportation, communications, political, legal, financial and educational systems. But, for some time it has been apparent to those working in manufacturing that the translation of new scientific knowledge into new methods and tools that are widely used on America's factory floors has not had an efficient infrastructure, and its absence has caused U.S. manufacturing competitiveness to suffer greatly. Continuous, unprecedented trade deficits, dramatic reductions in the international buying power of the U.S. dollar, and an unrelenting shift

of manufacturing jobs out of the U.S. are evidence of that suffering. Preventing further declines in America's competitiveness has become critical.

"Today, the so-called industrialized nations employ 350 million people who are paid an average hourly rate of \$18 (including benefits). However, during the past 10 years, the world economy gained access to large and populated countries, such as China, the former Soviet Union, India, Mexico, etc. Altogether, it can be estimated that a labor force of some 1,200 million people has become reachable at an average hourly cost of under \$2 and, in many regions, under \$1." (Art Dodge, Dodge-Rugupol, Lancaster, PA)

Consequently, U.S. manufacturers (large and small alike) are under intense global pressures to improve values and reduce costs—in other words, to maintain a significant productivity advantage in the face of rapidly improving productivity in these emerging countries."

In a way that other sectors of our economy are less sensitive to, U.S. manufacturers are already competing internationally, even if they don't export. The manufactured products marketed in the U.S. market come from around the world—in unprecedented volumes. These are the goods of international trade. Worker value—in time and skill—can be stored and transported within manufactured products. The value supplied by U.S. workers sits side by side on U.S. retail shelves, next to the value of their foreign counterparts. The value of a skilled U.S. *service* worker's time is also defined—in international standards—in terms of the internationally traded goods and services that can be purchased with the *proceeds* of that time which, in turn, depends on the productivity of those in the U.S. economy who manufacture. Manufacturing competitiveness is central to the standard of living of every member of our economy—whether they are directly involved in manufacturing or not.

My business and my job within it have permitted me to work closely with hundreds of manufacturing companies across the U.S. and through much of the world in dozens of industries from aircraft to automotive to aluminum extruders. My company invents, develops, builds, sells, installs and assures the successful use of innovative manufacturing technologies. It is a machine tool builder.

Our customers include many of the largest manufacturers in the U.S. as well as many small die "shops"—some with fewer than a dozen employees. As a rule, when a company buys our equipment, they are committing to a change in their manufacturing methods. It is in understanding this process of change, first-hand on those hundreds of factory floors, and in understanding how the programs that would be impacted by H.R. 1756 can help that process, that I may have a contribution to make to your deliberations.

From my perspective, it is the facilitation of constructive changes—of intelligent modernization—to which the Technology Administration, and particularly NIST, are directed. Increasingly, the competitive advantage that American manufacturers can maintain in using advanced manufacturing methods is their major weapon in staying competitive with foreign manufacturers exploiting dramatically lower labor costs. It is not that American workers can work harder or are

innately more intelligent than their Chinese counterparts whose products they must compete with, it is that they have better manufacturing skills, methods and technology available to them and can consequently "work smarter" and with better organization. In today's globally competitive marketplace, U.S. manufacturers must work *much* "smarter" than their counterparts if they expect to continue to pay ten times the hourly wages to their workers.

The programs of the U.S. Department of Commerce that would be eliminated or crippled by H.R. 1756 are precisely and efficiently enhancing that intelligence by expanding the arsenal of new technologies available to U.S. manufacturers through the ATP and accelerating the implementation of appropriate modern technologies and management practices into the "guts" of America's industrial strength--its smaller manufacturers--through the Manufacturing Extension Partnership Program.

These smaller manufacturers are today in a particularly vulnerable position. They have absorbed nearly two million jobs shed over the past 25 years by large U.S. manufacturers and now employ 60 percent of the U.S. manufacturing work force. Yet, they use a technology level that is at least a decade (often two decades) behind the latest, most efficient technologies used by their large company customers and their German and Japanese small company competitors. The technological advantage they still retain over their low-wage, newly industrialized competitors is fading rapidly.

I serve as the Board Chairman of a NIST MEP in western Pennsylvania and have assisted in reviews of MEP's in New York, Ohio and California. Most importantly, I have been an MEP client and recognize the value that can be provided by an MEP. In spite of the things that make our company unique, there are many areas of our business in which we are no better and no more knowledgeable than other small American manufacturers. The maze of changes occurring in manufacturing methods and technology offer both compelling benefits and frightening risks to small manufacturers who typically have a closely knit workforce and very limited working capital. Dealing with these changes without unduly risking either the futures of those who have committed their careers to the company or our painfully accumulated capital base is something I lose sleep over. These concerns have been eased by our local NIST-supported MEP organization. They have facilitated networking with other area companies who have faced similar decisions and their shared experiences have enabled us to envision and evaluate our choices. The MEP has also provided consulting help to assist us in properly and rapidly implementing those choices--sometimes with the help of other area support organizations the MEP has linked us to. NIST's MEP strategy has leveraged both local organizational and co-funding support with a national network of MEP centers and manufacturing extension professionals who share experiences, tools and "lessons learned" to continuously improve the MEP program itself. I believe the MEP mission and its management are squarely directed to the type of support needed to accelerate the selection and adoption of the methods and technologies needed by America's small entrepreneurial manufacturers to maintain our productivity advantage over our rapidly improving foreign competitors. That advantage supports our national comparative living standard advantage and can help to close our national budget deficit.

In a complementary effort, the ATP seeks to expand the menu of enabling technologies that, once widely implemented, can provide dramatic new productivity advantages to the U.S. manufacturing base. Contrasting with DoD and SBIR programs, the NIST ATP program painstakingly seeks out needs that are deemed critical to *industry*--not to the government funding agencies. The ATP also encourages vertically integrated teams of technology users, technology providers and research universities to insure and accelerate the implementation and maturation of new knowledge to new industrial "know-how."

ATP awardees must provide matching funds to the effort as well. This requirement not only leverages the NIST investment, it assures both the economic importance of the effort and that the awardees are pursuing the project with a commitment to implementation. Only through the implementation of the development can the awardee's cost-share investment be recovered.

As a recent ATP awardee, I can offer some comments on our specific project that may provide some insight into the impact of the program and its potential to empower America's most potent competitive advantage--its spirit of innovation. Our industry partners in the project are Ford and General Motors, whose interest in and commitment to our proposed technology was crystallized through the ATP "focus program" on Motor Vehicle Manufacturing Technology. In the process of identifying and selecting focus program areas, automotive industry needs were identified as nationally important due to the size and trade relevance of the industry. Fuel efficiency, emission cleanliness and production flexibility were all articulated as important to the industry's future. My company had been nurturing ideas for several years relating to manufacturing processes that had the potential to precisely and economically enhance and control the air flow to each cylinder of an auto engine and to generate highly accurate combustion chambers. By providing more accurate, leaner and more fully mixed fuel/air ratios to each cylinder of every engine and dependably repeatable compression of that mixture via precision combustion chamber cavities, engine power, fuel efficiency and exhaust cleanliness are all improved. Yet, to be viable in the U.S. auto industry, this must also be done very economically. The ATP supported development effort is directed to establishing methods to do precisely that. If successful, for production costs of an additional ten to twenty dollars per car, the technology could yield fuel savings of five percent or more, significantly improved exhaust emissions, and production flexibility that would easily "flow tune" standard castings to the requirements of specific niche market opportunities.

On the other hand, there is substantial risk and it's possible that these technologies won't be successful. We think they will be and we're risking a major portion of our net worth to prove it. Ford and General Motors are risking even more of their money and will receive no government funds from the ATP award. Yet, none of us, not Ford or GM, nor their casting and material suppliers, and certainly not us, as equipment suppliers, will be able to capture a major share of the value created. It will flow to the economy as a whole. My company will earn a bit supplying equipment to the casting suppliers of Ford and GM; the casting suppliers will earn a bit more than this in using the equipment to process the castings. The aluminum suppliers will earn a bit supplying aluminum since the processes are more suitable to aluminum than to cast iron or plastic; and Ford and GM will earn a bit by capturing marketshare from their foreign competitors due to the improved value of their product. The U.S. automotive industry employees will earn a bit more as a result. Through taxes, the Federal government will share in the benefit captured in each

of those ways. Most of the value will pass to the U.S. automotive consumer, however, and to all of us who will benefit from a marginally cleaner environment. My company is making as big an investment as we can make without losing the company. Ford and GM are investing substantially in an unproven idea, receiving no ATP funds.

If this technology would proceed to commercialization at all in the absence of the ATP, it would almost certainly do so in Europe or Japan where fuel costs are substantially higher than in the U.S., and the ability to exploit the fuel savings benefits might be stronger. The catalytic role of the ATP in this effort is critical--not only in providing a share of funding, but also in structuring the program in a way that provided incentives to collaborate within the technology supply chain--from university researchers to our role as innovator/champion, to casting and material suppliers, to major automobile producers. A small innovative company teamed with two of the largest companies in the world, pursuing an innovative approach to manufacturing that could have broad benefits would simply not have happened without the ATP because the innovator could not have gotten the attention of his partners and could not have effectively harnessed the benefits of his idea. The "upside" was too much of "long shot," and the "downside" was ruin. The idea would have remained as only an idea and the opportunity for realizing the innovation and its broad economic benefits would almost certainly have been lost.

Together, the ATP and MIP programs work collectively to provide a technology infrastructure to build and maintain a national industrial competitive advantage that is the foundation of our nation's economy. These infrastructure investments provide value throughout the economy that is uncapturable to any entity unable to gain a share of the widely distributed aggregate benefits through enhanced tax revenues. But, the need for this infrastructure is so critical and the aggregate value created by its implementation is so great that the resultant tax share of that value overwhelms the cost of the investment.

Re: *U.S. House of Representatives
Committee on Science
Letter Request by George E. Brown, Jr.,
Ranking Minority Member,
dated August 11, 1995 relating to H.R. 1756*

Reply by:
*Lawrence J. Rhoades, President
Extrude Hone Corporation*

RESPONSE TO SPECIFIC QUESTIONS:

- 1) *The Technology Administration was established to provide a focal point within the federal government for making federal technology services and expertise available to the private sector. H.R. 1756 would largely terminate all of these efforts and retain only the "standards and measurement" function. What would be the impact of such proposed changes? What role, if any, should the federal government play in making federal technology expertise available to the private sector, particularly small and medium-sized manufacturers? How would you compare the value of NIST's external programs such as ATP and MEP to other technology programs, such as the Small Business Innovative Research program and cooperative research and development agreements?*

Answer: The ATP program is directed to industry needs as opposed to the needs of the funding agencies generating SBIR solicitations. Very few of the SBIR solicitation topics are related to manufacturing processes and many are very specific and narrow. The SBIR process is rather long, with Phase I awards of \$50,000 to \$75,000, and Phase II awards of \$500,000 to \$750,000. More than a year passes between proposing a project in Phase I and receiving significant funding in Phase II. No cost sharing or collaboration partners are required, which in some respects is more attractive for proposers but is perhaps less likely to lead to realized technology advancements. We have received five SBIR awards for nearly a million dollars in funding—nearly all of this directed to developing sophisticated tactile sensing for robots. The funding agencies, DoE and NASA have critical needs for robotics in contaminated areas and space. The commercial world is not yet ready for the highly sensitive and responsive system we developed. We have managed to incorporate the developed technology into other products but have yet to find a market for our tactile sensing technology.

Negotiating cooperative research and development agreements seems to be highly dependent on the contractor operating the laboratory and is generally harder to do than it seems it should be, particularly for smaller companies. In any case, the result, if successful, is the assistance of Federal lab personnel and facilities in developing products or processes for industry. It's like having a very high tech advisor rather than the networking and hands-on advice of the MEP directed to intelligently choosing modern but currently commercial manufacturing technology. It is somewhat analogous to the ATP in that a private sector company collaborates with a lab to develop or adopt a technology in which the lab has expertise. I have not yet seen it work and am still struggling with how the collaborative effort of the lab personnel is to be focused on industry needs if there is any conflict with priorities within the lab.

- 2) *What would be the effect of selling or privatizing NIST laboratories and functions as called for in H.R. 1756? What private sector entities, if any, would be likely to carry on the functions of those laboratories and facilities? What would be the impact of privatization be on operating NIST's nuclear reactor in Gaithersburg? What functions of the NIST laboratories, if any, are duplicated by other agencies or the private sector? If the federal government were to purchase the same services from private labs, would there be significant reductions in federal spending?*

Answer: We have employed NIST's metrology laboratories to evaluate and qualify some of our special metrology products and they have done an excellent job. The transfer of that laboratory to any other public or private organization would dilute their credibility, neutrality and industry focus and would be unlikely to save money as the perceived value of their services would be reduced to their "customers."

- 3) *The House appropriations committee has already eliminated funding for the ATP (except for carryover projects) and only minimal funding for MEP for FY'96. If the House funding levels are enacted, would the proposed reorganization in H.R. 1756 achieve any additional cost savings for NIST's remaining functions?*

Answer: I am less familiar with NIST activities outside of the Metrology Lab and the MEP and ATP programs, but it seems to me that no savings will be realized—only the expense and confusion of the "musical chairs" that the reorganization seems to propose.

- 4) *What would the impacts be of transferring NIST's standards and measurement functions to the National Science Foundation? Does the NSF have the expertise, close relationship to industry, and resources needed to carry out such programs? How would such a transfer affect NSF's basic mission of supporting university-based research? Are there other*

agencies which might be better suited to house NIST's functions if the Commerce Department is abolished, or are there agencies to which NIST's functions should not be transferred? What is your opinion of moving NIST programs to the Department of Energy or a new Department of Science? Should NIST be established as an independent agency if the Department of Commerce is eliminated?

Answer: Transferring NIST's standards and measurement functions to NSF would be misguided and inappropriate. NIST's overriding objective is to facilitate commerce for the benefit of the national economy. The scientific groundbreaking it may engage in is directed to that objective—not the pursuit of science itself. No cost savings would result, as the people and expertise currently at NIST would simply move to another agency with a less appropriate mission.

I feel it is critical for NIST's standards and measurement activities to be driven by industry needs, by people familiar with and committed to fairly and neutrally brokering industry interests. A university research NSF focus or a government agency DoE focus or what I imagine a Department of Science focus would be all missing the point that facilitating commerce is the central task of standards and measurement. For these activities particularly, NIST should become an independent agency if the Department of Commerce is eliminated.

- 5) *What would be the impact of cutting the remaining NIST programs by 25 percent?*

Answer: They would likely lose more than twenty-five percent of their current effectiveness.

- 6) *If appropriate, please comment on the impact of H.R. 1756 on trade—in particular, the elimination of a Departmental home for trade policy.*

Answer: A departmental home for trade policy has long been needed and only recently implemented in Commerce. The fragmentation of these activities within the Federal government is the source of long standing frustration for me and other small businesses, particularly exporters. I served on and chaired the ExIm Bank Advisory Committee in 1987 and 1988 and was surprised and disappointed by the lack of coordination and occasional heated conflict among the eight or so agencies involved in international trade.

William G. Parzybok, Jr.
Chairman and
Chief Executive Officer

August 28, 1995

The Honorable George E. Brown, Jr.
U.S. House of Representatives
Committee On Science
Suite 2320 Rayburn House Office Bldg.
Washington, DC 20515-6301

Re: H.R. 1756, Department of Commerce Dismantling Act

Dear Representative Brown:

Our corporation enthusiastically supports Congressional efforts to reduce costs and improve the effectiveness of all federal agencies and functions. We support H.R. 1756 as it stands with the exception of the privatization of the basic standards laboratories currently administered by NIST. We believe that basic standards and the laboratories which support these standards are rightfully the responsibilities of the federal government and should remain under NIST sponsorship. NIST could become a smaller, more efficient independent agency if the Department of Commerce is eliminated.

We must remain on a level playing field with other major countries to assure our national competitiveness and to eliminate any possibility of trade barriers arising based on the lack of standardization between trading partners. In fact, "Standards" can become non-tariff trade barriers unless we maintain a strong government commitment to them.

With regards to Technology Administration, we support the concept of state support through local technology centers working with smaller companies and the private sector taking the role away from the federal government.

Our corporation is committed to reducing federal spending and federal programs wherever possible but we also recognize the need for an efficiently organized and adequately funded government organization to maintain, distribute, and improve our national measurement standards.

Best Regards,



William G. Parzybok, Jr.

WGP:va



September 7, 1995

Mr. George E. Brown, Jr.
 Ranking Minority Member
 Committee on Science
 U.S. House of Representatives
 Suite 2320 Rayburn House Office Building
 Washington, DC 20515-6301

Dear Mr. Brown:

Thank you for the opportunity to comment on the impact of H.R. 1756. The perspective presented as well as the opinions expressed in this letter are purely my own and in no way reflect those of Harris Corporation.

The standards, measurement and export licensing activities of the Department of Commerce are important to maintaining our nations' economic strength and leadership in high technology industries. In these areas, the Department of Commerce has developed the sensitivity and skill to meld the diverse, parochial interests of the academic, industrial and government sectors into pragmatic, timely compromises. Any organizational structure which limits this capability to balance academic purity, the financial self-interest of industry and the public welfare/national security concerns of government in the establishment of standards and measurement methodologies or the granting of export licenses will not serve the nations' overall best interests of economic strength, job creation and leadership in the development of intellectual property. I would expect a significant compromise in balance would result from placing these activities in any organization with a primary mission in one of these areas.

In response to your numbered questions:

1) No, it does not make sense to me to move NIST labs or NTIS to the Department of Energy. The NIST labs provide a practitioner's knowledge and the connections to industry which supports good decision making in the areas of standards setting and measurement practice. If you have never changed an automobile tire, or had to pay for parts, it would be hard to understand why you wouldn't just use 15 bolts to be certain it was attached safely. The NIST labs and the standards and measurement activities should be kept together. Based on the previous arguments, these functions would be best served as a combined, independent agency.

NTIS is an information clearing house which, as I understand it, has paid for itself over the past few years. It has accomplished this by understanding its customers' information needs and developing a cost-effective system for satisfying them. Embedding such a focused, effectively running organization in any larger bureaucracy would not appear appropriate. NTIS would function better

as an independent agency, or possibly, given the service and products it provides, as part of the Library of Congress.

2) I believe that there would be minimal impact on the country if the TA's efforts to make federal technology services and expertise available to the private sector were terminated. The arguments here are a bit involved but, basically, the private sector is driven by return on its investment. So long as private industry is aware of federal technologies, then, the measure of a technology's potential for economic payoff (and therefore intellectual property development and job creation - appropriate benefits to the country as a whole) is gauged by industry's willingness to pay for its development. Elimination of ATP matching funds and MEP infrastructure investment, would force industry to bear the full cost of the technology transfer. The programs which industry decides not to fund will therefore be those which it considers of the lowest potential or the highest risk/reward ratio. Money is never infinite. There are always more programs than funds. If industry determines that there is not adequate value in a fully costed program, since they are the sole beneficiaries, I find it hard to believe that there would be significant harm in eliminating the programs industry declines to fund.

I believe that the federal government must make industry-aware of federal technology expertise so that industry can make the decisions outlined above.

The TA programs, ATP and MEP, basically substitute governmental judgment for private sector judgment with regard to the value of funding new technology development and providing manufacturing technology support resources. SBIR and CRADA programs are fundamentally different. SBIR funding supports the goal of stimulating growth in small to medium size companies. CRADA's make use of the government's knowledge, as a user, in the solicitation and evaluation of program funding. These would seem to be more supportable reasons for investment and offer a higher chance of worthwhile returns than that of the ATP and MEP programs.

3) Privatizing NIST laboratories and functions would destroy the delicate balance of motivations necessary for the labs, in conjunction with the standards activity, to proceed in the over-all national interest as described above. A private, non-profit structure (such as IIT.) for a combined labs, standards and measurement organization might be able to achieve an acceptable balance in support of the overall national interest.

I do not believe that the NIST laboratories are inefficiency run or that industry laboratories enjoy any unique economies of scale. Consequently, I can't see how the federal government would realize any significant cost savings through such a change. From a more qualitative perspective, purchasing lab capability from a for-profit provider might be acceptable in the short-term, however, over time, without the effective balancing of academic, industrial, public welfare and national security perspectives, the ability to advance standards and measurement techniques in the overall national interest is likely to be lost.

4) Again, I believe that NIST is quite professional and efficient in performing its core tasks and find it difficult to believe that cost savings would result from performing these functions in an alternate government organization.

5) The impact of transferring NIST's standards and measurement functions to the National Science Foundation would be to "over-influence" their decision making with an academic, scientific bias for theoretical purity or fundamental understanding. I believe that the process would become significantly less real world oriented and become less effective at serving the overall national good. The NSF has or could develop all the required quantitative interfaces with the world. It does not believe however that it can neutralize the impact of its primary scientific/academic mission. To me, the issue of an effective home for these NIST functions rests on finding an organization which, by mission, orientation and leadership, can act in a balanced fashion.

6) I believe that the remaining NIST programs, which includes the standards and measurement functions, have marginal current funding to carry-out their jobs. Further cuts will only exacerbate the situation.

7) The Department of Commerce is the only participant in the export licensing segment of the trade policy arena which has the ability to view such decisions in a balanced light. All others have primary missions of furthering only one dimension of the national interest. I am concerned that loss of such a mediating presence will inappropriately reduce exports in the name of national security or another, single focused mission.

Again, thank you for the opportunity to present my opinions. I hope they are of some value in helping you resolve a very difficult situation in a manner of best service to the people of the United States.

Sincerely,



Henry Simon

ICSES: Information and Communication Systems for Emergency Services
P.O. Box 41136, Los Angeles, CA 90041
(213) 258-4440

18 September 1995

The Honorable Representative George E. Brown, Jr.
United States House of Representatives
2300 Rayburn House Office Building
Washington, D.C. 20515

Dear Representative Brown:

This letter is in support of the National Institute of Standards and Technology (NIST) Advanced Technology Program (ATP). As the program funding comes to debate I felt it important to inform you of our small minority owned business that has submitted a proposal to the NIST ATP.

We are developing a mobile satellite communications and information management system for Emergency Medical Services (EMS). A brief summary of the project is attached. The system is designed to take advantage of low cost personal computer hardware and software integrated with emerging advanced technology in mobile satellite communications. These systems are being developed to provide a personal satellite telephone system that is expected to have future costs competitive with cellular telephone.

A feasibility experiment of the concept was completed last year using the NASA Advanced Technology Communications Satellite (ACTS) and I was the principle investigator for that experiment. The results and EMS interest were very encouraging. This prompted my colleagues and I to form a company, ICSES: Information and Communication Systems for Emergency Services, for the purpose of developing an advanced emergency services communication and information system for EMS use. Our proposal is currently in semifinalist review.

ICSES is a small "grass roots" company of engineers, paramedics and physicians. We are motivated by the need to improve emergency medical care, reduce cost, and to feel that our engineering efforts are having a direct positive result. I conceived the idea very late one night in 1989, while working on the Voyager Spacecraft flyby of the planet Neptune. After reading about the problems with EMS communications in Los Angeles, I could not understand why we received information from Neptune but not from East L.A. The motivation of the other engineers is not unlike mine. Our engineers have worked on the Stealth Fighter, the Voyager Spacecraft, Star Wars projects, and commercial flight test projects. The paramedics and physicians are motivated by treating patients day after day. They know that improvements can be made that will provide better patient care at a lower cost. We are interested in seeing our work directly

benefit the people and friends we live with. One project physician worked as a paramedic and emergency nurse prior to attending medical school, another graduated medical school as a 35 year old single mother. Our team brings a special character to this project. ICSES is a unique company.

We feel that this project is important to the Nation, California, and Los Angeles. Our NIST Proposal "An EMS and Trauma Information and Communication Infrastructure," number 95-10-066, is currently under review as an ATP semifinalist. Without ATP funding we may not be able to carry this project forward. Please consider our company and this project when voting for ATP funding: not all companies funded by NIST are the "Who's who" of health care or in the "Fortune 500."

Sincerely,



Bruce P. Jackson
President, ICSES

I) Executive Summary

The Development of an Improved Emergency Medical Service Information Infrastructure...

Project Description

The purpose of this project is the development of an emergency medical services information infrastructure.

This system will be based on mobile satellite communications, local wireless communications and an advanced field data collection capability. The system will provide rapid voice and data communication between paramedics in the field, a command hospital and the receiving hospital. Improvements in paramedic medical oversight, more efficient treatment and transportation of patients will be the result. Pre-hospital patient and paramedic information will now be provided in a timely, useful and cost effective way. Duplication of data entry and storage will be eliminated. Direct cost saving can be achieved and a national long term cost saving is possible by improving patient care and improved outcomes.

Paramedics will use the system tools to rapidly collect patient information and transmit the information to a command hospital where it will be displayed and reviewed. The data will also be linked to an oversight management database and could also be linked to a hospital clinical medical record. The project tools will be developed through rapid proto-typing using existing software applications and hardware. The advanced technology for this project has not been used in EMS. User feedback is critical to the success of this project. ICSES: Information and Communication Systems for Emergency

Services will be working with the major EMS organizations of California.

The Mobile Satellite Solution

An example of how important satellite communications can be is given in the following story. As a skier, you just had the best skiing weekend of your life. You are not an Olympian but you felt like one. Somehow you just couldn't miss a gate, and have never worked so hard in his life, but yet, it has never been so easy. It was hard to leave the hill, and you stayed a little longer to have one last beer with the gang.

Somewhere on that long drive home, when your mind was back on the slope, you hit a patch of black ice. When you woke up, there was a tree where the passenger seat had been. The paramedics arrive and put you on a gurney. They had this worried, puzzled look on their faces, your condition is not in any textbook they have studied.

The paramedics need and want to consult with a hospital. Radio does not have the range and cellular does not exist out here. It is going to be an hour drive to the trauma center and your condition is very serious. The paramedics are experienced and well trained, but they need to talk to the doc's at that trauma center!

Communications are a very serious problem that have not been addressed or changed in over 30 years. Unfortunately, communications between the hospitals and paramedics can be summarized by the following:

systems and the increased use of private pre-hospital emergency responders provides a greater need and incentive for a more efficient method of caring for the pre-hospital care patient. Currently over forty percent of the patient transports to emergency departments are unnecessary. This creates a significant burden on the health care system. If additional information were readily available, unnecessary patient transports could be eliminated. Health care providers could implement this system as a cost-saving's program. Significant duplication of data entry tasks is occurring and can be eliminated. This will provide significant and immediate cost saving to the hospitals and EMS agencies. A marketing program will demonstrate improved patient care and reduced system cost. Market analysis has shown a huge potential and needs for an improved information management and communications system. These provide a unique opportunity for commercialization.

Proposer Experience and Qualifications

This proposal is an outgrowth of a concept initially developed by the non-profit group EMSAT: Advanced Technology for Emergency Medical Services. A short demonstration of the use of satellite communications for emergency medical service was conducted during January through April 1994. The EMSAT demonstration provided a very quick look at the technical and user feasibility of advanced communications and information management as applied to paramedics in the field and the medical staff at a command hospital. This demonstration provided a direct

understanding of the problems and issues involved. It also provided a direct measure of the task, and a better understanding of the requirements and effort required. The individuals who were the core group of the EMSAT project have formed ICSES: Information and Communication Systems for Emergency Services. ICSES is composed of physicians, paramedics, engineers and business professionals who bring many years of relevant experience to this project. They have the necessary user, technical and engineering experience for this problem and a clear understanding of the task that is necessary for the successful completion of this project.

Proposer Commitment

The great need for improved EMS communications and information management provides the underlying motivation. The emergency physicians and paramedics involved are required to deal with the current system on a daily basis. The engineers involved were the original group whom first came together in December 1990 and who formed EMSAT in October 1991. All these individuals have been working toward a solution since that time. The engineering manager has been working on this problem since the spring of 1989. The work completed to date is a statement of the proposer's commitment.

IEDC POSITION PAPER REGARDING THE DEPARTMENT OF COMMERCE DISMANTLING ACT

WHY ARE EXPORT PROMOTION ACTIVITIES IMPORTANT?: A U.S. POWER INDUSTRY PERSPECTIVE

- The worldwide market for privately-financed power projects is expected to be \$100 billion per year through the end of this decade. If the U.S. were to capture only 10% of this amount for exports, the \$10 billion per year could translate into support for 200,000 jobs per year.
- U.S. companies currently maintain global competitive advantages in private power markets as they have 1) a long-term tradition of private power and efficiencies, 2) a history of supplying construction, financial and engineering services and 3) worldwide leadership in providing equipment to projects such as turbines and boilers.
- Most future contracts to furnish electric power will be awarded to the private sector by foreign governments or government-owned or influenced entities (making government-to-government influence an important trade factor). The governments of our foreign competitors devote vast resources to promoting exports, both in export credit assistance and advocacy efforts, enabling their exporters to capture increasing market shares. U.S. government support is imperative to ensure that American companies can continue to compete fairly for these power project contracts.
- Export promotion programs play an inexpensive and effective role in helping underdeveloped countries meet their goals for economic and social advancement. Many private power developers are including infrastructure development, including hospitals, waste water treatment plants, ports, roads and schools as part of their power projects. In addition, private sector entities in their efforts to conduct business in these countries are bringing about swift legal and policy reforms, contract and regulatory reform, real cost pricing of power, currency reform, etc. in host countries where traditional U.S. development assistance (foreign aid) programs have not been successful.

HOW DEPARTMENT OF COMMERCE EXPORT PROMOTION PROGRAMS HAVE HELPED THE U.S. POWER INDUSTRY?

- The Department of Commerce's export promotion programs have directly assisted the U.S. power industry seeking to undertake overseas private power projects and have helped American firms win foreign contracts. Attached are several examples of ways in which the Department of Commerce has been helpful to members of the International Energy Development Council.

WHY ARE EXPORTS IMPORTANT?

- Over the last 7 years, U.S. exports accounted for over 1/3 of our nation's economic growth.
- Exports will grow 3 times faster than any other component of the economy in the next decade.
- Over the last 7 years, export-related jobs grew 8 times faster than total employment.
- Export-related jobs pay 13-17% higher wages than non export-related jobs.
- In 1994, exports of goods and services supported over 11 million jobs and within 5 years, they could support nearly 16 million.
- Between 15,000 and 20,000 U.S. jobs are supported (i.e. new jobs created or existing ones saved) by each \$1 billion worth of U.S. exports.

WHY THE EXPORT PROMOTION FUNCTIONS OF COMMERCE SHOULD BE PRESERVED?

- Compared to our major trading partners, the United States ranks last in expenditures for export promotion in relation to the size of its economy.
- Commerce is the only agency with a "cabinet-level voice" whose sole purpose is to further the needs/interests of U.S. industry, particularly overseas.
- Commerce coordinates the work of 19 agencies implementing the National Export Strategy (NES). The NES implements a government-wide, coordinated trade policy and export promotion strategy that will help open markets and increase U.S. exports.
- Commerce targets government resources to "Big Emerging Markets" as industry-specific (i.e. power) opportunities arise for investment overseas and increases in exports.
- The Advocacy Center, housed at Commerce, compiles and makes available for industry all information regarding major private power business opportunities in foreign markets. In addition, the Advocacy Center works with foreign ministers and Ambassadors to bring the full strength of the U.S. government together in support of U.S. bidders. The Advocacy Center is the "nerve center" bringing together in a single location all the facts, expertise, strategic planning and follow-up capacity needed to help U.S. companies win major private power deals abroad.

CONCLUSION: The export promotion activities of the Commerce Department should be maintained and fully funded otherwise the international competitiveness of U.S. business (and the U.S. Economy) will suffer.

INTERGEN COMPANY

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FAX

TO: Congressman George Brown, Jr.
Ranking Minority Member
US House of Representatives
Committee on Science
Suite 2320 Rayburn House Office Building
Washington, DC 20515-6301
Fax 202-225-3895

FROM: Edward M. Chait Ph.D.

DATE: September 6, 1995

Thank you for offering the opportunity for me to comment on H.R. 1756, the Department of Commerce Dismantling Act. My overall observation is that all governmental activities have to be viewed in the context of the times in which they are conducted. Departments which may have had extreme relevance in the context of a nation developing its technology at a rapid pace, may have been eclipsed by the development of the very industries which they supported. On the other hand, there are some definite technological activities which are best left to government. With this in mind, I advocate the most efficient organizations which can serve these functions without duplication. Considering the questions you posed in turn:

1. Standards and measurements are a logical function of government. Development and maintenance of basic standards must be impartial and not self serving with respect to a particular industry. These functions should be continued by government allowing prestige of US measurements and standards from an international perspective. Technical expertise of all kinds should be made available to small and medium sized manufacturers in the context of the MEP. My experience with actual operation of the MEP, Hudson Valley Technology Center, is that the expertise is provided by field engineers supported by federal funds. The government does not provide expertise here. Its role is limited to funding and program oversight. Many companies have profited from SBIR funding and have used this as a springboard to go from start-up to success. ATP offers the same promise, but the largest ATP grant was given to a biotechnology company subsequently acquired by a major pharmaceutical company. While I am pleased that a major biotechnology effort was supported, could the money have been raised by this high flying biotechnology company elsewhere.

Now that CRADA's are being administered sensibly by government, they offer a source of innovation for today's virtual companies.

2. The answer to the effect of selling or privatizing NIST lies in understanding the activities of NIST in a turn of the century context. The last 50 years has witnessed the rise and fall of great industrial research organizations, IBM, Du Pont, ATT, General Electric. These organizations downsized because their initial missions in developing basic technologies had largely been fulfilled. Innovation today is an exercise in technology management rather than continued technology creation. Since the 1980's, business has followed the new paradigm of spending its R&D money wisely, the same should apply to government. For some years now NIST has searched for relevant research projects of extreme practical value on the theory that these would aid industry. By and large, industry has failed to notice. In spite of some very good case studies and the Malcolm Baldrige Award, NIST research has not had an impact on management thinking in industry.

It may be a more intelligent choice to have the government focus its efforts on the fundamental research once done by industry and on the measurements which can only be done with its specialized equipment. Once, NIST and its predecessor NBS had equipment and facilities so unique, it was the envy of the industrial world. Today, much of this equipment is obsolete and better instrumentation can be found in routine use in factories, hospitals and industrial testing laboratories. Thus the government is faced with the choice of significantly upgrading NIST facilities to restore its leadership and make it world class competitive or scaling down its efforts in proportion to lowered expectations. Assuming that in today's climate scaling down is in order, privatization is a logical alternative except for those functions which must keep an arm's length relationship to preserve impartiality and resist conflict of interest. Since there are models of private contractors running government labs, the answer on whether this is cost effective can be forthcoming from actual performance.

3. Reorganization in NIST could certainly effect some savings. NIST has a large staff for administration and programs which could certainly be cut at no expense to the quality of science in the remainder of the organization. Without ATP, NIST would not need the staff associated with economic analysis of ATP projects and the project managers.
4. NIST's standards and measurement programs should not be transferred to the NSF. NSF has no experience in running such programs nor does it have the industrial relationships needed. To my knowledge, NSF has no laboratory infrastructure or hands on experience with experimental science. NIST would be better served as being an independent agency or part of a Department of Science.
5. It is difficult to comment on the effect of cutting NIST by 25% without knowing what programs would be eliminated or reduced. Cutting the correct 25% could produce a stronger, leaner organization with focused advanced

resources to really make an impact on technology development and knowledge transfer to industry.

6. I have no comment on a Departmental home for trade policy.

Please consider my responses a constructive. I have many friends and professional colleagues in NIST who make excellent contributions to our government and to science. A complete review of any activity to make it more cost effective an appropriate to the current context is beneficial. Although the process is painful, it will assure more credibility of government in the eyes of industrial leaders and the public for the future. Such activities of review and reorganization occur in industry periodically. Government should have the same interest in the stewardship of its resources. While I would like to see NIST and the Department of Commerce survive the current onslaught, I would like to see them emerge as lean, effective organizations which have earned respect.

U.S. House of Representatives
The Honorable George E. Brown, Jr.
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Washington, DC 20515-6301

Klaus B. Jaeger
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August 28, 1995

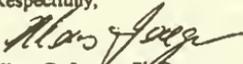
Re.: H.R. 1756

Dear Mr. Brown,

Thank you for giving me the opportunity to respond directly to you and thereby to the Committee on Science regarding the Department of Commerce Dismantling Act, H.R. 1756. At first it is quite a shock to hear and see the proposed legislature but after some considerations, parts of program begin to make sense to me.

I have made an attempt to answer the six listed questions in detail using my experience with the Department of Commerce from the last 14 years. I am not familiar with all the functions and consequently can only provide partial responses. It is hoped that my answers will help you in future actions regarding this legislature.

Respectfully,


Klaus B. Jaeger, Ph.D.
Manager, Metrology

PS: Due to Corporate restrictions, I have to respond from home using my home address. To get Corporate approval for this response would have taken weeks.

With respect to the six specific questions asked in your letter, I respond as follows:

Question 1:

The Technology Administration was established to provide a focal point within the federal government for making federal technology services and expertise available to the private sector. H.R.1756 would largely terminate all of these efforts and retain only the "standards and measurement" function. What would be the impact of such proposed changes? What role, if any, should the federal government play in making federal technology expertise available to the private sector, particularly small and medium sized manufacturers? How would you compare the value of NIST's external programs such as ATP and MEP to other technology programs, such as Small Business Innovative Research program and cooperative research and development agreements?

Answer 1:

Where federal technology services and expertise exist, it should be made available to the private sector. Regardless of the final outcome of H.R.1756, a focal point for disseminating such services and expertise is required provided the federal government retains some if not all of them.

The focal point for technology transfer from the federal government to the private sector has to be a federal agency to avoid any possible bias. There should not be any restriction as to small, large, or disadvantaged business that might benefit from the transfer. However, there has to be a restriction that prohibits transfers to foreign nationals or foreign owned businesses.

In addition, there is no need to have several technology transfer facilities in the country to administer this task. One centrally located facility should suffice. Also, there has to be a mechanism in place that assures transfers in one direction and one direction only and not from the private sector to the federal government. If the private sector has surpassed the federal government for a certain expertise, then the government has to get out of that function!

It is my opinion, that the external programs such as ATP and MEP constitute government subsidized technology and manufacturing programs. It is contrary to free enterprise and hence very similar to European subsidies to industry. I understand that many small companies are going to suffer if these programs are cut, but in many if not most cases it will effect large corporations. - In contrast to these external programs, the cooperative research and development agreements are absolutely superb and deserve continuance. These agreements should be expanded throughout all of industry. - I have no direct knowledge about Small Business Innovative Research programs but it appears to constitute a bias approach to help small business and should be decided in the spirit of free market economy.

Question 2:

What would be the effect of selling or privatizing NIST laboratories and functions as called for in H.R.1756? What private sector entities, if any, would be likely to carry on the functions of those laboratories and facilities? What would the impact of privatization be on operating NIST's nuclear reactor in Gaithersburg? What functions of the NIST laboratories, if any, are duplicated by other agencies or the private sector? If the federal government were to purchase the same services from private labs, would there be significant reductions in federal spending?

Answer 2:

First of all let us make sure that it is understood that NIST does a lot more besides "standards and measurements" functions. These other functions include research in physics, chemistry, computer algorithm, as well as engineering development in robotics, fire safety, etc. In terms of basic research, the NIST laboratories are world class. It would be a pity to lose that capability. However, certain aspects of the research and engineering efforts could clearly be privatized. By this I mean private industry and not another government laboratory under DoD or DoE. Examples would be microscopy on the atomic level for which excellent research efforts exist already in industry (IBM, AT&T, etc.), or coordinate measuring machines being utilized throughout industry, or robotics which is driven in large parts by industrial competitiveness such as in the automotive sector, chip production, etc. Any additional efforts in such specific areas should probably be organized through the NSF with grants to academic institutions.

NIST's Nuclear Reactor: No first hand knowledge, but why can this research not be done by GE or Westinghouse? Why not by DoE facilities like Oak Ridge or Idaho Engineering? If transferred to private industry, what will happen if this technology is bought out by foreign investors? Hence, there has to be government facility for nuclear reactors but not in duplication.

Duplication of effort is always difficult to assess unless one has first hand knowledge of all related facilities. Clearly, many of the research efforts at NIST can be done at Universities. Institutions like Lawrence Berkeley can do some functions efficiently giving adequate funds. As a matter of fact, Lawrence Berkeley is quite successful in maintaining the data base for atomic particles, nuclear structures, and perhaps others. It is very doubtful that such tasks can be handled efficiently in private industry since there is no growth in profits possible. It has to be cautioned that in most of these examples, continuance is the biggest concern. Data bases of atomic or molecular spectroscopy need continuous updates and maintenance.

Another case would be duplication of efforts by the government in "standards and measurements". NIST's activities could clearly be consolidated with the standards laboratory of Sandia National Laboratory funded by DoE but managed privately, with standards laboratories of DoD (at least three facilities), with standards laboratories of NASA, etc., etc. However, one central facility has to remain that stays independent from any private sector to avoid any possible bias.

In addition mundane, basic research has to be considered. NIST is one of the few facilities in the world that continuous with research in basic, fundamental standards. In general such research is not very attractive to graduate students and hence universities will have a difficult time sustaining efforts in these areas. Yet these efforts are vital to the "standards and measurements" and of extreme importance to U.S. industries.

The Malcolm Baldrige Quality Award program has been administered by NIST for several years. Since it is strictly an award program for industry, it requires industrial knowledge and understanding. The NSF could take control of it if it widens its approach from academia to include industry. This should definitely be possible.

In summary, duplications should be coordinated within government facilities. Only one facility should expand efforts for one particular task, e.g., reactor physics and engineering. - Transferring NIST's functions to private industries poses a difficult problem. Even though it could be done for all aspects, except trade policy issues, it would within time cause a problem for staying free of any possible bias.

Question 3:

The House appropriation committee has already eliminated funding for the ATP (except for carryover projects) and only minimal funding for MEP for FY'96. If the House funding levels are enacted, would the proposed reorganization in H.R.1756 achieve additional cost savings for NIST's remaining functions?

Answer 3:

Additional cost savings are possible by eliminating functions and programs carried out by other government agencies or laboratories. Of the remaining functions, cost savings appear to be feasible due to lower overhead rates and facilities.

Question 4:

What would the impacts be of transferring NIST's standards and measurements functions to the National Science Foundation? Does the NSF have the expertise, close relationship to industry, and resources needed to carry out such programs? How would such a transfer affect NSF's basic mission of supporting university-based research? Are there other agencies which might be better suited to house NIST's functions if the Commerce Department is abolished, or are there agencies to which NIST's functions should be transferred? What is your opinion of moving NIST programs to the Department of Energy or a new Department of Science? Should NIST be established as an independent agency if the Department of Commerce is eliminated?

Answer 4:

The NSF is known for administering national science programs. The organization is well respected within the science community throughout the world. It is NOT known for its expertise in working or interacting with U.S. industry. The NSF could make accommodations for NIST if the research programs are considered together with the "standards and measurements" functions. The part requiring close industrial relations would initially constitute an unnatural marriage. However, that function could be integrated into the overall NSF scheme. - If only the standards and measurement part transfers to the NSF, then it would constitute a stepchild in the organization and U.S. industry as a whole would suffer tremendously. In both cases, the NSF will not have the resources to carry out the administration of NIST activities. Additional funds would be required to remedy that situation. - Also, I do not think that the NSF's basic mission of supporting university based research would be diluted. (It is assumed here that appropriate funds transfer with the NIST and that only overhead savings be realized in the administration of its basic function.)

In terms of other government agencies, only the DoE comes to mind at this time. (Under no circumstances should DoD laboratories be considered.) Consolidating NIST with similar DoE laboratories such as Sandia National Laboratories and Oak Ridge National Laboratories could potentially lead to huge cost savings. (Just imagine if all the DoD standards and measurements laboratories were folded into this scenario. The cost savings for the country would be enormous.) However, DoE is still not the correct environment for NIST. The reader has to keep in mind that NIST has, apart from all the technical programs, one other important mission. This mission is to provide a link for standards, agreements, and understandings with other countries. This commerce link is extremely important for trade by the U.S. industry. It is very unlikely that other countries will

communicate effectively on these complicated issues with U.S. representatives that are not acting as spokesperson for the entire country.

A new Department of Science could possibly be a home for NIST especially in view of the existing basic research laboratories. But how will the commerce and trade issue fit into the new agency? It is still not quite right. If the Department of Commerce should be abolished, then the best alternative would be an independent NIST agency.

Question 5:

What would be the impact of cutting the remaining NIST programs by 25 percent?

Answer 5:

Assuming that the remaining programs are "standards and measurements", then an additional 25% cut would be disastrous. It will not be the death for NIST but industry will be required to go outside the country for some traceable standards support. That might be quite reasonable if NAFTA and NORAMET (North American Metrology Cooperation) are well established and agreements have been reached in the North American region for each one of the three countries (USA, Canada, Mexico) to provide certain basic standards for the entire region. At this time, such a system of trust and understanding is not in place and hence U.S. industry will acquire a costly handicap by having to buy these services wherever available. This will be even more evident in light of the current trend in quality to conform to ISO (International Standards Organization) standards.

Question 6:

If appropriate, please comment on the impact of H.R.1756 on trade—in particular, the elimination of a Department home for trade policy.

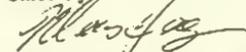
Answer 6:

The U.S. needs a home for trade policy. This function can not be privatized. However, it can be transferred to another agency as long as it is not the DoD. This country needs to speak with one voice on trade issues; especially in the future as all the countries with free trade are beginning to consolidate into trade regions.

The overall impact of H.R.1756 is difficult to assess. It is almost impossible to envision a country without a Secretary of Commerce. If not in the Department of Commerce, then a home has to be found in another agency to administer trade and commerce issues that are important to the entire country.

In terms of NIST, other possibilities exist. Several programs are not important to the NIST charter such as ATP and MEP. However, the basic research laboratories are an integral part of the "standards and measurement" world and the system has to be maintained as a whole. Privatizing NIST is feasible in terms of laboratories and "standards and measurements"; it does not make sense in terms international policy and interaction.

Sincerely,



Klaus B. Jaeger, Ph.D.
Manager, Metrology

**MASSACHUSETTS INSTITUTE OF TECHNOLOGY
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September 5, 1995

The Honorable George E. Brown, Jr.
U.S House of Representatives
Committee on Science
Suite 2230 Rayburn House Office Building
Washington, DC 10515-6301

Dear Mr. Brown:

I very much appreciate your invitation to comment on H.R. 1756, the Department of Commerce Dismantling Act. In my career as a university-based physicist (my research is in the area of atomic, molecular and optical physics) I have benefited both directly and indirectly from the activities of the National Institute of Standards and Technology and have come to understand something of NIST's role on the national scene. Consequently, I will focus my comments on the NIST-related questions in your letter of 11 August.

By way of background, let me mention that my own career in precision measurements was energized by the award of a NIST (then NBS) Precision Measurement Grant when I joined the faculty of M.I.T. more than twenty five years ago. I used my grant for research with the device known as the hydrogen maser. That research contributed values for some of the atomic constants that now appear in the table of Fundamental Constants prepared by NIST. This table is one of the metrological services that is absolutely vital to physics and that NIST, alone, can provide. The hydrogen maser research was also important in the development of atomic clocks- an area in which NIST properly has world renown.

NIST has responsibility for keeping and disseminating time. Dramatic advances in this area during the 1960s and 70s ultimately made possible the Global Positioning System (GPS). Although the GPS was created by the DOD, NIST contributed in many essential ways. The GPS story dramatizes how advances in metrology, stimulated by a research environment that encouraged progress along new frontiers, can enrich the nation. According to a recent NAPA-NRC study, the U.S. GPS industry is now at the \$1 billion level and is expected to climb to \$14 billion during the coming decade.

The metrological services of NIST are essential to manufacturing, medicine and science. Maintaining these services requires pushing forward metrological frontiers- as, for instance, in the advanced measurement and calibration procedures that are essential for micro-manufacturing. The rationale for NIST's laboratories is the interconnectedness of

research, advanced metrology and industrial innovation, as illustrated by the GPS story. I would like to cite one more example to illustrate this point. The history is ancient- it antedates NIST/NBS- but the story remains timely.

The modern era of precision mechanical measurements began in 1883 when the American physicist A.A. Michelson invented the optical interferometer that carries his name. His goal was to detect the motion of the earth through the ether. (His failure to find the motion opened the way to Einstein's theory of relativity.) Michelson realized that he could use the interferometer to measure machinists' gauge-blocks to a precision of a few millionths of an inch. His technique for replicating precise gauge blocks was crucial for the mass production of automobile engines and other machinery. Leadership in mass production was one of the keys to this nation's pre-eminence in manufacturing through the post World War II years. Looking to the future, we will have new technologies and new industries in which distances are measured in terms of the size of atoms rather than the wavelength of light. Innovative standards and new measurement techniques will be essential to their development. NIST has important work to do.

The atomic clock and the Michelson interferometer demonstrate that metrological advances can be a powerful tool for industrial innovation. However, such advances do not occur in an isolated laboratory focused on a narrow goal: they occur in a healthy atmosphere of basic and applied research. Furthermore, only in such an atmosphere is it possible to attract the first rate scientists that are needed for maintaining a first rate standards and measurement program. Consequently, any attempt to separate the standards and measurement program from the broader research program of the NIST laboratories would not work. The standards and measurement services would simply stagnate. In summary, NIST's laboratories are essential to its core mission.

Let me now turn to some of the specific questions in your letter.

2) What would be the effect of selling or privatizing NIST laboratories and functions as called for in H.R. 1756. What private sector entities, if any, would be likely to carry on the functions of these laboratories and facilities. The effect would be a disaster. The pay back from NIST's mission to maintain and disseminate standards—including the research programs required for staying at the frontiers—is enhanced prosperity for the nation as a whole. There is no profit in NIST's activities to be captured by any individual company.

What functions of the NIST laboratories, if any, are duplicated by other agencies or the private sector. If the federal government were to purchase the same services from private labs, would there be a significant reduction in federal spending?

NIST's mission to develop and support measurements, standards and data is unique. I know of no other organization, private or public, that carries out this function. Even assuming that there would be any users for a private entity whose partiality cannot be guaranteed, a laboratory that attempted to provide NIST services would have to show a profit. The costs would necessarily be higher.

4) What would be the impact of transferring NIST's standards and measurements function to the National Science Foundation?

Such a proposal reveals a misunderstanding of both NIST and the NSF. They have different missions, different goals, and different stakeholders. The answer to the question "Does NSF have the expertise, close relationship to industry, and resources needed to carry out such program?" is *absolutely not*. If NSF were to broaden its mission to include commerce and industry—the ultimate users of the standards and measurements program—there would inevitably be serious conflicts with its mission to support basic research. As explained, NIST's measurement responsibility cannot be separated from its research activities. Consequently, transferring NIST's measurement responsibilities to NSF would require NSF to run its own laboratories, breaking its long and successful tradition of supporting research in universities and related institutions but not carrying out "in house" research. The consequences for university research could be disastrous.

Are there other agencies which might be better suited to house NIST's function if the Commerce Department is abolished, or are there agencies to which NIST's functions should not be transferred?...

It is obviously desirable to maintain NIST within a department for which commerce is the primary responsibility. If no such department exists NIST would be better off operating as an independent agency rather than bending its mission to fit some other agenda, such as the energy mission of the DOE. To consolidate NIST with other research activities within a Department of Science runs the risk of isolating the research from the user. There is also a concern that the pluralistic nature of U.S. science—long regarded as a source of strength*—would be destroyed. The benefits of a Department of Science would have to outweigh those risks. At present it is difficult to see how that could be the case.

5) What would be the impact of cutting the remaining NIST programs by 25 percent?

Let me describe briefly the role of the NIST laboratories in the U.S. today. As you know, long term industrial research in the physical sciences has been drastically curtailed, university research is starting to stagnate due to financial pressures and the erosion of the scientific infrastructure, and many government research programs have

been cut back. Nevertheless, science remains crucial to our future. The NIST laboratories are a key element of our national scientific infrastructure. Furthermore, NIST is an institution of scientific excellence. The staff of the NIST laboratories includes some of the world's outstanding scientists. The recent discovery of Bose-Einstein condensation at the Joint Institute for Laboratory Astrophysics in Boulder is a case in point. I am enclosing a copy of a letter I sent last July to the Director of NIST, Dr. Arati Prabhakar, describing my view of the significance of this discovery. _

The nation cannot afford to discard NIST or let it deteriorate. A 25% cut in its budget would damage NIST gravely. The long range (and possibly short range) impact on industry would be significant.

NIST's mission is as important as ever- possibly more important because of the anticipated rapid rate of technological innovation. NIST deserves to be carefully preserved in any process of reorganizing or dismantling the Department of Commerce.

Sincerely,



Daniel Kleppner
Lester Wolfe Professor of Physics
Associate Director, Research Laboratory of Electronics

Encl: letter to A. Prabhakar, 7/11/95

MASSACHUSETTS INSTITUTE OF TECHNOLOGY
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July 7, 1995

Dr. Arati Prabhakar
Director, NIST
Gaithersberg, MD 20899

Dear Dr. Prabhakar:

This is a letter of congratulations for the latest jewel in NIST's crown. Eric Cornell's observation of Bose-Einstein condensation is a scientific triumph of the first order. Having worked towards BEC in hydrogen for many years, I am in an excellent position to appreciate his accomplishment. Cornell's results are truly breathtaking.

It is a tribute to NIST that it has been able to sustain the atmosphere in which this basic research could flourish. Cornell's achievement rests on advances in atom-light interactions that are due in large part to NIST scientists such as Dave Wineland, Bill Phillips, and, of course, Cornell's mentor Carl Wieman. When viewed as a totality, this research enterprise is absolutely superb.

At this time when NIST is practically under budgetary siege, such an accomplishment provides evidence, if any is needed, that NIST thoroughly deserves support. I wish you the best of luck in your efforts to sustain NIST as a resource for the nation.

Yours sincerely,



Daniel Kleppner
Lester Wolfe Professor of Physics

Comments of John P. McTague
Vice President - Technical Affairs
Ford Motor Company

On H.R. 1756, S.929, the Department of Commerce Dismantling Act

I am pleased to offer some personal observations on H.R. 1756, S.929, the Department of Commerce Dismantling Act. Since my expertise and experience are most relevant to the research and technical roles of the National Institute of Standards and Technology (NIST), I will focus on this area.

The core activity of NIST, namely standards and associated research, have served this nation well for almost a century now. Throughout this period Federal support has been seen as appropriate for the same reason that support of health research or fundamental science research has been and continues to be pursued, namely that there is a substantial national purpose whose benefits are so broadly distributed that no single institution could expect to capture the benefits of private investment in this area.

Has NIST outlived its federal role, or has its role declined in relative national priority? Is there a better, more cost effective way to address the future? These are the questions with which the Congress must deal as the Government structure becomes leaner.

As technology becomes ever more sophisticated and pervasive in our society and the information age changes both how we work and how we recreate, standards become ever more important to our people, to our products, and to our nation. And, this importance does not stop at our borders. In a global economy, it is essential for a competitive nation to be at the leading edge of standards research and standards setting. They go hand in hand, and must be closely coupled. If we lag, international standards will be set by others, resulting in a following position in technology implementation. This would have negative implications for the nation's economy.

Does all this mean that standards-associated research and standards setting is solely, or even primarily a federal role, with industry merely a bystander or bit player? Absolutely not. This country has evolved a very efficient and effective system of standards research and standards setting, wherein industry consortia do the majority of standards setting and research. For instance, in the automotive industry, automotive manufacturers and suppliers share research data and agree on industry specific standards through the Society of Automotive Engineers (SAE). Many other industries engage in similar collaborative standards setting.

NIST, however, has a unique responsibility for research and standards setting and maintenance in areas that cut across many industries and, often, even broader societal areas. Examples are fundamental standards of length, mass, time, temperature, energy, electricity, and magnetism.

There are other areas, of increasing importance, where there is a joint responsibility between industry and the federal government. Typically, these might involve several industries who have some stake and some particular expertise, but no one industrial association (such as SAE) to act

as convenor and research catalyst. An example is STEP, a pioneering effort to develop a data standard across industries which can enable seamless data sharing among product designers and manufacturing engineers, not only within a given company, but also with both present and potential suppliers, even those which use different computer systems. Here, NIST acts as both research catalyst and convenor of broad industry participants to ensure that our nation is on the leading edge in this essential evolving area. Furthermore, it provides an effective national voice in the global standards environment, enabling us to more than hold our own in the international arena, particularly with an increasingly effective and strident standards activity in the European Community.

These few examples, chosen from many, illustrate that there is an important federal role in both standards research and in standards setting and maintenance, and that it is important that both federal roles (standards associated research and standards setting) be extremely closely coupled in an entity that commands global respect.

NIST is unique in these respects within the United States, and its character and integrity need to be maintained and strengthened, even in this era of sustained budget stringency. Does this mean that any change in NIST would be harmful? Of course, not! Henry Ford once said, "Everything can always be done better than it is being done." As I have argued, there is a continuing and appropriate federal role, and efficiency in executing this role calls for keeping both the research and the standards setting activities within a single NIST organization. One might, however, consider partial privatization, through a Government Owned, Contractor Operated (GOCO) laboratory system for NIST. This gives substantially greater flexibility than allowed by federal procurement and Civil Service regulation, and has been successful in operating NASA's Jet Propulsion Laboratory (JPL), and the Department of Energy's National laboratories, for instance. In this mode, the federal government would solicit bids from the private sector to manage NIST, while continuing the appropriate federal roles of overall policy setting and funding.

If the Congress decides to dismantle the Department of Commerce, the new "home" for NIST should present not merely a transfer of responsibility, but an opportunity for synergy. The National Science Foundation (NSF) does not, in my opinion, offer such an opportunity, and even presents the danger of distracting NSF from its unique role to advance university based basic research. However, close coupling with the substantial, broad-based research and development activities of DOE's National Laboratory System (already GOCO's) might offer such an opportunity.

Thank you for the opportunity to express my personal views on this important matter.

The Alliance of Manufacturing
Extension Centers

T H E
MODERNIZATION
F O R U M

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Hon. George E. Brown, Jr.
Ranking Minority Member
House Committee on Science
822 O'Neill House Office Building
Washington, D.C. 20515

Dear Congressman Brown:

Thank you for your welcome invitation to provide written views to the House Committee on Science regarding H.R. 1756, the Department of Commerce Dismantling Act.

On behalf of over fifty grass-roots organizations across America that provide services to thousands of small and midsized manufacturers each day, I can inform you that we regard H.R. 1756 as misguided in its overall objective and profoundly unwise in its specific provisions regarding the Technology Administration of the Department of Commerce, the National Institute of Standards and Technology, and especially NIST's Manufacturing Extension Partnership (MEP).

As you know, in 1995 small manufacturers from all regions of the country have written over 1,300 letters to members of Congress strongly supporting the NIST Manufacturing Extension Partnership and the services they have received through the regional affiliates of this outstanding program. Yet H.R. 1756 calls for the immediate termination of the NIST MEP. As I trust the attached paper makes clear in much more detail, this would destroy one of the most effective federal-state partnership programs established by Congress in the past decade.

Fortunately, those who support H.R. 1756 and its ill-considered provision on the NIST MEP do not appear to speak for the majority of the 104th Congress. The House has already appropriated \$81M for the MEP in FY96. The Senate Commerce Committee has authorized an FY96 appropriation of \$91M.

I urge the Committee to remove the provision of H.R. 1756 that would terminate the NIST MEP and to preserve the MEP's valuable ties to NIST and the Technology Administration. The most constructive action would be to reject the entire bill. Thank you for your invitation and for your outstanding service on behalf of American science and technology.

Respectfully,

Jack Russell
Jack Russell, Ph.D.
President

The Modernization Forum



Manufacturing Extension Matters:

Building the National Manufacturing Extension Partnership

Manufacturing matters to America. Making what the world wants makes us a prosperous nation. And smaller manufacturers matter particularly. America's 381,000 manufacturing establishments of less than 500 workers employ nearly 12 million people and account for over half of our manufacturing production. Small and midsized firms make most of the parts, components, and tooling required by large manufacturers. They form the broad supplier base of our great metropolitan manufacturing centers and anchor jobs in smaller cities and towns across America.

Today, America's smaller manufacturers are challenged as never before. To perform in the emerging global marketplace, they must master modern technologies, management techniques, and methods of work organization. Our economy will be stronger if thousands of small and midsized firms accelerate modernization of their design, production, and marketing capabilities and the management methods that focus them.

The leaders of small and midsized manufacturers must drive modernization of America's industrial base. As they commit their companies to continuous modernization they would benefit from the support of resourceful organizations dedicated to their success. Unfortunately, most private for-profit consulting organizations have not been able to earn a competitive return serving small- and midsized manufacturers because of the high cost of sales required to reach many firms with modest resources.

Now, a growing number of smaller manufacturers can draw assistance from the Manufacturing Extension Partnership (MEP), the nationwide network of regional and local centers organized by the National Institute of Standards and Technology (NIST) and its state and private sector partners. Begun under President Reagan, enhanced under President Bush, and expanded under President Clinton, the NIST MEP has received growing support from Congress since 1989. \$74 million is appropriated for the NIST MEP in FY95. Today, 44 MEP centers and eight related pilot programs have been established in 40 states.

This federal investment is already earning a good return and developing markets. It leverages large matching investments by states. Most importantly, manufacturing firms that use MEP centers now report hard benefits of \$8 for every federal dollar the centers receive. Centers often use private consultants in their projects with firms and the firms assisted by MEP centers are *more* inclined to use private consultants in the future.

Like the firms they serve, the partners in the NIST MEP strive for continuous improvement. MEP centers listen to their customers and to their state and federal investors. In the spirit of continuous improvement, they welcome hard questions from the 104th Congress and offer the following responses to eleven questions that have already been posed.

Some Questions & Responses on Manufacturing Extension

1. Why Are Small- and Medium-Sized Manufacturers Particularly Important? Small- and medium-sized manufacturing enterprises are the foundation of American industry and do more and more of America's manufacturing.

Small- and medium-sized manufacturers are the broad supplier base for U.S. manufacturing, producing parts, components and tooling for large manufacturers whose products are sold worldwide. The 381,000 small- and medium-sized manufacturing establishments nationwide (98.7 percent of the manufacturing establishments) employ a total of 11.8 million people (64.9 percent of the manufacturing work force) and account for a combined annual payroll of more than \$322 billion (57.2 percent of the manufacturing payroll). Small- and medium-sized manufacturing establishments are responsible for the manufacturing sector's only job growth in recent decades. Manufacturing employment declined by 2.04 million from 1967 to 1992 at larger plants of 500 or more workers. During the same quarter century (1967-92), employment at small- and medium-sized manufacturing plants with fewer than 500 employees grew by 1.71 million. (Data from the U.S. Census Bureau's *County Business Patterns 1992: United States and Census of Manufacturers, 1967.*)

2. Why Is Manufacturing Extension Necessary? Small- and medium-sized manufacturers often excel in a specific manufacturing process, but many lack the internal staff to master all the dangers and opportunities of performing in the globally competed marketplace. Smaller firms have more difficulty than larger firms in identifying and carrying out high-priority improvement projects. They lack the in-house expertise, time, technical information and funds required to change their operations for the better, according to the National Research Council (*Learning to Change, 1993*).

Many smaller manufacturers have little or no experience working with outside consultants and cannot find appropriate technical experts to provide high-quality, unbiased assistance. Many consultants and consulting firms choose to work with larger manufacturers and ignore the small-firm market because of the high cost of sales involved in identifying clients and providing services to smaller manufacturers, especially those with fewer than 100 employees, the median size of MEP center customers.

The productivity growth of smaller manufacturers lags behind larger firms. Larger manufacturers improved their productivity (value added per hour worked in manufacturing) at an annual average rate of 2.9 percent from 1967 to 1987, the most recent year for which data are available. Small- and medium-sized manufacturing establishments' productivity grew at an annual average of only 1.3 percent during the same years. Small manufacturers are only 69 percent as productive as larger ones, according to the most recent data, down from 79 percent in 1967. (Data from the Census Bureau's 1967 and 1987 *Census of Manufacturers.*)

Market forces alone have not provided smaller manufacturers with all the resources they need to modernize, raise productivity, and make a stronger contribution to living standards and national economic competitiveness. A national network of centers with some public support to extend services to very large numbers small- and medium-sized manufacturers can overcome the cost of sales barrier and enable market forces to drive modernization of the industrial base.

3. What Is the NIST Manufacturing Extension Partnership (MEP)? The NIST MEP is a nationwide network of organizations that provide comprehensive, hands-on, technical support to modernizing small- and medium-sized manufacturers as they upgrade their equipment, improve their production processes, and strengthen their business performance.

The NIST MEP program awards limited federal funding *on a competitive basis* to non-profit manufacturing extension centers that serve firms in specific states and local areas. Each manufacturing extension center tailors its services to meet local needs. The centers provide technical expertise and hands-on assistance for projects relating to appropriate technology, quality assurance, business information systems, production process improvement, plant layout, market development, computer-aided design, computer-integrated manufacturing, waste reduction, material engineering, work force development, rapid prototyping, and other priority manufacturing issues.

NIST cooperates with state governments to set up MEP centers. In many cases, the MEP program builds upon, expands, and enhances established state-level manufacturing extension programs, including some that have been serving smaller firms for decades. But each center is a private, non-profit organization and *not* a part of the federal or state government.

The NIST MEP centers are market-driven -- almost all of them charge affordable fees to customer firms for technical assistance projects. The centers provide assistance broadly to the smaller firms in the manufacturing base of their states and communities. They do not and could not pick winners and losers.

The NIST MEP currently includes 44 affiliated centers located in 32 states and related programs in eight more states. A 1995 competition will add several new centers. A number of these centers are strongly established enterprises; many more are relatively new. The distribution of NIST MEP centers establishes federally supported manufacturing extension efforts in many of America's most industrial states. The 32 states with MEP centers account for 82 percent of all U.S. manufacturing shipments, 81 percent of all U.S. manufacturing employment, and 79 percent of all U.S. manufacturing establishments.

4. Is Manufacturing Extension Working? In a word: Yes. NIST MEP places a high priority on evaluating the impacts of its manufacturing extension centers. Based on early evaluations, the MEP is working very well.

During the program year ending in June 1994, the seven centers founded between 1989 and 1992 carried out some 12,350 services for over 10,000 small- and medium-sized manufacturers, including 2,885 technical assistance projects and formal assessments. The manufacturing firms that provided evaluation data said that they expected each individual technical assistance project, *on average*, to result in:

- \$191,473 in increased sales;
- \$17,518 in reduced inventory;
- \$23,776 in savings from labor and material costs; and
- five jobs created or preserved.

Fifteen months of evaluation data from the seven oldest centers and three months of data from five newer centers show that manufacturing firms are reporting total economic

returns of almost \$7 for every federal dollar that the centers receive. The economic benefits behind this seven-to-one ratio were calculated conservatively based on what the manufacturers said they expected in labor and materials savings, their reported savings from unnecessary capital purchases that they otherwise would have made, 60 percent of their change in sales, and 10-percent of the value of expected inventory reductions.

In 1994, Dun & Bradstreet Information Services surveyed 750 small- and medium-sized manufacturers that had been customers of MEP centers and 750 small- and medium-sized manufacturers that were not MEP center customers. A study based on this survey found that small- and medium-sized manufacturers served by MEP centers are up to *six times more likely* to organize specific improvement actions than small- and medium-sized manufacturers of similar size, type of operation, and unit volumes not assisted by a center. The planned actions included applying statistical quality control methods, using computer-based information systems, expanding the technical training of workers, and implementing just-in-time delivery procedures.

5. Who Delivers MEP Services to Customer Companies? A substantial majority of the directors, managers, and service-delivering field engineers at MEP centers are seasoned professionals with extensive backgrounds in private, for-profit manufacturing enterprises -- including small- and medium-sized manufacturers. MEP centers also make extensive use of the private, for-profit consultants.

6. Do MEP Centers Compete with Private Consultants Who Might Do a Better Job? Neither companies nor consultants themselves believe that MEP centers compete with private consultants. In fact, they complement private consultant services and enhance the potential small manufacturer market for consultants.

The recent study based on the Dun & Bradstreet Information Services survey confirms that more than 70 percent of the small- and medium-sized manufacturers assisted by MEP centers believe that the centers provide services that either complement the work of private consultants or are otherwise unavailable to the firms. The small- and medium-sized manufacturer customers of MEP centers value their services highly: 72 percent considered the center the only or better source for informal assistance or trouble-shooting at no or little cost; 64 percent considered the center the better or only source to perform cost-effective assessments of operations; 65 percent considered the center the only or better source for unbiased information on all relevant products and services for improvement.

MEP centers often retain private consultants for the project teams that serve customers. Consultants typically lower their rates for such work because they do not incur marketing or sales costs. Small- and medium-sized manufacturers are often reluctant to use private consultants, considering them difficult to find, screen, hire, control, and afford. But 40 percent of the small- and medium-sized customers of MEP centers indicated that working with the center made them more likely to use a private consultant. Nearly three out of four consultants that have worked with MEP centers indicate that the centers' services are beneficial to their businesses.

7. Why Should the Federal Government Help Fund the MEP Centers? Strong ongoing federal support for the Manufacturing Extension Partnership is needed to build and maintain the scale, scope, quality, coherence, responsiveness, and strong small- and medium-sized firm focus of the national network. Strong federal support for the MEP will make it possible to:

Overcome the cost-of-sales barrier to serving very large numbers of modernizing small- and medium-sized manufacturers -- private for-profit providers have not prospered serving small firms because the typical contract is too small to justify the expense incurred in finding and winning the customer;

Reach and assist scores of thousands of small- and medium-sized manufacturers whose improved performance can reverse and close the widening productivity gap between large and small manufacturers, strengthen U.S.-based supplier chains, save jobs, and improve incomes;

Assure that all manufacturing regions of the country have an industrial base of modern small- and medium-sized manufacturers that can defend markets against foreign competition and whose combined capabilities can help anchor the major manufacturers they now have;

Encourage states to invest in improved small- and medium-sized manufacturer performance (a national benefit) rather than intra-U.S. industrial recruitment (at best only a state benefit and often a net national cost);

Reach large numbers of worthy, very small manufacturers whose aggregate contribution to wealth creation and employment is significant but which require more effort to serve than larger firms and are often less able to pay the fully burdened cost of service;

Reach tens of thousands of smart firms in small towns that are often the keystone of the local economy but require more effort to serve than comparable firms in dense industrial metropolises;

Link centers together for consortial learning, benchmarking, timely adoption of best practices and tools through robust cooperation among all centers in the national network;

Deploy to scores of thousands of small- and medium-sized manufacturers the technical standards that are the essential enablers of modern manufacturing -- including the standards, technologies, and knowledge that small- and medium-sized manufacturers need to link into the national information highway;

Develop national and International standards through processes that include the voice of small- and medium-sized manufacturers in the United States;

Respond to unpredictable national security needs that require an agile defense supplier base of small- and medium-sized manufacturers to which national imperatives can be quickly communicated and from which timely performance can be expected; and

Improve small- and medium-sized manufacturers' access to federally funded technology through leveraging national resources such as the federal labs that can make a strong contribution to the modernization of thousands of small manufacturers.

Realization of each of these 11 worthy objectives requires an ongoing federal presence in the partnership. Indeed, the *partnership* is problematic without federal participation.

8. Are Changes in Federal Tax Policy an *Alternative* to the MEP? Wise fiscal policy can be a welcome complement to a nationwide network of manufacturing extension centers but *not* a substitute for the hands-on assistance provided by MEP centers.

Adjustments in the tax code that create incentives for small- and medium-sized manufacturers to modernize may eventually pay for the federal tax expenditure incurred, especially if the strongest benefits are targeted to small manufacturers where slow adoption of modern technology and lagging productivity have hurt national economic performance. The MEP community thoroughly respects the tax policy proposals in *Getting Back to Work*, the recent report of the bipartisan Northeast-Midwest Coalition's Manufacturing Task Force co-chaired by Reps. Franks and Meehan.

It is wrong, however, to force manufacturers to choose between tax breaks and the MEP center services so highly valued by thousands of firms that the MEP network has assisted to date. Well-targeted tax incentives can quicken the pace of technology adoption by small- and medium-sized manufacturers. The benefits of this rapid modernization will be increased for firms, communities, industries, and the nation if thousands of firms get good advice from the field engineers of MEP centers. Tax incentives encourage firms to invest in plant and equipment. MEP centers help modernizing firms to make a wise choice.

9. Why Not Reduce the Budget Deficit by Cutting the MEP? A successful MEP will help reduce the deficit through economic growth. Prospering small- and medium-sized manufacturers will generate taxable incomes and reduce social safety net outlays. By our estimate, increasing the annual rate of small- and medium-sized manufacturing establishments' productivity growth by just *one tenth of one percent* in five years would generate more than *one billion dollars* of additional federal revenue.

There are far better opportunities for deficit reduction than the modest appropriations for the MEP. In FY95, the represented only one tenth of one percent of the federal R&D budget, which is still largely dedicated to the missions of the Cold War era. Unlike most R&D spending, the economic impact of assisting the modernization of thousands of small- and medium-sized manufacturers through investment in the MEP is direct and immediate.

10. How Long Should Federal Funds Support Individual MEP Centers? Federal funds should only help support centers that pass aggressive performance reviews with distinction. The MEP should *never* guarantee permanent federal backing to individual centers.

The trial program that has become the MEP was authorized by the 1988 Trade Act. The primary objective was to transfer new technologies from federal labs directly to small- and medium-sized manufacturers through demonstrations and pilot projects -- a difficult experiment in which each center was properly limited to six years of federal support. Through years of experience in the marketplace serving firms in many different industries in all regions of the country the MEP partners have learned that the more important national mission is continuous deployment of current best practice technologies and methods to many thousands of small- and medium-sized manufacturers. This mission evolves as progress redefines best practice. This mission is worthy of ongoing federal investment.

Yet nothing would damage the market credibility of MEP centers more than for the national network to devolve toward a stable bureaucracy of entitled fundees. Small- and medium-sized manufacturers would shun the services of such centers. The MEP national network must be as dynamic as the manufacturers it serves. The best means to assure this is to compel centers, by rule or culture, to charge fees for most of their services. Maturing MEP centers are already required to raise a growing proportion of their revenues from non-federal (state and private) sources. If the current authorization in the 1988 Trade Act were amended to allow for federal support beyond the sixth year the amendment should require an aggressive review and competition for funds every two or three years.

The centers that continue to pass muster should continue to receive federal funds so that the national partnership maintains its mission of supporting modernization by small- and medium-sized manufacturers. The cost of sales required to reach very large numbers of small firms remains a barrier that centers can best overcome through public support.

The federal dollars that would fund MEP centers beyond their sixth year could allow those centers to continue to concentrate on smaller firms. Without government support, some centers will survive, but only by moving away from the critical small firm market to seek much larger customers that are less expensive to reach and serve and that can pay fees that reflect the fully burdened cost of the service. The final result might be a few more private for-profit consulting firms competing in a crowded market for the fees of Fortune 1000 manufacturing corporations -- an end far different than the sustained modernization of America's industrial base.

11. Is the MEP a Government Industrial Policy Picking Winners and Losers? Not remotely. The NIST MEP program does not pick winners from among technologies, industries, or firms.

MEP centers respond to a broad range of current needs defined by a wide variety of small- and medium-sized manufacturers in a given region. Centers do not bet on the future significance of any still-emerging technology. MEP centers support broad and timely adoption of those technologies and practices that the marketplace defines as enablers of competitiveness for specific sectors (e.g. computer-aided design and computer-aided manufacturing in tooling) or major industries (e.g. electronic data interchange in auto) or for all of manufacturing (e.g. Total Quality Management).

MEP centers can only achieve impact through sustained service to a large proportion of the small- and medium-sized manufacturers in their region -- not through focusing their resources on any small segment of manufacturers. Some centers do focus on large and very important industry concentrations in the areas they serve (e.g. aerospace in Los Angeles, auto in Michigan), while also responding at some level to the needs of all firms that seek assistance. MEP centers work with a broad range of customers, offering objective strategic dialogue to leading firms, providing average firms with engineering expertise they do not have on staff, and helping firms in stress define priority problems.

The Manufacturing Extension Partnership is sensible support for America's Main Street manufacturers, not industrial policy.



NANOPHASE TECHNOLOGIES CORPORATION
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September 1, 1995

Hon. George E. Brown, Jr.
U. S. House of Representatives
Committee on Science
822 O'Neill HOB
Washington, DC 20515

Re: H.R. 1756

Dear Congressman Brown:

Thank you for your letter of August 11, 1995, requesting comments concerning the Department of Commerce Dismantling Act (H.R. 1756).

My experience in this area is limited to my involvement with NIST under the ATP program. Attached is my statement from that vantage point. I hope it is helpful.

Sincerely,

A handwritten signature in cursive script, appearing to read "Robert Cross".

Robert Cross

U. S. HOUSE OF REPRESENTATIVES
Committee on ScienceH.R. 1756

Statement of:
Robert W. Cross, President/CEO
Nanophase Technologies Corporation
September 1, 1995

Although my company is still very small in revenue size, we are now the world's leader in the production and marketing of a revolutionary new variety of industrial raw materials that are critically important to the leadership of U.S. industry in world markets. That also means that the United States is now the world's leader in this important field. It was not always that way, and it would not be that way today were it not for the support of NIST and the ATP program.

My company is a pioneer in the field of nanocrystalline materials. That sounds very exotic, but it's very basic, and it has very broad application. Nanocrystalline materials are common raw materials, like iron and aluminum, in powder form, with particle sizes measured in nanometers -- that's a billionth of a meter, ten thousand times smaller than the width of a human hair. In this near-atomic size range, a large percentage of the atoms in the material reside on the surface of the particle, and enable the dynamic properties of the surface atoms to be exploited and manipulated to alter and enhance the performance of the materials far beyond the capabilities of conventional materials. As a result, new generations of products and processes become possible, and these spawn other new products and processes. The immediately available applications for these materials are numerous, and range from transparent skin-care products that combat skin cancer to high-stress engine parts that increase efficiency and reduce pollution.

The commercial potential of these materials has been known to scientists around the world for decades. The challenge has been to move the technology out of the laboratory and into commercial applications by developing means to produce quality materials in commercial volume at affordable cost. My company was spun off from Argonne National Laboratory several years ago for the purpose of further developing a lab-scale Argonne process that evidenced potential for commercial scale-up.

After three years of work under the ATP, we have successfully ramped-up this process. We are now able to produce these materials in tons rather than grams, and our materials now cost less than 10¢ per gram to produce rather than \$1000 per gram at lab scale. Our process, incidentally, was awarded the 1995 R&D 100 Award, which is given each year by *R&D Magazine* to recognize "the 100 most technologically significant new products in the world."

Because of our success in ramping up the production of these materials, we recently were able to sign an agreement with an international marketing organization to distribute our materials in more than 300 countries. One product has been released to the market, and two more are scheduled for release later this year. These and other applications that we are actively developing should represent more than \$100 million in revenues for my company over the next five years.

To support these applications, we also recently built and began operating a state-of-the-art production facility that was financed entirely with venture-capital money that came in after our work under the ATP program began. This new facility is the first in the world that is dedicated to the commercial-scale development and production of these materials.

It is these accomplishments that place my company -- and US Industry -- in a position of world leadership in this important field. And it would not have been possible without the ATP.

When my company applied for ATP support, the company did have a critically important technology with great potential, but the technology was only lab-scale; it was not proven to be commercially scaleable, and the ability to successfully engineer the materials for specific applications was not proven. The company itself was also quite small and fragile, with only one scientist, a nearly empty laboratory, little money, and no customers.

A company and a technology under these circumstances will not usually be supported by the venture-capital community or by corporate R&D budgets. In our case, it was the ATP, and only the ATP, that was available to provide the resources to ramp-up this technology. The ATP also provided us with the credibility to attract substantial industrial organizations (in our case, Caterpillar and Lockheed) as subcontract collaborators in the program. These collaborations catalyzed the program and greatly enhanced our prospects for success.

Then, importantly, as our work moved forward, our progress toward the ATP milestones gradually began to make the commercial potential of our technology apparent to private-sector funding sources. As a result, we are now supported by seven national venture-capital firms who have provided a total of \$5.7 million in equity funding. That represents six-times leverage on the amount of ATP funding that we received. Equally important, the focus of the ATP on developing a commercial-scale operation gave us a focus on the requirements of large mainstream markets. That focus, in turn, made us successful in those markets.

These are the reasons why we are now supported by the private sector, and why we are now selling these materials in the world markets. These are the reasons why we are now the world leader in this field, and why the United States is now in a position to benefit from the job creation and the trading strength in this very important field.

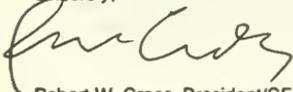
I would also like to point out that my company today has nothing to gain directly from the continuation of the ATP program. Our ATP contract was completed several months ago, and we have no further contractual interest in the program. It is from that vantage point that I state that this program is unique and critically important, and should be supported even when budget cuts are essential.

It is my hope that the Congress will have the wisdom to use a surgical approach -- and not a meat ax -- in implementing the required budget cuts. It is my hope that the Congress will have the courage to rise above the rhetoric about corporate welfare, and about choosing winners and losers, and look into the substance of this program. The ATP supports vital technologies in the risky pre-commercial stages of development when private-sector support is not usually available. In this role, the ATP program benefits the entire nation by supporting technologies that help to maintain the U.S. as a producing nation rather than a consuming nation, and by supporting technologies that otherwise would probably be forfeited to our foreign competitors in the world marketplace.

I also submit that the governments and the industries in the nations that we compete with in Europe and Asia are watching right now to see if our Congress, in the face of the current juggernaut to slash spending, will be so short-sighted as to shut off public support for pre-commercial technologies that are important to the future industrial strength of this nation. Those foreign nations have been supporting pre-commercial technologies for decades. That is largely why those foreign economies have become so strong. It would be short-sighted and tragic indeed if we were to throttle NIST and kill the ATP initiative, and abandon these technologies and these jobs to those foreign competitors.

Finally, I must confess it is ironic for me to take a stand in favor of any government program at all. I am a Republican. I am also a fiscal conservative, and I have a fundamental dislike for government programs. But this program is a bulls-eye. It works, it's critically important, and only the federal government can do it effectively. NIST is also uniquely qualified to carry out this work. NIST and the ATP program should be saved and supported.

Sincerely,



Robert W. Cross, President/CEO
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NCAR

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September 7, 1995

Robert Serafin

Congressman George E. Brown, Jr.
U. S. House of Representatives
Committee on Science
Washington, DC

Dear Congressman Brown:

I am happy to respond to your letter of August 28, asking several questions regarding the impacts of H.R. #1756 on NOAA and its programs. I am familiar with many of these programs, having worked with NOAA and its scientists for many years in a variety of research efforts. I also currently serve as chairman of the National Research Council's National Weather Service Modernization Committee and as chairman of the Technical Advisory Committee for the NEXRAD radar system, which is part of the NWS Modernization program and brings Doppler radar technology to the nation to improve weather forecasts and warnings.

Let me respond to each of your questions in order.

1) In 1969, the Stratton Commission recommended the establishment of an "earth sciences" agency, which eventually led to the creation of NOAA by Executive Order. Are there still compelling reasons – scientific, managerial, or operational – to maintain an integrated "earth science" agency to address oceanic and atmospheric issues? Are there still compelling reasons for such an agency to subsume research, operations, and enforcement functions?

I believe that there remain compelling reasons for an integrated earth science agency that addresses the nation's atmospheric and oceanic issues. As our society grows and, indeed, as the global society grows and develops, our natural resources, including the atmosphere and oceans, become increasingly important to all of us. Weather, climate and climate variability affect our daily lives and our economy. A healthful environment is essential to our well-being. And, since the oceans and atmospheres are international in nature, a very visible and high-level focal point within this country is necessary for effective interactions and discussions with other countries around the world.



Congressman George E. Brown, Jr.
September 7, 1995
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2) What would be the effect of selling or privatizing NOAA laboratories and functions as called for in H.R. 1756? What private sector entities, if any, would be likely to carry on the functions of those laboratories and facilities? What functions of the NOAA laboratories, if any, are duplicated by other agencies or the private sector? If the federal government were to purchase the same services from private labs, would there be significant reductions in federal spending?

I cannot forecast the effect of selling or privatizing NOAA's laboratories and functions. However, I don't understand why private sector companies would choose to take over these laboratories unless they were funded to do the research now undertaken within them. If that were to be the case, I could envision no savings in dollars. I can't imagine any private sector company assuming the fiscal responsibility for the laboratories without external funding.

The NOAA laboratories serve as the research and development arms of the operational services of NOAA. Without supporting research and development, these operational arms would be left with stagnating technologies and their operational effectiveness would dramatically degrade over time. Since the research underway within NOAA laboratories is very closely connected to the operational mission-oriented elements of NOAA, the two functions should continue within a single agency.

3) Would the proposed reorganization and funding reductions have an adverse effect on the quality, accuracy and timeliness of weather forecasts and warnings? How would H.R. 1756 affect the NWS plans for modernization?

The initial reorganization as proposed in HR #1756 might have no immediate impact on the timeliness of weather forecasts and warnings. This assumes, however, that funding and support for the modernization would continue. However, in the long run, modernization would be very negatively impacted because, as mentioned earlier, separation of the operation and research arms of NOAA would result in a long-term degradation of weather services since the necessary research on atmospheric processes for improvements to weather forecasting would be eliminated or fragmented.

Another factor that must be considered is the relationship of weather to climate. Weather forecasts and warnings usually refer to outlooks up to several days in advance. But there are patterns to weather that are being recognized and aspects of those appear to be predictable so that climate variability also needs to be addressed. Witness the exceptional number of hurricanes so far this season that were forecast in advance, partly as a consequence of changes in El Niño. El Niño

Congress George E. Brown, Jr.
September 7, 1995
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causes changes in wintertime weather all around the world. And weather patterns are changing because the climate is changing. It is vital that we continue to develop the capability for keeping track of these changes, making the observations, analyzing them appropriately, developing models and understanding and improving projections into the future. These are all very much research activities, ones where NOAA has led, and they must continue. I have been impressed with the quality of the research in the Climate Global Change Program of NOAA, and of equal importance, its utility to society.

4) What are the impacts of terminating NOAA's pollution research and estuarine and coastal assessment research? Does such research duplicate research at other federal agencies or at universities? Would the proposed termination of such research have any adverse effect on the ability to make rational regulatory decisions about ocean or estuarine pollution or natural resource management?

I am very concerned about pollution of our environment as are, I believe, a majority of Americans. From my perspective, NOAA's research does not duplicate research at other federal agencies or at universities, but certainly is complementary to activities there. Indeed, NOAA supports university research to help accomplish NOAA's objectives.

I'm not familiar with the work of all of NOAA's research laboratories, but I support continued research and development across a broad range of environmental science. It is only through understanding the physical, chemical, biological processes at work in the earth's system that we will be able to effectively manage these resources and protect them for generations to come. As noted earlier, this is becoming increasingly critical to society in a world in which the global population may double by some time in the next century.

5) Would the transfer of NWS to the Department of the Interior have any impact on the ability of NWS to carry out its mission? Are there other agencies which might be better suited to house NWS if the Commerce Department is abolished, or are there agencies to which NWS should not be transferred? What is your opinion of moving NOAA programs to the Department of Energy or a new Department of Science? Should NOAA be established as an independent agency if the Department of Commerce is eliminated?

If HR #1756 is passed, I imagine that the Department of the Interior is among the better choices for the location of the National Weather Service. However, without the underlying research,

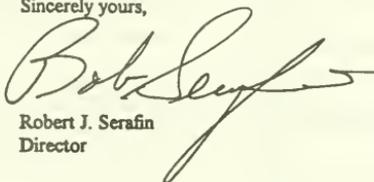
Congressman George E. Brown, Jr.
September 7, 1995
Page Four

as mentioned earlier, services would gradually degrade at a time when they are more important to the nation's economic health than ever before. I can think of no agency of the government better suited to house the National Weather Service than NOAA. The Department of Energy is clearly inappropriate. Energy is one of the beneficiaries of weather services but not the only one. Placing NWS in the Department of Energy might result in an undesirable bias regarding the emphases that the National Weather Service would place on its services to the nation. And, the National Weather Service should not be within a Department of Science, even were it to be established. The National Weather Service is a mission-oriented agency that provides services to virtually all people in the United States on a daily basis. This kind of an operational mandate, in my view, is clearly inconsistent with the concept of a Department of Science or any agency whose principal goal is science.

Among all of the options available, if the Department of Commerce is eliminated, I recommend that NOAA be established as an independent agency. The oceans, the atmospheres, and the physical processes that contribute to their well-being are so important to our society, that they deserve this level of visibility and attention by the Administration and the U.S. Congress.

I hope that you find these comments to be valuable and I will be happy to help in any way further that I can.

Sincerely yours,

A handwritten signature in black ink, appearing to read "Bob Serafin", with a long horizontal flourish extending to the right.

Robert J. Serafin
Director

cc: Colorado Representatives in the
U.S. House of Representatives
and the U.S. Senate



National Conference of Standards Laboratories

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August 31, 1995

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U.S. House of Representatives
The Honorable George E. Brown, Jr.
Suite 2320 Rayburn House Office Building
Washington, DC 20515-6301

Re: H.R. 1756

Dear Sir:

I am both pleased and honored to be selected for providing written views in regards to H.R. 1756. I will answer the six categories from three perspectives. First as a concerned citizen and a decorated, retired veteran who has devoted 23 years in the defense of our beloved country. Second, as the Director of Corporate Quality for a large corporation, and third, as the President of the National Conference of Standards laboratories. These three perspectives, I believe, will provide you with the broad spectrum of opinions required to fairly evaluate the impacts of this bill.

As the President of the National Conference of Standards laboratories, I am responsible for providing strategic guidance and overall management of a non-profit corporation that is composed of 1357 corporations worldwide, of which 1111 organizations or companies are located in the United States, its Territories or Possessions. As the Director of Corporate Quality, I am responsible for compliance to United States and International Standards that allow us to be globally competitive and for the need for international traceability for product acceptance. Lastly, as a concerned citizen, I express my personal opinions on the many facets of this far-reaching bill.

Sincerely,

William F. Doyle, President
National Conference of Standards Laboratories

"The Technology Administration was established to provide a focal point within the federal government for making federal technology services and expertise available to the private sector. H.R. 1756 would largely terminate all of these efforts and retain only the "standards and measurement" function. What would be the impact of such proposed changes? What role, if any, should the federal government play in making technology expertise available to the private sector, particularly small and medium-sized manufacturers? How would you compare the value of NIST's external programs such as ATP and MEP to other technology programs, such as the Small Business Innovative Research program and cooperative research and development agreements?"

Concerned Citizen: While I enthusiastically support the current Congressional efforts to reduce costs of government and to eliminate unnecessary burdens on industry, I hope that Congress will retain those programs and organizations which make major contributions to the international competitiveness of American industry. For that reason, I am very concerned with Section 206 (b) of H.R. 1756, the Department of Commerce Dismantling Act, which calls for the sale or other disposition of the standards laboratories of the National Institute of Standards and Technology. I view this proposal as a major mistake which would undermine this country's voluntary standard system, which in turn is the linchpin of quality manufacturing in the United States.

Director of Quality: Technology information available in any of the many federal laboratories should be available to the American public. Depending on the type of information, it should be treated as infra-technology, available to anybody without restriction, or as proprietary technology available under exclusive or non-exclusive license.

We can obtain a vast array of information from our contacts at NIST, the National Technology Transfer Center, the Federal Laboratory Consortium and other sources. The NIST Manufacturing Extension Partnership program provides technology information from the NIST laboratories and from other sources mostly to small and medium-size companies.

We see the Advanced Technology Program not so much as a source of extant information, but as a mechanism to develop new, pre-production state-of-the-art technology. As a company, we do not qualify for the Small Business Innovative Research program.

NCSL President: We represent over 7000 scientists, engineers, and technicians from U.S. companies involved in industrial and trade related measurements. We rely on NIST for a wide range of technical information related to measurements, data, and reference materials. NIST keeps us very well informed about innovations in measurement technologies and related topics.

NIST also provides our many member companies with calibrations, training, accreditation of calibration and testing laboratories, technical information, and many other services vital to developing and maintaining the competitive positions of our member companies in national and international trade.

“What would be the effect of selling or privatizing NIST laboratories and functions as called for in H.R. 1756? What private sector entities, if any, would likely to carry on the functions of those laboratories and facilities? What would be the impact of privatization be on operating NIST’s nuclear reactor in Gaithersburg? What functions of the NIST laboratories, if any, are duplicated by other agencies or the private sector? If the federal government were to purchase the same services from private labs, would there be significant reductions in federal spending?”

Concerned Citizen: Without NIST, measurement science in this country would undoubtedly decline. Individual companies cannot afford to undertake this work because the cost of this research far outweighs the benefits to individual companies. Yet, it is also important to our economy that the knowledge of how to measure and manufacture with world-class precision remains available to all who need it and does not become a proprietary matter. I also feel that companies would only naturally be reluctant to send their proprietary equipment to any laboratory which may be operated by a competitor.

Director of Quality: A primary function of NIST is to provide this country with uniform and accurate fundamental measurements for research, engineering, production and marketing, and with the underlying research and development. NIST also harmonizes our national measurement system with those of other countries with whom we trade. NIST is a world leader in measurement science. There is no other organization in this country that could provide these services with the requisite accuracy and confidence. This is clearly a government function that is essential for the functioning of research, manufacturing neutrality, and trade in this country. Abolishing, selling, or dismantling NIST would put U.S. industry at a serious disadvantage.

NCSL President: Industry and trade in this country spend approximately 3% of the GDP for measurements and measurement-related services. The GDP is about \$7 trillion, so the cost of measurements is about \$200 billion. NIST is the sole authority in this country that helps us in industry to make these measurements uniform and accurate. NIST is highly respected in the U.S. and abroad. Its measurements carry credibility. There is no other organization that can do this task. This is not a profit making enterprise but a public, infra-technology service, benefiting virtually everybody in this country. Without NIST backing up the accuracy of this extraordinary number of measurements made in industry and trade, we would be unable to compete in international markets; we could not assure proper functioning of products, safety of drugs and pharmaceuticals, and the efficiency of the medical services staff.

The House Appropriations Committee has already eliminated funding for the ATP (except for carryover projects) and only minimal funding for MEP for FY'96. If the House funding levels are enacted, would the proposed reorganization in H.R. 1756 achieve any additional cost savings for NIST's remaining functions?"

Concerned Citizen: Analyzing budget reallocations in the past has proven to be somewhat ineffective. Once the funds are freed they are usually absorbed by "more needy" agencies or departments. I have always felt that the ATP and MEP programs were an extremely worth while endeavor. However, I do fully understand the need and the importance of reducing government spending.

Director of Quality: We do not believe that any additional savings could be achieved by reorganizing the NIST budget. Any such change would seriously impair the services we and all of U.S. industry receive from NIST. The amount the U.S. government spends on NIST is a very small percentage of the total federal budget. It is also a small fraction of the U.S. GDP. On the other hand, the services of NIST are vital to almost every industrial and many public or private sector activities. NIST's budget should not be smaller but larger to enable it to fulfill the many requests for new measurement services.

NCSL President: The NCSL is particularly concerned about the many measurement services provided by NIST. These are essential to U.S. industry. Innovation, efficiency, competitiveness, and safety rely on good measurements. Trade is not possible without uniform measurements throughout the entire global market. NIST provides these services, the needed new methods, training, and information. We believe that reducing the budget of NIST below its current marginal level would have very detrimental effects for industry.

What would the impacts be of transferring NIST's standards and measurements functions to the National Science Foundation? Does the NSF have the expertise, close relationships to industry, and resources needed to carry out such programs? How would such a transfer affect NSF's basic mission of supporting university-based research? Are there other agencies which might be better suited to house NIST's functions if the Commerce Department is abolished, or are these agencies to which NIST's functions should be transferred? What is your opinion of moving NIST programs to the Department of Energy or a new Department of Science? Should NIST be established as an independent agency if the Department of Commerce is eliminated?"

Concerned Citizen: The primary charter of the National Science Foundation is to support academic research. The difference between the NSF and the basic mission of NIST is radical. Such a difference would make the combination of the two agencies extremely difficult if not impossible.

Director of Quality: The National Science Foundation (NSF) has no laboratories and knows little about measurements and normative standards, about providing uniform, and accurate measurements to U.S. industry and trade, or about the research and development necessary to continuously update the standards as industrial demands change. NIST is the one and only federal agency that works directly with industry. Managers at NSF understand basic science and would impose their goals and objectives on NIST with disastrous results. NIST should be in an agency that works with trade and industry, and negotiates international agreements to include the recognition of measurement standards of other nations.

NCSL President: The National Science Foundation (NSF) does not carry out any research and does not provide any services to industry. The NSF only distributes funds. We think placing NIST at the NSF would be a complete mismatch, much to the detriment of the services that we expect from NIST. If the Commerce Department is abolished, NIST should go to the Department of Energy or perhaps a new science department. We do not believe that there is another department or agency that could either provide NIST's services or to which NIST should be transferred. We believe that U.S. industry needs a Commerce or Trade Department, and that is where NIST should be.

"What would be the impact of cutting the remaining NIST programs by 25 percent?"

Concerned Citizen: Ever since World War I, NIST (NBS) has helped in the development of Department of Defense weapon projects, such as the proximity fuse, Radar, and the electromagnetic problems encountered with helicopters. NIST has also made all of our lives safer by the control of drugs and bomb detection schemes used in airports. A further 25% cut in the NIST budget can only adversely impact the quality of services rendered by NIST.

Director of Quality: U.S. industrial technology is developing at a very rapid pace. Many of these new technologies require measurements of greater accuracy, data for novel materials, reference materials for chemical measurements, technical information underpinning normative standards. Measurements must be coordinated worldwide. NIST must be able to carry out the necessary research and development ahead of a fast-paced industrial evolution. A reduction of the NIST budget below its already low level would soon lead to a serious deterioration in services. We need a well funded proactive NIST.

NCSL President: We are very familiar with the research and development that NIST carries out in order to keep up with the rapidly changing demands of industry. The establishment of Sematech demonstrates the rapidity of the semiconductor industry changes. We believe that the budget is already insufficient. A further cut would be disastrous.

"If appropriate, please comment on the impact of H.R. 1756 on trade -- in particular, the elimination of a Departmental home for trade policy."

Concerned Citizen: It's time for us to "walk the talk". Scarcely a day goes by without reading an article relating to the balance of trade. Without a Departmental home for trade policy, who will take ownership of this extremely important issue?

Director of Quality: We are manufacturing and trading in many areas of the world. Many of our competitors in other countries are very well supported by their respective governments. The power of MITI in Japan is well known and we are up against it. It is inconceivable that the U.S. government would desert industry at this critical time. We need more, not less export, and we need the services of NIST, the Department of Commerce and its Foreign Commercial Service.

NATIONAL CONFERENCE ON WEIGHTS AND MEASURES



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September 5, 1995

The Honorable George E. Brown, Jr.
 Ranking Minority Member
 Committee on Science
 U. S. House of Representatives
 Washington, D. C. 20515

Dear Representative Brown:

In a letter dated August 28, 1995, you invited James C. Truex, former Chairman of the National Conference on Weights and Measures (NCWM), to assist the Committee on Science by providing his views on legislation that would negatively impact the U. S. Department of Commerce. As the new Chairman of the NCWM, I have been asked by Mr. Truex to respond to your letter. My experience with weights and measures dates to 1971. I am currently the Director of Weights and Measures for Suffolk County, New York, a county of almost 1.5 million residents. I have been involved with the development of policy, laws, rules and regulations at the local, regional and national levels of weights and measures administration.

The NCWM, which is a professional organization of State and local weights and measures officials, was established in 1905 by the National Institute of Standards and Technology (NIST), an agency of the U. S. Department of Commerce's Technology Administration. Its primary purpose is to promote uniformity among the States in weights and measures laws, standards, and methods of inspection and thereby provide uniform protection of the public across the country and an equitable environment for U. S. businesses and industry. The NCWM now has a membership of over 3,000, which, in addition to weights and measures officials from every State, includes representatives of business, industry, consumer groups, and Federal agencies.

Members of the NCWM develop uniform laws and regulations and methods of practice that are published by NIST. These standards are adopted by State or local governments and Federal regulatory agencies in the form of laws or regulations.

It is estimated that sales of products by weight or measure in the United States total over 2.1 trillion dollars annually. Areas potentially impacted by the decisions of the NCWM include retail

food sales, petroleum products, transportation, chemicals, and general retail merchandise. The membership of the NCWM are deeply concerned that the proposed legislation [H.R. 1756] to dismantle the U. S. Department of Commerce, transfer NIST functions to the National Science Foundation (NSF), and sell the NIST laboratories will have a catastrophic effect on the weights and measures regulatory system in the United States and consequently on that portion of the U. S. economy that is impacted by weights and measures laws.

Because of its role as the ultimate authority in the United States on fundamental measurements and standards, NIST plays a critical role in the achievement of uniformity of weights and measures standards in the United States. NIST and its laboratories are vital to maintaining the measurement system, and they should not be separated one from the other. The NCWM relies on the NIST and its laboratories in the following areas:

1. **Establishment and maintenance of U. S. measurement standards.** As you know, the U. S. Constitution gives the Congress responsibility for fixing the standards of weights and measures for the country. NIST is the Federal agency charged with carrying out the functions related to this important task. These functions include not only the interpretation of the measurement systems recognized for use in the United States but continuing research to refine the measurements and improve their accuracy to respond to measurement needs created by new technologies that lead to the growth and strengthening of the U. S. economy. As the National Measurement Laboratory for the United States, NIST works with its counterparts in all other major industrial nations, to establish and refine the standards for the global marketplace. NIST's role is unique and is vital to the economic well-being of our nation.
2. **Calibration of State weights and measures standards.** NIST is at the top of the measurement hierarchy in the United States; consequently, traceability to NIST standards, and through NIST to international standards, is important for State metrology laboratories that maintain State standards for the protection of their citizens and the benefit of their industries. Increasingly today, U. S. industries that want to compete in international markets must follow international quality guidelines that require careful documentation of traceability to national and international measurement standards. States rely on NIST for the calibration of their measurement standards to ensure the traceability needed by industry. This traceability also extends on a daily basis to the tools which are used by thousands of weights and measures officials and industry service technicians as they test, inspect, install, or repair various scales, gas pumps, oil meters and other devices that are the cornerstone of accurate measurements in this

country's marketplace. These tools are the test weights used to inspect the scales from mom-and-pop grocery stores to the mega-supermarkets; the 5-gallon test measures used to check gasoline pumps from the corner gas station to the company-operated "super-pumpers." Consumers have confidence that these devices are being checked and sellers have confidence that all similar businesses are being treated equally and uniformly. The foundation of this confidence is the assurance that the tools being used--the standards--are uniform and are traceable to some higher standard.

3. **Provision of administrative and technical support to the NCWM.** As mentioned above, the NCWM works to promote uniformity in State and local weights and measures laws and regulations. Before the creation of the NCWM, chaos existed in the country because of the variations in weights and measures standards and practices. Without a strong and viable NIST it is likely that the chaos would return because if it is unlikely that NCWM could survive without the support it receives from NIST. This support includes providing the President of the organization and its Executive Secretary as well as the technical advisors of its various committees, who carry out the work of the Conference throughout the year. NIST publishes the handbooks that serve as the basis for the uniform laws, regulations, specifications, and practices adopted by State and local governments. NIST publishes NCWM publications, plans and conducts its annual and special meetings, and works with other countries to gain international recognition of NCWM programs and practices. NIST is the impartial third party that is able to bring together government regulators and industry representatives in the forum of the NCWM to develop standards and practices that serve the public interest.
4. **Administration of and participation in the NCWM National Type Evaluation Program (NTEP).** This program was established to make it possible for U. S. manufacturers of commercial weighing and measuring equipment to get approval of their new equipment from a single source rather than having to go to each State for approval. Under the program, industries submit models of their equipment to NTEP for testing to determine compliance with requirements in NIST Handbook 44, Specifications, Tolerances, and Other Technical Requirements for Weighing and Measuring Devices. Most of the work of evaluating devices is carried out by NTEP Participating Laboratories in the States; however, NIST administers the overall program and its laboratories conduct some of the NTEP tests (because NIST has special equipment that the State laboratories do not have). NIST and the NCWM recently established a mutual recognition program with Canada that makes it possible for U. S. manufacturers

of some weighing devices to have their devices tested once in either Canada or the United States and get approval from both countries. Plans are also underway to have NTEP issue International Organization of Legal Metrology certificates, which will make it easier for U. S. manufacturers to enter additional foreign markets. These and other mutual acceptance programs planned for the future would be jeopardized if NIST is weakened in the ways being proposed by Congress.

5. **Training of weights and measures officials.** For many years, NIST has provided invaluable training to State laboratory metrologists. This training enables the State metrologists to uniformly use and maintain the State weighing and measuring standards provided by NIST for the benefit of the States' citizens and industries. NIST also administers the NCWM's National Training Program and has provided training and training materials for State and local weights and measures officials to encourage uniform enforcement practices throughout the States and provide a level playing field for industry. This training has often taken the form of courses for State trainers, who then go back to their States and train a number of other officials. Recently, NIST widened the scope of its metrology training to include individuals from lesser developed countries that have been identified as potential markets for U. S. goods and services. Such programs build good will and promote U. S. trade.

These are just a few examples of the ways in which NIST serves the NCWM, the people of the United States, and U. S. business and industry. Because of the importance of NIST's many contributions, we do not feel it would be in the best interests of our country to transfer NIST functions to either the National Science Foundation (NSF) or the Department of Energy (DOE). These agencies have very different missions than NIST and might find it difficult to understand NIST's needs and support its priorities. Under a worst case scenario, were the Commerce Department to be dismantled, a better alternative than making NIST a part of either DOE or NSF, would be to establish it (NIST) as a separate agency.

We understand that H.R. 1756 would further require a minimum 25 percent reduction in the funding of all remaining NIST programs in support of national and international weights and measures activities. There are now many programs that the NCWM and NIST have postponed or canceled due to lack of resources--programs that would provide the public greater protection from fraud and help promote the equity and trust in the marketplace that is essential to fostering U. S. commerce both at home and abroad. Significant cuts in funding would result in the cancellation of additional beneficial programs. For example, a current priority of the NCWM and NIST is to establish a national data base for use by all jurisdictions so that information which impacts equity in the marketplace--such as shortweight commodities, defective measuring devices,

The Honorable George E. Brown, Jr.

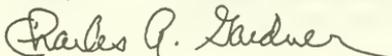
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September 5, 1995

better test procedures--will be more easily shared by all concerned. This requires a coordinated, national effort--the states and local jurisdictions cannot possibly accomplish this on their own.

The areas of NIST with which we are familiar have always made the most of the public funds they have received. They have developed key partnerships with the States and industry to accomplish their mission and share costs with the groups that benefit from their activities. Consequently, we believe the contributions that NIST makes to all members of our society far exceed the funds allocated to it. Therefore, we urge Congress not only to retain the National Institute of Standards and Technology but to provide it with the support it needs to continue to fulfill its mission.

Sincerely,



Charles A. Gardner
Chairman
National Conference on Weights &
Measures

CAG/jlt

NATIONAL SCIENCE FOUNDATION
4201 WILSON BOULEVARD
ARLINGTON, VIRGINIA 22230

September 1, 1995

nsf

OFFICE OF THE
DIRECTOR

Honorable George Brown
Committee on Science
House of Representatives
Washington, D.C. 20515

Dear Mr. Brown:

Thank you for allowing me the opportunity to comment on H.R. 1756, the Department of Commerce Dismantling Act.

There are many questions relating to the dismantling of the Department of Commerce proposed in H.R. 1756. Many of these questions relate to the consequences H.R. 1756 would have on activities now performed by the National Institute of Standards and Technology (NIST) and other entities within the Department of Commerce.

As a general comment, I strongly believe that the Department of Commerce, particularly its technology activities, are an important and critical part of this Nation's science and technology enterprise. Attempts to diminish this important national capability by the dismantlement of the Department should be resisted.

Now let me comment on a specific aspect of the bill. As I understand section 203(b) of H.R. 1756, the weights and measures responsibilities of the National Institute of Standards and Technology would be transferred to the National Science Foundation, but without the existing NIST laboratories that perform these vital measurement functions.

NSF's mission since its founding in 1950 has been to support the progress of science, mathematics and engineering across all scientific disciplines. We are the only federal agency with such a broad and important mission. NSF carries out this mission by funding ideas based on scientific merit that come primarily from university-based individual investigators. The proposed transfer of the NIST weights and measures functions to NSF is fundamentally inconsistent with this mission and could significantly dilute the Foundation's vital support for basic research and science education.

For NSF to develop and manage uniform measurement standards would significantly alter NSF's role, operation and culture. NSF has historically concentrated on enabling the process of scientific discoveries at our nation's academic institutions. NIST – as an integral component of the Department of Commerce – is closely aligned with industry and is uniquely suited for the role of meeting the technical measurement needs of the private sector.



*National Weather Service
Employees Organization*

AFFILIATED WITH MEBA AFL-CIO

September 8, 1995

The Honorable George E. Brown, Jr.
U.S. House of Representatives
Washington, D.C. 20515

Dear Congressman Brown:

We appreciate your invitation to comment on H.R. 1756, the Department of Commerce Dismantling Act, on behalf of our members in the National Weather Service (NWS), the National Environmental Satellite and Data Information Systems (NESDIS), and NOAA's Office of the General Counsel. NWSEO believes that NOAA should be established as an independent agency. OMB has designated NOAA as one of ten agencies whose National Performance Review and Government Performance and Results Act activities have been exemplary. According to an Atlanta Journal-Constitution poll conducted after the Oklahoma City bombing, the NWS' job performance placed second only to the armed forces with a 74% favorable rating. Instead of eviscerating NOAA, we recommend that Congress accept NOAA's offer to work with it, the DOC and the NWS, to identify appropriate ways to reduce Federal spending and eliminate waste.

There is no doubt that NOAA in its present form significantly enhances the Nation's economy through the services provided by the NWS. Neither is there any doubt about the impact that oceans have on the atmosphere and the resulting weather that affects the Earth. This "total system" relationship should be a sufficiently compelling reason to keep the scientific, managerial and operational "earth science" functions within NOAA, in addition to the efficiency and effectiveness gained from such an integration.

For example, NOAA's National Marine Fisheries Service (NMFS) Office of Enforcement, primarily responsible for enforcement of NOAA's fisheries laws, is not a "stand alone" office. It is a logical extension of NOAA's other programs. Its activities are inextricably intertwined with, and heavily dependent upon, NOAA's fisheries management and science programs, and data bases. Efficient and effective fisheries enforcement requires close coordination with fisheries management to ensure that management proposals are practical and feasible to enforce, and maximize benefits, to the fishing industry and consumers, while minimizing enforcement costs. NOAA's management of multiple fisheries is, of necessity, a fast-paced activity, requiring constant contacts, communication, and coordination among fisheries managers, scientists, and enforcement personnel. This team approach ensures that fisheries conservation and management measures are timely and effectively enforced.

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NOAA labs perform basic oceanic and atmospheric research. The NWS then builds upon this basic research by conducting its own specifically applied research. Applied meteorological and hydrometeorological research is essential to providing more timely and accurate warning and forecast services to the U.S. public. Attempts to privatize, eliminate, or transfer these labs have the potential to disturb the synergies within NOAA. This will weaken the NWS' effectiveness by interfering with the continual transfer of research results into critical forecast and warning capabilities, as well as the ability to understand long term climate changes. Privatization of these labs may destroy vital integrated data-gathering networks that support a wide range of NOAA activities, including weather forecasting.

Another example of the synergy within NOAA is the National Marine Mammal Laboratory's (NMML) administration of the Marine Mammal Protection Act. This function is an inherent Federal government activity. Privatizing such an activity, as called for in H.R. 1756, will result in no savings to the government whatsoever. Nor are other NOAA labs, serving similar functions, appropriate candidates for outsourcing. Whether private labs would be willing and capable of conducting the necessary research at a savings to the government should be ascertained before those labs are removed from NOAA's purview. We would like to point out that in 1991, NOAA could find no private sector interest to operate NOAA data centers when attempts were made to privatize them. Consequently, proponents of current privatization actions should be required to show sufficient private sector interest in assuming the responsibilities of these NOAA labs, and document how any near and long-term savings would be achieved.

With over half of the U.S. population now living on or near our coasts, it seems reckless to terminate NOAA's pollution research and estuarine, and coastal assessment research. Such research is invaluable in developing regulatory decisions about the impacts of cumulative environmental stresses on coastal areas, the health of coastal habitats, and the establishment and maintenance of national estuarine reserves as living laboratories for ecosystem management.

The NWS has traditionally been staffed at a "fair weather" level. During times of increased workload, additional staff are called in on overtime as necessary. The budget reductions in H.R. 1756 will result in field staff reductions below the level minimally necessary to operate during adverse weather conditions. Delays in the implementation of much-needed newer technology will prevent anticipated savings from the modernization and restructuring of the NWS. We believe that an agency that has demonstrated fiscal responsibility by reducing the number of field offices by 60%, its plans to reduce the number of regional headquarters by 50%, and its FTE levels by 16%, all by 1999, should not be penalized further. Furthermore, this funding for vital warning and forecast services comes at a cost of only \$2.50 per person.

Honorable George Brown

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I am concerned that H.R. 1756 would likely require NSF to utilize scarce resources on developing and disseminating measurement standards while administering or overseeing the unique research facilities necessary for performing this mission, regardless of whether these facilities are run by contractors. NSF does not have expertise in this area, nor does it have the administrative workforce necessary to perform these responsibilities.

Providing measurement infrastructure requires an impartial third party, which is an argument for a continued federal role in this area. While H.R. 1756 calls for NIST's in-house laboratories to be "privatized" or sold, many of these labs are unique, one-of-a-kind facilities that would be needed to continue the mission of providing technical infrastructure. It is likely that these laboratories would require significant levels of support from the federal government.

Requiring NSF to administer measurement standards would certainly change the very nature of NSF, causing a large increase in NSF internal operations which currently constitutes less than 4% of NSF's budget. This level of efficiency prohibits us from finding savings to pay for any new missions through cuts in administrative operations. I am very concerned that NSF might have to drastically curtail its highest priority -- investing in basic scientific research and education -- to take on the new responsibilities called for in H.R. 1756.

NSF's long standing role has been to enrich the knowledge base that allows this nation to meet current and future needs. A reduction in support for these basic scientific activities will reduce the prospects for making discoveries and enhancing human resources that can benefit the Nation in the near term and enrich future generations. In my opinion, being asked to take on new weights and measures responsibilities that would limit our ability to invest in high-yield research and education efforts is not in the best long-term interests of the country.

Thank you for the opportunity to comment on this legislation.

Sincerely,



Neal Lane
Director

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It has been estimated by NIST that the Modernization and Associated Restructuring (MAR) of the NWS will result in eight dollars in national economic benefits for every dollar invested in the ongoing MAR, which has been threatened by these proposed budget cuts. The funding levels in H.R. 1756 would reduce those anticipated benefits by:

- reducing the NWS field structure from 118 to 56 offices, resulting in a greater number of states without a weather office and in a corresponding degradation of service due to expanded areas of responsibility;
- increasing the number of life threatening gaps in radar coverage by eliminating funds to operate 42 of the new Doppler radars, part of a proposed network of only 118 NWS radars; and
- eliminate procurement of replacement satellites, resulting in a degradation of the timeliness, accuracy, and quality of warning and forecast services, which are heavily dependent on real time satellite data, particularly now that one half of the NWS field offices are already being closed.

Most importantly, NWSEO opposes the transfer of NOAA to any other existing department because none have the expertise to manage the agency's systems and programs. Indeed, some departments being considered for subsuming different NOAA agencies are also candidates for the budget ax. Such a transfer would generate up-front costs, no identified long-term savings to the Government, nor improved services to the public and the economy.

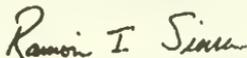
Recently, all of NOAA's operations and facilities in the National Capitol area were consolidated into one complex in Silver Spring, MD. NOAA has its own office of General Counsel which operates independently of DOC's Office of General Counsel, as well as four regional "Administrative Support Centers" providing personnel services to NOAA components throughout the country. NOAA is already constituted as a "stand alone" agency and can operate independently tomorrow. Placing NOAA within the structure of another cabinet department would continue, rather than eliminate, the current levels of bureaucracy.

Thus, because NOAA can not contribute to the accomplishment of the missions of existing Departments, or those being proposed, we prefer that NOAA be granted independent agency status with all its present components intact, should Congress and President Clinton agree to dismantle the Department of Commerce. For example, the mission of the Department of Interior is land management, while the primary mission of the NWS is public safety. NOAA's integrated programs are particularly effective because of the coordination provided by a single agency. Dismemberment of NOAA would destroy those synergies among its elements, and the unique nature of their services that provide cost-effective benefits to the entire Nation.

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September 8, 1995

We thank you for your consideration of our comments as part of the hearing record on this very important piece of legislation. Please let us know if we can provide any additional assistance.

Sincerely,

A handwritten signature in cursive script that reads "Ramon I. Sierra".

Ramon I. Sierra
National President



**National Society of
Professional Engineers**

September 8, 1995

The Honorable George E. Brown, Jr.
Ranking Minority Member
Committee on Science
U.S. House of Representatives
Washington, DC 20515

Dear Representative Brown:

I am responding to your August 29, 1995, request for the views of the National Society of Professional Engineers on the Department of Commerce Dismantling Act (H.R. 1756/S. 929).

The National Society of Professional Engineers (NSPE) was founded in 1934 and represents over 65,000 engineers in over 500 local chapters and 52 state and territorial societies. NSPE is a broad-based interdisciplinary society representing all technical disciplines and all areas of engineering practice, including government, industry, education, private practice, and construction.

Not unlike the other cabinet-level departments, the Department of Commerce has a variety of missions, including science, engineering, and technology development, natural resources protection, trade promotion, and economic and statistical research. NSPE does not claim expertise in this entire portfolio and thus has not taken an explicit position on legislation of such far-reaching scope as H.R. 1756/S. 929.

However, it is our observation that the U.S. Department of Commerce performs many activities that are vital governmental functions. For example, would the nation ever contemplate not conducting a census? And, would we have no central agency for seeking international trade opportunities? It is clear that some federal agency, whether it be the Department of Commerce or another, should provide these essential services.

Lost in the discussion over the fate of the Department of Commerce, however, has been a critical examination of another mission of the Department that NSPE believes to be important. The remainder of our comments focus on this other vital mission - science, engineering, and technology research, development, and transfer.

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The Honorable George E. Brown, Jr.
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It is the position of the National Society of Professional Engineers that the U.S. Department of Commerce plays a critical role in the areas of scientific and engineering research, technology development and transfer, and intellectual property administration. We urge Congress to ensure that these essential governmental functions be retained in the Department of Commerce or in successor agencies.

National Institute of Standards and Technology - Scientific, Engineering, and Technical Research Services

Scientific, engineering, and technical standards and measurements are essential for all industries that design and manufacture technology-based products or services. Because the U.S. must maintain technological superiority in order to remain competitive, standards and measurements are as important as ever.

Despite this importance, standards and measurements research and development is an area in which the private sector does not bear the burden of responsibility. In part this occurs because no single company is willing to invest in research that benefits its competitors, who utilize the initiators' research results without having made the up-front investment themselves. Also, because the outcomes of standards and measurement research are applicable across broad industrial sectors, it makes little sense to limit such research to the exclusive domain of a particular sector. Furthermore, industry needs common standards and measurements in order to integrate products and services manufactured by other sectors.

Thus, the need for a national government role in standards and measurements is evident. The National Institute of Standards and Technology (NIST) currently performs this function. NSPE advocates for the continuation of NIST's scientific, engineering, and technical research and development functions.

We are particularly opposed to the suggestion in H.R. 1756/S. 929 that NIST's standards and measurement functions be transferred to the National Science Foundation. These functions have no place within the Foundation. Wisely, the Foundation was structured to exclude it from operational responsibilities such as an in-house research laboratory.

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Foremost among our concerns, the addition of standards and measurement functions would seriously divert the Foundation from its sole mission of support for academic science and engineering research and education. Second, the Foundation does not currently have the personnel or facilities for undertaking NIST's functions. The Foundation would need substantial increases in personnel, facilities, and funds to absorb this entirely new function. If additional resources were not forthcoming, the Foundation would have to divert funds from university-based research in order to meet important standards and measurement needs. NSPE finds this an unacceptable trade-off.

National Institute of Standards and Technology - Industrial Technology Services

NSPE's support for the industrial technology services of the National Institute of Standards and Technology is long-standing. NSPE was the first engineering society to advocate for these technology development and transfer programs when they were proposed in the mid-1980s. We are proud to have been among the first supporters of the Advanced Technology Program, Manufacturing Technology Centers program (now part of the Manufacturing Extension Partnership), and the Malcolm Baldrige Quality Award.

Advanced Technology Program - The private sector has failed to make investments in some new technologies because those investments are not perceived to have pay off within the parameters of the current capital market. U.S. competitiveness depends in part on investments in new technologies, and as such, government has a role to play in assisting the private sector in their development. One manner in which the government can assist is through cooperative research.

The cooperative research approach recognizes that the common benefits derived from such cooperation supersedes the competition between industries. Cooperative activities allow industries to pool their limited resources to fund costly advanced research that no single industry can support. Cooperative private sector activities also promote the sharing of personnel, research facilities and equipment, and information to create a product, process or technology of mutual benefit to all parties.

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NSPE believes the Advanced Technology Program is a promising cooperative research program that should be retained in any future governmental restructuring. We believe that appropriate safeguards have been built into the program to ensure that it remains focused on support to industry and promote cooperative research. These safeguards include substantial cost-share requirements on the private sector partners; limitations on the number of years a consortia can receive funding; preferential treatment to joint venture applicants over single company applicants in the award process; and prohibitions on the use of funds for product development. Also critical to the success of ATP has been its reliance on private sector panels to evaluate the business merits of grant proposers to ensure that awardees have a solid plan for commercializing research results.

Manufacturing Extension Partnership - Industrial extension is an area in which many state governments and universities have played a leadership role for some time. The federal government also participates in a more limited way through the Manufacturing Extension Partnership (MEP) program. Because a national extension program is already developing on an ad hoc basis, the national government does not need to, and has not, superimposed a new extension bureaucracy.

NSPE believes the Manufacturing Extension Partnership program is a proven success that should be retained in any future governmental restructuring. The MEP provides short-term seed money to assist states and regions in establishing industrial extension programs. Under this model, the programs remain decentralized and tailored to the type and amount of industrial activity in the region or state. The MEP also provides critical technical assistance to existing state and regional programs. This provides a forum for extension program managers around the nation to share solutions to common problems and to enhance their extension services.

Baldrige Award - A major impediment to industrial modernization is the failure of a large segment of the private sector to incorporate quality management practices into their business operations. NSPE views the national government's role in remedying this situation as limited. However, the Malcolm Baldrige National Quality Award program, established by Congress in 1987, is an appropriate governmental response.

The Baldrige Award program promotes awareness of quality excellence, recognizes quality achievements of U.S. companies, and publicizes successful quality strategies. In doing so, the government identifies role models for other private sector companies to follow. For these reasons, NSPE believes that the Baldrige Award program should be retained in any future governmental restructuring.

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National Telecommunications and Information Administration

NSPE supports the development of an information superhighway that will have the capacity to transfer data at unprecedented rates and put vast resources of information at virtually every citizen's fingertips. The information superhighway is also a logical development for supporting existing and emerging domestic and international information industries.

The construction of the information superhighway requires a partnership among industry, government, universities, non-profit organizations, consumers, and the public sector. Because telecommunications and information systems cross state lines and national borders, it is clearly a policy area that merits national government involvement.

Thus, we are surprised that H.R. 1756/S. 929 would dismantle the lead federal agency for telecommunications policy, the National Telecommunications and Information Administration (NTIA), without even making provisions to transfer its functions (except for spectrum allocation) elsewhere. NSPE believes that in any future government restructuring, the national government must retain a central agency for coordinating its role in the development of a national and international information superhighway.

National Technical Information Service

NSPE believes that the dissemination of scientific, engineering, and technical reports, data, and other information generated by the federal government benefits the private sector, universities, and consumers. The National Technical Information Service (NTIS) serves as the nation's clearinghouse for this federal information. NTIS receives no support from taxpayer revenues and is supported by sales of its information, and thus NTIS is not a drain on the federal budget. S. 1756/S. 929 propose to privatize NTIS.

Congress should examine whether privatization will have any impact on the ease or manner by which federal agencies submit their information to the clearinghouse. If it is determined that the transfer of federal information to a non-governmental source will create any difficulty in user access to such information, then Congress should retain NTIS as a government agency.

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Patent and Trademark Office

Issuance and administration of patents and trademarks is a constitutionally-mandated function of the national government. PTO receives no support from taxpayer revenues and is reliant on filing, issue, and maintenance fees for its operation, and thus is not a drain on the federal budget.

Unfortunately, Congress has in past years elected to divert revenues generated by PTO fees to purposes other than intellectual property administration. NSPE opposes such diversion and suggests that if the revenues generated remained within PTO's account.

Views on a Centralized Department of Science and Engineering

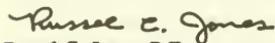
Your August correspondence asks for our reaction to the possibility that NIST, NTIS, and the National Oceanic and Atmospheric Administration would be transferred to the U.S. Department of Energy. We question such a transfer, as it would approach the establishment of a centralized science department. NSPE believes that consolidation of the nation's federal science, engineering, and technology activities in a centralized agency would stifle the creativity and diversity that have been the hallmarks of this nation's research and development enterprise. A centralized science department will delink research and development activities from the missions of federal agencies, inhibit the nation's ability to respond flexibly to emerging challenges, and result in less innovation in science and engineering. NSPE's complete statement on the establishment of a department of science is attached.

Representative Brown, NSPE is most supportive of the science, engineering, and technology services provided by the U.S. Department of Commerce. We urge Congress to carefully weigh the costs to the nation of dissolving those programs or placing institutional stresses on them through the unnecessary transfer of their functions. We are confident that a careful examination of the above-mentioned agencies within the Department of Commerce will yield a compelling case for their continuation under the departmental structure or within a successor agency.

The Honorable George E. Brown, Jr.
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Please do not hesitate to have a member of your staff contact Bob Reeg of the NSPE Government Relations Department at 703/684-2873 should you desire further information about our position.

Sincerely,



Russel C. Jones, P.E.
Executive Director

Attachment

cc: Hon. Robert S. Walker, Chairman, House Science Committee
Hon. William F. Clinger, Jr., Chairman, House Government Reform and Oversight Committee
Hon. Cardiss Collins, Ranking Member, House Government Reform and Oversight Committee
Hon. Dick Chrysler
Hon. Larry Pressler, Senate Commerce, Science, & Transportation Committee
Hon. Ernest F. Hollings, Ranking Member, Senate Commerce, Science, & Transportation Committee
Hon. William V. Roth, Jr., Chairman, Senate Governmental Affairs Committee
Hon. John Glenn, Ranking Member, Senate Governmental Affairs Committee
Hon. Spencer Abraham

NATIONAL STORAGE

NSIC

INDUSTRY CONSORTIUM

Berry H. Schechtman, Executive Director

August 21, 1995

Committee On Science, Minority Office
U.S. House of Representatives
822 O'Neill House Office Building
Washington, DC 20515-6301

Dear Members of the Committee On Science:

The United States Digital Recording Industry (both optical and magnetic recording systems) is both large and critical to the success of this country's computer industry. Recording alone accounts for annual U.S. revenues of about \$40 Billion, and recording technology and devices are integral to the economics of the U.S. computer and consumer/business electronics industries. The technologies being developed are essential to the future of computing systems, interactive communications, the entertainment industry, and education.

The National Storage Industry Consortium (of which I am the Executive Director) represents both industrial and academic organizations who have banded together for joint development of new technologies aimed at increasing our worldwide competitiveness. These organizations (representing essentially all of the U.S. recording industry) have benefited significantly from awards made to us from the Department of Commerce's ATP Program and also from ARPA funding. For your information, I enclose a copy of our NSIC At a Glance brochure which indicates the companies and universities that are actively engaged in our joint research projects.

We understand that you will soon be considering H.R. 1756, a proposal to dismantle the Department of Commerce and its component NIST and ATP programs. We are writing this to argue against adoption of the proposals in H.R. 1756. We believe these actions will have a serious negative impact on our industry which is struggling to maintain its world leadership position.

The ATP program is ideally suited to industries such as ours in which eroding profits have curtailed (and nearly eliminated) long-term, high-risk research. The awards from ATP (and ARPA) have allowed us to form joint research projects involving dozens of our industrial concerns and university research centers. Without the governmental funding, our industry would not have been able to fund the extensive long-term work that is now underway and which has already begun to yield world-competitive technologies. If ATP is abandoned, this joint work is in jeopardy of being seriously curtailed or stopped completely.

Committee On Science, Minority Office
U.S. House of Representatives
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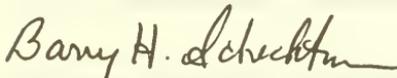
One important aspect of ATP funding is that it provides funds which our industry has used largely to enable universities to partner with company laboratories. This collaboration has been unique in its ability to focus university research on industry-relevant problems and even to elicit university participation in critical path schedules for convergent technology developments. The ATP process has replaced the old process of government moneys being "thrown over the wall" to untargeted university research; in our joint projects, universities are allowed to participate only if they can make significant and focused progress toward industry goals and timetables. At the same time, the university component of these joint projects emphasize "further from the mainstream" technical approaches as well as the fundamental underpinnings of the technology areas that the companies alone cannot support. Adoption of H.R. 1756 would throw us back to the old system of inefficient, unfocused university work--a poor use of taxpayer money.

On the subject of NIST, we believe that the technology development efforts of NIST would not find a ready market for privatization. This isn't because they aren't good or valuable programs. Rather, we are in hard financial times when most of our companies are shedding many of their own technology components and it is unlikely ready funding will be found for the NIST programs on the auction block. If H.R. 1756 is adopted, the most that will happen is that some of the outstanding NIST scientists may find research jobs in industrial concerns, but the critical mass of the NIST programs will be destroyed.

In summary, our large and critical U.S. industry respectfully requests that you reject the proposals of H.R. 1756 and, instead, provide legislation that will continue the industry-relevant work of both ATP and NIST. Our industry will join with other large U.S. industries in benefiting through improvement of their worldwide competitiveness, with subsequent positive effects on broad sectors of the U.S. economy.

Thank you for your kind consideration of our arguments. Your committee action will play a significant role in our ability to compete on a worldwide level.

Sincerely yours,



Barry H. Schechtman, Executive Director

cc: The Honorable George E. Brown, Jr.

The Honorable George E. Brown, Jr.
U. S. House of Representatives
Committee on Science
822 O'Neill HOB
Washington, D. C. 20515

Dear Mr. Brown:

This is in reply to your inquiry of August 31, 1995 regarding H. R. 1756, the Department of Commerce Dismantling Act. The Optoelectronics Industry Development Association (OIDA) which represents 35 companies, universities and government laboratories, including the majority of optoelectronics jobs in this country, is honored to comply with your request. Our answers are grouped to respond to your questions from one to five, which are the most relevant to our industry.

As some background information, optoelectronics is a rapidly growing technology which will provide the goods and services for the information age (see attached booklet entitled: OPTOELECTRONICS Enabling the Information Age). Unfortunately, despite an early lead in basic optoelectronic R&D, the United States has lost ground to Japan, with U.S. industry producing about \$8 billion worth of such products in 1994 compared to the Japanese industry's \$40 billion.

The reason for Japan's success is a concerted effort by the Ministry of International Trade and Industry (MITI) to forge a cooperative program in optoelectronics with Japanese industry, which enabled them to pull ahead and attain global leadership in optoelectronic manufacturing. In the United States, only NIST and the Advanced Research Projects Agency (ARPA) have supported optoelectronics development, without which American industry would have fallen even further behind.

With this background our response to your questions of 1-5 are as follows:

1) We believe that it would be highly inefficient to move the NIST labs to DOE. The Department of Energy is an effective administrator of programs with a narrow focus on energy production and defense R&D. However, the wide array of civilian research activities on generic, pre-competitive technologies handled by NIST are best housed at the U.S. Department of Commerce, who has the tradition and experience to work closely with U.S. business to promote competitiveness and economic growth. The programs of NIST enable the development of emerging technologies, such as optoelectronics, that will drive future economic growth. Both the research and standards-setting programs of NIST are of vital importance to the national economy, as such should remain linked with the Department of Commerce.

Based on the global importance of optoelectronics technologies in the 21st century, it is vital that NIST's technology development functions be maintained. Without those

activities, in particular the Advanced Technology Program, American industry will not be able to regain their competitive leadership in optoelectronics. Finally, moving a scaled-down version of the program to the Department of Energy, which lacks the expertise and tradition to interact with industry over a broad range of technologies, would defeat the goal of focusing on technology development specifically for the advancement of the U.S. economy.

2) In the United States, programs at the Department of Defense and the Department of Energy support basic R&D, while commercially-oriented R&D is undertaken by the private sector. In between lies the area of exploratory, pre-competitive R&D and feasibility demonstration projects which is funded only by the U.S. Department of Commerce.

The research and development activities of the Technology Administration are crucial to the continued competitiveness of American industry, particularly in the rapidly changing field of high-technology, in which the United States currently stands at the forefront. In the field of optoelectronics, where Japanese industry has surged ahead, Technology Administration supported activities hold the potential for advancing U.S. leadership.

Because the multi-billion dollar firms of the future will arise from the small and medium-sized firms currently engaged in producing the most competitive and advanced products and services, the deployment of federal technology expertise is crucial to the economic future of the nation.

The Advanced Technology Program, in particular, is a program poised to play a vital role in fostering the type of pre-competitive technology development that cannot be undertaken by the private sector alone. By forging a joint public-private partnership for the development of advanced technologies, the ATP can leverage the expertise of private sector research with the long-term vision of the public sector. In short, the ATP will allow American firms to capitalize on changes in technology and research that might otherwise be commercialized only by their large, deep-pocket competitors overseas.

3) Privatization of NIST would likely lead to the demise of programs in pre-competitive generic technologies. By definition, such R&D is too risky to be undertaken by private firms acting alone, particularly by small and medium sized entrepreneurs. In the absence of those NIST functions, technology development by U.S. firms would be substantially hindered, and the competitiveness of the U.S. economy would be negatively impacted. NIST activities are complementary to, rather than duplicative of, the technology R&D programs of other agencies.

While the departments of Defense and Energy foster basic R&D technologies for military use and the National Science Foundation supports academic R&D, NIST is the only agency which provides the infrastructure that industry needs to commercialize civilian technologies that drive the U.S. economy. This NIST activity includes the laboratory work needed to carry out the Constitutional responsibility of maintaining the standards of weights and measures, the dissemination of measurement technology needed for traditional and high technology goods and through the ATP and MEP to work in cooperation with the industry to stimulate commercially useful directions in technology. (The attached study on the Japanese OITDA practices show how consistently the Japanese government has worked with industry to stimulate the spectacular growth of the Japanese optoelectronics industry over the past 15 years).

We believe that the federal government would have great difficulty in contracting out the services of NIST to the private sector. In addition to losing the long term view and

impartiality provided by the federal government, it would be essentially impossible to duplicate the infrastructure and scope of activities currently supported by NIST.

4) The elimination of ATP funding proposed by the House would create a negative impact on the deployment of research and development, without reducing the cost of other NIST functions. While NIST programs account for less than one percent of all federal spending on R&D, they provide a crucial link between basic research and the activities of the private sector.

5) Because the National Science Foundation is not equipped to handle any of the standards and measurement functions of NIST, transferring those functions to NSF would neither save federal tax dollars, nor improve the efficiency of the activities undertaken. NIST already works effectively with U.S. industry and academia in developing new standards, while the NSF is an administrator and implementor of science programs. Importantly, the Commerce Department's focus on working closely with U.S. industry ensures that the federal government's standards and measurement activities are in line with the needs and goals of a competitive economy. NIST's programs and activities are best housed in an agency such as the Commerce Department which can deal effectively and appropriately with the demands of the private sector.

Moving those programs to the NSF would serve only to dilute the mission both of the Foundation and of the activities themselves. Steering a course between the military and commercial sectors, NIST's development of standards for U.S. industry should be carefully guided by the Department of Commerce. While we prefer that NIST remain a part of an intact Commerce Department, it should be made independent in the event that Commerce is dismantled.

In case that you need additional information on any of these points please do not hesitate to contact OIDA.

Sincerely yours,



Dr. Arpad A. Bergh
President, OIDA

att.

OPTOELECTRONICS Enabling the Information Age
Japanese Application Trials in Optoelectronics

OFFICE OF THE
PRESIDENT

September 7, 1995

George E. Brown, Jr.
Ranking Minority Member
U.S. House of Representatives
Committee on Science
Suite 2320 Rayburn House Office Building
Washington D.C. 20515-6301



OREGON
STATE
UNIVERSITY

Administrative Services
A600
Corvallis, Oregon
97331-2128

Dear George:

Here is my statement concerning the proposed dismantling of NOAA as part of the abolition of the Department of Commerce. The statement does not address the wisdom, or lack thereof, of abolishing Commerce. It does address proposed dismantling of NOAA, transfer of some functions to other governmental entities, elimination of some functions, and transfer of others to the private sector.

I have provided some general statements and have also attempted to respond more specifically to questions posed in your letter of 11 August 1995. Recognizing some streamlining of NOAA may make excellent sense, it is my belief it would be extremely unwise to dismantle NOAA. It makes much better sense to transfer it intact to another appropriate agency or to create a new agency or department.

I will be pleased to respond orally to any questions you or your staff may have (telephone 503-737-2565).

Sincerely,



John V. Byrne
President

503-737-4133

Fax
503-737-3033

END
sm

**Statement of
John V. Byrne, President
Oregon State University
and
Former Administrator of the National Oceanic and Atmospheric Administration
of the Department of Commerce**

Regarding: HR 1756, the Department of Commerce Dismantling Act.

Thank you for the opportunity to express my views on the proposed legislation to abolish the Department of Commerce and specifically to dismantle and reorganize the National Oceanic and Atmospheric Administration. My comments are based primarily on my experience as Administrator of NOAA from the period July 1, 1981 to November 1, 1984. These comments will address only those aspects of the bill which pertain to the National Oceanic and Atmospheric Administration.

Under the present budgetary circumstances facing the United States, it may be in U.S. interest to streamline certain NOAA functions, to eliminate some and to transfer others to the private sector. I believe it is definitely NOT in the best interest of the United States to dismantle the National Oceanic and Atmospheric Administration at this time. It makes much better sense to transfer NOAA, intact, to another cabinet level department or to make it an essential part of a new Department of Science or, as a last resort, an independent agency in and of itself.

In 1969, the Stratton Commission recommended the establishment of an independent agency which would incorporate many of the functions presently subsumed under NOAA. At that time I personally served on a committee within the Department of Interior to examine and to propose a reorganization of Interior to receive the new agency. For a variety of reasons, primarily political, NOAA was not established by Executive Order within the Department of Interior but was established within the Department of Commerce, where for much of its existence, it has served as roughly half of the Department of Commerce in terms of personnel and budget. In my opinion it does not accurately reflect the "commercial character" of the Department of Commerce. Nevertheless, NOAA has been effective as an agency within that Department and has served to integrate many aspects of oceanic and atmospheric sciences as a basis for the services it provides to significant segments of the United States population.

If we have learned anything of the science of the earth, ocean, and atmospheric systems during the past 25 years, it has been the integrated nature of those systems. The only planetary system under which humans will exist is now known to be incredibly complex and significantly fragile. If there was reason to establish a coordinated earth science agency in 1970, there is even greater urgency to maintain such an integrated agency today.

Our knowledge of oceanic/atmospheric functions and their integration has increased significantly as a result of scientists working together on aspects of ocean/atmosphere correlations and couplings. A classic example is our understanding of El Nino processes which not only affect and are affected by oceanic conditions but also which have a dominant impact on major weather

patterns and climatic change. The relationships of these ocean/atmospheric conditions affect public safety as it pertains to use of the ocean. They also exert a profound influence on development of fisheries at a time when increasing world population strives to find more and more adequate food supplies. Separation of the scientific experts who have learned to work significantly together in this single agency would be a serious mistake at the this time. As we recognize the increasing fragility of our earth systems we need the best scientists working together to ensure that our knowledge base is adequate to meet the stress a burgeoning world population is exerting on our planet. NOAA is one agency that provides that working environment.

I believe it would be a significant mistake to separate the National Marine Fisheries Service from the oceanic and atmospheric aspects of this agency at a time when we recognize the vulnerability of world fisheries. As recently as 45 years ago, in 1950, the world fish catch stood at 22 million metric tons. And at that time fisheries biologists estimated a sustainable catch of 100 million tons was possible. As a result of new and more efficient fish finding and fish catching techniques, the world fish catch gradually grew to reach that 100 million tons in 1989 and has been more or less stable for the past five years. It must be questionable whether this is in fact a sustainable level in as much as that by 1994 it was obvious several fisheries stocks were disappearing. The Coho Salmon season in the Northwest closed for an entire season the first time in history; the United States waters off Georgia's banks in southern New England were closed to all commercial fishing from December until March; off California the herring had long been gone; and a once flourishing tuna and albacore fishery in the northeast Pacific has virtually disappeared. These declines in preferred stocks occurred at a time when the demand for seafood was rising exponentially. It is estimated that within the next ten years the demand for seafood will increase to more than 135 million metric tons; 35 percent more than the record-breaking catch of the last four or five years; and by as much as 70 percent during the next 35 years. Clearly, the very best minds and the very best understanding of our systems are essential if we are to turn to this valuable fisheries resource as a significant element of world food production. An agency which brings together all of the factors affecting this resource seems essential. It makes sense to leave NOAA in tact.

HR 1756 proposes the selling or privatizing of the NOAA laboratories and certain functions. It is not clear who will buy the NOAA laboratories although it is possible that some Universities neighboring such facilities may attempt to incorporate those facilities in their own activities if funding is available. It is not clear how any "savings" would be made by "buying" the same type of research from universities or other private sector entities. The availability of NOAA facilities to the private sector would no doubt result in the creation of a number of independent contractors who would be willing to take these on with some assurance Federal Funding would continue. Such an assurance would not result in any significant savings.

If a major role of the federal government is to ensure public safety, then everything possible must be done to ensure that weather forecasts are as accurate and timely as possible. Combining the satellite operation, research, and weather service in a single unit would appear to make sense, however, it was my experience as administrator of NOAA that satellite operations are such an extremely expensive item that any budgetary emergencies which occur with respect to satellites

have a significant impact on the remainder of the budget. Whatever might be done should insure that the delivery of service is not inappropriately impacted by the budgetary requirements of the satellite operation.

With regard to weather research it would be a serious mistake to eliminate the Environment Laboratories which integrate atmospheric research with oceanic research. More and more we recognize the integration of the ocean/atmosphere system and the necessity to maintain strong research elements for all aspects of that system. Our knowledge of El Nino would clearly be much less than it presently is had we not had such integration of atmospheric and oceanic research at the time of major El Nino events (e.g., 1982). Separation of such research will ultimately have a significant impact on the accuracy and timeliness of weather forecasts and warnings.

The portion of the ocean most sensitive to man's impact is clearly the coastal ocean and specifically the estuarine areas which are critical in the life cycle of fisheries. The pollution research, estuarine and coastal assessment research which NOAA conducts is a strong component of the total U.S. research effort for these areas. Much of the research for these areas takes place in universities, either sponsored through NOAA or other federal scientific research sponsoring agencies. Although some duplication of effort may exist, most research tends to support and stimulate other research rather than to duplicate it. Eliminating this aspect of research within NOAA would deprive us of important knowledge for these oceanic areas which are most responsive to man's insults.

Elimination of the NOAA fleet, of the NOAA Corps and of the data centers do not in final analysis make sense. Public Safety requires adequate navigational charts. The creation of those charts requires appropriate facilities (ships) and people to operate those facilities.

If the Federal Government is not the collector and repository of critical environmental data, I don't know who will do it. We know now as a result of increases in atmospheric gasses (CO₂) depletion of ozone, pollution build up that long term data-sets are essential to the recognition of potentially life-threatening environmental changes. The Data Centers are necessary to the development of those critical data -sets.

With regard to the transfer of NOAA to another agency, (I have already indicated I believe it should be transferred intact, if at all) it would seem the Department of Interior is perhaps the most suitable existing cabinet level department. Although some aspects of NOAA might be transferred to the Environmental Protection Agency, it makes better sense to me to keep EPA as a regulatory agency rather than as a research-oriented agency. The past history of EPA suggests regulation has been its strongest suit and that it has not been particularly effective as a research agency. I see no reason to transfer or consider transferring NOAA to the Department of Energy; however, the creation of a new Department of Science, depending upon its dimensions, could certainly be a viable option for NOAA.

Although many in the ocean or atmospheric community would like to see NOAA established as an independent agency if the Department of Commerce is eliminated, I believe NOAA would not

be of sufficient size or strength to ensure stability and protection from political forces which could damage its mission, or ultimately result in its elimination. To me, it makes better sense to affiliate either with a Department of Science or with a strong department of the environment such as the Department of Interior.

The present organization of the National Oceanic and Atmospheric Administration was achieved during my term as Administrator. I believe the past decade has demonstrated this organization was a viable one and that the interaction between the components of NOAA has been sufficiently effective to provide valuable service to the public communities which benefit from NOAA services. There is no question that NOAA could be organized in different ways. There is no question that a number of programs that are not specifically scientifically oriented or service oriented might be eliminated. Efforts to eliminate some of these programs, to privatize others, or to contract out other functions were attempted during past administrations with only partial success. Nevertheless, these are different times and perhaps a revitalized NOAA with its existence in a cabinet-level department is appropriate. In any case, NOAA should remain essentially intact to ensure that the integration of its scientific base is maintained. The integrity of this integrated scientific base is essential to the appropriate services provided by NOAA.

John V. Byrne
September 7, 1995

CHARLES PANKOW BUILDERS, LTD.*A California Limited Partnership • Pankow Operating, Inc., General Partner*

August 15, 1995

Mr. George E. Brown, Jr.
822 O'Neill HOB
Washington, D.C. 20515

Re: Comments on H.R. 1756

Dear Mr. Brown:

Our experience with cooperative research and development with the National Institute of Standards and Technology (NIST) has been positive and access to their technical expertise and testing facilities an essential ingredient in the consideration for my company's investment in non-proprietary research and development. The construction industry is fragmented into separate design and construction functions and consists, in large measure, of small geographically orientated companies which are lightly capitalized. It is based upon procurement practices that emphasizes "price only" selection. These conditions penalize private companies which undertake non-proprietary research and development because the investment increases their cost of doing business without providing a reward mechanism. Thus this type of research can only be rationally done when the cost and risk are shared with the ultimate beneficiary of the constructed infrastructure, the public. Yet it is this very type of research, and its necessary development component, which offer the quantum improvements because it involves general engineering and construction principles. NIST offers access to the scientist and researchers not found in private companies, the capital intense testing facilities which are far beyond the means of private companies and the vehicle for risk sharing as the representative of the users and beneficiaries of the constructed projects. The construction industry's investment brings practical development to research, making application possible and providing the vested interest champion to transfer the non-proprietary innovations to practice.

Our current involvement in joint research with NIST involves the development of the engineering and construction principles applicable to the Special Moment Resistant Frames that withstand inelastic deformations due to seismic events without inflicting damage to themselves. In current earthquake engineering, buildings protect themselves by destroying themselves. The Northridge event and the resulting billions of dollars of damage emphasize the long term fallacy of this approach. Currently, the years of cooperative research into separating the functions of energy absorption and strength integrity has been developed into practical application which is under evaluation for incorporation into the building codes and industry standards. Without this kind of sharing of the risk and cost between United States industry and government in the area of non-proprietary research and development that advances the state-of-the-art of construction, investment by private enterprises in such research and development is not a rational decision due to the structure of our domestic marketplace. Yet domestic construction industry investment is essential to timely domestic development of research and its transfer to practice.



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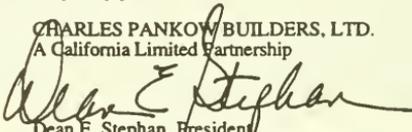
George E. Brown, Jr.
Page Two
August 15, 1995

NIST offers the construction industry access to research capabilities outside of its limited resources and not available elsewhere. The research university laboratories have the scientists and researchers and some of the physical facilities but their primary goal of education, publication as the deliverable, and orientation around graduate programs do not make them suitable for development of research results and transfer of the results to practice. In addition, they are incapable of sharing the risk and cost necessary for industry investment in the non-proprietary research and development that is quintessential to advancing the state-of-the-art.

Privatizing NIST laboratories and its technical capabilities would preclude the risk and cost sharing essential to "common good" research and development done in cooperation with the construction industry. Without the opportunity for this mutual investment in this type of research and development we will ensure the undesirable consequences of the construction industry's abysmal record of transferring non-proprietary research into practice. This means that we will continue to depend on EC and Japan, where government and industry actively cooperate, for the development of much of our NSF funded, university based, theoretical construction research where a technical paper is the return to the public investment.

Very truly yours,

CHARLES PANKOW BUILDERS, LTD.
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Dean E. Stephan, President
Pankow Operating, Inc., General Partner

DES:jh

PENNSTATE



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College of Earth and Mineral Sciences

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The Pennsylvania State University
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University Park, PA 16802-2710

September 7, 1995

The Honorable George E. Brown, Jr.
Committee on Science
U. S. House of Representatives
822 O'Neill HOB
Washington, DC 20515

Dear Congressman Brown:

I am writing in response to your letter of 17 August requesting comment on H.R. 1756. As a Professor of Meteorology at Penn State, as a frequent advisor of agencies with responsibilities related to the atmosphere and earth science, and as Chair of the Board on Atmospheric Science and Climate of the National Research Council, I believe I am qualified to comment on the many issues involved. Indeed, I welcome this opportunity to be of service to you and the Committee on Science, but I emphasize that the comments in this letter represent my own views and not those of the various organizations with which I am associated.

The most important responsibility of NOAA is the protection of life and property through observation, analysis, and prediction of key atmospheric and marine variables. The work of the National Weather Service has critical impacts on a wide range of activities, most notably aviation, agriculture, construction, transportation, recreation, and the protection of the public from the hazards of severe weather and its consequences. While many aspects of the present arrangements could be improved, changes should be made only after careful consideration and rigorous analysis. It is especially important to realize that many NOAA activities not immediately related to operational weather prediction are the basis for enhanced understanding of our environment and for continuing improvement in forecasts and warnings of severe weather. While reduction in government spending is attractive to all, it is a false economy if the consequences would be loss of life, increased property losses, and a diminished capability to assess our changing environment.

I will provide answers for your questions in the order you posed them.

1. *Are there compelling reasons for an earth sciences agency?*

There would be many advantages to be gained from a strong agency focused on the physical aspects of the atmosphere, ocean, and land surface and their impacts on society, economic endeavors, and policy issues. Such an agency with strong collaboration with the academic research community and private weather, ocean, and geological services firms could be of considerable benefit to the nation.

However, NOAA is not a good model for such an agency because the enforcement and regulatory functions of the National Marine Fisheries Service (NMFS) demand too much time, attention, and energy of NOAA senior executives. While research and operations may be mutually stimulating (as in the case of the National Meteorological Center and the European Center for Long Range Forecasting), enforcement and regulation cause endless diversion and enmesh the scientists in political hassles. While enforcement agencies must draw on current knowledge, it does not seem to be effective to combine them with research and operational agencies. •

2. *Would NOAA laboratories or functions be attractive to the private sector?*

Probably none of the NOAA laboratories or their functions would be of interest to the public sector. They are devoted to development of knowledge, understanding, and operational techniques and would not be attractive to a company concerned with proprietary rights. While the fruits of this research may have important benefits to agencies such as the National Weather Service and eventually to private sector firms, it is very unlikely that private sector weather services firms would be willing to pay a fraction of the cost of continuing the operation of such laboratories.

In general, American industry is abandoning its commitment to research, and the nation will pay a long-term price for this short-term emphasis on immediate profit. There is no reason to expect that the weather services sector would be any more enlightened. In fact, Travelers Research of Hartford, Connecticut, is an example of a fine atmospheric research laboratory that could not succeed on the open market. In the 1960s the group employed a number of internationally recognized scientists, but could not meet demands for immediate profit.

3. *Would reorganization and funding reductions have an adverse effect on weather forecasts and warning or on the plans for the weather service modernization?*

I have long believed that the National Weather Service and NOAA would be stronger and better servants of the nation if they were freed of the constraints of operating within the Department of Commerce. But ensuring improvement would require careful study of a variety of alternatives and the resulting ratio of benefits to costs. The present rather *ad hoc* proposal has not enjoyed such a careful analysis, and it is difficult to predict its effect, especially since so many of the critical issues have not been addressed. As an example, NESDIS weather satellite services are to go to the NWS, but it is not clear what will be the fate of the large and important NESDIS data centers. These organizations are increasingly significant in the study of climate change and global change and have critical responsibilities for managing and archiving information about the atmosphere and ocean. This information is widely used in government and academic research and by the private sector.

4. *What are the impacts of terminating NOAA pollution, estuarine, and coastal research?*

I am not qualified to address this question.

The Honorable George E. Brown, Jr.

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5. *What are the impacts of various proposed arrangements for transferring NOAA to other agencies or making it independent?*

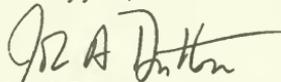
Whether or not the National Weather Service could carry out its mission in the Department of the Interior would depend on whether the other functions of NOAA that support the NWS are transferred as well. This includes important parts of OAR and NESDIS.

I have long believed that the National Weather Service would be a most effective public servant if it were a part of an independent agency that contained the necessary research and operational infrastructure but was not distracted by enforcement and regulation issues, especially those related to fisheries, that should, in my view, be a part of the National Fish and Wildlife Service. Whether the weather service should be part of a new Department of Science is not yet clear, since the details and consequences of that proposal have not been worked out. Moreover, it is not now clear whether the NWS could succeed as an independent agency in today's political environment.

Summary Comment

H.R. 1756 proposes dramatic change in the way weather services and research are addressed in this nation. Significant improvement is certainly possible, but any change is potentially of great consequence to the safety and well-being of the citizens and should be carefully considered. The proposed legislation does not enjoy the heritage of such careful consideration. In view of the critical significance of weather services, it would seem advisable that this proposal and possible alternatives be studied by an appropriate group of experts in weather research and weather services who could offer a carefully-reasoned proposal along with an assessment of advantages, disadvantages, benefits, and costs.

Sincerely yours,



John A. Dutton
Dean

PENNSTATE



Charles L. Hostler
Senior Vice President for Research
and Dean of the Graduate School
and Professor of Meteorology Emeritus

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September 1, 1995

Congressman George E. Brown, Jr.
U. S. House of Representatives
Committee on Science
Suite 2320 Rayburn House Office Building
Washington, DC 20515-6301

Dear Congressman Brown:

Thank you for requesting my opinions regarding H.R. 1756. Before commenting specifically on the issues it raises, I must offer some general comments.

It is timely to address the organizational aspects of science in the U.S. government. My comments are based upon 50 years of close observation.

I am not a proponent of putting all science in one agency, but science should be in agencies where there are senior level advocates of science. We benefit greatly from the diversity of interests and prejudices of multiple federal agencies researching and sponsoring research in universities and industry even though the research may fall into the some general discipline. Not only is there a higher probability of radical new ideas, but the diverse concerns of the government agencies and the research performers give significant guidance in orienting research to real problems the society encounters. Applications are likely to emerge more rapidly under a "disorganized" application of federal funds. It is difficult to track specific research breakthroughs into the economy and the quality of life of citizens, primarily because in our system it diffuses into the national life in a very subtle and gradual way. New ideas leapfrog the necessary proofs and peer review in a very efficient manner through involvement of researchers in scientific meetings, consultants, students involved in or housed adjacent to the research, researchers leaving government or universities to form companies, etc. Ideas from many different sources and disciplines are combined due to a highly mobile science and technology workforce.

I favor Jefferson's collective intelligence as it bears upon the direction of research over the creation of a superscience agency not likely to be headed by a Leonardo DaVinci or a Benjamin Franklin or even a Solomon.

- 1.) The concept of NOAA was and is a good one, but commerce has not been a good home. Commerce, and sometimes even NOAA, has generally not had leadership whose concerns and abilities included either oceanic or atmospheric science as very high priorities. As a result of lack of understanding of science and technology by top management, the nation has not had the full benefit of what science can do in either the oceanic or atmospheric realm. (Many benefits of the current weather service modernization are postponed by six

An Equal Opportunity University

years by wrangling over AWIPS in Commerce and OMB and huge additional costs have been incurred.) The lack of enthusiastic advocacy over the 60 years these functions have been in Commerce has been stifling.

I see no fundamental reason why research, operations, and enforcement, such as in NOAA, cannot reside in one agency properly organized.

- 2.) I believe there are service-related research topics best addressed by NOAA Labs and the agenda of these labs should be controlled by the government, but there is no doubt that some of these labs have often become "academic" labs without students, rotation of staff, or adequate review to keep them on track. They can be reduced in size and cost by contracting some of the research to universities and industrial laboratories. Close affiliation with universities such as occurs at Argonne or NCAR would help. Farming out research can be more productive and less costly than federal laboratories. The federal labs often do not have the flux of people and ideas to keep them on the cutting edge.
- 3.) No one argues that the DoD should be privatized. I regard the gathering of data and the production of warnings of floods, severe weather, etc. as in the same category as defense. Who in the private sector would take on the liabilities incurred or the five billion dollar modernization now underway? Once the information to construct the warnings is in hand, general forecasts are produced by the same personnel and dissemination occurs over the same channels. At the same time one makes forecasts of general conditions, special situations requiring warnings are identified. Predictions for special needs of industry or individuals can be provided by the private meteorology and oceanography sector. Most specific information for business and industry can be extracted from the freely available databases in NOAA. The government should do all in its power to encourage the free flow of this information into the economy. Fees should not be charged by the government for this information. This would discourage small businesses from starting. The general economic growth due to application of this information and avoidance of costs and life and property losses will result in tangible benefits to the general economy and the public. Ultimately, all of these benefits yield taxable profits from throughout the economy and from the private providers of information.

The deterioration or lack of improvement of services to be seen in Europe, New Zealand, etc. due to short-sighted attitudes in this area should serve of an example as to how the attempt to recover costs can go too far. These countries will never be able to collect fees large enough to renew and modernize their infrastructure or to do research to improve services. They will be frozen with 1950s and 1960s technology forever and rely on America for research and innovation.

- 4.) I do not feel qualified to comment in detail, but what is the EPA for?
- 5.) Interior may present some of the same problems as are present in commerce, although there are agencies like the geological survey, reclamation etc. that have some overlapping

Congressman George E. Brown, Jr.

3

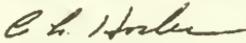
and synergistic characteristics. I believe NOAA as well as some of the agencies in Interior would function best in a science-oriented agency in which the administrators would have some feeling for science and technology. I would suggest a Department of Earth and Space Systems, which would embrace NOAA, NASA, parts of Interior, Corps of Engineers, EPA, etc.

It goes beyond the scope of H.R. 1756, but in my vision of the next century economic competition will continue to overwhelm other traditional extensions of power and influence. The key to success at home and abroad, whether in private enterprise or in government policy, will be the ability to gather data and analyze it. The Department of Commerce should become the Department of Economic Information and Analysis by combining its current activities in data gathering and the Census Bureau with the Department of Labor Statistics, the Federal Reserve Board, parts of the CIA, and Department of Agriculture, etc.

The world's great superpower based upon military strength must place equal emphasis on economic strength at home and economic competition and cooperation abroad. Someone said "you can't manage what you can't measure." I agree. Let's have the best measurement and analysis organization in the world by putting together our considerable expertise with the world's best information technology. Rather than eliminate facets of the government piecemeal, why don't we take a month off and decide how the government needs to be reorganized to meet the challenges of the next century. It can and probably should be leaner and meaner, but it also should be based upon a new look at how we organize ourselves in new ways to cope with new circumstances.

Forgive me for the gratuitous comments, but I've just finished reading two large volumes, one on Thomas Jefferson and the other on Tom Paine, and I think you folks in the Congress should, in their tradition, think radically and act rationally in reforming our government. We are the greatest nation the world has ever known. We can be even better and can show the way to the rest of the world by example. We are not great because we are individually superior, but because of the way in which we have in the past organized ourselves to act and to produce. The same will be true in the future, but we will not look exactly like the organization we were before.

Sincerely,



Charles L. Hosler
Senior Vice President for Research
and Dean of the Graduate School
and Professor of Meteorology Emeritus

CLH/lak



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SENT VIA FAX AND U.S. MAIL

August 22, 1995

The Honorable George E. Brown, Jr.
Ranking Minority Member
Committee on Science
U.S. House of Representatives
822 O'Neill HOB
Washington, DC 20515

Dear Congressman Brown:

This is in response to your letter of August 11, 1995 (copy enclosed). We appreciate the opportunity to comment on our experiences with Commerce Department programs.

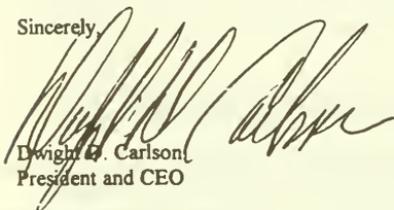
1. I have had experience in international commerce since 1971 and have a keen appreciation for how U.S. global competitors compete through teaming. The U.S. Commerce Department should be the focal point for building such a U.S. team approach. In the last three years, we have been very encouraged with the success of the Advanced Technology Program (ATP) and the Manufacturing Extension Partnership (MEP) programs. We have found these programs to be well thought out, well administered and, most importantly, focused on specific, strategic objectives.
2. Over the last 15 years in Michigan, we have been attempting to develop "NIST-type" programs. Without NIST, the private sector has had a very difficult time meeting this objective. In the process of developing these programs first without NIST and then with NIST assistance, we have gained a keen appreciation for NIST and what has been accomplished in Gaithersburg. From this experience, we support the centralized, national NIST approach as it currently exists.
3. I highly doubt that eliminating a successful program like the ATP and reducing MEP would be in anyone's best interests! In fact, such action would negatively impact the competitiveness of industry in America.

The Honorable George E. Brown
August 22, 1995
Page 2

4. The National Science Foundation (NSF) is a small, focused and effective organization. To add NIST to it would only serve to defocus NSF and make it less effective. I would recommend that NIST be made a separate agency if the Department of Commerce is eliminated.
5. Under its current leadership, NIST is becoming more and more effective. To reduce funding to an effective agency at a time when international competition is so fierce is directionally wrong.
6. International competition and trade policy go hand-in-hand and it would seem that the Department of Commerce is the agency that needs to lead the thrust for international competition and, therefore, should have responsibility for trade policy.

In summary, going forward into the future, U.S. industrial global competitiveness will have more impact on the well being and quality of life for Americans than military readiness. The Department of Commerce should be viewed as the "defense department" of the future.

Sincerely,



Dwight G. Carlson
President and CEO

DDC:arb

Enclosure

**PORTLAND CEMENT ASSOCIATION**

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Telex 9102407163 ESL UQ • Facsimile 708/966-9781

September 8, 1995

Honorable George E. Brown, Jr.
U.S. House of Representatives
Committee on Science
Suite 2320 Rayburn House Office Building
Washington, D.C. 20515-6301

Dear Congressman Brown:

Thank you for the opportunity to comment on the impact of H.R. 1756 on the National Institute of Standards and Technology (NIST). Over the past 18 years, I have worked with NIST on construction-industry-related research, technology and standards development. In addition, over the past three years, I have served on a National Research Council review panel for NIST's Building and Fire Research Laboratory. You asked a number of questions in your letter of August 31, and I will address those for which I am in a position to provide a knowledgeable response.

The Portland Cement Association believes NIST should remain as an independent agency. NIST serves a critical role in building government-industry partnerships that are essential to the health and competitiveness of U.S. industry. Some view such partnerships as wasteful "corporate welfare." This is a narrow and short-sighted view. Government-industry relationships pay off in a healthier business climate, which results in additional tax dollars, and job creation. A cooperative rather than adversarial government-business relationship is common in many countries that compete with the U.S. in the global marketplace. It is essential to maintain NIST as a link with industry.

With regard to specific questions raised in your letter, I can respond as follows.

In response to question 1, I do not believe that moving the NIST labs to the Department of Energy is appropriate. I assume the theory is that NIST would function as the other DOE-managed national labs (Oak Ridge, Los Alamos, Lawrence Berkeley, etc.). While this may seem appealing on the surface, NIST serves a very different role and a broader "customer base" than these other labs. NIST's measurement and standards functions related to building and fire research would be adversely affected by a shift to DOE. I am familiar with the DOE program on energy conservation, which is related to the construction industry. This program has not been given strong support under DOE where nuclear energy and weapons programs seem to be the focal point. Also, the national labs currently have a mandate to commercialize their services. This is counterproductive - we now have tax-supported laboratories competing with laboratories in the private sector!

PORTLAND CEMENT ASSOCIATION

Honorable George E. Brown, Jr.
U.S. House of Representatives
Committee on Science
September 8, 1995
Page 2

In question 3, you ask about the concept of selling and privatizing the NIST Laboratories. This is not logical. It implies that NIST is already providing commercial services that compete with the private sector. If this is the case for a particular NIST program, that program should be eliminated. In reality, NIST is doing work that is unique and necessary, but would not be profitable in the private sector. For example, NIST's construction industry programs would not be viable on a commercial basis because no one company could profit from any technology gains achieved. U.S. procurement constraints, liability issues, and other factors do not make it feasible for a fragmented industry such as construction to bear the sole burden of financing the type of programs conducted at NIST. However, such programs are viable, and in fact more credible, on a shared government-industry basis.

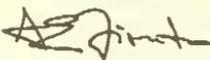
In response to question 5, the potential move of standards and measurement functions to the National Science Foundation is also inappropriate. NSF has a basic research focus; it's academic orientation would inevitably lead to a loss of linkage to industrial programs. While both types of programs are needed for a healthy growth in U.S. technology, it is best to have NSF focus on "pure" science and engineering and have NIST serve the role of "integrator" between basic research and applied technology. This role is particularly important for the U.S. construction industry which does not have the high tech aura to attract NSF support at any significant level. Also, standards and measurement criteria must be developed jointly with users, not solely as an academic exercise.

In question 6, you ask about the option of reducing NIST programs by 25%. I do not believe it is a good management practice to arbitrarily cut funding across the board. If funding cuts are necessary, they should be based on an evaluation of specific NIST programs; those with the lowest priority should be reduced or eliminated as needed.

In conclusion, I would reiterate that NIST should be retained and should function as a separate entity.

Please do not hesitate to contact me if you have questions or need additional information.

Sincerely yours,



A. E. Fiorato
Vice President
Research and Technical Services

AEF/vkv

PRC Inc.
1500 PRC Drive
McLean, VA 22102
703-556-2344

September 6, 1995

The logo for PRC Inc. consists of the letters "PRC" in a bold, italicized, sans-serif font.

The Honorable Geroge E. Brown, Jr.
RHOB-2300
Washington, DC 20515

William C. Hoover
President and
Chief Operating Officer

Dear Mr. Brown:

As you and your colleagues debate the future of the Commerce Department, its missions and its structure, we at PRC would like to share some of our thoughts about the National Weather Service (NWS) and its importance to our Nation. In short, this is one agency that delivers a critical service to every American and at a reasonable cost.

As part of its business base, PRC designs, develops and delivers commercial and public weather forecasting technologies and systems. We are part of the team behind the NWS' own Weather Service Modernization initiative. In addition, we are building an important system for The Weather Channel™ and are pursuing other commercial weather opportunities here and around the world. We at PRC believe we understand the business of weather. As a consequence, we have some strong views on the appropriate roles of the public and private sectors in the field of weather forecasting. And, for two important reasons, we believe it is essential to maintain the size or mission of the National Weather Service.

First, the public depends on a nationwide, comprehensive forecasting system that can anticipate weather patterns, especially severe ones associated with hurricanes, floods, tornadoes, snow, rain, heat and cold. Every minute of advance warning can save lives. This "advance warning" capability is a primary mission of the NWS. And we would emphasize that the NWS' modernization program is giving the United States the most advanced weather forecasting capability in the world. As a result, lives are being saved today that would have been at great risk even a few short years ago. Further, the workforce and technology of Weather Service Modernization are significantly improving our ability to construct roads, bridges and other infrastructure around weather patterns that we can model over the past 100 years. They are advancing the safety and reducing the cost of air travel

through precise detection of hazardous weather over long distances. These are but a few of the many examples, but we think they make our point.

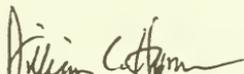
Second, and most importantly, the NWS provides a single and reliable source of weather information for every American, regardless of where they live, and regardless of whether there is sufficient economic activity to warrant such service were it to be provided commercially. In fact, it often is in those areas where economic activity is the lowest that weather patterns are the most severe.

We applaud the efforts of you and your colleagues to reexamine government processes, reduce and eliminate them where it makes sense. We, in the private sector, are engaged in the same process. It may be the National Performance Review in the government or business process reengineering in the private sector. Either way, its objectives are the same: lower cost and improved and appropriate service. We strongly commend to you that the National Weather Service is providing an ever-improving and certainly appropriate service. And as for the cost, a cost-benefit analysis by NIST projects annual savings of \$7 billion to the economy when Weather Service Modernization is complete.

Finally, we urge in your deliberations that you preserve and encourage the mission of the National Weather Service. Enclosed is a publication we produced that might provide some useful information on weather, its impact on lives and the economy, and the importance of the National Weather Service and its modernization program.

We hope this input and information is useful.

Sincerely,



William C. Hoover
President and Chief Operating
Officer



Leonard M. Pomata
Senior Vice President and
General Manager
Systems Integration

PURDUE UNIVERSITY



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September 6, 1995

The Honorable George E. Brown, Jr.
Ranking Minority Member
U.S. House of Representatives
Committee on Science
Suite 2320 Rayburn House Office Building
Washington, DC 20515-63101

Dear Congressman Brown:

Thank you for the opportunity to give my views on H.R. 1756, The Department of Commerce Dismantling Act. Since my career spans academic, government and industrial positions, I will respond from this extended perspective. Also, I served as member and chairman of the NIST Statutory Visiting Committee at a time when the ATP and MEP Programs were being established and have served six years on the National Science Board.

The Office of Technology Policy and NIST have traditionally been key sectors of the federal government looking after the technological capabilities and competitiveness of American industry. NIST through its R&D programs and standards activities has been an especially critical factor in assuring high quality standards in U.S. products. This is the primary function of national standards laboratories around the world. In addition NIST has traditionally performed the special role of advising voluntary standards organizations (such as ASTM and ANSI) on the scientific bases for their standards setting activities. Thus, NIST underpins the national quality infrastructure of American industry. Such a role needs to be independent and objective in order to maintain a trusted relationship with industry.

NIST has enjoyed a trusted relationship with industry over most of its history. Furthermore, it has expended great efforts to build on this relationship through a range of services which provide extensive intellectual leverage through joint research activities and alliances. NIST generally ranks among the top two or three government agencies in terms of CRADA's and similar joint programs with industry. The economic impacts of these programs have been estimated and generally show a highly leveraged return on government investment.

I believe H.R. 1756 would put the traditional role of NIST at risk and would seriously do damage to national capabilities to manufacture quality products competitively. The critical foundation for NIST's standards role are the laws of science not the economic

laws of running a private sector organization. The proposal to privatize NIST would in my opinion destroy the ability of NIST to remain independent and objective; hence, trusted.

The ATP and MEP programs, though less critical, should be judged on their merits. I consider the MEP program to be more important than the ATP because of the technological outreach involved with small and middle size businesses. Most of the MEP programs are directly linked to colleges and universities which perform outreach functions as part of their missions. Thus the added NIST funding greatly enhances their effectiveness in regions of the U.S. where manufacturing is intense and where small and middle size manufacturing firms are concentrated. The MEP compliments the efforts of the Small Business Administration by focusing on manufacturing capabilities in addition to new product developments (through SBIR grants). The ATP program tends to have greater overlap with the basic purpose of the SBIR program. Therefore I believe its demise would be less critical to federal initiatives to boost technological and economic development.

A major factor in judging the wisdom of dismantling the OTP is the continuing need for establishing government policies that enable industry's cooperation in technology developments without damaging antitrust protections. OTP has had a major impact in loosening antitrust restrictions and fostering such cooperative alliances to the nation's benefit. These actions have been an effective counter to government-supported industrial alliances established abroad that challenge U.S. technological effectiveness. There continues to be a need for a government policy body to monitor U.S. comparative technology position in critical high-growth industries and to develop policies that will help maintain a viable competitive position in leading job-creating industrial sectors. To my mind eliminating this role would be a false economy that could have very damaging consequences in a relatively short time.

With respect to NIST's reactor at Gaithersburg, this has a dual role of providing industry with physical radiological physical standards and providing unique user facilities for basic research to the scientific community at large. Rather than privatizing the NIST reactor, the establishment of a university-operated facility similar to the Missouri University Research Reactor (MURR) would seem more appropriate. Both reactor facilities perform similar functions and both are supported by both government and private-sector users. This arrangement would be little different than similar research facilities at DOE national laboratories operated under contract with a university consortium.

As a former member of the National Science Board, I have a special sensitivity to the question concerning assigning NIST's R&D role to the NSF. NSF's primary roles are to support basic research at the nation's colleges and universities and thereby to support higher education as well as general education in mathematics and the sciences. Much of NSF's investments are for "cutting edge research" so judged by the merit review process. In contrast, while much of the standards research carried out by NIST is at the "cutting edge," a significant fraction is "housekeeping" and "evolutionary" in nature, requiring long, sustained efforts by career scientists who are totally dedicated to this mission. Furthermore, a substantial fraction of NIST's research is in support of other agencies which require the special facilities and expertise at NIST. I personally see no obvious comparability between these two missions, nor do I believe that the organization and governance of the NSF is appropriate to the NIST mission. The necessary adjustments needed to carry out both missions in one agency would be sufficiently sub-optimal that it would put both missions in jeopardy.

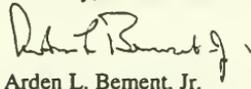
-3-

In summary, I find little in the provisions of H.R. 1756 that apply to the OTP and NIST that I would or could support. The effectiveness of NIST has been achieved by many years of inspired leadership and dedication, which is why NIST has become the envy of all other standards organizations throughout the world. In the span of two short decades I have witnessed the policy environment between the public and private sectors shift from a largely adversarial to a more cooperative relationship. Much of this progress can be credited to the Department of Commerce and to a large extent through the programs of OTP and NIST. I have grave fears that H.R. 1756 is too great a price to pay for reducing the budget. I would rather favor allowing OTP and NIST the opportunity to determine how to administer a major budget cut by internal downsizing and program restructuring, as painful as that would be, rather than through dismantlement. The primary impact of a 25% budget cut at NIST will be the loss of bright young talent that is essential to keeping NIST dynamic and innovative. A further consequence will be the loss of programs that not only renew the scientific and technical competence of the senior staff but which also enable vital connections between NIST, industry and academia. The result could be a more introspective and inbred organization with a much reduced constituency base and with much less value delivered for the public investment.

I hope that these views are responsive to your questions. Although I will be unable to attend the hearing on September 12, 1995, I have no objections to having my written statement included in the record. Also, I would be happy to elaborate further on the above views and address any other issues that I can.

With highest regards!

Sincerely,



Arden L. Bement, Jr.

Mr. R. E. Rieck
13913 Overton Lane,
Silver Spring, MD 20904
September 7, 1995.

U. S. House of Representatives,
Committee on Science,
Rayburn House Office Building, Suite 2320
Washington, D.C. 20515-6301

Attention: George E. Brown, Jr., Ranking Minority Member

Dear Mr. Brown:

I understand that action on H.R. 1756, the Department of Commerce Dismantling Act, will be coming up shortly. As a forty-year employee of the U.S. government, most of which I served in various positions throughout the National Weather Service, I would like to express some of my views with respect to the National Weather Service and NOAA. I am, of course, speaking as a private citizen and would prefer anonymity.

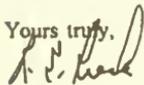
The fishing and ocean programs in NOAA have long suffered the fate of having no money to do their job simply because of their proximity to the National Weather Service which has been taken the lion's share of the funding for NOAA. Perhaps these programs could be run more efficiently under an organization devoted to fisheries and oceans.

I believe that significant savings could be realized if the training facilities of the Federal Aviation Administration (FAA) and the National Weather Service (NWS) were consolidated. Much of the training they do for their field personnel is similar, especially in the training of Electronic Technicians.

I believe also that considerable money could be saved if all meteorological research in the federal government were consolidated. At the present time there are millions (probably hundreds of millions) spent by the FAA, the National Aeronautics and Space Administration (NASA) the Department of Defense, the Department of Agriculture and others on meteorological research, much of which is duplicative.

I also believe that the NWS would be more efficient if it were made a part of NASA instead of the Department of the Interior. NASA is more oriented toward dealing with scientists and they have a good history of efficient use of the budget and strict adherence to guidelines set by Congress. Bringing an operational organization such as the NWS into NASA would enrich both agencies, especially since NASA is already deeply entwined in meteorological research.

Yours truly,



R. E. Rieck



Scott Specialty Gases, Inc.

6141 EASTON ROAD, P.O. BOX 310, PLUMSTEADVILLE, PA 18949-0310 (215) 766-8861 FAX: (215) 766-0320

September 1, 1995

House of Representatives
Committee on Science
c/o 822 O'Neill HOB
Washington, D.C. 20515

Attn: The Honorable George E. Brown, Jr.
Ranking Minority Member

Dear Congressman Brown,

Thank you for the opportunity to provide you with our comments regarding H.R. 1756, the Department of Commerce Dismantling Act, introduced by Representative Chrysler. It is our belief that the rapid dismantling of the Commerce Department and/or the proposed twenty-five percent reduction in funding would severely and adversely affect critical NIST and NOAA programs and consequently business activities worldwide.

Scott Specialty Gases, Inc. our customers and competitors purchase products and services (e.g., Standard Reference Materials (SRMs), NIST Traceable Reference Materials (NTRMs), and Research Gas Materials (RGMs)) based from unique activities performed by NIST. NOAA is currently performing critical activities that measure and track the atmospheric impact of chemicals produced throughout the world. Together, NIST and NOAA provide Scott and our U.S. and international customers with technical support unparalleled by any industrial or government agency.

Both NIST and NOAA directly affect the ability to conduct and the quality of industrial and university research. Activities such as pollution reduction, process control, process improvement and safety and hygiene activities to meet corporate profit objectives and for government compliance (e.g., EPA, OSHA) are completely dependent on the underpinnings of the National Measurement System provided by NIST. These activities were developed and refined over decades. This combination of experience and expertise cannot be relocated without a significant loss of continuity. Based on our understanding of the alternatives presented in the H.R. 1756, the program areas affected will not be effectively preserved.

NIST measurements, services and expertise continue to help our industry eliminate technical barriers to trade. Measurement traceability to NIST, internationally recognized as the U.S. measurement authority, enables Scott to demonstrate compliance with specific technical standards, an increasingly common prerequisite for doing business in foreign markets. Without NIST, we would be forced to buy chemical standards from foreign laboratories, such as the Netherlands Measurement Institute (NMI) or the National Physical Laboratories (NPL) in the United Kingdom. These alternatives would be both costly and slow, ultimately reducing our competitiveness here and abroad.

Scott Specialty Gases, Inc. is the leading supplier of gaseous calibration standards used throughout the world. Our products are employed to calibrate instruments for environmental measurements for mobile and stationary sources, medical and research applications. We produce the measurement standards that are required under EPA's Clean Air Act for calibration and accurate operation of emissions monitoring that measure pollution from power utilities and other stationary sources and to enable state agencies to accurately measure automotive emissions. This ensures that the automobile catalytic converter is operating properly at the manufacturing plant and later when the car is tested by the owner. Scott's calibration gases and services have been instrumental in allowing NOAA to determine the impact of chlorofluorocarbons (CFCs) on the ozone level six miles up in the atmosphere and here on earth by allowing the EPA to regulate and reduce the emissions of volatile organic compounds (VOCs) and oxides of nitrogen (NO_x), which cause ozone and smog on hot summer days.

Whether it is in a hospital, calibrating an anesthesia monitor, or on a power plant's "smoke stack" or in a research center, where a research chemist is trying to determine the effectiveness of a new catalyst to reduce carbon monoxide effluent, our standards have one thing in common... National Institute of Standards (NIST) traceability. NIST traceability is the universal benchmark. It's the way we tie all measurements to a common frame of reference. Without NIST, we may be able to come close, but close is not enough. "NIST quality" measurements link all U.S. companies and institutions to the rest of the global economy.

In environmental and research measurements, we and our customers deal in the range of "parts per trillion" (ppt) concentrations to determine emission outputs of thousands of tons per year. Likewise, absolute accuracy is the reference goal for all quality measurement systems. ISO 9000 guidelines, Department of Defense (DOD) and Nuclear Regulatory Commission (NRC) all mandate "direct traceability to the national measurement system." The ability to continue to refine analytical methodology at the top of the standards quality pyramid is not something a new group at the National Science Foundation (NSF) or industry can undertake in the short term.

NIST aims to develop measurement capabilities that are four to ten times more accurate than the best quality and inspection methods practiced in industry. The chain of precise measurements leading to the factory floor begins at NIST. At each step along the chain -- from NIST to Scott, to our customers' standards labs, all the way to the production unit -- uncertainty is introduced. This uncertainty necessitates the high (often, world best) levels of accuracy achieved by NIST.

In the automotive industry -- from small suppliers of metal parts to large refiners of gas and oil, more than 350 different NIST developed measurement tools and services are embedded into quality control systems. In the products we sell to American, European and Asian automotive companies, Scott utilizes over 25 different NIST standards to establish the chemical concentration of our products. Our global competitiveness is highly dependent upon the foundation laid by NIST chemical standards

In 1995, Scott spent over \$225,000 for NIST reference material products. Using these, our company produced over \$50 million of premium calibration products. As the top tier in the nation's measurement chain, NIST and NOAA conduct research that anticipates long-term needs in our markets. They develop otherwise unattainable tools that ensure confidence in the growing number of measurements demanded by technically complex affairs of science, engineering, health, safety, defense, law enforcement, and the environment. Scott and our customers depend on the Department of Commerce... there is no substitute for NIST and NOAA's impartiality, international clout and long term commitment to excellence.

In response to the questions listed in your August 14, 1995 letter the following information is provided:

- 1) Scott fully supports the continuation of the "standards and measurement" function. We do not believe that, as H.R. 1756 mandates, these functions should be transferred from NIST to NSF. To our knowledge NSF does not currently possess experience managing the functions necessary to operate the analytical laboratory, quality assurance and support (storage, handling and shipping) functions required by the Standard Reference Material (SRM) programs.

The Chemical Science and Technology Laboratory (CSTL) at NIST has invested tens of thousands of man hours and literally hundreds of thousands of dollars in state-of-the-art analytical equipment to develop the expertise to produce and certify SRMs. The overall SRM program is self funding and as such, any change or increase in the overhead structure associated with the SRM program will likely raise the costs of these products. We do not wish to see either the experience or cost structure adversely affected because of the proposed changes. It would be regrettable to place American companies at a competitive disadvantage versus foreign competition.

Currently, Scott does not participate in the Technology Administration programs. As such we can formally comment on this section of the bill. However, whenever we have dealt with NIST (and NOAA) on technical support issues, we have found their personnel extremely supportive, knowledgeable and on the leading edge of technology. Maintaining this expertise is critical to maintaining our role in the global economy.

- 2) If NIST laboratories are sold or privatized, the continuity of experience and their third party impartiality will be adversely affected. Because of the breadth and depth of NIST's involvement in standards, there is not one private or government organization (or industry segment) that encompasses NIST's role as the preeminent supplier of calibration products. The number of standards that NIST certifies provides them with economies of scale for areas such as statistical analysis, metrology and general administrative support. The quality and cost effectiveness of this function would likely be compromised if NIST's standards and measurements function was carved up or sold.

We do not support the short term dismantling of NIST. We do not feel this is a workable alternative.

- 3) Since the SRM and NTRM programs at NIST are self funding, we do not feel that, after the elimination of funding for the ATP and minimal funding for MEP, the proposed reorganization in H.R. 1756 will achieve any cost savings for NIST's remaining functions.

Reducing the number of projects under NIST auspices would shift the overhead burden of the other programs to the critical standards and measurement function. This would be counter productive and weaken the global competitiveness of U.S.-based operations that depend on NIST's standards and expertise.

- 4) Transferring NIST's standards and measurements functions to the National Science Foundation would result in a loss of continuity, experience and expertise. The standards NIST produces are the most complex and accurate found anywhere.

We do not believe that NSF has the experience today to take over these programs without significant adverse impact. NSF is not operating the type of laboratories NIST is using. NSF does not currently interface with us or our customers on a regular basis. Clearly, with NSF's focus on University research and grant programs, their experience is not well suited to the production and technical support of the wide range of SRM calibration products required by all the industries served by NIST. We need NIST's products and services regularly to meet our customers demands. NIST has demonstrated their ability to meet our needs. NSF is an unknown.

Congressman George E. Brown
September 1, 1995

We would envision similar issues would emerge if NIST standards and measurement functions were transferred to either the Department of Energy or the new Department of Science.

- 5) The NIST programs we have talked about in this letter would be adversely affect by and additional 25 percent budgetary decrease. Our experience shows that the NIST programs in which we are involved have the proper number of scientists and support infrastructure allocated to complete their mission. The equipment is well maintained and effectively utilized. While the standards and measurement functions of NIST are not over-funded, they operate well.
- 6) As we discussed above, NIST reference materials are critical to America's ability to compete in a global marketplace. Therefore, the maintenance of a strong SRM program is critical.

We have used Department of Commerce information in our international market research activities and therefore, do not support the elimination of a Departmental home for trade policy. Commerce serves a vitally important role.

I trust the information we have supplied is sufficient for your immediate needs. If you need any additional material or have any questions, please do not hesitate to contact us. If required, we would be glad to attend the committee meeting to provide additional information.

On behalf of the entire Scott team, thank you for the opportunity to submit our comments. We look forward to a significant modification (or defeat) of H.R. 1756 to protect the commercial and scientific leadership of U.S.-based manufacturing operations.

Sincerely,

William E. Gittler
Environmental Products Group

Doug Vohden
V.P. Environmental Products Group

cc: Mr. Donald Humphries, National Oceanographic and Atmospheric Administration
Dr. Arati Prabhakar, National Institute of Standards and Technology
Dr. Hratch G. Semerjian, National Institute of Standards and Technology
Mr. J. Frederick Merz, Scott Specialty Gases



COOPERATIVE
RESEARCH

September 6, 1995

The Honorable George E. Brown, Jr.
Ranking Minority Member
Committee on Science
U.S. House of Representatives
Suite 2320 Rayburn House Office Building
Washington, DC 20515-6301

Dear Representative Brown,

I appreciate your invitation to discuss H.R. 1756, the Department of Commerce Dismantling Act. Those of us who have worked with the Department of Commerce over the years will have mixed reactions. On the one hand, we see downtown DoC offices peopled by former campaign workers producing little of value. On the other hand, we see an excellent staff at NIST providing essential measurement tools that enable U.S. industry to manufacture products required for competition in world markets.

The Department of Commerce, in general, suffers from the common plight of many mature organizations - it is easy to add new functions but difficult to remove those found to have marginal value. The result, eventually, is that the burden of these old programs becomes too much for the organization to carry while retaining its productivity. Unfortunately, the resultant collapse usually includes the excellent and essential programs along with those of little value. That is what now appears to be on the horizon for DoC. It will cause problems for the U.S., semiconductor industry.

The semiconductor industry of the United States is important. It is the world leader and is providing essential elements for other growing industries. Our continued success in this industry will be key to the relative position of the United States in the twenty-first century world economy, but is by no means assured.

The semiconductor industry has worked closely and successfully with DoC in the promotion of a level playing field in international trade. It has also maintained a close relationship with NIST in development of essential metrics, tools, and related research that are extending the capabilities of our industry.

Although these contributions are important to the progress and competitiveness of the industry as a whole, they involve insufficient proprietary value to attract the required investment from any one company. However, the industry would not be successful without them. This expanding semiconductor metrology activity at NIST is known as "The Semiconductor Metrology Program" and is closely coordinated with industry needs and activities.

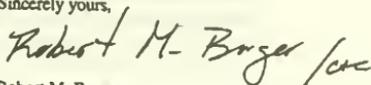
I will now respond to the individual questions raised in your letter.

1. DoE has operated the National Laboratories to effectively respond to national defense needs. Costs have been of secondary importance. In its non-defense operations, DoE has yet to demonstrate that it can perform cost-effective R&D although its science is often first-class.

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These comments indicate plainly that from my perspective in the industry, the survival of NIST and its traditional internal programs is of the highest priority. Furthermore, this should be accomplished in an organizational environment that is focused on this nation's industry and its ability to compete in an increasingly competitive world. Without an industry-government partnership to maintain U.S. competitiveness, the economic future of U.S. industry in a competitive world is highly uncertain.

Sincerely yours,

A handwritten signature in black ink that reads "Robert M. Burger /cxc". The signature is written in a cursive style with a large, sweeping "R" and "B".

Robert M. Burger

Vice President and Chief Scientist

Speaking primarily with regard to NIST, I see little relationship between NIST and DoE. In the administrative environment of DoE, the demise of NIST will be assured if its overhead expenses increase to those characteristic of DoE laboratories. NIST relates to all industry, not just energy. Many of its activities would be alien to DoE.

2. It is difficult to defend the Technology Administration and the NIST outreach programs. I'm unaware of the added value that the Technology Administration has provided. The outreach programs, ATP and MEP, have in general focused on areas with low potential for payoff and are comparable in value to other government programs that exist on the edges of industry advances. Because the government must insulate itself from the competitive marketplace, it should probably focus such programs on basic generic technologies for industry identified growth sectors, rather than attempting to identify new growth sectors.
3. Selling or privatizing NIST laboratories is not possible. There is insufficient potential for creating an income that will pay for the research, much less provide a profit. That why the NIST laboratories are so important. They are performing an essential function that is not viable as a commercial operation.
4. My position is to strongly support NIST in-house R&D and the importance of this to U.S. government and industry. This is a first priority. Where NIST is administratively located is important also. It would be most appropriate to replace DoC with a Department of Industry and Trade that carried out the essential functions but discarded the historical costly baggage.
5. NSF has no capability or experience in operating an R&D activity. Its mission is too important to be tinkered with. Find another solution. I remain in the position that a major government organization focused on the important industrial sector of the economy is appropriate and necessary. This organization is the most appropriate home for NIST.
6. It would be much more appropriate to give the NIST management the power and authority to reorganize the internal programs for maximum current relevance with the objective of a programmed incremental budget reduction. Actually, in a rational allocation of resources across broad areas of the government, I would not be surprised to see the NIST budget grow.
7. The semiconductor industry, and other U.S. industries, cannot be left without a U.S. government trade policy. In an era where many foreign governments orchestrate trade for the benefit of their economies, the U.S. government must continue to actively participate in this sector. This should take place in an environment where economic benefits have higher priority than foreign policy or defense.



The Texas A&M University System

Office of the Vice Chancellor for Strategic Programs

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Galveston Office: (409) 740-4748 • FAX (409) 740-4787

September 4, 1995

The Honorable George E. Brown, Jr.
U. S. House of Representatives
2300 Rayburn House Office Building
Washington, D.C. 20510

Dear Congressman Brown:

Thank you for your letter of August 11, 1995 requesting written comments on H.R. 1756, the Department of Commerce Dismantling Act. I believe that the fate of the National Oceanic and Atmospheric Administration (NOAA) is of utmost importance to the nation.

I chair the Ocean Studies Board of the National Research Council. The Ocean Studies Board has produced more reports for NOAA than for any other agency. This is not accidental. NOAA's role is central to the understanding of the ocean and managing U.S. marine resources. We have reviewed NOAA's National Sea Grant College Program, its Coastal Ocean Program, and aspects of its fisheries programs. In addition, we have provided advice to NOAA and other federal agencies regarding the Global Ocean Observing System and global change research, coastal ecosystem science, and marine biodiversity.

In particular, the OSB undertook a study in 1990 that sought to examine the field of ocean science and to assess its health and future directions. The resulting report, *Oceanography in the Next Decade: Building New Partnerships*, documented the major contributions that ocean science had made to our understanding of the Earth and how its systems operate and the importance of that understanding to society. The primary theme of the report was "to provide a blueprint for more productive partnerships between academic oceanographers and federal agencies." With respect to NOAA, the report stated:

"The National Oceanic and Atmospheric Administration (NOAA) has a wide range of responsibilities in the ocean. . . The future viability of basic oceanographic research in academia may depend on its forging productive partnerships with NOAA." p. 9

My answers to the specific questions posed in your letter are given below. These answers represent my personal professional view point and are not necessarily the opinion of the Ocean Studies Board of the National Research Council.

Universities

Prine View A&M University
Tarlton State University
Texas A&M International University
Texas A&M University
Texas A&M University at Galveston

Texas A&M University-Corpus Christi
Texas A&M University-Kingsville
West Texas A&M University

Agencies

Texas Agricultural Experiment Station
Texas Agricultural Extension Service
Texas Animal Damage Control Service
Texas Engineering Experiment Station
Texas Engineering Extension Service
Texas Forest Service
Texas Transportation Institute
Texas Veterinary Medical Diagnostic Laboratory

The Honorable George E. Brown, Jr.
 September 4, 1995
 Page 2

Question 1a: Are there still compelling reasons for an "earth science" agency?

As I responded to questions from the House Natural Resources Committee on June 15, the need for an agency whose primary mission focuses on observing and predicting the state of the Earth system remains a valid one — perhaps now more than ever. The past two decades of scientific discovery have reinforced the need for and benefits of an agency that strives to promote understanding of the coupled ocean-atmosphere-land system and that is responsible for the development and delivery of reliable information regarding the present state and likely future behavior of that system.

For example, U.S. marine fisheries face serious threats from environmental factors and from human activities, as cited in my June 15 statement. As fisheries management evolves from its present single species focus to management of entire fisheries ecosystems, addressing fisheries problems in a coherent manner will require cooperation among the National Marine Fisheries Service and other oceanic parts of NOAA. The agency that is responsible for fisheries management must have capabilities for collecting and analyzing fisheries and oceanographic data from ships and satellites (not necessarily belonging to the agency); conducting fundamental research (laboratory and field studies) to learn how fish populations are affected by other organisms, pollution, habitat loss, climate, and other important factors; and studying the human factors involved in fisheries problems. Likewise, there must be an agency that focuses on science activities (including research, observations, and modeling) related to weather, climate, and oceanic and coastal processes that affect the habitability, productivity, and resource use of the coastal United States. An effective NOAA is needed now more than when it was created in 1970, to manage and respond to such issues. Where NOAA is placed organizationally is less important than the continued existence of NOAA.

Question 1b: Are there still compelling reasons for an earth science agency to include research, operations, and enforcement functions?

There are compelling reasons to maintain research and management functions related to any given earth science issue in a single agency. The case for including enforcement functions in the same agency is weaker.

2. What would be the effect of selling or privatizing NOAA laboratories and functions as called for H.R. 1756? What private sector entities, if any, would be likely to carry on the functions of those laboratories and facilities? What functions of the NOAA laboratories, if any, are duplicated by other agencies or the private sector? If the federal government were to purchase the same services from private labs, would there be significant reductions in federal spending?

The Honorable George E. Brown, Jr.

September 4, 1995

Page 3

Any reorganization proposal must include a careful review of NOAA's existing structure and activities to ensure that the agency fulfills its fundamental mission of reliably providing an integrated view of the state of the environment at the lowest possible cost. Each of NOAA's existing programs should be reviewed for quality, relevance, performance, and relationship to related activities in NOAA and across the federal government.

It is important to ensure that important federal responsibilities are maintained and can rely on in-house capabilities for critical functions. For example, if weather forecasting is a federal responsibility, the observations, modeling, research, assessment, and data management activities required to provide weather forecasts should also be federal responsibilities. Similarly, if the development and management of U.S. fisheries is a federal responsibility, the observations, modeling, research, assessment, and data management activities required to develop and manage fisheries are federal responsibilities. The federal government should not be captive to the private sector to obtain critical services.

As the only federal agency dedicated to the ocean, NOAA is vital to our nation's ocean interests. In its ocean leadership role, NOAA has built in-house expertise and forged powerful partnerships with states, academia, and industry. NOAA has an important role to play as a partner in the nation's science and technology programs as demonstrated by: (1) NOAA's unique and special contribution to interagency programs such as the U.S. Global Change Research Program; (2) the unique national assets of NOAA laboratories; (3) the important partnerships of NOAA with the extramural research community forged by programs such as the Climate and Global Change Program and the Coastal Ocean Program; and (4) the role of NOAA-academic partnerships in both supporting critical research and training the next generations of scientists. NOAA has an important role as a science agency, through its support of fundamental science, which is an important federal responsibility.

3. Would the proposed reorganization and funding reductions have an adverse effect on the quality, accuracy and timeliness of weather forecasts and warnings? How would H.R. 1756 affect the NWS plans for modernization?

I am not familiar enough with activities of the National Weather Service to answer these questions. I am committed, however, to the process of carefully evaluating agency structure and function before major changes are proposed or enacted.

4. What are the impacts of terminating NOAA's pollution research and estuarine and coastal assessment research? Does such research duplicate research at other federal agencies or at universities? Would the proposed termination of such research have any adverse effect on

The Honorable George E. Brown, Jr.
September 4, 1995
Page 4

the ability to make rational regulatory decisions about ocean or estuarine pollution or natural resource management?

Each of NOAA's existing programs should be reviewed for quality, relevance, performance, and relationship to related activities in NOAA and across the federal government. Terminating NOAA activities without a thoughtful scientific, technical, and programmatic review would be somewhat arbitrary. NOAA, or any federal agency for that matter, should be willing to submit their programs to close scrutiny and should be willing to eliminate, initiate, or refocus programs.

5. Would the transfer of NWS to the Department of the Interior have any impact on the ability of NWS to carry out its mission? Are there other agencies which might be better suited to house NWS if the Commerce Department is abolished, or are there agencies to which NWS should not be transferred?

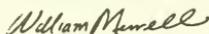
NWS without the in situ and satellite observing systems and supporting research programs makes little sense and cannot fulfill its missions. Therefore, NWS should remain with NOAA oceanographic programs.

What is your opinion of moving NOAA programs to the Department of Energy or a new Department of Science? Should NOAA be established as an independent agency if the Department of Commerce is eliminated?

The important question is not so much "where" NOAA is placed in the governmental structure but "what" NOAA will be and how important it is to the nation. If NOAA is moved, it should be moved intact, pending a review of agency programs and development of an implementation strategy for the agency in its new home or as an independent agency. I am concerned that some of the actions proposed by Congress would not only dismantle NOAA, but also selectively destroy many of NOAA's critical partnerships with the states, academia, and industry. As I indicated in my June 15 testimony, an independent NOAA is the best solution.

If you have any additional questions, please feel free to contact me.

Sincerely yours,



William Merrell



UCAR

University Corporation for Atmospheric Research
P.O. Box 3000, Boulder, CO 80307-3000 U.S.A.
Tel: (303) 497-1852 Telex: 989764 FAX (303) 497-1854

7 September 1995

RICHARD A. ANTHES
President

The Honorable George E. Brown Jr.
U.S. House of Representatives
822 O'Neill House Office Building
Washington, DC 20515

Dear Congressman Brown:

Thank you for the opportunity to provide comments on H.R. 1756, legislation to abolish the Department of Commerce. It is encouraging to me and many scientists that you and others in the Congress have taken a deep and long-term interest in our environment and in the science needed to understand, predict, and protect it.

Introduction

I am Dr. Richard A. Anthes, and I am President of the University Corporation for Atmospheric Research (UCAR) headquartered in Boulder, Colorado. UCAR is a consortium of 61 institutions of higher education in North America. UCAR includes virtually all U.S. universities with Ph.D. programs in the atmospheric, oceanic and related sciences. The consortium has been in existence for more than 35 years, and is organized as a private non-profit Colorado corporation. A list of our 61 member institutions is attached to this testimony (Attachment 1).

The proposed H.R. 1756 legislation would, in my opinion, have grave effects on the research and services now provided by NOAA to the nation. While I am sympathetic and supportive of the need to reduce both the federal budget and the national deficit as well as improve the efficiency of the government, I believe that NOAA provides many cost-effective services vital to the interests of the nation and should be protected and nurtured. The proposed

Member Institutions
University of Alabama in Huntsville
University of Alaska Fairbanks
University of Alabama, State University of
New York
University of Arizona
California Institute of Technology
University of California, Davis
University of California, Irvine
University of California, Los Angeles
University of Chicago
Cornell State University
University of Colorado
Cornell University
University of Denver
Drexel University
Florida State University
Georgia Institute of Technology
Hawaii University
University of Hawaii
University of Illinois at Urbana
Champaign
Iowa State University
University of Iowa
James Madison University
University of Maryland at College Park
Massachusetts Institute of Technology
Miami University
University of Miami
University of Michigan
University of Minnesota
University of Missouri
New Mexico State University
University of Nebraska-Lincoln
University of Nevada
University of New Hampshire
New Mexico Institute of Mining and
Technology
New York University
North Carolina State University
Ohio State University
University of Oklahoma
Old Dominion University
Oregon State University
Pennsylvania State University
Rutgers University
Purdue University
University of Rhode Island
Rice University
Saint Louis University
Georgia Institute of Oceanography
University of California, San Diego
Stanford University
Texas A&M University
University of Texas at Austin
University of Texas
Utah State University
University of Utah
University of Virginia
Washington State University
University of Wisconsin-LaCrosse
University of Wisconsin-Stevens Point
Weber State University
Yale University



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7 September 1995

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radical restructuring of NOAA and the concomitant reduction in funding pose, in my opinion, far greater risks than the potential for improvements or cost savings. Changes in NOAA are worth considering, but they should be made only after due deliberation and careful consideration of the consequences.

Environmental Security and NOAA

There is increasing perception among scientists, policy makers, industry, and the general public that our society is under increasing environmental stress. Local and regional pollution, erosion of the Earth's protective ozone shield, and a seemingly increased frequency of environmental disasters such as heat waves, droughts, hurricanes, floods, severe storms, hazardous waste incidents, oil spills, garbage disposal problems, pollution of local water supplies and the oceans, deforestation, and extinction of species, to name only some examples, all demonstrate the fragile nature of our air and water support system. The present global population of 5 billion is likely to double in as few as 40 years, adding to the mounting stress on our environment.

Increases in population and demand on natural resources including air, land, water and energy give heightened importance to weather and climate in the United States. Hail, lightning, thunderstorms, tornadoes, hurricanes, droughts and floods, heat and cold, turbulence and icing have pervasive effects on the nation's economy and industries. It has been estimated that weather affects about 1/6, or \$1T out of the \$6T U.S. economy.

Severe weather is more frequent and more damaging in the United States than in any other nation, affecting every state in every season of the year. Weather is responsible for 85% of the natural disasters declared by the President. Adverse weather causes an estimated \$35 billion losses annually and about \$14B of this has been estimated as preventable. The damage done by extreme weather events is increasing at an alarming rate---the 1988 drought, the 1993 Midwest floods, Hurricanes Hugo, Andrew and Iniki, the March 1993 East Coast blizzard, ice storms in the South and California floods. Deaths are down, but costs are up to an extraordinary degree, either due to increased frequency of extreme events, increasing populations at risk or both. For example, in 1993 insurance payments for catastrophic losses due to weather were more than \$5 billion across the economy. Total

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losses due to weather were estimated to be more than \$25 billion. These losses affect every state and all people of the nation and nearly all industries, including agriculture, fisheries, forestry, mining and manufacturing, transportation, communications, financial, insurance and real estate and others, including wholesale and retail trade and services.

As the lead mission agency in performing atmospheric and oceanic research and in providing weather forecasts and warnings to the nation, NOAA plays a vital role in maintaining the short- and long-term strength and vitality of the nation. For example:

- NOAA supports basic research in atmospheric and ocean sciences in the universities and in laboratories around the nation. This research builds the foundation for the understanding, prediction and warning of climate and weather, including severe weather hazards.
- The US has the most dangerous, violent weather of any developed nation, so a strong, effective National Weather Service is a national necessity. The primary mission of the National Weather Service is providing warnings of weather hazards. It also provides general weather data and forecasts to all people in the nation, and provides the basic weather data and numerical weather forecasts to a growing private sector, which then adds value and sells the enhanced products to specialized users of weather information. We need only to consider the continual reduction in annual loss of life from hazardous weather phenomena that has occurred in the last four decades - - at a time when our nation's population has grown rapidly - - to see that the National Weather Service and its supporting NOAA laboratories are serving the public well.
- NOAA's Climate and Global Change Program, with its university partners, has made vast improvements in relating the phenomenon of the El Nifto to the floods in California and agricultural practices in this country. As suggested by the staggering impacts summarized above, better capabilities in the seasonal prediction of weather and climate patterns can have incalculable benefits to our economy.
- The NOAA laboratories and centers that support the National Weather Service are key to its success. These are the "research arm" of the National Weather Service, as well as, indirectly, the private sector companies that provide value-added weather and climate products.

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They are an important interface between the National Weather Service and the university research community, assisting in the difficult task of transferring basic research results to both the public and private sectors.

Response to Specific Questions

1) In 1969, the Stratton Commission recommended the establishment of an "earth sciences" agency, which eventually led to the creation of NOAA by Executive Order. Are there still compelling reasons--scientific, managerial, or operational--to maintain an integrated "earth science" agency to address oceanic and atmospheric issues? Are there still compelling reasons for such an agency to subsume research, operations, and enforcement functions?

The scientific reasons for addressing atmospheric and oceanic issues in an integrated fashion in the same agency are more compelling now than ever before. It is undeniable that the oceans and the atmosphere are a closely coupled, interacting system on time scales ranging from days (e.g. hurricanes) to months (the El Niño) to many years (long-term climate). One cannot understand and predict one without the other. Hence it is scientifically and administratively efficient and productive to have atmospheric and oceanic scientific research and operational services in the same agency.

However, it is questionable whether NOAA should include regulatory and enforcement functions such as those associated with the National Marine Fisheries. While the scientific research activities and the operational activities of the National Weather Service operate together in a mutually beneficial and synergistic way, the regulatory and enforcement functions of NOAA divert resources and management attention and away from NOAA's primary contributions to the nation.

2) What would the effect of selling or privatizing NOAA laboratories and functions as called for in H.R. 1756? What private Sector entities, if any, would be likely to carry on the functions of those laboratories and facilities? What functions of the NOAA laboratories, if any, are duplicated by other agencies or the private sector? If the federal government

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were to purchase the same services from private labs, would there be significant reductions in federal spending?

Without doing the experiment of attempting to privatize the NOAA laboratories, it is impossible to say for sure what the outcome would be. However, it would be a dangerous experiment and one in which the potential losses far exceed the potential gains. The NOAA labs are producing relevant, high-quality scientific research in support of important national goals. They have an outstanding track record in observational systems and models of the atmosphere and the oceans in support of prediction of weather and climate.

I doubt seriously that the research now conducted by the NOAA labs would be supported by the private sector. Research which is long-term in nature and provides benefits to a broad sector of society is not likely to be supported by the private sector, which increasingly has shorter-term and much more specific interests. Many of the research topics studied by the NOAA laboratories, such as development of hurricane prediction models, global weather prediction observing systems and models, climate, monitoring of carbon dioxide and other trace gas concentrations and studies of tropospheric and stratospheric ozone, are inherently long-term in nature and ultimately affect all citizens of the United States; hence it is appropriate that the government provide long-term, stable support. And, even if the federal government were able to purchase the same services from the private sector, I do not see any significant savings to the government.

3) Would the proposed reorganization and funding restrictions have an adverse effect on the quality, accuracy and timeliness of weather forecasts and warnings? How would H.R. 1756 affect the NWS plans for modernization?

The proposed reorganization and funding reductions would almost certainly have a significant negative effect on the future quality, accuracy and timeliness of weather forecasts and warnings. To realize the enormous potential improvements in weather forecasts and warnings that are at the heart of the goals of the NWS Modernization, it is essential to provide the necessary funds in a timely way; already budget shortfalls have slowed down the Modernization. For example,

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AWIPS has proceeded much too slowly as a result of inadequate funds and excessive Congressional oversight and micro management. NOAA research on weather, which underpins the modernization has also been cut in recent years and additional reductions would further reduce or delay the benefits of the Modernization.

4) What are the impacts of terminating NOAA's pollution research and estuarine and coastal environment research? Does such research duplicate research at other federal laboratories or at universities? Would proposed termination of such research have any adverse effect on the ability to make rational regulatory decisions about ocean or estuarine pollution or natural resource management?

NOAA's activities in this area are generally not duplicative of other agency activities or universities, and in fact are carried out in close partnership with the universities through programs like Sea Grant. Given the importance of the health of the estuarine and coastal water to the natural aquatic resources available to the nation, it is important to maintain these high-quality activities and partnerships. With increasing population pressures along the coasts of the United States, it is vital to understand and protect the health of the rich coastal environment.

5) Would the transfer of NWS to the Department of the Interior have any impact on the ability of the NWS to carry out its mission? Are there other agencies which might be better suited to house NWS if the Commerce Department is abolished, or are there agencies to which the NWS should not be transferred? What is your opinion of moving NOAA programs to the Department of Energy or a new Department of Science? Should NOAA be established as a independent agency if the Department of Commerce is eliminated?

Because of the close coupling between the ocean and the atmosphere, it is important that the NWS be supported by a strong atmospheric and oceanic research program in the same agency; thus I believe NOAA is the correct place for the NWS and the oceanic and atmospheric research that supports it. I see no advantage to transferring the NWS to the Department of Interior or to any other agency.

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However, should the Department of Commerce be eliminated, I recommend serious consideration of establishing NOAA as an independent agency.

Summary Statement

Having a strong program of atmospheric and oceanic research and operations in the same agency (NOAA) makes sense on both scientific, organizational and economic grounds. The United States, through NOAA, has the best national weather service in the world. It's research activities in the OAR are similarly recognized as among the highest quality in the world. While changes directed toward increasing the quality of research and services must always be considered, we must also be careful to preserve the precious resources and infrastructure now in place.

Thank you for this opportunity to comment on these important issues.

Sincerely,



Richard A. Anthes

Attachment

**MEMBERS OF THE
UNIVERSITY CORPORATION FOR ATMOSPHERIC RESEARCH**

1. University of Alabama in Huntsville
2. University of Alaska, Fairbanks, Alaska
3. University of Albany, State University of New York
4. University of Arizona, Tucson, Arizona
5. California Institute of Technology, Pasadena, California
6. University of California at Davis, California
7. University of California at Irvine, California
8. University of California at Los Angeles, California
9. University of Chicago, Chicago, Illinois
10. Colorado State University, Fort Collins, Colorado
11. University of Colorado, Boulder, Colorado
12. Cornell University, Ithaca, New York
13. University of Denver, Denver, Colorado
14. Drexel University, Philadelphia, Pennsylvania
15. Florida State University, Tallahassee, Florida
16. Georgia Institute of Technology, Atlanta, Georgia
17. Harvard University, Cambridge, Massachusetts
18. University of Hawaii, Honolulu, Hawaii
19. University of Illinois at Urbana-Champaign, Urbana, Illinois
20. Iowa State University, Ames, Iowa
21. University of Iowa, Iowa City, Iowa
22. John Hopkins University, Baltimore, Maryland
23. University of Maryland, College Park, Maryland
24. Massachusetts Institute of Technology, Cambridge, Massachusetts
25. McGill University, Montreal, Quebec (Canada)
26. University of Miami, Miami, Florida
27. University of Michigan, Ann Arbor, Michigan
28. University of Minnesota, Minneapolis, Minnesota
29. University of Missouri, Columbia, Missouri
30. Naval Postgraduate School, Monterey, California
31. University of Nebraska at Lincoln, Nebraska
32. University of Nevada, Reno, Nevada
33. University of New Hampshire
34. New Mexico Institute of Mining and Technology, Socorro, New Mexico
35. New York University, New York, New York
36. North Carolina State University, Raleigh, North Carolina
37. Ohio State University, Columbus, Ohio
38. University of Oklahoma, Norman, Oklahoma
39. Old Dominion University, Norfolk, Virginia
40. Oregon State University, Corvallis, Oregon
41. Pennsylvania State University, University Park, Pennsylvania
42. Princeton University, Princeton, New Jersey
43. Purdue University, West Lafayette, Indiana
44. University of Rhode Island, Narragansett, Rhode Island
45. Rice University, Houston, Texas
46. St. Louis University, Saint Louis, Missouri
47. Scripps Institution of Oceanography, University of California at San Diego, La Jolla, California
48. Stanford University, Stanford, California
49. Texas A&M University, College Station, Texas
50. University of Texas, Austin, Texas
51. University of Toronto, Toronto, Ontario (Canada)
52. Utah State University, Logan, Utah
53. University of Utah, Salt Lake City, Utah
54. University of Virginia, Charlottesville, Virginia
55. Washington State University, Pullman, Washington
56. University of Washington, Seattle, Washington
57. University of Wisconsin at Madison, Wisconsin
58. University of Wisconsin at Milwaukee, Wisconsin
59. Woods Hole Oceanographic Institution, Woods Hole, Massachusetts
60. University of Wyoming, Laramie, Wyoming
61. Yale University, New Haven, Connecticut

SCHOOL OF
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& APPLIED SCIENCE

DEPARTMENT OF CHEMICAL ENGINEERING

University of Virginia
 Thornton Hall
 Charlottesville, VA 22903-2442
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 TDD (804) 982-HEAR

5 September 1995

Honorable George E. Brown, Jr.
 US House of Representatives
 Committee on Science, Minority Office
 822 O'Neill House Office Building
 Washington, DC 20515

Dear Representative Brown,

This is in response to your letter of 14 August in regard to H.R. 1756, the Department of Commerce Dismantling Act.

I have had a number of years of experience with Commerce Department programs, principally as a member at various levels on the Board of Assessment (BOA) of the National Institute of Standards and Technology (NIST) where I had the opportunity to evaluate the mission and accomplishments of NIST and describe its quality in annual reports. I also have been in service to, and received research support from, both the National Science Foundation (NSF) and the Department of Energy (DOE) for nearly 30 years. I have appreciated for a long time your personal efforts on behalf of American science and technology.

A copy of H.R. 1756 has been made available to me. I will state at the outset that I believe that implementation of its reorganization and program eliminations would be a disaster for US technology.

To facilitate communication of my concerns, I have written below relatively brief answers to your questions. However, the comprehensiveness and complexity of the issues really demands further explanation so I have attached some elaboration as an Appendix. I hope this structure is satisfactory for your purposes.

1. Among its many deleterious impacts, eliminating the focus of federal technology services and expertise available to the private sector except for "standards and measurement" would dramatically reduce America's competitiveness by two kinds of inefficiencies: a) removing the best of our cooperative research ventures for technology development (as in ATP and the NSF Centers), and b) inhibiting coordination of technology policy, regulation and sponsorship. The ensuing chaos would effectively eliminate small and medium US companies from making world-class advances in technology as well as debilitate many contributions of our Universities.

2. The technology and service functions of NIST are unique. But they will not be attractive to the private sector because they are generic and usually nonpatentable. They are necessary, but not sufficient, for national industrial advancement and international commerce. These attributes make them a perfect service for government, but not for private enterprise.

Rep. G E. Brown, Jr
5 September 1995
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3. It is very unfortunate that ATP funding has been eliminated, but that probably would be the major appropriation savings from the NIST budget. The base budget that is left is not as large. Since the bill eliminates a number of other Commerce programs, an immediate savings would appear. But I am also strongly against virtually all of these moves because of their crippling effect on our country's technical capability.

4. I feel NSF would be completely unable to absorb and supervise any of NIST's functions. Creation of a Department of Science would put all these vital activities on hold for several years until the organization stabilized while the current disarray of DOE would also overwhelm and deprive NIST of its ability to function. The current arrangement should be kept.

5. The impact of a 25% cut can be found in the reports of the BOA for the nearly 20 years when the budget of NIST was flat at that level. We said every year that a principal opportunity for American technological growth and increasing competitiveness was being squandered with such short-sighted budgeting strategy.

6. The bill's dismantling of trade functions by elimination and transfer principally to Treasury and to other Commissions is dangerous, I think. The globalization of commerce makes trade policy and its administration too important to be dispersed. If anything, trade should be given more visibility and cohesiveness in the federal government so we can deal more effectively and consistently with the rest of the world. The governments of Japan and Europe have a focus on trade; why should not we?

I hope these comments are useful to you and your committee.

Sincerely yours,



John P. O'Connell
H. D. Forsyth Professor

APPENDIX

Elaboration of Comments in response to questions of Rep. G.E. Brown, Jr. to
John P. O'Connell, H.D. Professor of Chemical Engineering, University of Virginia.

5 September 1995

1. Eliminating the Technology Administration would remove the country's principal mode of facilitating technology through cooperative research (as in ATP and NSF Centers). There would be much wasted industrial money and effort in trying to obtain information about advances as well as seeking alternative generic facilities and instruments that NIST makes available. Further, the current difficulties of Universities to obtain reliable and sensible research funding would be further aggravated. This would put our small and medium companies even more at a disadvantage relative to the Japanese and Europeans where support involving all institutions is implemented as a national policy.

Many in business claim that technology is not the problem (they seem to feel that their employees limit our progress so they get rid of some and overwork the rest. This is both insult and injury to the American people). However, in the modern world, if the US continues emphasizing only raw materials and services produced independently by individuals, we will be reduced to the status of a low-tech "Third-World" country. What made us strong was our monopoly on *technical* products and people and we need to return to this core competence.

To get back ahead of our competition, we need to utilize every opportunity for increased knowledge and efficiency. That is what NIST has done with both its base resources and the ATP. The payoff has certainly been better than SBIR and other programs, principally because those have only low levels of technology and do not engender significant economic multiplication or international impact.

NIST is not "Corporate Welfare", which is a relatively recent phenomenon fostered by incompetent, nontechnical businesspeople. As recently noted, Congress has been inconsistent in its selection of programs to deal with this alleged abuse of public resources and trust. Insinuating that NIST actions and use are exploitive would be part of this destructively political pattern. Doing so would completely ignore the traditions and contributions of the National Bureau of Standards over many decades and the recent enhancements arising from NIST being in the center of the fight to maintain US competitiveness.

2 & 3. Current American business attitude asserts holds that every activity should be in a company's core competence and must make a profit on its own in a very short time. The idea of H.R. 1756 seems to be that the federal government should abandon its responsibility and competence in technical leadership. Further, the concept that our society does not need technical service and expertise, except when it can make a profit, foolishly ignores the expense and complexity of modern technology as well as the practices of the international competitors who are surpassing us. Their policies recognize the challenges of technical advancement and support a sharing of the costs of technological development among the players - all members of a particular industry, the government, and the universities. Even if private buyers could be found for NIST, savings could only occur when increases in efficiency would offset the profit and the costs of

Elaboration of Comments by

John P. O'Connell

5 September 1995

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transition. I am not at all sanguine about that, nor am I convinced that a sell-off would necessarily yield a net income to the federal government. Further, since one can generate any desired result by manipulating the numbers, I am also skeptical of arguments that claim to prove economic benefits.

4&5. NSF has no experience in *managing* technical services and research nor *doing the real work* of industrial/university/government cooperation. Its role has been to provide the vital functions of fund distribution, program advocacy and project facilitation. The danger of a small agency like NIST becoming independent is that it can then be an easy target for cutbacks and manipulation. The proposals for it to go into other Departments have major flaws due to the time it would take and the unsupportive, or even hostile, reception it would encounter.

If the concept of core competency has any validity, the federal government should adopt it by continuing to concentrate technology service functions with the government's commerce activities and personnel. After all, that arrangement was worked out over decades of thought, action and assessment. Now that the current programs are finally functioning well again - after years of languishing - we should let NIST do its job with a sensible level of resources rather than distract and reorganize it again and/or dramatically cut its budget for the sake of appearance.

6. It seems to me that a major role of federal government is to formulate policy and administer it, especially on national/international issues like trade. To be effective, the organization of any activity must facilitate its function. My impression is that the optimal structure of our Executive Branch has Departments represented by Secretaries who oversee and integrate the policies and actions of their area. The current arrangement is probably the only one with a chance yield the consistency and strength that the times demand of our trade agency. The proposed change will ignore the sense of this structure and practice worked out over decades of federal experience and substitute a highly diffuse and uncertain arrangement that would be likely to worsen our balance of payments problem, among other dangers.

Robert M. White
President Emeritus
National Academy of Engineering
1701 K Street, N.W., Suite 300
Washington, D.C. 20006

August 21, 1995

(202) 833-1818
FAX (202) 466-6073

The Honorable George E. Brown Jr.
U.S. House of Representatives
822 O'Neill House Office Building
Washington, DC 20515

Dear George:

I welcome this opportunity to comment on H.R. 1756, the Department of Commerce Dismantling Act, introduced by Representative Chrysler. Unfortunately, I will not be in Washington on 12 September, but I do feel strongly about the consequences of passage of the Chrysler bill. NOAA was brought into being by President Nixon in 1970 and I was privileged to be appointed its first Administrator.

You have provided me with a set of questions for comment. I will do that in a sequence of paragraphs which correspond to the paragraphs in your letter without repeating the text of your questions.

1. I was a member of the Stratton Commission that recommended the creation of NOAA. It was not created by Executive Order, as your question suggests, but was created by Reorganization Plan # 4 of 1970. At the time of the establishment of NOAA, its purpose was not to form an "earth sciences" agency, but to establish a center of strength in ocean, atmospheric and other environmental activities within the federal government. At that time, oceanic and atmospheric activities were scattered throughout agencies of the federal government, and the creation of NOAA provided for their consolidation into a single agency. The reasons for the establishment of NOAA in Reorganization Plan #4 are as cogent today as they were then.

From a scientific point of view, it is now essential to study the oceans and atmosphere as a single system because they interact so closely. The recent concern about Hurricane Felix is a good example of the interaction of oceans and atmosphere. Our deep concerns about the climate of the earth and possible changes in that climate can only be studied and forecasts made if the oceans and the atmosphere are considered together.

From a managerial point of view, NOAA, by consolidation of many different federal entities, was able to provide a management structure which was much more efficient than the original separate structures. The management structure of NOAA was able to give

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closer attention to the problems of the various units that came to compose NOAA. For example, at the time of the amalgamation of the Bureau of Commercial Fisheries into NOAA, there was deep concern within the commercial fisheries industry for the way in which that Bureau was being treated within the Department of the Interior. When transferred to NOAA, the Bureau of Commercial Fisheries' fleet was in a state of disrepair. We were able to take the managers of the Coast and Geodetic Survey Fleet, also merged into NOAA, to oversee the refurbishment of the vessels of the fisheries service.

Another example was in the operation of the earth orbiting satellites. Until the formation of NOAA, satellites were used only for weather observation. With the formation of NOAA, the weather satellite operations were broadened to become environmental satellites.

From the beginning, NOAA was visualized as an agency to provide vital services to the general public and to industry. Research is conducted to improve the ability to provide such services. NOAA also undertakes management and regulatory functions with respect to the living resources of the oceans and the coastal zones. This combination of activities has worked well over the past quarter century. I see no reason for attempting to disestablish or dismantle the activities of NOAA which today work so well.

2. The idea of selling or privatizing NOAA laboratories and functions makes little sense. From my knowledge of the NOAA research laboratories, there is very little of commercial value that these laboratories could provide except as contractors to the government. If by privatizing NOAA laboratories it is meant that the NOAA laboratories would be placed in the hands of private entities but receive most of their funds from the federal government, I don't see that there would be great advantages.

It is important to understand the function of the NOAA laboratories. They relate very directly to the missions of NOAA - the Hurricane Research Laboratory and the Severe Storms Research Laboratory are clearly undertaking research to improve our ability to forecast these devastating phenomena. Laboratories like the Geophysical Fluid Dynamics Laboratory in Princeton or the Aeronomy Laboratory in Boulder are vital to the understanding of some of the most critical environmental problems facing the world -- the decreasing stratospheric ozone in the polar regions and the issue of climate change. The Fisheries research laboratories are essential if management of rapidly depleting fish stocks is to be performed wisely.

Some of the NOAA Laboratories are the foremost in the world in their field, and it would be a disaster to make significant changes in the management or funding of such laboratories given their importance to the national welfare. It is important to emphasize that in the conduct of scientific research it is frequently important to have a number of

The Honorable George E. Brown, Jr.

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independent groups conducting similar research using different approaches. What may appear to be duplication is frequently sound scientific procedure. Some of the NOAA laboratories are absolutely unique and their work is not comparable to the work in any other laboratory. You ask whether there would be significant reductions in federal spending if the same services were purchased from private laboratories. I do not believe that would be the case. The same salaries would have to be paid, the same facilities would have to be provided, and there is no indication that overheads in the private sector are any less than those within the federal government.

3. The modernization plans for the National Weather Service are proceeding well. The installation of new Doppler radars is almost complete; the installation of other equipment for bringing together weather information from the entire world is moving ahead; the National Meteorological Center is the foremost operational computer weather forecasting entity in the world. The Weather Service would be severely and adversely affected were there any significant funding reductions for a public service which is essential for the protection of the public. A reorganization which would move the Weather Service from its present location to another location would be disruptive.

4. At the time of the formation of NOAA, one of the most pressing national issues, especially of deep concern to the coastal states, was the fate of the estuarine and coastal waters. At that time, encroachment of industrial development and residential building upon the shorelines and estuaries were of deep concern. Spawning areas for fish were being disturbed, access to the beach for recreational purposes was being restricted, and it was clear that there needed to be a more rational and balanced management of the coastal zones of the United States. This was achieved through the passage of the Coastal Zone Management Act which is now a partnership between the states and the federal government to conduct research upon estuarine and coastal problems and to assist the states in setting up coastal zone management plans in accordance with which balanced use of the coastal zones could proceed. I believe this program has been eminently successful, and the termination of NOAA's pollution research and estuarine and coastal assessment would be a blow to the wise management of such coastal areas. It is true that there are many agencies such as the EPA, the Department of Interior and the Corps of Engineers that have research functions in the coastal areas. No agency, however, has the deep research and oceanic capabilities of NOAA, and clearly the termination of such research would make it much more difficult to make rational regulatory decisions about the coastal zone.

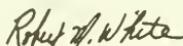
5. The transfer of the National Weather Service to the Department of Interior would not be the most desirable place for the location of the National Weather Service. However, there are other arrangements for the Weather Service and NOAA that, in my mind, would be much preferred. The original Stratton Commission recommendation was for the establishment of NOAA as an independent agency. I still believe that this is a good

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solution, should the Department of Commerce be dismantled. NOAA is now large enough, spending on the order of \$2 billion per year, to exist as a strong independent agency. I believe also that NOAA could function well in other organizational forms within the federal government. If a new Department of Science is brought into being, it would be a very good locus for NOAA operations. It would then be able to interact more effectively with the other elements of a Department of Science such as the National Science Foundation, NASA, and the U.S. Geological Survey, should these agencies be contained in a Department of Science.

To sum up, NOAA was a sound concept when it was recommended 25 years ago. It is an even sounder concept today.

Sincerely,



Robert M. White
President Emeritus
National Academy of Engineering



**X-RAY
OPTICAL
SYSTEMS
INC.**

The Honorable George E. Brown, Jr.
Ranking Democrat
Committee on Science
United States House of Representatives
Washington, DC 20515

August 18, 1995

Dear Representative Brown:

Do not eviscerate the National Institute of Standards and Technology (NIST) by passing the Department of Commerce Dismantling Act (H.R. 1756 and S.929) as it now stands. NIST, previously known as the National Bureau of Standards, is a critical resource for keeping US industry competitive in the world marketplace.

X-Ray Optical Systems, Inc. is a small high-technology company which has grown from one employee in 1991 to eighteen personnel at the present. We are looking for several additional employees right now and expect to continue growing at this rate for several more years, at least.

We are world leaders in our technology which is important in the medical imaging, advanced materials, and semiconductor industries. Technological and market world leadership would not have been possible without support from the NIST laboratories. NIST's advanced measurement capabilities and research capabilities are important in keeping US technology companies in the forefront. We work with many laboratories including several federal labs, university labs, and industrial labs. While many of those are good, NIST is superior at providing the type of information and techniques important for helping companies move products from R&D into commercial introduction.

Because of NIST's focus on supporting US commerce, they have built the infrastructure of people, equipment, procedures, and culture so they can deliver highly accurate measurements and answers rapidly. NIST is extremely open. It is the only Federal lab I am aware of which distributes an indexed catalog of all their capabilities. The catalog gives points of contact with phone numbers; not to some bureaucrat, but to the person actually doing the work.

It was only by accident that we learned there were steps being considered to drastically modify NIST, including the NIST laboratories. But if changes are made which in any way diminish NIST's ability to provide high-quality, cost-effective, and credible technical services, the repercussions will be large for both small and large companies. The work being done at NIST is not speculative research or pork. They provide measurement techniques and other technical capabilities which are critical to American companies developing and maintaining international economic competitiveness.

Don't mess with something that works extremely well.

Emphatically,

David M. Gibson
President

STATEMENT OF
THE HONORABLE JOHN D. DINGELL

HEARING ON H.R. 1756
THE DEPARTMENT OF COMMERCE DISMANTLING ACT

BEFORE THE COMMITTEE ON SCIENCE

SEPTEMBER 12, 1995

Chairman Walker and Members of the Committee, I appreciate this opportunity to discuss these important issues with you.

A bill to abolish the Department of Commerce has been introduced by my good friend, Mr. Chrysler. Unfortunately, I believe the Chrysler bill will do great damage to programs that benefit the Nation:

- * It will mean lost jobs here at home and hurt efforts to protect American jobs from unfair practices by foreign companies.

- * It will endanger our ability to compete in the global marketplace by killing programs that produce technological innovations, quality products, and scientific advances.

- * It destroys programs that preserve jobs and help distressed communities and the environment.

I base these conclusions on what I have heard from businesses and others in the State of Michigan. I have copies of scores of letters I have received from Michigan businesses and others on the Chrysler bill and ask that they be included in the hearing record. I also have copies of four Dear Colleagues that I and other Michigan Members have signed that give you a flavor of what our constituents are telling us about this dangerous proposal.

As these letters spell out in vivid detail, the Chrysler bill will abolish or slash programs that create and preserve jobs in Michigan. They shuffle boxes for the sake of shuffling boxes, with great detriment to programs that protect U.S. jobs from unfair practices by foreign competitors and promote the sale of our products around the world. They destroy programs that produce technology and innovation resulting in high-tech, high-wage jobs in Michigan. They abolish programs that produce investment many times over for our communities. They slash cost-effective programs that benefit the entire Great Lakes region. They kill programs that build telecommunications and information systems to improve the education and health of our children and citizens.

For example, the Donnelly Corp. in Holland writes: "Rather than both houses of Congress proposing the elimination of the Department of Commerce, they should be reemphasizing the department's critical role in promoting international trade and, in particular, export promotion activities. Without question, U.S. exports are creating new jobs, building growth in our economy, and helping to reduce the growth of our trade deficit." American Broach in Ann Arbor writes: "With our country's balance of trade problems, we hope the business community and general public realizes how important the Department of Commerce...is to creating jobs and allowing small companies to compete in the global market." And discussing the elimination of domestic Commercial Service offices, VIATEC, in Hastings writes that: "...[T]his valuable program is an 'INVESTMENT' that produces returns back to the American taxpayers with more high-paying skilled jobs, higher tax paying citizens, U.S.A. purchased materials, etc. etc. Please help defeat this [legislation]." Others talk about their first-hand experience with programs that produce community investment, build telecommunications and information systems, produce great benefits for the entire Great Lakes region, and develop new research and technologies that produce skilled jobs.

What really is going on here is a trophy hunt by the new Republican leadership in Washington. They want to eliminate a department just to say that they have done so. They are doing this without regard for the importance of the programs they are abolishing or whether real efficiency and savings will be produced. As Morton Kondracke recently said in Roll Call: "Even fellow Republicans deride [the Chrysler bill] as mere 'box shuffling'-- redistributing Commerce's sub-agencies throughout the federal government without deep study of how to sensibly consolidate their functions, cut overall costs, and improve the government's performance."

The Department of Commerce has the smallest budget of any cabinet department. It is working better than ever. It already is cutting costs, reducing personnel, closing offices, and increasing its efficiency to deliver quality services that pay huge dividends to Michigan's economy. Businesses across the country hail Ron Brown as the best Secretary of Commerce ever. As business and community leaders in Michigan have written, the Department's programs are creating jobs and producing returns and investment far in excess of its budget.

Look at how other countries operate and tell me where we will be if these bills become law. Other countries invest far more than we do to promote their businesses, products, and technology. While the Japanese are talking about doubling their research and development budget by the year 2000, these bills are proposing to abolish the only agency whose mission it is to promote commerce! Why would anyone propose to give foreign businesses such a huge advantage in the global market? Why would anyone choose to eliminate programs that create

and protect American jobs? Why would anyone choose to abolish a department that produces billions of dollars more than it spends?

I am not here to defend the Department of Commerce, per se. Whether there is any building called the Department of Commerce is of no great importance to me. Nor am I here to defend an inefficient bureaucracy. If we can make changes that make sense, I'm for it. I have spent my career in Congress trying to root out waste and inefficiency.

But what is important to me is that we save programs that create jobs in Michigan, help Michigan businesses compete against foreign companies and countries, and help improve the State's economy and environment. The bills that have been proposed are a meat-axe approach to cutting government -- they disregard programs that really work for the State of Michigan, its businesses, and its citizens.

* Scores of small businesses in Michigan are now exporting and competing around the globe because of the work of the International Trade Administration. The Chrysler bill eliminates domestic offices of the U.S. & Foreign Commercial Service. As Durametallic, a small business in Kalamazoo, has written to me: "[I]t would be a serious mistake to eliminate the export assistance programs provided by the International Trade Administration and the Domestic Commercial Service. It will hurt small businesses particularly and negatively impact employment in the state of Michigan."

* The President of Monroe Auto Equipment writes that: "[T]he aggressive trade promotion policies of our government, coupled with knowledgeable human resources, is adding value to my company's efforts to compete in worldwide markets. The beneficiaries of these actions are [our] shareholders, our employees domestically and abroad, and the communities in which we reside...In the final analysis, I believe a Cabinet-level department focused upon export opportunities and the promotion of international market development will best serve the country at a time when global competition is at its keenest."

* The Chrysler bill eliminates the Advanced Technology and Manufacturing Extension programs. MERRA, a non-profit association of major Michigan businesses, the executive and legislative branches of the State, universities, and economic development organizations, writes that the ATP program: "is important in transferring the results of fundamental research into practical products. This results in the creation of jobs and an increase in export sales." Its members report that the MEP program provides "invaluable assistance" to small and medium-sized businesses.

* The Great Lakes Environmental Research Lab in Ann Arbor (that employs 100 people) would be eliminated. This lab and other NOAA programs benefit the entire Great Lakes region's environment. As a letter from Professor Kerfoot of the Michigan Technological Institute states: "The proposed legislation is akin to Sherman's march to the sea in the damage it will do to forecasting and research programs related to marine and Great Lakes' transportation, weather, water quality and ecosystem health research. The proposed restructuring fragments a cohesive agency and sends the pieces to areas where the present forecasting and research development...will not function."

* The Chrysler bill eliminates EDA grants. The West Michigan Shoreline Regional Development Commission, serving 5 counties and 120 local governments, opposes the elimination of the Department of Commerce. They have written to me detailing 41 EDA projects that have leveraged private sector investments of more than 50 times the total EDA investment and created or saved over 22,700 jobs in Michigan. And Detroit's Focus:HOPE, the premiere model in the Nation for providing skills in technology and manufacturing technology education, would not be in existence without the Department's help.

* The Chrysler bill eliminates NTIA grants. The Michigan Ass'n for Local Public Health has described a grant it received last year to build an information exchange to connect all local health departments and the state Department of Public Health that "provided direct and immediate benefits to local governments throughout the state and continues to promote the health of Michigan citizens." And the director of the Regional Educational Media Center 10 in Cass City has written that: "It is inconceivable to me that members of Congress would even think about eliminating the NTIA at a time when the information explosion threatens to overwhelm us."

The Chrysler bill is wrong for the State of Michigan and wrong for the Nation. And while the proponents of the legislation claim significant savings, the fact of the matter is that the bill may actually increase costs to taxpayers, while destroying programs that create and preserve jobs.

We can all agree that we need to take a long, hard look at whether savings and efficiencies can be achieved in all government programs. But the Chrysler bill is a cynical and counterproductive way to do business. I respectfully urge this Committee to seriously examine the real and lasting adverse consequences of enacting this legislation.

ONE HUNDRED FOURTH CONGRESS

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JAMES E. DERDERIAN, CHIEF OF STAFF

U.S. House of Representatives
Committee on Commerce
Room 2125, Rayburn House Office Building
Washington, DC 20515-6115

September 11, 1995

The Honorable Robert S. Walker
Chairman
Committee on Science
2320 Rayburn House Office Building
Washington, D.C. 20515

Dear Mr. Chairman:

I am sorry you were unable to accommodate my request to testify at the commencement of your hearing tomorrow morning on legislation to dismantle the Department of Commerce. I had hoped to offer a statement on a subject of great interest to my constituents and to many Members, including those of the Science Committee.

When my staff contacted your Committee staff Friday afternoon to make the request, we were informed the Committee would not permit me to testify at the commencement of the hearing, in accordance with the courtesies usually accorded to Members. Little time remains for a full and complete analysis of all relevant issues if the severe time schedule announced by the Republican leadership for moving this legislation is followed. Therefore, in lieu of my oral testimony to the Committee on Science, I would appreciate your inclusion of my enclosed written statement, along with the following documents, in the hearing record:

1. Response of Secretary Brown to my questions relating to costs of the Chrysler bill.
2. Recent Dear Colleagues from me and several Members of the Michigan delegation relating to the Chrysler bill.
3. Approximately 100 letters from Michigan businesses and others relating to the proposed legislation.

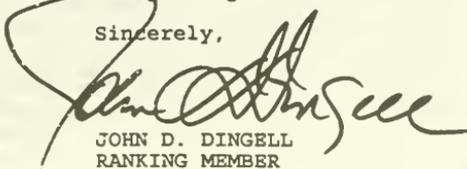
Mr. Chairman, I respectfully urge the Committee on Science to take appropriate time to examine the immense implications of the Chrysler bill. I believe upon close scrutiny, you will find the proposed legislation destroys cost-effective programs that

The Honorable Robert S. Walker
September 11, 1995
Page 2

create and protect American jobs. I also believe an unbiased accounting of the costs of the Chrysler legislation will show that the bill certainly will not achieve the savings claimed and, in fact, may result in net costs for the taxpayer.

Thank you again for your consideration of these important issues. I trust you will not hesitate to contact me if I may provide any further information regarding this matter.

Sincerely,

A handwritten signature in black ink, appearing to read "John D. Dingell", written over a large, stylized flourish that starts with a large loop and extends to the right.

JOHN D. DINGELL
RANKING MEMBER

cc: The Honorable George E. Brown, Jr.

RESPONSES TO QUESTIONS OF CONGRESSMAN DINGELL
HOUSE COMMITTEE ON COMMERCE
SUBCOMMITTEES ON COMMERCE, TRADE, AND HAZARDOUS
MATERIALS AND TELECOMMUNICATIONS AND FINANCE

Question:

1. Rep. Chrysler has indicated that H.R. 1756 will result in total savings of \$7.765 billion over five years. Please provide a detailed response as to whether you believe this is accurate, and include a discussion of whether the alleged savings include amounts that have already been realized through cost reductions and other efficiencies, whether the alleged savings appropriately reflect costs that would have to be incurred when the bulk of Commerce functions are dispersed throughout numerous Federal agencies, and any other information that bears on the accuracy of Rep. Chrysler's estimated savings.

Answer:

1. As OMB Director Rivlin noted when the Chrysler Bill was introduced, she doubted that savings would occur from dismantling Commerce if implemented. We concur with her assessment. By using the FY 1995 CBO baseline from which to calculate savings, the Chrysler bill is more than \$5 billion short of minimum expenditures that must be made for continuing programs. This is so because:
 - o There are errors and omissions in the Chrysler estimates;
 - o The Chrysler bill failed to include as an offset to savings the costs associated with dismantling the Department such as RIF costs, dislocation costs, disposal of facilities and operation of a Commerce Programs Resolution Agency;
 - o There is no ability to achieve the proposed across the board cut of 25 percent below FY 1994 levels for remaining Commerce programs except by the program cuts described in the response to question 3 below; and
 - o Savings that are already built into the President's budgets will occur without the Chrysler bill.

OMISSIONS AND ERRORS

- o The Chrysler estimates, as scored by CBO, make several substantial omissions and errors in their assumptions.
- o The largest is the CBO baseline that does not include an estimate for the decennial census in the year 2000. The five year total decennial shortfall from 1996 to 2000 is \$3.6 billion, and for all Census programs exceed \$4.3 billion. Also the Chrysler bill had claimed \$.8 billion from Decennial Census improvements with the \$7.765 billion saving estimate. However, since no funds are in the CBO baseline for the Decennial, the funds cannot be saved.
- o Within NOAA, the Chrysler estimates omit funds to pay for continuation of weather satellite systems and completion of the Congressionally approved Weather Service Modernization program. The costs for procuring additional satellites and Weather Service contracts alone exceed \$1.5 billion above the CBO baseline for the modernization program. These costs are required to ensure future continuity of weather forecasts and warnings nationally.
- o The Chrysler bill makes two substantial errors in PTO. The Omnibus Budget Reconciliation Act of 1993 requires \$325 million to be appropriated from the PTO Surcharge Fund. The bill would make those funds directly available to PTO, but does not identify an offset. Therefore, in terms of the deficit, the savings are overstated by \$325 million. Further, PTO collects 100 percent of costs in fees now. If PTO must reduce costs 25 percent, or \$375 million, as called for in the Chrysler bill, no reduction will accrue to the deficit because PTO already obtains these fees directly.
- o The funding for the budget of the United State Trade Representative (USTR) is \$21 million annually. In FY 1995 alone, ITA is providing USTR direct assistance of \$12.1 million from Trade Development and International Economic Policy. These two activities are terminated by the Chrysler bill. The FY 1996 termination costs for ITA under the Chrysler bill would be \$106 million or 500 percent of the USTR budget, but are not included in the Chrysler estimate.

- o The Chrysler bill assumes that Treasury, at no additional cost, will monitor the EDA portfolio of grants. We estimate the three year cost of closing out EDA at \$26 million plus RIF costs regardless of organization location.
- o Establishment of a Commerce Programs Resolution Agency is assumed in the Chrysler bill, and would operate for three years. We believe that it would cost approximately \$150 million for that period, about the same as the Office of the Secretary and Inspector General currently cost.

UNFUNDED COSTS IN THE CHRYSLER BILL

- o The Chrysler bill does not reflect the costs of closing agencies, terminating employees, dislocation and operating a Commerce Programs Resolutions Agency. We estimate these costs at \$2 billion, and they are shown in Table 1.
- o A total of 12,685 FTE would be eliminated under the Chrysler bill assumptions, 35 percent of existing staff, in the first year after enactment. The closeout costs, RIF costs and dislocation costs would total \$1.526 billion for all of Commerce. The balance of the \$2.001 billion is \$325 million for an offset to PTO appropriations requirements under OBRA of 1993 and \$150 million for a three year Commerce Programs Resolution Agency.

ABILITY TO ACHIEVE 25 PERCENT SAVINGS FROM OVERHEAD

- o The basis for the Chrysler 25 percent cut below FY 1994 funding totals is not stated in the legislation or the press release. Congressman Chrysler indicated on July 24 that the cut was related, at least in the case of PTO, to an overhead rate Commerce now charges bureaus.
- o Commerce does not charge its bureaus any overhead rate. While Commerce sells services through the Working Capital Fund, bureaus purchase an average of 1.4 percent of their available funding in services. See bureau Working Capital Fund estimates in Table 2. All Commerce oversight is funded through the General Administration account, \$36 million in FY 1995 or about .7 percent of the Commerce total appropriation.
- o The only way to achieve a savings of 25 percent in programs not terminated would be through further program reductions as discussed in the response to question 3 below.

SAVINGS IN PRESIDENT'S BUDGET

- o The budget President Clinton submitted for FY 1996 already contained savings built into the budgets for FY 1996 - FY 2000 that would have occurred without the Chrysler proposals. These savings total \$1.472 billion for the period and are shown in Table 3.
- o Savings are shown for program terminations, program reductions, FTE/Administrative reductions and the President's Reinventing Government initiative. The individual program terminations and reductions proposed in the FY 1996 President's budget are listed in Table 4. The FTE and Administrative savings result from Public Law 103-226 to reduce FTE by 272,900 by FY 1999, and Executive Order 12837 to reduce administrative expenses by 14 percent by FY 1997.
- o Two reinventing government savings estimates are shown for increasing Census data sales and for privatizing specialized weather services. The President is considering additional Commerce reinvention proposals which are not included in these totals.

COMPARISON OF H.R. 1756 AND H.R. 2076 "SAVINGS"

- o The Chrysler Bill claims to save \$5.370 billion from program terminations, \$78 million from privatization and \$2.317 billion from the 25 percent across the board cut provision for remaining programs. A breakout of the reductions shown by Commerce bureau in the attached Table 5. The reductions result from program terminations, not from dismantling Commerce.
- o The major savings is from the elimination of the Office of the Secretary, \$250 million over five years. Sixty percent of this amount provides procurement, general counsel, accounting, budget, security and building support which would have to be replicated in the agencies receiving Commerce program transfers.
- o Therefore, actual savings from eliminating Executive Direction at Commerce would be no more than \$20 million per year. These savings would not be realized until the Commerce Program Resolution Agency is dissolved, three years after Chrysler enactment.

SUMMARY OF CHRYSLER BILL SAVINGS

- o Chrysler savings are overstated for the five year period, 1996-2000, as follows:

Chrysler Estimate.....	\$7.765 billion
Less:	
o Tech errors Inappropriate overhead rate.....	-2.317 billion
o Unfunded Closeout Costs.....	-1.990 billion
Revised Chrysler Estimate.....	3.458 billion

- o Congress needs to carefully evaluate the components of the Joint Budget Resolution. For example, in Commerce alone, more than \$5 billion in costs for the decennial census and Weather Service contracts have been ignored in the CBO baseline so far.
- o Adding the \$5 billion in additional costs to the revised Chrysler Estimate above indicates that the Chrysler bill has a potential cost of \$1.542 billion.

DEPARTMENT OF COMMERCE
UNFUNDED TERMINATIONS/RIF COSTS
OUTLAYS
(IN MILLIONS OF DOLLARS)

	H.R. 1756 CHRYSLER BILL	H.R. 2078 HOUSE APPROPRIATIONS BILL
	FTE	FTE
	\$	\$
GENERAL ADMINISTRATION	194	200
ECONOMIC DEVELOPMENT ADMINISTRATION	311	135
BUREAU OF CENSUS/ECONOMIC & STATISTICAL ANALYSIS	1,720	128
INTERNATIONAL TRADE ADMINISTRATION	1,824	0
BUREAU OF EXPORT ADMINISTRATION	188	0
MINORITY BUSINESS DEVELOPMENT AGENCY	165	0
UNITED STATES TRAVEL & TOURISM ADMINISTRATION	94	94
NATIONAL OCEANIC & ATMOSPHERIC ADMINISTRATION	5,482	560
PATENT AND TRADEMARK OFFICE	1,289	0
UNDER SECRETARY/OFFICE OF TECHNOLOGY POLICY	73	16
NATIONAL TECHNICAL INFORMATION SERVICE	378	0
NATIONAL INSTITUTE OF STANDARDS & TECHNOLOGY	884	147
NATIONAL TELECOMMUNICATIONS & INFORMATION ADM.	193	0
SUBTOTAL, DEPARTMENT OF COMMERCE	12,685	1,280
COMMERCE PROGRAM RESOLUTION AGENCY	0	0
TOTAL, DEPARTMENT OF COMMERCE	12,685	1,280
	2,001	87

02-Aug-95
04:55 PMDEPARTMENT OF COMMERCE
WORKING CAPITAL FUND
DISTRIBUTION BY BUREAU
(IN MILLIONS OF DOLLARS)

	FY 1995 ESTIMATED COST	FY 1995 BUDGET AUTHORITY	OVERHEAD PERCENTAGE
GENERAL ADMINISTRATION - OFFICE OF THE SECRETARY	5	36	14.0%
GENERAL ADMINISTRATION - INSPECTOR GENERAL	1	17	5.8%
ECONOMIC DEVELOPMENT ADMINISTRATION	3	450	0.7%
BUREAU OF CENSUS	9	278	3.1%
ECONOMIC & STATISTICAL ANALYSIS	3	50	6.2%
INTERNATIONAL TRADE ADMINISTRATION	13	266	4.9%
BUREAU OF EXPORT ADMINISTRATION	6	41	13.8%
MINORITY BUSINESS DEVELOPMENT AGENCY	2	44	5.6%
UNITED STATES TRAVEL & TOURISM ADMINISTRATION	1	17	5.0%
NATIONAL OCEANIC & ATMOSPHERIC ADMINISTRATION	13	1,949	0.7%
PATENT AND TRADEMARK OFFICE	4	580	0.7%
UNDER SECRETARY/OFFICE OF TECHNOLOGY POLICY	1	10	6.9%
NATIONAL TECHNICAL INFORMATION SERVICE	4	76	5.0%
NATIONAL INSTITUTE OF STANDARDS & TECHNOLOGY	3	654	0.3%
NATIONAL TELECOMMUNICATIONS & INFORMATION ADM.	2	113	1.3%
TOTAL, DEPARTMENT OF COMMERCE	69	4,782	1.4%

NOTE: TABLE DOES NOT REFLECT RESCISSIONS IN P.L. 104-19. DISTRIBUTION OF TRAVEL/ADMINISTRATIVE REDUCTION IS PENDING DEPARTMENTAL APPROVAL.

TABLE 3

DEPARTMENT OF COMMERCE
 OUTLAY SAVINGS IN THE PRESIDENT'S BUDGET IN AGREEMENT WITH THE 96 HOUSE ALLOWANCE

02-AUG-95
 04:56 PM

OUTLAYS

(IN MILLIONS OF DOLLARS)

1996--2000

	PROGRAM TERMINATIONS	PROGRAM REDUCTIONS	FTE/ ADMINISTRATIVE SAVINGS	REGO	TOTAL
GENERAL ADMINISTRATION	0	0	13	0	13
ECONOMIC DEVELOPMENT ADMINISTRATION	0	2	69	0	61
BUREAU OF CENSUSECONOMIC & STATISTICAL ANALYSIS	0	8	46	39	93
INTERNATIONAL TRADE ADMINISTRATION	37	1	28	0	66
BUREAU OF EXPORT ADMINISTRATION	0	0	9	0	9
MINORITY BUSINESS DEVELOPMENT AGENCY	0	0	4	0	4
UNITED STATES TRAVEL & TOURISM ADMINISTRATION	0	0	4	0	4
NATIONAL OCEANIC & ATMOSPHERIC ADMINISTRATION	385	338	382	40	1,155
PATENT AND TRADEMARK OFFICE	0	0	14	0	14
UNDER SECRETARY/OFFICE OF TECHNOLOGY POLICY	0	0	1	0	1
NATIONAL TECHNICAL INFORMATION SERVICE	0	0	0	0	0
NATIONAL INSTITUTE OF STANDARDS & TECHNOLOGY	0	0	46	0	46
NATIONAL TELECOMMUNICATIONS & INFORMATION ADM.	0	0	6	0	6
TOTAL, DEPARTMENT OF COMMERCE	422	340	622	70	1,472

NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
 FY 1988 House Approved Terminations and Reductions

(Millions of Dollars)

	House Mark
	5 Yr. Outlays
BC Cooperative geologic survey.....	(4)
Land Information System.....	(4)
Coast assessment program.....	(11)
Transfer from Damage Assessment Fund ^a	(1)
Oil Spill Research.....	(2)
National Institute of Environmental Research.....	(4)
Charleston, SC, toxic area mgmt. plan.....	(2)
Marine education program.....	(1)
Atlantic beach burn research.....	(4)
International fisheries commissions.....	(12)
North Atlantic fishery project.....	(2)
Expert advisory/advis. panel.....	(13)
Forecasting weather mod. grants.....	(2)
Severe weather storm research.....	(11)
VENTS.....	(2)
SE USA/Caribbean FOCI program.....	(4)
GLERL/Zebra mussel.....	(1)
Lake Champlain study.....	(1)
Pacific Island technical assistance.....	(4)
National coastal R&D Institute.....	(77)
NOAA Undersea Research Program.....	(6)
Regional marine research centers.....	(133)
MARCO.....	(10)
Agricultural & fruit frost program.....	(2)
Fire weather services.....	(2)
Susquehanna River Basin Flood Sys.....	(14)
Sarnos.....	(119)
Regional climate centers.....	(2)
NEOQAD.....	(18)
ASOR.....	(20)
Coastal research program.....	(8)
Chesapeake Bay research.....	(4)
Coastal Fisheries Lab repairs.....	(16)
Boston Biotechnology Innovation center.....	(14)
Myrtle, CT, maritime educ. & research center.....	(4)
Alaska Fisheries Center.....	(8)
Kansas City Weather & Environment Center.....	(10)
NEPRAD WFO construction.....	(16)
Columbia river facilities.....	(14)
Multipurpose aquaculture center.....	(44)
Lafayette, LA Fisheries Lab.....	(16)
National Estuarine Research Reserve.....	(21)
Indiana State University.....	(10)
Newport marine science center.....	(60)
Thruway/Banta Cr.	(72)
5 year Total.....	(723)

^a Reductions to the FY 1988 Appropriation (\$336 million in outlays)

International Trade Administration

House Mark
Program Terminations
FY 1996
(Dollars in Millions)

Program Terminations	Amount	5 Year Outlay
National Textile Center	(2)	(9)
Center for Global Competitiveness	(1)	(5)
Emerging Technologies Institute	(1)	(5)
Michigan Biotech Institute	(1)	(5)
Tailored Clothing Technology Center (TC2)	(1)	(3)
Massachusetts Biotech Research	(2)	(8)
Transfers to Office of Inspector General	0	(1)
Japan Information Center	(1)	(2)
Total	(9)	(38)

TABLE 6

31-Jul-85
01:44 PM

DEPARTMENT OF COMMERCE
CHRYSLER BILL SAVINGS BY CATEGORY
OUTLAYS
(IN MILLIONS OF DOLLARS)
1996-2000

	1995 CBO BASELINE	SAVINGS FROM DISMANTLING		COST OF TRANSFERRED PROGRAMS		
		TERMINATIONS	PRIVATIZATIONS TRANSFERS		TOTAL	
GENERAL ADMINISTRATION	298	250	0	250	48	
ECONOMIC DEVELOPMENT ADMINISTRATION	2,177	1,139	0	1,139	1,038	
BUREAU OF CENSUS/ECONOMIC & STATISTICAL ANALYSIS	1,801	27	0	800	827	974
INTERNATIONAL TRADE ADMINISTRATION	1,472	240	0	54	294	1,178
BUREAU OF EXPORT ADMINISTRATION	224	51	0	41	91	133
MINORITY BUSINESS DEVELOPMENT AGENCY	239	183	0	0	183	58
UNITED STATES TRAVEL & TOURISM ADMINISTRATION	83	75	0	0	75	18
NATIONAL OCEANIC & ATMOSPHERIC ADMINISTRATION	10,684	1,468	78	798	2,344	8,340
PATENT AND TRADEMARK OFFICE	418	0	0	375	375	41
UNDER SECRETARY/OFFICE OF TECHNOLOGY POLICY	56	70	0	0	70	(14)
NATIONAL TECHNICAL INFORMATION SERVICE	44	0	0	0	0	44
NATIONAL INSTITUTE OF STANDARDS & TECHNOLOGY	4,328	1,847	0	155	1,802	2,524
NATIONAL TELECOMMUNICATIONS & INFORMATION ADM.	585	221	0	95	315	270
TOTAL DEPARTMENT OF COMMERCE	22,415	5,370	78	2,317	7,755	14,850

Congress of the United States
 Washington, DC 20515

September 12, 1995

ISSUE ONE: MORTON'S RIGHT!

Dear Colleague:

Here's what Morton Kondracke recently said in Roll Call about H.R. 1756, the Department of Commerce Dismantling Act:

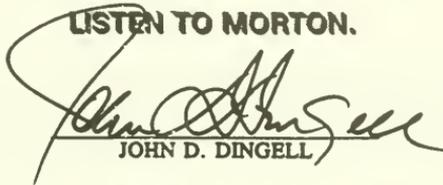
"[T]he favorite vehicle of Commerce abolitionists, proposals sponsored by freshmen Chrysler and Sen. Spence Abraham (R-Mich) and endorsed by Senate Majority Leader Bob Dole (R-Kan), has run into major problems. . . .

"[E]ven fellow Republicans deride Chrysler-Abraham as mere 'box-shuffling' – redistributing Commerce's subagencies throughout the federal government without deep study of how to sensibly consolidate their functions, cut overall costs, and improve the government's performance. . . .

"The best course might be for Congress and the Clinton Administration to form a new Hoover Commission...Surely that's a more responsible course than deciding, as Republicans did this year, to close down an agency just to show they could do it."

Why would ANYONE choose to eliminate programs that create and protect American jobs? Why would ANYONE choose to abolish a department that produces billions of dollars more than it spends? Why would ANYONE choose to give foreign businesses a huge advantage in the global economy?

LISTEN TO MORTON.


 JOHN D. DINGELL

(full text on reverse side)

Pennsylvania Avenue

By Morton M. Kondracke

Time to Reinvent, Not Eliminate, Commerce Dept.

Despite ferocious Republican huffing and puffing, Congress isn't likely to dismantle the Commerce Department this year. Nor should it, especially if the Clinton Administration persists in reinventing the agency for a 21st century of global trade competition.

It's almost universally acknowledged that Commerce Secretary Ron Brown has been a dynamo of trade promotion. The Administration also has significantly beefed up the agency's capacity — established during the Bush Administration — to assist in advanced civilian technology development.

Soon, White House aides promise, President Clinton will announce "paradigm-changing" new management systems at Commerce as part of Vice President Al Gore's National Performance Review.

Commerce officials say the changes involve privatizing parts of the US Weather Service and creating government corporations to process patent applications and provide scientific information services to business. Gore's office seems to be thinking bigger but won't discuss details.

Meantime, despite a new vow last week on the House floor to "zero out" Commerce this year, Congressional Republicans seem deeply divided on what to do with its dozen-odd major components, many of which even the most

How about a reprise of the Hoover Commission, which supervised government reorganization after World War II?

ardent budget-cutters want to retain as government agencies.

It's almost certainly too late for Republicans to agree on terms for closing down Commerce this year, an exceedingly complex undertaking. Even if they did, Clinton has vowed to veto such a bill.

The GOP budget resolution for fiscal 1996 calls for dismantling the agency. Last Wednesday, however, the House approved a \$3.4 billion budget for the agency. In spite of this, Reps. William Clinger (R-Pa) and Dick Chrysler (R-Ill.) announced that Speaker Newt Gingrich (R-Ga) had approved a strategy to eliminate Commerce as part of Congress's massive budget reconciliation bill.

The problem with this plan is that it almost certainly violates the Senate's "Byrd rule," requiring 60 votes to pass any substantive change in law as part of a reconciliation measure. Furthermore, key committee chairs in both the House and Senate are in disagreement about the future shape of Commerce or a successor department.

Meanwhile, the favorite vehicle of Commerce abolitionists, proposals sponsored by freshman Chrysler and Sen. Spence Abraham (R-Mich) and endorsed by Senate Majority Leader Bob Dole (R-Kan), has run into major problems.

For one thing, the way the bill funds Commerce programs would make it impossible for the government to conduct the 2000 Census.

What's more, even fellow Republicans deride Chrysler-Abraham as mere "box-shuffling" — redistributing Commerce's sub-agencies throughout the federal government without deep study of how to sensibly consolidate their functions, cut overall costs, and improve the government's performance.

For instance, Chrysler-Abraham would deposit Commerce's biggest sub-agency, the National Oceanic and Atmospheric Administration (NOAA), into the Interior Department, whose culture tends to be environmentalist rather than business-oriented, and would transfer Commerce's 3,000 trade-promotion officials to the office of the US Trade Representative, now the negotiating arm of the White House with a staff of just 150 people.

Also under Chrysler-Abraham, Commerce's Bureau of Economic Analysis — which issues growth and business statistics — would go to the Federal Reserve Board, a monetary agency, while the Census Bureau would go to the Treasury Department.

Some government-reorganization experts, such as Senate Governmental Affairs Chairman Bill Roth (R-Ind), say that Congress in-

stead should think about creating a new agency to consolidate all economic data offices.

Most seriously, Roth and other Republicans, including Commerce subcommittee on Commerce, trade, and hazardous materials Chairman Mike DeLoe (Ohio) and Rep. John Mica (Fla) — along with major corporate interests — want to maintain a Cabinet-level voice for American business. They think it's especially necessary to have a strong trade-promotion agency, with scientific backup, to counter foreign governments that subsidize their exports and sometimes treat trade as a form of war.

They've talked about creating a Department of Trade or a Department of Trade and Technology, but Brown and his aides say that's essentially what Commerce already is because even NOAA, the statistical agencies, and the National Institute of Standards and Testing help back up trade promotion efforts.

Even so, there certainly is a need for serious study of government restructuring to eliminate duplication, flatten management structures, deregulate, improve service, and cut costs.

The best course might be for Congress and the Clinton Administration to form a new Hoover Commission, like the one former President (and Commerce Secretary) Herbert Hoover headed that reorganized the government after World War II.

Surely that's a more responsible course than deciding, as Republicans did this year, to close down an agency just to show they could do it.

Brown, the prospective target, calls this "trophy hunting." You could also call it posturing.

Congress of the United States
House of Representatives
 Washington, DC 20515

COMMERCE WORKS FOR MICHIGAN
 (It Probably Works in Your State, too.)

Part 1

TRADE AND EXPORT PROMOTION = JOBS, JOBS, JOBS

Dear Colleague:

After hearing from many businesses and organizations who depend on a healthy trade climate, we've concluded that H.R. 1756, the Department of Commerce Dismantling Act, would have disastrous consequences for our state, and probably your state too. In Michigan, for example, the bill would abolish all domestic offices of the U.S. Foreign & Commercial Service, including offices in Detroit and Grand Rapids. These offices service over 2,000 small/medium size firms by providing "how to export" assistance and information. We have heard from dozens of Michigan businesses who have first-hand experience with the invaluable services these offices provide. Here are just a few examples of what they say:

"With our country's balance of trade problems, we hope the business community and general public realizes how important the Department of Commerce International Trade Administration is to creating jobs and allowing small companies to compete in the global market."

Edward Kokmeyer, American Broach & Machine Co., Ann Arbor,
Michigan

"Why would we even rationally consider the elimination of Commerce which since the mid-1980's has concentrated on helping small- and medium-sized firms export. These are the same companies that have driven our surge in exports and our growth in employment. Are we trying to 'kill the goose that lays the golden egg'?"

Donald G. Keese, Keese & Associates, Birmingham, Michigan

"I cannot begin to comprehend the thought processes behind the abolishment of the one governmental agency that is so in tune and involved with the United States taking its rightful place in the newly emerging global economy. To divide the responsibilities of the Commerce Department and to disperse them to other agencies would simply mean overtaxing already stressed agencies and diluting the effectiveness of their services."

Dianne Blamer, Second Chance Body Armor, Inc., Central Lake, Michigan

"These opponents to the Department of Commerce must have their heads in the sand or are simply choosing to ignore what other governments, specifically Japan, do to support private enterprise."

Ginger Lantz, Electro-Wire Products, Inc., Dearborn, Michigan

"I have frequently used these programs, and they have proven to increase export sales and thus help the economy of our country."

Don Seale, Bissell, Inc., Grand Rapids, Michigan

"Our competition from other industrial countries have already teamed with their government to a far greater level of support and financial backing than anything the United States Government has ever considered...If there is a reduction in the size, or the elimination of the Department of Commerce, many small and medium size U.S. manufacturers who want to enter the export market may never have that opportunity."

Brad Carson, Johnston Boiler Company, Ferrysburg, Michigan

"As for the buzz-word, 'corporate welfare,' it's a sad misnomer to apply it to DOC/ITA, because their services are actually a 'corporate investment,' since they help with job creation or stabilization."

A.J. Takacs, Whirlpool Corp., St. Joseph, Michigan

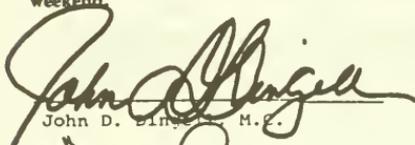
"The elimination of the Department of Commerce and the resulting termination of the Domestic Commercial Service would be a step backwards that would not only limit the growth of new jobs in the U.S. but cause us to be left behind in international competition."

Andrew Murch, Burke E. Porter Machinery Company, Grand Rapids, Michigan

"This valuable program is an 'INVESTMENT' that produces returns back to the American taxpayers with more high-paying skilled jobs, higher tax paying citizens, U.S.A. purchased materials, etc."

Kenneth Kensington, Viatic, Inc., Hastings, Michigan

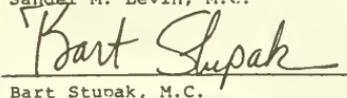
This is just one small part of what is wrong with the Department of Commerce Dismantling Act. You may want to listen to people who have first-hand experience with Secretary Brown's reinvented Department of Commerce before supporting some Washington-led scheme that will hurt U.S. business at a time when they most need cost-effective and efficient programs. It's highly likely you'll find these people at home this weekend.

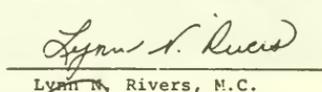

John D. Dinger, M.C.


John Conyers, Jr., M.C.

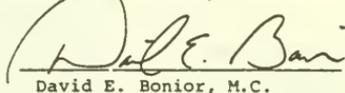

Sander M. Levin, M.C.


Barbara-Rose Collins, M.C.


Bart Stupak, M.C.


Lynn M. Rivers, M.C.


Dale E. Kildee, M.C.


David E. Bonior, M.C.

Congress of the United States
House of Representatives
Washington, DC 20515

September 5, 1995

THE DEPARTMENT OF COMMERCE WORKS IN MICHIGAN
(It Probably Works in Your State, too.)

Part II

RESEARCH AND TECHNOLOGY

Dear Colleague:

The United States ranks 28th in the world in non-defense percentage of R&D. Japan's MITI is considering DOUBLING their R&D expenditures by the year 2000 while some in Congress are advocating shutting down cost-effective programs of the Department of Commerce that create good jobs and fuel economic growth.

H.R. 1756, the Department of Commerce Dismantling Act, among other things, will eliminate the Advanced Technology Program (ATP) and the Manufacturing Extension Program (MEP), and cut all remaining NIST programs -- including those that produce basic research and development -- by at least 25% from 1994 funding levels.

ATP provides cost-shared awards to companies and consortia for competitively selected projects to develop high-risk, enabling technologies during the pre-product phases of R&D. Michigan companies have competed successfully for 13 ATP awards that, with private cost-sharing, will generate \$132 million worth of projects to produce high-tech, high-wage jobs.

The MEP is a nationwide network of extension centers, including the Midwest Manufacturing Technology Center in Ann Arbor, co-funded by state and local governments, that provide small/medium size manufacturers with technical assistance as they upgrade their operations to boost performance. On a per project basis, companies utilizing the MEP program have reported at least five jobs saved or created as a direct result of the program.

But don't take our word for it -- here's a sampling of the many letters we have received from Michigan businesses and others who have first-hand experience with the National Institute of Standards and Technology and the Department of Commerce:

"NIST is the key ingredient in public-private partnerships to keep the U.S. as the leader in information process technologies and standards."

John F. White, Industrial Technology Institute, Ann Arbor, Michigan

"Our members believe the ATP is important in transferring the results of fundamental research into practical products. This results in the creation of jobs and an increase in export sales."

Keith Blurton, MERRA, Ann Arbor, Michigan

"We believe that MEP is an example of a state and federal partnership that works."

W.C. Dyer, Midwest Manufacturing Extension Center, Ann Arbor, Michigan

"From my experience, I know that the laboratory program at NIST provides valuable contributions to the basic scientific infrastructure of our country. If we are to remain a strong nation, we must continue to invest in basic research to provide for future growth."

Robin J. Hood, Wayne State University, Detroit, Michigan

"It is quite ironic that members of the House of Representatives from Michigan introduced [H.R. 1756], because the ATP is positively impacting a substantial part of the Michigan-based automotive industry."

Ernest Vahaia, Auto Body Consortium, Ann Arbor, Michigan
Arbor, Michigan

"In general, I do not believe that the federal government should be growing, but in this area [MEP] I believe that if we as a nation do not do everything to strengthen small business, there will soon be no business to worry about."

Paul Semerad, President, Semtron, Inc., Flint, Michigan

Before you support a bill like H.R. 1756, we hope you'll do what we did: find out the consequences for your state.

<u>Lynn A. Rivers</u>	<u>Dale E. Bair</u>
<u>James Lewis</u>	<u>Bart Shupak</u>
<u>John W. Giffell</u>	<u>Barbara Rae Collins</u>
<u>Dale E. Alder</u>	<u>Jen Longenecker</u>

Congress of the United States

House of Representatives

Washington, DC 20515

September 6, 1995

**THE DEPARTMENT OF COMMERCE WORKS IN MICHIGAN
(It Probably Works in Your State, too.)**

Part III

TELECOMMUNICATIONS AND INFORMATION

Dear Colleague:

H.R. 1756, the Department of Commerce Dismantling Act, among other things, would eliminate the National Telecommunications and Information Administration (NTIA). In Michigan, NTIA programs have worked to build and enhance needed telecommunications and information systems to greatly improve educational capabilities for Michigan's children and students, create networks designed to improve the delivery of health care services and information, and to improve the State's telecommunications connections and technology capabilities as we develop the information superhighway.

Here are some of the comments we have received from people in Michigan who have first-hand experience with NTIA and the Department of Commerce:

"It is inconceivable to me that members of Congress would even think about eliminating the NTIA at a time when the information explosion threatens to overwhelm us."

Robert Townsend, Regional Educational Media Center 10, Cass City, Michigan

"The careful attention to detail, pursuing and directing monies to those most in need or to the programs that would directly further educational use of telecommunication networks, were supported each year. There were no frills or waste in any sense either in the use of professionals' time or successful entry into the use of telecommunications to the NTIA grant programs."

Constance Julius, Michigan Community College Association, Lansing, Michigan

"It would truly be a shame to eliminate a program that does such good work to ensure that our national information infrastructure will continue to serve the public good, especially by improving the health of Michigan's citizens."

Jeffrey Wehl, Michigan Association for Local Public Health, Lansing, Michigan

"Because of PACE Telecommunications' receiving financial support in the form of these grants from NTIA/PTPF sections of the Department of Commerce, it has been able to interconnect 16 school districts and reach home viewers totalling approximately 16,000 subscribers."

Jack Keck, PACE Telecommunications Consortium, Indian River, Michigan

"We strongly encourage the committee to defeat any attempt to weaken the public broadcasting system by eliminating the NTIA and its programs."

Dave Myers, Blue Lake Public Radio, Twin Lake, Michigan

"NTIA funding fosters regional and local programming and public access. Reduction or elimination of these funds contributes to the danger that many public stations will be forced to cease operations, thereby taking away service to many smaller communities."

Thomas Hunt, CMU Public Radio, Mt. Pleasant, Michigan

Elimination of NTIA is just a small part of the Department of Commerce Dismantling Act. In addition to NTIA, it will abolish domestic offices of the U.S. and Foreign Commercial Service, the Economic Development Administration, and the Advanced Technology and Manufacturing Extension programs. IN ADDITION, THE BILL WILL CUT EVERY SURVIVING PROGRAM A MINIMUM OF 25% FROM 1994 FUNDING LEVELS.

Look before you leap. Listen to what people are really saying about how the Department of Commerce works for them to produce jobs, increase exports, and promote advances in technology and telecommunications. The Department of Commerce works, in Michigan and in your state!

John Stenzell

Quinn Linn

Bart Shepak

Dale E. Collins

John Longenecker

Barbara Lee Collins

Lynn V. Rivers

Dale E. Bair

Congress of the United States**House of Representatives**

Washington, DC 20515

September 7, 1995

**BUSINESSES IN MICHIGAN SUPPORT THE DEPARTMENT OF COMMERCE
(They Probably Support it in Your State, too.)**

Part IV**WHO'S GOT IT RIGHT?**

Dear Colleague:

Recently, a letter was circulated that claimed that "Business Doesn't Want the Department of Commerce." You may or may not choose to take our word for it. So we want to share letters from scores of Michigan businesses and communities that say otherwise. Here is just a sampling:

"The aggressive trade promotion policies of our government, coupled with knowledgeable human resources, is adding value to my company's efforts to compete in worldwide markets. The beneficiaries of these actions are [our] shareholders, our employees domestically and abroad, and the communities in which we reside."

Jack Thompson, Monroe Auto Equipment, Monroe, Michigan

"The Department of Commerce is a very effective department which is of great help to small and medium scale industries."

Gladson Remos, INCOE Corp., Troy, Michigan

"Moving the functions of the International Trade Administration to the U.S. International Trade Commission, to the Treasury Department, to the Office of the U.S. Trade Representative, or to some other agency would not save any tax dollars and would result in less effective enforcement of U.S. unfair trade laws and less effective export promotion."

John Dixon, Medusa Cement Co., Charlevoix, Michigan

"I humbly ask you to do whatever you can to help strengthen the Department of Commerce, rather than to see it diminish, melt into other committees, or become non-existent. We need them."

Monty Vincent, Arbor Technologies, Inc., Ann Arbor, Michigan

"The Department of Commerce has been a job-creation machine for the State of Michigan and our cities."

Dennis Archer, Mayor, City of Detroit

"We need federal programs like EDA to continue in partnership with State, local and private investment to provide economic incentives that have been proven to work in stimulating growth, creating jobs and generating revenues."

Gerald Perreault, Western Upper Peninsula Planning & Development Regional Commission, Houghton, Michigan

"It is inconceivable to me that members of Congress would even think about eliminating the NTIA at a time when the information explosion threatens to overwhelm us."

Robert Townsend, Regional Educational Media Center 10, Cass City, Michigan

"The proposed legislation is akin to Sherman's march to the sea in the damage that it will do to forecasting and research programs related to marine and Great Lakes' transportation, weather, water quality and ecosystem health research."

Charles Kerfoot, Michigan Technological University, Houghton, Michigan

"I believe there is value in having a cabinet level department working for and with American enterprise. I also believe that the prospect of shutting down an entire business division of government without a thorough examination is, at the very least, unwise."

W.C. Dyer, Midwest Manufacturing Technology Center, Ann Arbor, Michigan

"Your support in defeating H.R. 1756 will be appreciated."

Theo Merrill, Automotive Industry Action Group, Southfield, Michigan

We have heard from dozens of persons who have first-hand experience with Department of Commerce programs. They are telling us that Secretary Brown's reinvented Department of Commerce creates jobs, promotes technology, and produces needed investments in our communities and environment. Before you support precipitous action that is penny-wise and pound-foolish, you may want to check with your own constituents.

John McGill

John Longenecker

Samuel Davis

Burton-Rae Collins

Bart Slapak

Lynn V. Rice

Dee E. Calder

Dale E. Bair

LETTERS RELATING TO PROPOSED LEGISLATION
TO DISMANTLE THE U.S. DEPARTMENT OF COMMERCE

TRADE/EXPORT

Jack L. Thompson, President, Monroe Auto Equipment, Monroe, MI.

Dennis W. Archer, Mayor, City of Detroit.

Michael J. Cole, Vice President, Donnelly Corp., Holland, MI.

Raymond J. Gaynor, International Director, Mechanical Dynamics, Inc., Ann Arbor, MI.

Edward W. Kokmeyer, President, American Broach & Machine Co., Ann Arbor, MI.

Edward A. Mascara, Arthur Andersen LLP, Detroit, MI.

Donald G. Keesee, President, Keesee & Associates, Birmingham, MI.

Charles Robrecht, Vice President, Tim Gilson, New Ventures Manager, Gelman Sciences, Ann Arbor, MI.

Joseph L. Primeau, International Sales Manager, Acromag, Inc., Wixom, MI.

Gladson Remos, International Technical Director, INCOE Corp., Troy, MI.

Dianne S. Blamer, Export Manager, Second Chance Body Armor, Inc., Central Lake, MI.

Frank H. Commiskey, Director/General Manager, James A. Haworth, Export Manager, Horiba Instruments, Inc., Ann Arbor, MI.

Charles E. McCallum, Esq., Warner Norcross & Judd, Grand Rapids, MI.

Clarence M. Kivette, Chief Operating Officer, Amigo Mobility International, Inc., Bridgeport, MI.

Dan Muelenberg, President, Muelenberg International, Ltd., Grand Rapids, MI.

Birgit M. Klohs, President, The Right Place Program, Grand Rapids, MI.

D.R. Zelek, Vice President, AMPRO Industries, Inc., Bradley, MI.

Thomas E. Haan, Executive Vice President, Durametallc, Kalamazoo, MI.

- Mark D. Basile, President, Healthmark Industries Co., St. Clair Shores, MI.
- Kevin H. McKervey, Chairman, World Trade Club, Greater Detroit Chamber of Commerce, Detroit, MI.
- Ken Van Tol, Cheesebrough Wood Rakes & Specialties, Freeport, MI.
- David J. Spyker, President, JWI, Holland, MI.
- Ginger L. Lantz, Manager of China Business Development, Electro-Wire Products, Inc., Dearborn, MI.
- Dale W. Koop, Vice President, Hastings Manufacturing Company, Hastings, MI.
- Don R. Seale, Director of International Sales, Bissell, Inc., Grand Rapids, MI.
- George N. Herrera, Director of International Sales, MASCO Corp., Taylor, MI.
- Gerald A. Hilty, Vice President, Rapistan Demag Corp., Grand Rapids, MI.
- Brad Carson, Vice President, Johnston Boiler Company, Ferrysburg, MI.
- A.J. Takacs, Vice President of Government Relations, Whirlpool Corp., St. Joseph, MI.
- Andrew Murch, President, Burke E. Porter Machinery Company, Holland, MI.
- Michael Bee, Manager of International Sales & Marketing, Hart & Cooley, Inc., Holland, MI.
- Kenneth Kensington, CEO, VIATEC, Inc., Hastings, MI.
- John R. Dixon, Plant Manager, Medusa Cement Company, Charlevoix, MI.
- Dale Apley, Director of Public Policy, Ann Arbor Area Chamber of Commerce, Ann Arbor, MI.
- Robert J. Huisingh, Sales Manager, LORIN Industries, Muskegon, MI.
- Matthew P. Marko, Vice President, CORE Industries, Bloomfield Hills, MI.
- Monty E. Vincent, President, Arbor Technologies, Inc., Ann Arbor, MI.

Richard N. Sarns, President, Sarns, Inc., Ann Arbor, MI.

R.E. Masnari, International Sales Manager, Armstrong International, Inc., Three Rivers, MI.

Patrick A. Dell, Manager, International Operations, Moti Enterprises International, Sterling Heights, MI.

Joseph C. Schneider, Vice President, Oliver Business Products, Grand Rapids, MI.

COMMUNITY INVESTMENT

Wilbur Ingrham, Chairperson, Southwestern Michigan Commission, Benton Harbor, MI.

Raymond Rathbun, Chairman, West Michigan Shoreline Regional Development Commission, Muskegon, MI.

Robert G. Kudney, Chairman, East Central Michigan Planning & Development Commission, Saginaw, MI.

Richard J. Beldin, Associate Director, Northwest Michigan Council of Governments, Traverses City, MI.

Jon W. Coleman, Chair, Lansing Regional Economic Redevelopment Team, Lansing, MI.

Gerald Perreault, Chairperson, Western Upper Peninsula Planning & Development Regional Commission, Houghton, MI.

Joyce Tubarsky, Director, West Michigan Regional Planning Commission, Grand Rapids, MI.

TELECOMMUNICATIONS AND INFORMATION

Constance P. Julius, Director of Telecommunications, Michigan Community College Association, Lansing, MI.

Michael J. Donahue, Ph.D., Executive Director, Great Lakes Commission, Ann Arbor, MI.

Scott Seaman, General Manager, Northern Michigan University Public Broadcasting Services, Marquette, MI.

Jeffrey S. Wehl, Senior Data Analyst, Michigan Association for Local Public Health.

Robert F. Larson, President, WTVS/Detroit Public Television, Detroit, MI.

Jack A. Keck, Director, PACE Telecommunications Consortium,
Indian River, MI.

Dave Myers, General Manager, Blue Lake Public Radio, Twin Lake,
MI.

Thomas Hunt, Manager, Central Michigan University Public Radio,
Mt. Pleasant, MI.

Steve Meuche, Director of Broadcasting Services, WKAR/Michigan
State University, East Lansing, MI.

Robert Townsend, Director, Regional Educational Media Center 10,
Cass City, MI.

NAT'L OCEANIC AND ATMOSPHERIC ADMINISTRATION

Van W. Snider, Jr., President, Michigan Boating Industries
Association, Northville, MI.

Robert C. Haas, Biologist In Charge, Lake St. Clair Fisheries
Research Station, Mt. Clemens, MI.

John A. DeKam, Superintendent, Bay Metropolitan Water Treatment
Plant, Bay City, MI.

Jon G. Stanley, Ph.D., University of Michigan, Ann Arbor, MI.

Michael J. Donahue, Ph.D., Executive Director, Great Lakes
Commission, Ann Arbor, MI.

Robert A. Shuchman, Ph.D., Environmental Research Institute of
Michigan, Ann Arbor, MI.

Chris Goddard, Executive Secretary, Great Lakes Fishery
Commission, Ann Arbor, MI.

Guy A. Meadows, Acting Director, University of Michigan College
of Engineering, Ann Arbor, MI.

W. Charles Kerfoot, Director, Lake Superior Ecosystem Research
Center, Houghton, MI.

Wilfred L. LePage, Superintendent, Water Treatment and Pumping
Division, Monroe Water Department, Monroe, MI.

Nick Blackstone, Vice President, National Marine Manufacturers
Association, Washington, D.C.

Dale R. Tahtinen, Ph.D., Vice President for Governmental
Relations, Michigan Technological University, Houghton, MI.

John P. Giesy, Distinguished Professor, Michigan State University, East Lansing, MI.

TECHNOLOGY/STANDARDS

Keith F. Blurton, President, MERRA, Ann Arbor, MI.

R.J. Pangborn, Vice President, Ventures/Central R&D, The Dow Chemical Company, Midland, MI.

Dwight D. Carlson, President, Perceptron, Farmington Hills, MI.

Theo D. Merrill, Executive Director, Automotive Industry Action Group, Southfield, MI.

Ernest O. Vahala, President, Auto Body Consortium, Ann Arbor, MI.

W.C. Dyer, Executive Director, Midwest Manufacturing Technology Center, Ann Arbor, MI.

Bill Kalmar, Director, Michigan Quality Council, Rochester, MI.

Robin J. Hood, Director, Central Instrumentation Facility, Wayne State University, Detroit, MI.

Charles R. Cowley, Professor, University of Michigan, Ann Arbor, MI.

M.M. Calhoun, Quality Assurance Manager, Sprague Prutsman, Inc., Traverse City, MI.

John F. White, Director, Center for Electronic Commerce, Industrial Technology Institute, Ann Arbor, MI.

Janice L. Karcher, Program Manager, Innovation Council, Flint, MI.

William J. Donohue, President, Focus Fund, Inc., Flint, MI.

Ronald M. Prime, President, Atlas Technologies, Fenton, MI.

Robert T. Sibilsky, Vice President, Compak, Inc., Flint, MI.

Paul Semerad, President, Semtron, Inc., Flint, MI.

Joseph L. Scott, Vice President, IATRICS, Fenton, MI.

Kevin Moore, General Manager, Products Limited, Sterling Heights, MI.

Brian K. Gillum, President, Gilco Inc., Roseville, MI.

Gene P. Reck, Professor of Chemistry, Wayne State University,
Detroit, MI.

Monroe Auto Equipment
Division of Tenneco Automotive

Internal only Drive
Monroe, Michigan 48161
(313) 243-8000



July 20, 1995

The Honorable John D. Dingell
U.S. House of Representatives
Washington, DC 20515

Dear Congressman Dingell:

By way of this letter, I would like to take the opportunity to comment on the pending legislation to abolish the Department of Commerce.

In the last two years, Monroe Auto Equipment Company, a division of Tenneco Automotive, has found the Commerce Department to have been a critical partner in several important business situations. The aggressive trade promotion policies of our government, coupled with knowledgeable human resources, is adding value to my company's efforts to compete in worldwide markets. The beneficiaries of these actions are Tenneco shareholders, our employees domestically and abroad, and the communities in which we reside.

Representatives from Tenneco Automotive have accompanied other U.S. automotive parts manufacturers on Commerce Department sponsored Automotive Matchmaker missions to the countries of the Association of South East Asian Nations (ASEAN), and most recently to China. These geographic regions represent some of the highest potential opportunities for the long-term growth of Monroe as their respective automotive industries develop. The coordination by the Department of Commerce effectively focused our efforts to interview potential joint venture partners and evaluate the automotive market prospects. The Department's presence also permitted us to communicate our concerns to those foreign government officials who are developing public policies that will define investments such as ours. It has been clear from these visits that component manufacturers from other countries are making the same rounds with the assistance of their respective governments in order to develop a competitive advantage in these markets.

In January, Richard Snell, the CEO of Tenneco Automotive, accompanied Secretary Ron Brown on the trade mission to India. With the imprimatur of the Secretary, our company was able to sign a joint venture agreement with the Indian market leader that will result in the production of Monroe shock absorbers within

MONROE

The Honorable John D. Dingell
July 20, 1995
Page 2

the year. Commerce Department and U.S. Embassy officials in New Delhi have continued to work with Tenneco Automotive to pursue policies with the Indian government that will encourage the broader availability and use of unleaded fuel. This will allow for the introduction of improved emission control devices, including catalytic converters on vehicles.

I know you are quite aware that the successful conclusion of the U.S.-Japan Automotive Framework discussions will provide significantly improved opportunities to serve the Japanese automotive market. These opportunities will occur both in the U.S. and Japan. The leadership and marshaling of appropriate resources by Ambassador Kantor and Secretary Brown were integral to concluding this exhaustive multi-year dispute. Keeping the U.S. automotive parts sector involved and providing a voice for it during difficult times is directly attributable to the government professionals who worked tirelessly on this issue.

Other Tenneco divisions, including Newport News Shipbuilding, Packaging Corporation of America, and Tenneco Gas have sought and received advocacy assistance from the Commerce Department. In addition, we have found the economic information resources available through the Department's various programs to be helpful in the development of strategic business plans.

These are some of the more concrete examples in which the participation of the Commerce Department - as our partner in business development -- is making a positive difference in the future of Monroe Auto Equipment Company.

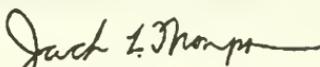
As a businessman, I find the efforts to streamline the federal government and reduce the deficit to be laudable and in concert with the business community's interest to create a strong economy. In the final analysis, I believe a Cabinet-level department focused upon export opportunities and the promotion of international market development will best serve the country at a time when global competition is at its keenest. I hope you and other Members of Congress will find ways to keep U.S. assets, like the Commerce Department, involved in the kinds of activities as I have outlined above. These public officials are adding great value to U.S. citizens, communities, and our companies.

The bottom line is the creation of more jobs in the USA from successful competition in the global marketplace.

The Honorable John D. Dingell
July 20, 1995
Page 3

Thank you for your time in considering my views on this matter.
Please let me know if I can provide you with additional
information.

Sincerely,



Jack L. Thompson
President

:ar

DENNIS W. ARCHER, MAYOR
CITY OF DETROIT
EXECUTIVE OFFICE

1136 CITY-COUNTY BUILDING
DETROIT, MICHIGAN 48226
PHONE 313-224-3400
FAX 313-224-4128

July 25, 1995

The Honorable John Dingell
2328 Rayburn House Office Building
Washington, D.C. 20515

1136
CITY-COUNTY
BUILDING
DETROIT, MI
48226
JUL 26 1995

Dear Congressman Dingell:

As you know, Congressman Dick Chrysler and Senator Spencer Abraham have introduced identical bills to eliminate the Department of Commerce. I write to advise that I respectfully but vigorously oppose this legislation. The Department of Commerce's purpose and programs have benefitted both the State of Michigan and our cities.

The State of Michigan, for example, has 2,000 clients in the Department of Commerce's regional Grand Rapids and Detroit offices. These clients helped Michigan account for \$36.8 billion in export sales in FY 1994. These exports helped to support 513,900 jobs in the State of Michigan. Without the Department of Commerce, many small- to medium-sized businesses would not be able to broaden their horizons, expand their operations, or create more jobs in the State of Michigan.

The Greater Detroit metro area had export sales of \$19.5 billion in 1993. This total includes automobiles, industrial machinery, fabricated metal products, and electric and electronic equipment. Detroit, along with the cities of Pontiac, Fremont, and Saginaw, received four of the 27 Economic Development Administration's grants to the State for FY 1994, which totalled \$17.4 million. These grants go directly to municipalities for short- and long-term economic development.

The Department of Commerce has been a job-creation machine for the State of Michigan and our cities. Please review the enclosed information. If some aspect within the auspices of the Department of Commerce needs to be fixed, let's fix it. Elimination of the Department of Commerce is not the answer. Local and state elected officials already know of the fruit borne of the broad economic development missions, goals and achievements of the Department of Commerce, and I firmly oppose legislation eliminating this agency.

With warm regards.

Sincerely,



Dennis W. Archer
Mayor

Tel: (617) 424-5990; Fax: (617) 424-5992

COMMERCE WORKS FOR MICHIGAN!

Total Exports FY 94	\$35,467
Jobs Supported by Exports	513,900
Clients of the Commerce District Office	7,000
Participants in Trade Missions (First Two Quarters of 1995)	59
Export Promotion Staff	17

Michigan's business community has long benefitted from access to a global network of commercial specialists without leaving the state. Working with the Detroit District Office and the Grand Rapids Branch Office, Michigan companies have used the commercial expertise and the global network of the Department of Commerce to broaden their export horizons and to create and preserve jobs back home.

OUR SERVICES YIELD RESULTS:

Here's what a few Michigan businesses have to say about Commerce:

"Although American Broach was founded in 1919, they have only begun exporting in the past 11 years. We presently export nearly 50% of our products each year and this provides jobs for 20-25 employees directly and indirectly to our supplier's employees. The U. S. Department of Commerce Detroit Office was instrumental in developing our exporting program and continues to provide valuable assistance as we expand in the international market. Our contact at the Detroit office, Paul Litton, is very knowledgeable in all exporting areas and we give him a lot of the credit for our international success. With our country's balance of trade problems, we hope the business community and general public realizes how important the Department of Commerce International Trade Administration is to creating jobs and allowing small companies to compete in international markets." — Mr. Brad Kokmeyer, International Marketing Manager, American Broach & Machine Company, Ann Arbor, MI

"Most medium and small-sized American companies would find it difficult to do business in foreign countries without the help of the U.S. Department of Commerce. I've been in international business for thirty years. Overall, I'd give the U.S. Department of Commerce an A-, and I'm a tough critic." — George Herrera, Director, International Sales, Masco Corporation, Taylor, MI

"Everyday at Amigo we remind ourselves that we are responsible for the livelihood of approximately 100 families. Small and medium sized businesses

like ours have relied on the various services and support offered through the U.S. Department of Commerce to provide jobs and opportunities for our employees and their families." -- Clarence Rivette, Chief Operating Officer and International General Manager, Amigo Mobility International, Inc., Bridgeport, MI

"The Foreign Commercial Service unit has provided direct assistance to our Company, and has contributed to our international success. As an "E Star" Award recipient, success is the outcome of combined efforts. Your office has been part of that combined effort, and that effort has lead to more U.S. jobs." -- John Ferguson, President, International Division, Tecumseh Products Company, Tecumseh, MI

PARTNERSHIPS ARE ESSENTIAL:

The Detroit District Office works closely with the Michigan International Authority, most recently on the CeBit trade show in Germany. Commerce trade specialists recruited the majority of the participants in the State's pavilion, as well as a delegation that participated in the Commerce technology pavilion at the show. The District Office also has plans for upcoming events with the state, including the November trade exhibit Africa World Expo. This event, which is a combination trade show, export seminar and cultural event, will help Michigan exporters to make contacts in the African market.

FUTURE OFFICES:

We plan to convert the Detroit District Office into a Regional Export Assistance Center that will include staff from Commerce, the Small Business Administration and a partner of the Export-Import Bank and will provide trade finance as well as export marketing assistance. We will also open a District Export Assistance Center in Pontiac, that will include representatives from the State, and in Ann Arbor to complement the services of the existing offices and to move our trade specialists closer to their clients.

FOR MORE INFORMATION, CONTACT:

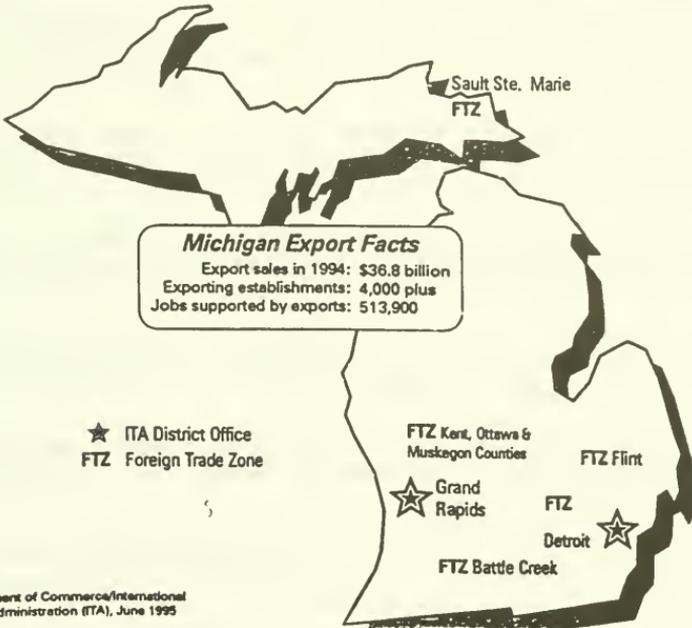
Detroit District Office
1140 McNamara Building
477 Minnesota Avenue
Detroit, MI 48226
Tel: (313) 226-3650; Fax: (313) 226-3657

Grand Rapids Branch Office
300 Monroe N.W., Room 406
Grand Rapids, MI 49503
Tel: (616) 456-2411; Fax: (616) 456-2695

ITA Helps Michigan Do Business Abroad Through Wide-Ranging Export Support

In 1994-95, ITA and its local offices—

- ▶ Are assisting 2,000 Michigan exporters
- ▶ Included 59 Michigan businesses in trade fairs and missions in the first half of 1995
- ▶ Organized 68 export seminars for Michigan businesses including four on NAFTA
- ▶ Successfully advocated to foreign governments on behalf of Michigan firms bidding on contracts worth \$13 million, supporting 119 Michigan jobs
- ▶ Participated in the negotiations to open the Japanese auto and auto parts market
- ▶ Awarded the Michigan Biotechnology Institute a grant to develop commercial applications of innovative industrial and environmental biotechnologies and to identify foreign market opportunities for such products
- ▶ Held two automotive conferences in Dearborn in cooperation with Japan's Ministry of International Trade and Industry. The conferences informed U.S. auto parts companies of the Japanese auto industry's requirements and expectations of its suppliers and introduced them to the appropriate Japanese purchasing contacts



MICHIGAN: STATE EXPORT PROFILE

- Michigan is the nation's fifth-leading exporter of merchandise, with \$25.3 billion of sales in 1993. Over the 1987-93 period, Michigan's merchandise exports grew by \$5.8 billion--the tenth-largest dollar increase among the states.
- Michigan's top three export markets in 1993 were Canada (sales of \$11.4 billion), Mexico (\$5.6 billion), and Japan (\$1.1 billion). Other important country markets were Saudi Arabia (\$977 million), Germany (\$912 million), the United Kingdom (\$474 million), and Belgium (\$405 million).
- The state's major regional markets in 1993 were Latin America and the Caribbean (sales of \$6.3 billion), the European Union (\$2.6 billion), and the Pacific Rim (\$2.5 billion).
- Ninety-eight percent of Michigan's 1993 export sales consisted of manufactured goods (almost \$25 billion).
- Sales of transportation equipment, mainly automotive products, dominated Michigan's exports in 1993. The transportation sector's exports were \$13.4 billion--a little more than half of the state's total exports.
- Other major manufactured exports by Michigan in 1993 were industrial machinery and computers (\$2.9 billion), fabricated metal products (\$2.0 billion), electric and electronic equipment (\$1.7 billion), and chemical products (\$990 million).
- Michigan's exports became increasingly diverse over the 1987-93 period. Exports from 13 major non-transportation categories grew by more than 100 percent; meanwhile, exports of transport equipment remained fairly level.
- The Greater Detroit metro area had 1993 export sales of \$19.5 billion--over three-fourths of the state total. Again, transportation equipment dominated the export picture, with sales of \$11.7 billion (88 percent of the state total).
- Other major manufactured exports by the Detroit area were industrial machinery and computers (\$1.8 billion), fabricated metal products (\$1.6 billion), and electric and electronic equipment (\$1.1 billion).
- Michigan had 4,044 business establishments (factories and other business facilities) that exported in 1987, the latest year for which data are available. Almost 96 percent had fewer than 500 employees. Michigan accounted for 15 percent of all exporting establishments in the North Central region and ranked tenth among all states in the number of business locations that exported.

GREATER DETROIT, MI.
EXPORT SALES TO THE WORLD, BY INDUSTRY SECTOR*
 (Zip Codes 480-483)
 (Percent & Thousand \$)

	1987	1992	1993	% CHANGE 1987-93	\$ CHANGE 1987-93
METRO TOTAL	\$15,203,602	\$17,114,220	\$19,449,585	27.9%	\$4,245,983
AGRICULTURAL & LIVESTOCK PRODUCTS	\$3,521	\$23,120	\$44,693	**	\$41,172
MANUFACTURES	\$15,132,920	\$16,869,213	\$19,112,934	26.3%	\$3,980,014
Food Products	21,649	86,255	89,432	313.1%	67,783
Tobacco Products	0	0	844	--	844
Textile Mill Products	18,186	59,856	71,837	295.0%	53,651
Apparel	17,389	34,545	49,378	184.0%	31,989
Lumber & Wood Products	8,430	24,361	23,137	174.5%	14,707
Furniture & Fixtures	8,798	493,858	488,827	**	480,029
Paper Products	18,594	55,353	63,276	240.3%	44,682
Printing & Publishing	10,638	41,007	50,106	371.0%	39,468
Chemical Products	79,716	265,669	326,575	309.7%	246,859
Refined Petroleum Products	19,702	40,960	51,055	159.1%	31,353
Rubber & Plastic Products	41,166	370,519	416,482	911.7%	375,316
Leather Products	309	33,991	51,673	**	51,364
Stone, Clay & Glass Products	155,185	193,166	203,233	31.0%	48,048
Primary Metals	77,759	626,052	521,524	570.7%	443,765
Fabricated Metal Products	997,465	1,510,391	1,595,481	60.0%	598,016
Industrial Mach. & Computers	1,285,925	1,850,272	1,824,589	41.9%	538,664
Electric & Electronic Equip.	433,830	719,413	1,145,181	164.0%	711,351
Transportation Equipment	11,728,027	10,195,838	11,724,774	-0.0%	-3,253
Scientific & Measuring Instru.	56,436	191,925	340,382	503.1%	283,946
Miscellaneous Manufactures	8,838	58,353	44,980	408.9%	36,142
Unidentified Manufactures	144,880	17,430	30,167	-79.2%	-114,713
OTHER COMMODITIES	\$67,162	\$221,888	\$291,958	334.7%	\$224,796
TOTAL STATE EXPORTS	\$19,542,822	\$22,014,227	\$25,324,771	29.6%	\$5,781,949
METRO TOTAL	\$15,203,602	\$17,114,220	\$19,449,585	27.9%	\$4,245,983
METRO SHARE (%)	77.8%	77.7%	76.8%		

* Data show exports sold from this location by exporters of record. The location from which exports are sold is not always the same as the location where the goods were produced.

** Indicates percentage change of 1,000 percent or more.

Source: U.S. Census Bureau, Location of Exporter Series.

GREATER DETROIT, MI. EXPORT MARKETING PROFILE

(Zip Codes 480-483)

(Thousand \$)

TOP TEN COUNTRY MARKETS

	<u>1987</u>
1. CANADA	\$11,647,922
2. MEXICO	929,749
3. SAUDI ARABIA	309,291
4. GERMANY	216,594
5. VENEZUELA	203,616
6. JAPAN	197,767
7. BEL.-LUX.	184,650
8. FRANCE	177,880
9. UNITED KINGDOM	173,477
10. KUWAIT	136,846
TOP TEN MARKETS	\$14,177,792
TOTAL MARKETS	\$15,203,602
TOP TEN SHARE	93.3%

	<u>1993</u>
1. CANADA	\$8,350,014
2. MEXICO	5,328,858
3. SAUDI ARABIA	855,171
4. GERMANY	761,651
5. JAPAN	600,751
6. AUSTRIA	375,589
7. BEL.-LUX.	309,495
8. UNITED KINGDOM	274,298
9. TAIWAN	194,681
10. FRANCE	183,569
TOP TEN MARKETS	\$17,234,077
TOTAL MARKETS	\$19,449,585
TOP TEN SHARE	88.6%

MAJOR REGIONAL MARKETS*

	<u>1987</u>
DEVELOPED NATIONS	\$13,109,744
DEVELOPING NATIONS	2,070,621
EUROPEAN UNION(EU)	918,282
NON-EU EUROPE	222,421
EAST EUROPE/NIS	1,737
EAST ASIAN NICs	176,930
APEC	13,098,198
-PACIFIC RIM	520,527
-NAFTA	12,577,671
ASIA-NEAR EAST	549,612
SOUTH ASIA	15,826
LATIN AMERICA & CARIBBEAN	1,287,099
AFRICA	32,109

	<u>1993</u>
DEVELOPED NATIONS	\$11,549,887
DEVELOPING NATIONS	7,689,612
EUROPEAN UNION(EU)	1,853,426
NON-EU EUROPE	586,235
EAST EUROPE/NIS	50,063
EAST ASIAN NICs	379,992
APEC	15,045,326
-PACIFIC RIM	1,366,453
-NAFTA	13,678,873
ASIA-NEAR EAST	1,332,428
SOUTH ASIA	18,546
LATIN AMERICA & CARIBBEAN	5,802,694
AFRICA	38,741

*The country composition of some categories overlaps. Therefore these numbers cannot be added together to arrive at metro area export totals.

**GREATER DETROIT, MI.
EXPORT SALES TO LATIN AMERICA & CARIBBEAN
BY INDUSTRY SECTOR***

(Zip Codes 480-483)
(Percent & Thousand \$)

	1987	1992	1993	% CHANGE 1987-93	\$ CHANGE 1987-93
METRO TOTAL	\$1,287,099	\$5,175,292	\$5,802,694	350.8%	\$4,515,595
AGRICULTURAL & LIVESTOCK PRODUCTS	\$403	\$245	\$187	-53.6%	-\$216
MANUFACTURES	\$1,285,179	\$5,172,573	\$5,798,652	351.2%	\$4,513,473
Food Products	2,921	6,179	4,186	43.3%	1,265
Tobacco Products	0	0	0	--	0
Textile Mill Products	9,113	51,135	56,557	520.6%	47,444
Apparel	1,045	17,394	24,679	**	23,634
Lumber & Wood Products	839	815	934	11.3%	95
Furniture & Fixtures	4,493	330,266	344,616	**	340,123
Paper Products	4,385	16,957	21,479	389.8%	17,094
Printing & Publishing	406	973	1,595	292.9%	1,189
Chemical Products	9,370	96,463	111,323	**	101,953
Refined Petroleum Products	2,132	3,123	7,723	262.2%	5,591
Rubber & Plastic Products	13,513	278,729	313,630	**	300,117
Leather Products	132	23,526	9,570	**	9,438
Stone, Clay & Glass Products	9,368	56,101	65,627	600.5%	56,259
Primary Metals	6,053	371,386	205,342	**	199,289
Fabricated Metal Products	19,342	578,253	673,815	**	654,473
Industrial Mach. & Computers	106,810	428,085	315,802	195.7%	208,992
Electric & Electronic Equip.	57,917	383,169	638,173	**	580,256
Transportation Equipment	1,015,363	2,451,855	2,833,276	179.0%	1,817,913
Scientific & Measuring Instru.	6,808	52,119	155,870	**	149,062
Miscellaneous Manufactures	353	23,774	11,270	**	10,917
Unidentified Manufactures	14,818	2,272	3,185	-78.5%	-11,633
OTHER COMMODITIES	\$1,517	\$2,474	\$3,854	154.1%	\$2,337
TOT STATE EXPORTS TO LATIN AMERICA & CARIBBEAN	\$1,434,313	\$5,579,174	\$6,295,637	338.9%	\$4,861,324
METRO TOTAL	\$1,287,099	\$5,175,292	\$5,802,694	350.8%	\$4,515,595
METRO SHARE (%)	89.7%	92.8%	92.2%		

* Data show exports sold from this location by exporters of record. The location from which exports are sold is not always the same as the location where the goods were produced.

**Indicates percentage change of 1,000 percent or more.

Source: U.S. Census Bureau, Exporter Location Series.

GREATER DETROIT, MI.
EXPORT SALES TO THE EUROPEAN UNION
BY INDUSTRY SECTOR*
 (Zip Codes 480-483)
 (Percent & Thousand \$)

	1987	1992	1993	% CHANGE 1987-93	\$ CHANGE 1987-93
METRO TOTAL	\$918,282	\$1,617,526	\$1,853,426	101.8%	\$935,144
AGRICULTURAL & LIVESTOCK PRODUCTS	\$1,183	\$274	\$543	-54.1%	-\$640
MANUFACTURES	\$909,723	\$1,601,060	\$1,828,645	101.0%	\$918,922
Food Products	2,382	891	829	-65.2%	-1,553
Tobacco Products	0	0	0	--	--
Textile Mill Products	111	446	602	442.3%	491
Apparel	482	1,180	2,190	354.4%	1,708
Lumber & Wood Products	1,870	8,340	4,506	141.0%	2,636
Furniture & Fixtures	20	1,608	2,139	**	2,119
Paper Products	1,835	3,290	2,776	51.3%	941
Printing & Publishing	2,106	5,705	4,489	113.2%	2,383
Chemical Products	10,583	23,462	22,316	110.9%	11,733
Refined Petroleum Products	33	587	495	**	462
Rubber & Plastic Products	5,209	9,236	11,129	113.6%	5,920
Leather Products	133	1,492	1,023	669.2%	890
Stone, Clay & Glass Products	8,710	14,784	7,323	-15.9%	-1,387
Primary Metals	7,723	20,301	9,843	27.5%	2,120
Fabricated Metal Products	11,516	27,702	23,722	106.0%	12,206
Industrial Mach. & Computers	376,009	304,377	261,635	-30.4%	-114,374
Electric & Electronic Equip.	34,137	45,126	99,352	191.0%	65,215
Transportation Equipment	429,070	1,075,560	1,297,735	202.5%	868,665
Scientific & Measuring Instru.	10,679	44,742	62,280	483.2%	51,601
Miscellaneous Manufactures	1,086	8,257	10,457	862.9%	9,371
Unidentified Manufactures	6,030	4,034	3,805	-36.9%	-2,225
OTHER COMMODITIES	\$7,377	\$16,192	\$24,238	228.6%	\$16,861
TOT STATE EXPORTS TO E. U.	\$1,447,341	\$2,383,816	\$2,649,643	83.1%	\$1,202,302
METRO TOTAL	\$918,282	\$1,617,526	\$1,853,426	101.8%	\$935,144
METRO SHARE (%)	63.4%	67.9%	70.0%		

*Data show exports sold from this location by exporters of record. The location from which exports are sold is not always the same as the location where the goods were produced.

**Indicates percentage change of 1,000 percent or more.

Source: U.S. Census Bureau, Exporter Location Series.

APPENDIX 1: STATE & REGIONAL EXPORTS TO THE WORLD: 1987, 1991-93
 (Thousand \$)

	1987	1991	1992	1993	(Percent Change) 1992-93	1987-93
U.S. Total	\$244,405,955	\$419,984,659	\$447,470,815	\$464,858,344	3.9%	90.2%
Alabama	1,482,853	2,429,733	2,718,471	2,504,344	-7.9%	68.9%
Alaska	538,431	1,062,364	1,097,767	817,676	-25.5%	51.9%
Arizona	2,468,494	4,529,473	5,001,737	5,785,148	15.7%	134.4%
Arkansas	408,285	840,015	1,077,703	1,109,725	3.0%	171.8%
California	32,890,959	59,036,934	66,732,044	68,067,134	2.0%	106.9%
Colorado	4,848,228	6,085,141	6,005,015	6,214,809	3.5%	28.2%
Connecticut	4,666,119	6,731,197	10,485,850	10,198,199	-2.7%	118.6%
Delaware	2,723,982	3,538,489	3,738,921	3,454,507	-7.6%	26.8%
Dist of Columbia	408,966	427,540	372,562	4,264,978	**	942.9%
Florida	7,804,344	12,642,656	14,427,621	14,695,824	1.9%	88.3%
Georgia	2,431,917	5,224,460	5,990,517	6,050,113	1.0%	148.8%
Hawaii	159,954	219,026	127,178	207,882	63.5%	30.0%
Idaho	412,027	1,010,728	1,148,044	1,235,896	7.7%	200.0%
Illinois	10,229,536	16,363,394	18,999,910	20,347,213	7.1%	98.9%
Indiana	3,743,293	6,674,924	7,294,613	8,445,322	15.8%	125.6%
Iowa	1,087,034	1,386,069	1,523,871	1,929,057	26.6%	77.5%
Kansas	1,877,363	2,921,695	3,083,110	3,109,413	0.9%	65.6%
Kentucky	1,720,190	3,317,768	3,809,100	3,348,842	-12.1%	94.7%
Louisiana	2,978,976	3,131,413	3,364,626	3,220,327	-4.3%	8.1%
Maine	533,698	984,225	970,492	1,065,258	9.8%	99.6%
Maryland	1,531,860	2,695,906	2,687,440	2,713,437	1.0%	77.1%
Massachusetts	8,297,703	11,166,563	11,569,295	11,597,179	0.2%	39.8%
Michigan	19,542,822	18,849,757	22,014,227	25,324,771	15.0%	29.6%
Minnesota	5,556,427	7,900,182	8,985,037	9,974,369	11.0%	79.5%
Mississippi	448,451	788,875	816,961	802,711	-1.7%	79.0%
Missouri	3,383,505	4,275,771	4,310,371	4,733,284	9.8%	39.9%
Montana	148,118	162,337	211,946	243,265	14.8%	64.2%
Nebraska	328,863	693,977	1,536,933	1,740,700	13.3%	429.3%
Nevada	269,087	420,878	393,456	502,716	27.8%	86.8%
New Hampshire	662,197	933,185	1,002,509	1,134,873	13.2%	71.4%
New Jersey	7,648,640	13,724,326	13,906,150	14,540,560	4.6%	90.1%
New Mexico	116,527	236,083	247,350	397,199	60.6%	240.9%
New York	29,570,000	37,462,283	36,769,778	40,703,235	10.7%	37.7%
North Carolina	3,472,260	6,228,645	7,391,401	7,976,373	7.9%	129.7%
North Dakota	163,116	276,682	313,362	343,707	9.7%	110.7%
Ohio	6,468,319	13,624,983	15,236,599	17,479,892	14.7%	170.2%
Oklahoma	967,003	2,422,638	2,604,898	2,334,549	-10.4%	141.4%
Oregon	3,117,438	5,032,728	5,704,840	6,204,733	8.8%	99.0%
Pennsylvania	7,166,999	12,217,077	13,176,207	13,189,649	0.1%	84.0%
Rhode Island	376,656	695,133	684,849	911,932	33.2%	142.1%
South Carolina	1,017,005	1,959,558	2,683,212	3,219,519	20.0%	216.6%
South Dakota	41,963	178,656	172,562	213,811	23.9%	409.5%
Tennessee	2,970,399	4,993,225	5,738,684	6,145,363	7.1%	106.9%
Texas	18,045,460	31,869,207	33,879,611	35,626,656	5.2%	97.4%
Utah	667,429	1,685,660	2,167,657	2,045,015	-5.7%	206.4%
Vermont	265,572	1,966,321	1,837,409	2,276,131	23.9%	757.1%
Virginia	3,147,793	8,835,544	8,468,117	8,154,475	-3.7%	159.1%
Washington	10,317,038	27,337,619	28,664,274	27,397,726	-4.4%	165.6%
West Virginia	656,321	882,103	872,642	753,639	-13.6%	14.8%
Wisconsin	2,939,795	4,937,338	5,768,437	5,810,366	0.7%	97.6%
Wyoming	60,273	52,195	84,911	88,509	4.2%	46.8%
Puerto Rico	1,980,613	3,791,823	4,222,657	4,365,071	3.4%	120.4%
Virgin Islands	1,178	-	131,929	162,125	22.9%	**
Unallocated	19,644,476	53,130,155	45,245,952	39,679,136	-12.3%	102.0%
New England	14,801,945	22,476,624	26,550,404	27,183,572	2.4%	83.6%
Mid Atlantic	44,385,639	63,403,686	63,852,135	68,433,444	7.2%	54.2%
South Atlantic	23,194,448	42,434,901	46,632,433	51,282,865	10.0%	121.1%
North Central	55,362,036	78,083,428	89,239,032	99,451,905	11.4%	79.6%
South Central	29,021,617	49,792,874	54,010,054	55,092,517	2.0%	89.8%
Mountain	8,990,183	14,182,495	15,260,116	16,512,557	8.2%	83.7%
Pacific	47,023,820	92,688,671	102,326,103	102,695,151	0.4%	118.4%
Other	1,981,791	3,791,823	4,354,586	4,527,196	4.0%	128.4%

* Indicates percentage change of 1,000 percent or more.

MICHIGAN EXPORTING ESTABLISHMENTS, 1987*

Zip Codes	NUMBER OF EXPORTERS			
	Small	Medium	Large	Total
480	1,026	155	27	1,208
481	505	82	34	621
482	375	49	12	436
483	6	3	0	9
484	65	12	3	80
485	32	2	6	40
486	67	14	8	89
487	43	9	2	54
488	91	31	7	129
489	32	8	2	42
490	209	79	20	308
491	34	7	3	44
492	82	43	3	128
493	32	15	2	49
494	142	61	10	213
495	195	41	11	247
496	51	18	2	71
497	45	9	2	56
498	24	9	0	33
499	10	3	0	13
UNKNOWN	166	7	1	174
TOTAL	3,232	657	155	4,044

*All data are for establishments, not companies. An establishment is a site, or location, of business activity. One or more establishments constitute a company. A small establishment is defined as employing 1 to 99 workers, a medium-sized establishment has 100 to 499 workers, while a large establishment has 500 or more employees.

Source: U.S. Department of Commerce, Exporter Data Base.

Donnelly

CONNELLY CORPORATION

July 24, 1995

Mr. John D. Dingell, Ranking Member
U.S. House of Representatives
Committee on Commerce
Room 2125, Rayburn House Office Building
Washington, DC 20515-6115
Fax: 202-225-2525

Dear Mr. Dingell:

I am writing in response to your letter of July 19, 1995, referring to House bill H.R. 1756.

Rather than both houses of Congress proposing the elimination of the Department of Commerce, they should be reemphasizing the department's critical role in promoting international trade and, in particular, export promotion activities. Without question, U.S. exports are creating new jobs, building growth in our economy, and helping to reduce the growth of our trade deficit.

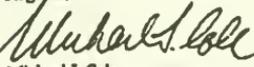
While we have seen excellent growth in our country's exports in recent years, most of us in business are experiencing tremendous competition from imports and increasing competition in the export markets we serve. In all cases, this competition is strengthened by government support, which is an integral part of our competitor's strategy.

Our company has a strong history in exporting and was a recipient of the President's Export Award in 1988. At the local level, we have valued the many services received through the U.S. and Foreign Commercial Service offices in Grand Rapids and Detroit. Internationally, we have used the services of ITA offices and continue to find them a very valuable source of local market information and resources. We also value ITA's work in the area of automotive affairs, NAFTA, GATT, and intellectual property issues.

Currently the Grand Rapids office is helping us to use ITA's network of resources as we determine the appropriate strategies to avail of exciting opportunities for us in the new internationally emerging markets.

We agree that the federal budget needs to be reduced, but we would not support the elimination of export assistance programs including the elimination of the Grand Rapids and Detroit offices of the U.S. and Foreign Commercial Service as they are making an important contribution to building strong, competitive and internationally focused companies in our area.

Regards,



Michael J. Cole
V.P. International Business Development,
Emerging Markets

molev:ab



FACSIMILE TRANSMISSION

Page 1 of __

Mechanical Dynamics, Inc.
2301 Commonwealth Blvd.
Ann Arbor, MI 48105

Tel: (313) 994-3800
Fax: (313) 994-6418

To: Senator Carl Levin
c/o U.S. Department of Commerce # 313-226-3657
Detroit District Office

cc: Dean Peterson, Paul Litton

From: Ray Gaynor - Director International Operations

Subject: US&FCS

Date: July 6, 1995

Dear Senator Levin,

I regret that I am not able to attend this important meeting today to express my experiences and dealings with the US&FCS Department. I hope that this letter will attest to the importance of and benefits derived from the services offered by US&FCS.

My company, Mechanical Dynamics, Inc., MDI, is a medium size privately owned company that produces software for engineers who design mechanical systems. Our Virtual Prototyping software is considered an important component of the Information Technology business segment.

MDI, is located in Ann Arbor and we have been a user of the export services offered by the US&FCS. The services used were outstanding and have help my company grow it's exports by over 500% in the last five years. Our international business now represents over 60% of our company's total sales figure.

We are also the proud recipient of the E-Award and the only software company in the state of Michigan to ever receive such distinction.

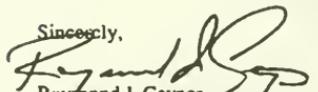
MDI started as a spin-off from the University of Michigan. We developed the knowledge of how to accurately predict non-linear dynamic behavior of mechanical systems, an industry we created called Mechanical System Simulation, MSS. We developed a commercialized software code called ADAMS and began offering it to industry. ADAMS is used in a variety of industries ranging from automotive, aerospace, heavy equipment, electro-mechanical and general machinery. We now have 140 employees with over 5000 licenses sold which represents over 2/3's of the worldwide market share.

In our dealings with US&FCS we have gained a tremendous amount of knowledge and guidance which has contributed to our international success. The FCS marketing reports have helped us open up new international areas faster. The available data bases of prospects and trade show support have helped us be successful in established territories. And the personal assistance in guiding us through the past export licensing maze helped us complete orders faster.

I can only imagine how much more difficult if not impossible it would have been to achieve this level of international success without the availability of local US&FCS services.

Based on these facts, I urge the you to reconsider your decision to reduce the services offered by US&FCS.

Sincerely,



Raymond J. Gaynor
Director, International Operations

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AMERICAN
 BROACH & MACHINE COMPANY



4600 JACKSON ROAD. • P.O. BOX 2030 • ANN ARBOR, MICHIGAN 48106 USA
 PHONE: (313) 761-5021 • FAX: (313) 761-7626

July 21, 1985

U.S. House of Representatives
 Committee on Commerce
 Room 2125 Rayburn House Office Bldg.
 Washington D.C. 20515-6115
 Mr. John D. Dingell
 U.S. Congressman

Dear Mr. Dingell,

Although American Broach & Machine Company was founded in 1919, the company has only started to export during the past 11 years. We presently export nearly 50% of our products each year and this provides jobs at our company for 20 to 25 employees directly and indirectly to our supplier's employees.

The U.S. Department of Commerce Detroit office was instrumental in developing our exporting program and continues to provide valuable assistance as we expand in the international market. Our contact at the Detroit office, Paul Litton, is very knowledgeable in all exporting areas and we give him a lot of credit for our international success. With our country's balance of trade problems, we hope the business community and general public realizes how important the Department of Commerce International Trade Administration is to creating jobs and allowing small companies to compete in the global market.

Sincerely,
 American Broach & Machine Co.

E. W. Kohnmeyer
 Edward W. Kohnmeyer
 President

..... MACHINES AND BROACHING TOOLS



4600 JACKSON ROAD. • P.O. BOX 2030 • ANN ARBOR, MICHIGAN 48106 USA
 PHONE: (313) 761-5021 • FAX: (313) 761-7626

July 10, 1995

United States Government
 Office of U.S. Senator, Carl Levin
 477 Michigan Avenue
 Room 1860
 Detroit, MI 48226

Attention: Carl Levin

Exporting may be the most important factor in strengthening the American economy. No amount of cost cutting will be able to offset the negative effect of poor balance of trade. Germany and Japan are obvious examples where strong exports have helped keep their currency value high. My discussion with you last week shows to what lengths Japanese companies will go to keep their exports high.

American Broach & Machine Company manufactures broaching machines, broach cutting tools, part holding fixtures, broach holders and broach sharpening machines. A broach is a metal cutting tool and is used by our customers to machine (broach) components for cars, trucks, hand tools, electrical equipment, military units, nuclear reactors and various other applications. The broach industry is relatively small (approximately \$100 million dollars per year in the U.S.A.) but is very critical to manufacturing.

American Broach & Machine Company was founded over 75 years ago and did almost no exporting in 1977 when purchased by the present ownership. It was obvious even then that exporting would be necessary in the future, but many changes had to be made and new products and systems had to be implemented before exporting. A new accounting system was installed and engineering was computerized with the addition of CAD. Machines were purchased and/or built to manufacture better cutting tools. New broaching machines were designed and automated grinding (broach sharpening) machines were developed. Additional facilities were purchased and after ten years, American Broach was ready to embark on its exporting program. American Broach then worked with the U.S. Department of Commerce to develop an export marketing program.

July 10, 1995

After successfully marketing in Mexico and Canada, South Korea was the next foreign market that we targeted. A private individual (a South Korean living in the U.S.) organized a trade mission of ten small machine tool companies to visit some Korean manufacturers and Korean trade associations. There was also a dinner with the U.S. Embassy and the Korean Government. The mission was well received and we returned to our company with part prints and quotation requests. Quotations were submitted to Korea with much enthusiasm, but also with the knowledge that it sometimes takes years to penetrate a foreign market. Within two months, it was requested that American Broach send someone to negotiate a contract. Unfortunately, American Broach did not have a sales representative in Korea nor did we have experience in foreign negotiations. We were also naive in that we did not realize we needed any experience in this area. After technical discussions were received favorably, a meeting was established with the commercial group. It was obvious that the customer had much more experience negotiating, but eventually American Broach received a large order.

American Broach returned to Korea with the preliminary engineering to be reviewed by the customer's technical staff. The customer's engineers were very pleased with the design and approval was received to proceed with the final engineering and manufacturing. Before leaving, the buyer asked American Broach for a meeting. At the meeting the buyer informed us that he could not get an import license because a new Korean law specified all broaching machines must be manufactured in Korea. The buyer was told by American Broach that the Korean machine tool industry had not advanced to the level in technology where they could build this type of equipment. The buyer mentioned the name of the Korean company that was to design and build the broaching machine & tooling. It was obvious based on a recent visit to that company by American Broach personnel, that the Korean company could not build this equipment. Later it was discovered that the Korean company signed an agreement with a Japanese company to design and build the broaching machine & tooling in Japan. The equipment would then be partially disassembled and shipped to Korea. These machines would then be reassembled in Korea thus meeting the requirements of the law.

At midnight, after the meeting where the import license problem was expressed, the buyer called the President of American Broach at a hotel in Seoul, and notified him that the contract was cancelled. He stated that the contract may be reinstated if American Broach could clear an import license. American Broach met with the U.S. Embassy in Seoul, the Korean Trade Association and the customer with no solution.

July 10, 1993

Upon returning to the U.S.A., contacts were made with the Korean Embassy in Washington, the U.S. Department of Commerce in Detroit, U.S. Foreign Trade Office in Washington, U.S. Senators, (your aid visited our company), U.S. Congressmen, the A.M.T. and many others with still no solution. It was recommended by some Korean friends in Ann Arbor and the U.S. Department of Commerce to try to work around the Korean law. It was suggested that perhaps the law does not apply to N.C. (Numerical Control) broaching machines.

Anyone familiar with broaching machines knows that a different system called P.L.C. (Programmable Logic Control) is typically used. But by installing a type of hydraulic valve, a proportional valve that is different than typical, the signal would be digital rather than analog. Based on the strict definition that a N.C. machine would use a digital signal, American Broach had a N.C. broaching machine.

The buyer in Korea was called and asked if the law covered N.C. broaching machines. After some research, he informed American Broach that it appeared that the law did not cover N.C. broaches. He said he would need a catalog for his engineers and the government; American Broach prepared a printed catalog in less than a week and it was faxed to the Korean customer.

After the customer submitted the catalog to the Korean import licensing authority, he demanded a meeting with our company. The American Broach President returned to Korea to meet the official. After many delays, the official was informed that if there was not a meeting immediately, we would go to the U.S. Embassy for assistance. The official met with American Broach and he agreed that an import license would be granted for a "N.C. broaching machine". Later, American Broach received other N.C. broaching machine purchase orders. The Korean law regarding broaching machines has since been removed.

Based on the American Broach ability to supply the Korean market with N.C. broaching machines, many sales organizations wanted to represent our company. It was decided to sign a contract with a large German/Korean trading company. Unfortunately, the trading company was so big that a small company like ours did not get much assistance. Later, we signed a contract with a Korean sales representative similar to the type we use in the U.S.A. with much better success. The Korean market continues to be good for American Broach.

We have recently opened a Foreign Sales Corporation (FSC) with guidance from the U.S. Department of Commerce. Although it was very difficult for a small company with a small CPA firm to establish the FSC, it has been completed and financially justified.

July 10, 1993

American Broach does not ask for much aid in exporting its products. In 1994 over 62.5% of its sales were exported, (\$3,386,335 exports out of \$5,421,736 total). It would be much easier to serve the domestic market than to export, but we believe exporting is important for the well being of our country. Hopefully the aid received from the U.S. Department of Commerce and FSC will not be eliminated.

Best regards,



E.W. Kokmeier
President
American Broach

ARTHUR
ANDERSEN

ARTHUR ANDERSEN & Co. SC

July 24, 1995

The Honorable John D. Dingell
U. S. House of Representatives
Room 2125
Rayburn House Office Building
Washington, D.C. 20515-6115

Arthur Andersen LLP

Suite 2700
500 Woodward Avenue
Detroit MI 48226-3424
313 596 9000

Dear Mr. Dingell:

I received your letter dated July 19, 1995, asking for comments regarding familiarity and experience with the Department of Commerce. The letter requested an answer by July 24, the day the Committee Hearings were scheduled to commence. I have comments which I believe are appropriate for the issue at hand.

I have been working with the Department of Commerce for over 10 years through my involvement with the Michigan District Export Council. Prior to that time, I had used them as sources of information and I also recommended them to my clients in appropriate circumstances.

Because of my involvement with the Michigan District Export Council, I have been able to get a greater insight into the materials that are available through their offices and have been able to refer a number of people to their offices for export guidance. The reaction of the people I have referred to their office has been excellent. The individuals I have dealt with are very professional and knowledgeable on export related activity. I personally believe that a number of the companies who are presently exporting would not have been doing so without the able assistance of the trade specialists in the Department of Commerce in Detroit and Grand Rapids. I cannot speak for other offices since I have only dealt personally with the individuals in Detroit and Grand Rapids. They are truly outstanding examples of international trade professionals.

The programs that have been instituted by them in Detroit and Grand Rapids have been proactive examples of export promotion activities. Booklets have been prepared which lists Michigan companies and these booklets have been distributed outside of the United States to potential customers. Trade seminars are held periodically in addition to the large world trade week activities. Directories listing free international consulting professionals have been dispensed to business organizations throughout the states. Examples of promotional activities are too numerous to mention in a letter of this type.

ARTHUR
ANDERSEN

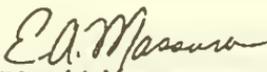
ARTHUR ANDERSEN & CO. SC

The Honorable John D. Digell
Page 2
July 24, 1995

I have had the opportunity to work with individuals from many professional organizations, both in the public and private sector, and I can honestly say the Department of Commerce trade specialists are outstanding representatives of specialists in this field. I would thoroughly encourage you to fund the activities of the Department of Commerce.

Very truly yours,

ARTHUR ANDERSEN LLP

By 
Edward A. Massura

RML/4158



100 WEST BROWN ST., SUITE 210 • BIRMINGHAM, MICHIGAN 48202 • PHONE: (810) 540-2015 • FAX: (810) 540-2250

24 July, 1995

The Honorable John D. Dingell
U. S. House of Representatives
Committee on Commerce
Room 2125, Rayburn House Office Building
Washington D. C. 20515-6115

Dear Rep. Dingell:

This letter is in response to your 19 July request for comment on pending legislation on the elimination of the Department of Commerce.

To begin, let me say that I have over thirty years of international business experience which began with the Export-Import Bank in 1962. Throughout these years, I have worked with the Department of Commerce. First as part of an inter-agency task force, then as a member of an automotive ISAC during the Kennedy Round of trade negotiations and then on to the first government and industry automotive mission to Japan. Interestingly, while this appeared to be a State Department function, it was Commerce that provided the real support. My next contact was as part of an industry and government mission to the ASEAN Countries in 1970 which Commerce organized and which did over \$3.0 million of exports sales during the six week trip and, if my memory is correct, over \$30.0 million in the following year. The basis of the trip was using credit to purchase U. S. products.

During the 1970's I served again on an ISAC in connection with the Geneva Round of talks. But it was also in that period where I became involved with the Michigan District Export Council and began to see close-up and first hand the work of the Commerce Department field office personnel. I have at times been bothered by certain personalities encountered; but, one would have to stretch to say that the people are not willing and able promoters of American exports. Time and time again, I have worked with Commerce to provide assistance to my clients either in educating the exporter or would-be exporter, to actually obtaining an export license that the exporter had forgotten until it was time to ship.

From my perspective, they are tireless promoters of the values of exporting. They spend countless hours and effort getting small-and medium-sized companies to export. And if they are to be successful, they do not hesitate to reach into the MDEC and get a professional to support their efforts.

For the record, we are a specialty insurance agency selling insurance for trade and the financing of trade. In addition, we assist exporters to raise financing for their exports. We work closely with Ex-Im Bank, SBA and ITA. We are the only private company in the U. S. to be named a City/State representative for Ex-Im. The vast majority of our clients are small- and medium-sized firms.

Specialists in International Finance, Insurance and Global Strategies



One story to highlight the foregoing points. Last fall a small Michigan firm located in Belair was struggling mightily to avoid bankruptcy. We were hired to obtain an SBA guarantee which we did. However, when we got close to shipping and finalizing the funding, we realized that the validated license which was a stipulation of the SBA Guarantee had not been put into place. Paul Litton of the Detroit office of ITA "bent over backwards" to get the license issued in order that our client could finalize his funding and complete a \$500,000 sale to Taiwan.

One question to make one wonder why the Congress allocates trade promotion funding as it does: Why does Congress give the Department of Agriculture approximately \$1.80 for trade promotion to every \$1.00 it gives Commerce for trade promotion when agricultural exports are 1/10 of industrial exports?

Finally, why would we even rationally consider the elimination of Commerce which since the mid-1980's has concentrated on helping small- and medium-sized firms export. These are the same companies that have driven our surge in exports and our growth in employment. Are we trying to "kill the goose that lays the golden egg"?

Thank you for this opportunity to support the Department of Commerce and the small- and mid-sized American exporters.

Sincerely yours,

Donald G. Keesee

24 July 1995

Honorable Representative John D. Dingell
U.S. House of Representatives
Committee on Commerce
Room 2125, Rayburn House Office Building
Washington, DC 20515-6115

Dear Representative Dingell:

Thank you for your letter of 19 July, regarding the potential termination of the Department of Commerce.

Over the past several years I have had an opportunity to consult with the Detroit Branch on several occasions, and each time I have received invaluable advice and information which assisted me in conducting export business for my employer.

In 1990 we completed a technology transfer and key equipment sale to the Peoples Republic of China. DOC helped us through the challenge of getting an export license ruling under a severe time restraint. Without their help I am not sure we could have gotten the job done.

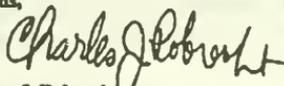
On innumerable occasions we have consulted with DOC on a variety of issues: payment problems, lists of potential distributors, and generally how to solve international trade problems. My employer, Gelman Sciences, is targeting for greater growth outside the United States in the next three years. The DOC will play an important role in helping us reach our export objectives.

With DOC help we have established a sales and marketing effort in China over the past 12 months. This program is for standard products outside those covered by the technology transfer. The effort has been successful, and convinced us that our products can be sold in China, and the route chosen to sell them is effective.

In addition, Gelman Sciences is the recipient of a grant administered through the Department of Commerce. This grant, known as SABIT, is currently being used to expedite the entry of our company into the markets of the Newly Independent States of Eastern Europe. Our initial grant was for \$50,000 and will allow us to partially sponsor scientists, businesspeople, and entrepreneurs during a stay here in the United States. The contacts which we have developed as a result of the SABIT program have helped us to learn more about the region, about the specific needs of the local potential customer in the region, and has already resulted in some business for our Michigan based corporation. This grant has truly supported our long term goals in the NIS and assisted upper management to make a commitment to the region which might otherwise not be as strong.

Please do not hesitate to contact us with further inquiries.

Regards,



Charles J. Robrecht
Vice President Asia Pacific Ventures



Tim Gilson
New Ventures Manager

cc Maureen Berry- DOC
Paul Litton-DOC



30765 Wixom Road, P.O. Box 437, Wixom, MI 48393-7037 USA

Tel: (810) 624-1541 Fax: (810) 624-9234

July 17, 1995

Congressman John D. Dingell
U.S. House of Representatives
Committee on Commerce
Room 2125, Rayburn House Office Building
Washington D.C. 20515-6115

Congressman Dingell,

I recently had a chance to review information concerning House Bill H.R. 1756 and I strongly oppose its plan to eliminate the Department of Commerce. I am the International Sales Manager for a small electronic firm, Acromag, Inc. The planned change as proposed in H.R. 1756 would seriously impact my company's current plans to expand our export market.

Four years ago Acromag's international sales amounted to less than five percent of our total business. Through the valuable services and the encouragement provided by the local office of the Department of Commerce, Acromag has expanded its international sales to over twenty percent of our total business.

Prior to 1990 Acromag's international sales were primarily in Canada and central Europe. As these markets changed and shrank, so did Acromag's international sales. After taking over the position of International Sales Manager in 1990, I made contact with the Department of Commerce and was provided with information on a number of countries worldwide that would readily fit our market. Of particular importance were Japan, Korea, and the rest of the Asian market.

Based on research information provided by Commerce and their assistance in searching for distributors of products similar to Acromag's, we have been able to successfully expand our sales into both the Asian and Middle East market. This would have been difficult or even impossible for a small company like Acromag to accomplish if we had to do all of the market research ourselves or pay an outside firm to do this research for us.

In addition to providing market specific research, the Department of Commerce help insured the success of visits to these new export markets by providing us with names of companies who would be interested in distributing or purchasing our products. Acromag's management would have been very reluctant (as they should be) to allow the expenditure of thousands of dollars to travel to Asia for several weeks without being assured the visits would be successful. Contacts provided by the Department of Commerce insured that each visit was a success.

Congressman John D. Dingell
Page Number Two

When I look at the future prospects for Acromag, I see that for our international sales to grow, we will need to expand into Central and South America as well as Mexico. These countries pose a particularly unique problem in that the available market research from the private sector for these countries offered is very limited. In addition, the information that is available is targeted towards very large market segments such as the automotive industry.

We would expect to have to make an investment of thirty to fifty thousand dollars a year to undertake the marketing research needed to enter the South American market. This may be a small amount for a large company, but is a large investment for a small company. Recently Acromag has been working with the Commerce Department to obtain market research on our industry in many of the South American countries.

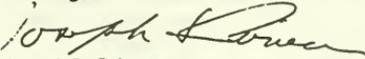
Beyond market research, Acromag has been working with the Commerce Department with regard to the upcoming Representaciones Guadalajara '95 Trade Show. This show provides ready access to distributors and representatives from the Mexican market as well as education concerning the social and business practices of Mexico.

This trade show will allow me to visit Mexico for as little as three days and have the opportunity to talk with the leading distributors in the industry. Access to a broad base of distributor's for our type of products will allow me to readily pinpoint market requirements and the different distribution techniques available. This is a unique service the Department of Commerce provides for small U.S. companies. Such services insure that small American companies can continue to expand in the export market, thus strengthening the overall economy of the United States.

It is my hope that you will seriously take into consideration the requirements of small companies like Acromag, Inc. in considering the future of the Department of Commerce. Possibly all parts of the Department of Commerce do not need to continue in their present form, but the services provided to the small business in the United States and their continued push into the export market should be retained. If the U.S. is to continue to remain competitive in the worldwide market, it will need small and medium-size companies to continue to expand their export market. It is those companies that are willing to make investments teamed with the resources of the Commerce Department that will insure the long-term growth of exports.

I look forward to your report on this issue. If you or any of your staff would like to discuss this with me, I would be more than happy to provide you the time.

Best regards,



Joseph L. Primeau
International Sales Manager
Acromag, Inc.

JLP/mw



1740 E. MAPLE ROAD • P.O. BOX 485 • TROY, MI 48099-0485 USA
 PHONE: 810-616-0220 • FAX: 810-616-0225

July 25, 1995

Mr. John Dingell
 U.S. House of Representatives
 Committee on Commerce
 Room 2125, Rayburn House Office Building
 Washington, DC 20515-6115

Dear Mr. Dingell.

Thank you for your letter dated July 19th, 1995 regarding legislation for abolishing Department of Commerce.

I have personally worked with the Department of Commerce for the past six years and have benefitted from their excellent service. INCOE CORPORATION is a corporation which exports more than 50 % of our products to overseas markets around the world. Today, we deal with more than 41 countries and I believe the Department of Commerce helped us in attaining this goal.

Following are a few specific examples of help received from the Department of Commerce:

1. We have established distributorship in Spain after obtaining Gold Key Service through the Department of Commerce. I have met with the staff of the Department of Commerce in the Detroit office and in Spain. Working together with them we now have successfully established a Distributorship in Spain. The total cost involved was \$350.00. Today, we enjoy a good amount of business from Spain due to our effort with Department of Commerce.

I have attached copies of two cost comparisons for finding distributor in Spain. The cost for finding distributor from Egon Zeunder International - Barcelona, Spain is \$43,000.00 (exhibit B) and the cost from Berndston International - Barcelona, Spain is \$50,000.00 to \$100,000.00 (exhibit A). The cost from the Department of Commerce is \$350.00 (exhibit C). Mr. Dingell, you can see clearly how much of a benefit there is by having the Department of Commerce. It is not possible for a company of our size to invest \$40,000.00 and more to secure Distributorships in foreign countries.

2. Currently, I am involved in setting up a Distributorship in Korea, again with the help of the Department of Commerce. I have taken advantage of their service and we are in the final stages of setting up the Distributorship.



MOLDING SYSTEMS AND SPECIALIZED TOOLING FOR THE PLASTICS INDUSTRIES

3. ADS Service, which is another service offered by the Department of Commerce, is very helpful and very inexpensive. We have used such services in many countries not only to set up distributors but also to find out general business interests in particular countries.

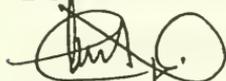
For the past four years I have worked as a member of the Export Council of the Department of Commerce. During this period I have counseled many companies to help them in exposing their product to foreign markets. I can name a few companies in Michigan who enjoy the benefits of export sales today due to the efforts of the Department of Commerce: PCS Corporation, Fraser; Global Computer, Rochester; QPC, Grand Rapids.

The Department of Commerce is a very effective department which is of great help to small and medium scale industries. In my opinion, it is not possible for small and medium scale companies to have separate departments to initiate sales in export or the funds available for distributorships in foreign countries. The Department of Commerce is helpful for all such industry.

Dedicated departments like the Department of Commerce must exist so that we can improve our export abilities. 100% of INCOE CORPORATION products are manufactured in the U.S. and we have achieved a great success through the help of the Department of Commerce.

If I can be of further help, please do not hesitate to contact us. Please help us to improve exports of our product by keeping the Department of Commerce.

Sincerely,
INCOE CORPORATION



Gladson Remos
Int'l Technical Director

GR/dl
attachments

Exhibit
A

22/02/93

15:09

BERNDTSON INTERNACIONAL S.A.

001

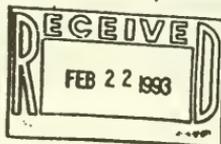
BERNDTSON
INTERNATIONAL

TO: Gladson Remon
International Technical Director

FROM: José Medina
President

DATE: February 22, 1993

PAGES: 9



Thank you very much for your information.

Please find enclosed information on Corporate Development International (CDI), our Company Search activity. I am personally partner of CDI and Berndtson (Executive Search) for Spain and Portugal.

In connection with your need of replacing your existing distributor in Spain, our assisting you would include:

Our task

1. An in-depth meeting with you during your visit to Spain, in order to learn more about your organization, your projects and possibilities in Spain.
2. We would identify and approach the most suitable companies from all potential candidates in Spain within plastic tool design companies and similar.
3. We would contact and interview the most interesting and interested ones, sending you reports on the 3-4 most adequate ones.
4. We would present you these 3-4 "candidates" in order to reach an agreement with you.
5. We would structure and assist in the negotiations of an agreement with the selected company.
6. We would help you in any future negotiations which could take place between you and the company selected.

BER0223.SP

MADRID
Plaza, 11 - 1º by
28014 Madrid
Tel.: 308 05 16
Fax: 319 74 90

BARCELONA
Plaça Francesc Macià, 3
08001 Barcelona
Tel.: 414 97 63
Fax: 393 29 98

LISBOA
Avenida de República, 9 - 8º
1000 Lisboa
Tel.: 352 63 11
Fax: 33 04 02

Amsterdam Barcelona Bratislava Copenhagen Estoril Frankfurt Ginebra Helsinki Lisboa London Madrid Milan

BERNDTSON INTERNACIONAL S.A.

002

BERNDTSON

INTERNACIONAL

Our Fees

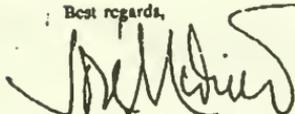
We would propose the following working formula:

- Within a minimum 2-month period and a maximum of 6, we would invoice you US\$ 10,000 per month.
- We would be in conditions of presenting the "candidate companies" reports within 2-3 months.
- I would be personally involved in the process during this period.
- Our success fee runs an average of US\$ 50,000-100,000. This fee is usually payable 50% against signature of principles of agreement and 50% against signature of final contract.

Of course, this is a general statement of how we might work together. If there are points which you would like to discuss, described in more detail, or modified in any way, please let me know.

I look forward to hearing from you.

Best regards,



José Medina

♦ ♦ ♦ ♦

IF ANY PAGES ARE UNREADABLE, PLEASE CALL 34-1-308 05 16.

BARCELONA
 Factory, 37 - 3^a Inv.
 28010 Madrid
 Tel.: 304 05 18
 Fax: 319 24 90

BARCELONA
 Plaza Francisco Macià, 3
 08021 Barcelona
 Tel.: 414 17 42
 Fax: 302 29 98

LISBOA
 Avda. de República, 9 - 9^a
 1000 Lisboa
 Tel.: 331 62 11
 Fax: 33 04 82

Amsterdam Barcelona Braselias Copenhagen Estocolmo Frankfurt Ginebra Helsinki Lisboa Londres Madrid Múnic.
 Nueva York París Roma San Francisco Santiago de Chile Sao Paulo Valparaíso

Exhibit
B

EGON SWINDER INTERNATIONAL, S.A.

Via Augusta, 200, 2a planta
08021 Barcelona

Phone: 34/3/202.04.45
Fax: 34/3/201.93.16

FAX COVER LETTER

Please deliver the following pages:

To : Mr. Gladson Ramos - Incoe Corp.

From : José Maria Navarro-Rubio - 171 Barcelona

Date : February 11th, 1993.

Re : Yr. fax nr. EG00210.SP

Number of pages (including this cover letter) : 1

Dear Mr. Ramos,

Estimated price for the search for a Distributor of the characteristics you described to me would be Proctan 8 million or its equivalent in US\$ (approximately \$ 43.000).

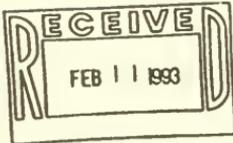
Hope this proves useful.

Best regards,

rather my
José Maria Navarro Rubio

THIS IS BIT TOO MUCH!

*PL. FLOW
SAMUEL S. FALGOUT*



EG0023.SP

Exhibit
C

GENERAL RECEIPT		NO.	TO U.S. \$1.00	U. S. \$ EQUIV.
1. POST		A 1515820		
2. RECEIVED FROM (Name of individual or firm):	AMERICAN CONSULATE GENERAL, FCS, BARCELONA, SPAIN	3. DATE MARCH 17, 1953		
4. PERMANENT ADDRESS	2111 STEPHANSON HIGHWAY, P.O. BOX-485 TROY, MI 48099-0485			
5. THE AMOUNT OF (including type of currency):	\$350.00	6. RATE OF EXCHANGE:		
7. RECEIVED BY (Print or stamp):		8. SIGNATURE		
Name: Carlos Garcia		<i>C. Garcia</i>		
Title: Class-B Cashier				
9. ACCOUNTING CLASSIFICATION	\$350.00 - 13X6539-02-J32419961354-0-941200			
10. RECEIVED FOR:				
	Gold Key Services (P.A.C-14547) (Id no. 399548)			

OPTIONAL FORM NO. 10
MAY 1962 EDITION
GSA FPMR (41 CFR) 101-11.6
DEPT. OF STATE

80188-102

COPY 1



Second Chance Body Armor, Inc. • 7919 Cameron Street • Post Office Box 578 • Central Lake, Michigan 49522-0578
616-544-5721 • 800-253-7090 • FAX: 616-544-9824

20 July 1995

The Honorable John D. Dingell
U.S. House of Representatives
Committee on Commerce
Room 2125, Rayburn House Office Building
Washington, D.C. 20515-6115

Dear Mr. Dingell:

Thank you for your letter dated 13 July giving me the opportunity to respond to H.R. 1756 which would eliminate the Department of Commerce. As the Export Manager of a small Michigan company I am very concerned.

Second Chance Body Armor, Inc. has been in the business of manufacturing and marketing bullet resistant police and military armor for the past 23 years. I have called upon both Michigan Domestic Commercial Service offices for assistance many times. I have also attended many of the seminars and workshops the Commerce Department has made available to Michigan companies for the continuing exporter education. I depend on the expertise, good common sense and 'no strings attached' approach of Ed Christi, Paul Litton, Tom Merger and the rest of the personnel in these offices. Unfortunately the private sector does not offer this kind of unconditional assistance. Private companies presenting export training must turn a profit and many of them put unreasonable professional and monetary demands on small companies interested in breaking into the global market.

I cannot begin to comprehend the thought processes behind the abolishment of the one governmental agency that is so in tune and involved with the United States taking its rightful place in the newly emerging global economy. To divide the responsibilities of the Commerce Department and to disperse them to other agencies would simply mean overloading already stressed agencies and diluting the effectiveness of their services.

I am positive that Second Chances and Ray Plevas would never have been able to claim a place in the global marketplace without the help of the United States Department of Commerce and its Domestic Commercial Service offices.

Best regards,

Dianne S. Blamer
Export Manager
SECOND CHANCE BODY ARMOR, INC.

cc: file

HORIBA**HORIBA INSTRUMENTS INCORPORATED**

5900 Hines Drive Ann Arbor, Michigan 48108
 Telephone: (313) 213-6555 (EO) 3-HORIBA
 Fax (3'3) 213-6525

MI

20 JUL 95

The Honorable John D. Dingell
 Room 2125
 Rayburn House Office Building
 Washington DC 20515

Dear Congressman Dingell:

In response to your letter of 13 JUL 95 regarding H.R. 1756, we submit the following statement for your consideration.

"As a world leader in the production of Vehicle Emission Testing Systems, a large percentage of our business originates overseas. As such, the services provided by the Exporter's Assistance Office are very important to our operation.

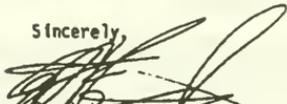
We have sold many Systems in Europe, Asia and the Americas. Due to the technical content of our Systems, most of these sales required a Validated Export License. Assistance in obtaining these licenses came from the Office in Detroit. In recent years, our customer base has expanded into the former Soviet Republic, the Czech Republic, Switzerland and the Peoples Republic of China. Export licenses were readily obtained, due in large measure to pre-application counseling provided by the Detroit Office.

Our Export Department has developed an excellent relationship with key members of the Detroit staff over a period of more than ten years. We know the Detroit staff and they know us; their knowledge of our products and customers makes export counseling and licensing assistance easier and more expedient than searching for the "right person" in Washington.

We were recently informed that a satellite Office would soon be opened here in Ann Arbor, employing staff members from Detroit. We look forward to utilizing the services of this new Office.

In closing, I strongly urge that support be withheld for any action that would result in the reduction or elimination of the broad range of exporter services provided by local Department of Commerce offices."

Sincerely,



Frank H. Conley
 Director/General Manager



James A. Haworth
 Export Manager

The Honorable John D. Dingell
July 20, 1995
Page 2

firms whose entry into and subsequent success in exporting can be attributed in significant part to the support of the trade specialists and trade reference assistants in the domestic field offices of the US&PCS. In addition, the periodic seminars and export promotion activities (such as the annual celebration of World Trade Week) sponsored by these offices have produced demonstrable results in export activity.

I am enclosing for your reference a roster of the Michigan District Export Council, all of whose members serve as volunteers. I am also enclosing a copy of my letter of March 9, 1995, to Congressman Vern Ehlers, who represents this district. I encourage you and your fellow Representatives to preserve and indeed to strengthen the U.S. and Foreign Commercial Service and the programs that its foreign and domestic offices are providing to American business.

Very truly yours,

Charles E. McCallum / *blw*
Charles E. McCallum

/blw
enclosures

WARNER NORCROSS & JUDD LLP

ATTORNEYS AT LAW
 900 OLD EBNY BUILDING
 111 LYON STREET, N.W.
 GRAND RAPIDS, MICHIGAN 49503-2489
 TELEPHONE (616) 792-2000
 FAX (616) 792-2007

CHARLES E. MCCALLUM
 DIRECT DIAL NUMBER
 (616) 792-2104

FILE COPY

March 9, 1995

The Honorable Vernon J. Ehlers
 166 Federal Building
 110 Michigan Street, N.W.
 Grand Rapids, Michigan 49503

Re: Department of Commerce, U.S. and Foreign Commercial Service

Dear Vern:

As you know, I was appointed during the Bush administration to, and currently serve as Chairperson of, the Michigan District Export Council, a group of private business people who volunteer their services in support of the Department of Commerce's export promotion efforts. I am writing to express my concerns over current initiatives to reduce these programs (in the hope the state will take them over) and to transfer the operations of the U.S. and Foreign Commercial Service to the State Department.

While I would appreciate the opportunity to visit with you generally about the issue of the shrinking of the federal government, I will focus here on my concerns about the Commerce Department initiative. I have been active in assisting West Michigan clients in their international trade activities for 30 years. In recent years, as I have begun to play a role in the Michigan District Export Council, I have taken the opportunity to visit district offices of the U.S. and Foreign Commercial Service in the United States and in foreign countries.

While there are no doubt instances of inefficiency, it is my impression that the current U.S. and Foreign Commercial Service is a relatively well run and focused organization. I believe that U.S. exporters would miss it, and that U.S. exports would be adversely affected, if it were to be eliminated.

Let me speak to two points in particular. First, in visiting foreign offices I have visited some which are housed in our embassies (State Department turf) and some which are housed away from the embassies. Those which are housed away from the embassies have seemed to me to be more focused and receptive to businesspeople. It seems to be a risk that one grows fond of embassy life and does not pursue trade initiative as aggressively or effectively as those who have not developed that taste. You will recall that the Foreign Commercial Service

The Honorable Vernon J. Ehlers
March 9, 1995
Page 2

officers were originally in the State Department, and were transferred out of it precisely in order to focus them on trade promotion.

Second, I have had considerable experience over the years with the international trade and export promotion activities of the State of Michigan. I have been and remain underwhelmed. I would not willingly give up one trade specialist in the U.S. and Foreign Commercial Service for any three individuals I have run into in the State of Michigan's international trade promotion programs.

I am very concerned about the current initiative. I am hopeful that you will find some time to discuss this matter with me when you are next in Grand Rapids and that I can persuade you to be of some influence in avoiding what I think could be a major blunder. If we need to take steps to make the U.S. and Foreign Commercial Service more efficient, or to make it more accountable and more reliable, or otherwise to improve it, then we should do so. But to dismantle and demoralize it at a time when exchange rates have made U.S. exports attractive will deprive us of a valuable resource.

Very truly yours,

Charles E. McCallum

/bjs
enclosure

cc: The Honorable Vernon J. Ehlers
1526 Longworth Building
Washington, D.C. 20515



AMIGO MOBILITY INTERNATIONAL, INC.
6593 Dale Highway • Bridgeport, MI 48727-0402 • (517) 777-0910 • FAX 517-777-8184

July 20, 1995

**Important Fax Message for Representative John D. Dingell, U.S. House of Representatives,
Committee on Commerce, Washington, D.C.**

Fax: (202) 225-2525

From: Clarence M. Rivette, Chief Operating Officer

REFERENCE: House Bill, H.R. 1756

To Members of the U.S. House of Representatives, Committee on Commerce,

The legislation sent to the President to remove the U.S. Department of Commerce from a cabinet level position, and either transfer or remove the offices and services within the department, deeply concern me.

Everyday at Amigo we remind ourselves that we are responsible for the livelihood of approximately 100 families. Small and medium size businesses like ours, have relied on the various services and support offered through the U.S. Department of Commerce, to provide jobs and opportunities for our employees and their families.

Specifically, the products, staff and service of the U.S. Foreign and Commercial Service, both domestic and overseas offices, have directly contributed to Amigo's international sales growth (approximately 22% growth each year for the past 3 years). The critical link has been commercial officers of the Detroit USFCS. I commend and have experienced their professionalism, export assistance, and bottom line results orientation.

My recommendation is to maintain the "business", "for profit", and "job creation" components within the U.S. Department of Commerce. I do support measuring peripheral programs within the department against the above criteria, however, let me emphasize that the USFCS in its current form exceeds the criterias' requirements.

I am available for personal comments.

A handwritten signature in black ink, appearing to read "Clarence M. Rivette". The signature is fluid and cursive, with a long horizontal stroke extending to the right.

Clarence M. Rivette
Chief Operating Officer

F. U. MESSAGE FROM MULLENBERG INTERNATIONAL LTD

2150 4614 Street SE, Grand Rapids MI 49508 U.S.A

Voice Contact 616 281 4100 Facsimile 616 781 1150

TO: Committee on Commerce
 ATTN: Mr. David Tittsworth
 RE: H. R. 1756

FAX NO: 202-225-2525

DATE: 20 July 95

PAGE: 1 of 1

Mr. David Tittsworth
 2322 Rayburn House Office Building
 Washington D.C. 20515

Dear Mr. Tittsworth;

As you may recall, I spoke with you 20 July 95 regarding H.R. 1756.

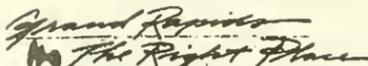
I believe that it would be a costly mistake to abolish the DOC if it negatively impacts the DOC/ITA programs and district offices.

From 1983 to 1992 I was V.P. International for C-Tec Inc. located in Grand Rapids Michigan. During that time period I received excellent counsel from the Grand Rapids DOC/ITA office. I also utilized the ADS (Agent Distributor Search) and the Commercial News Letter service offered by the DOC. In December 1991 C-Tec was awarded the "E" Award for excellence in exporting based on the fact that we had increased our export sales from five per cent of our sales volume to thirty three per cent. This represented export sales of over \$6,000,000.00 in 1990. This would not have been possible without the help of the Grand Rapids DOC/ITA office.

I urge the Committee on Commerce to study H.R. 1756 with a keen eye as to how this bill will impact the export sales of all companies but especially those companies new-to-export.

Sincerely,


 Dan Meulenberg
 President



The Right Place Program
 The Waters Building, 111 Pearl Street NW
 Grand Rapids, Michigan 49503-2831
 (616) 771-0300 • FAX (616) 771-0329

Jay Van Andel
 Founding Chairman

Chairman
 Robert L. Hooker
 Mazda Great Lakes

Executive Board
 Michel Benz
 Saint Mary's Health Services

Betty S. Burton
 Wonderland Business
 Forms, Inc.

Richard D. Both
 Kent County
 Board of Commissioners

John C. Carriss
 Old Kent Financial Corporation

Dick DeVos
 Aramco Corporation

Carl L. English
 Consumers Power Company

Edward E. Frederick
 Buehler Realty, Inc.

David G. Fry
 NBD Bank, N.A.

Ernie Henke
 Suspa, Inc.

The Honorable Bill Hartman
 City of Kentwood

Earl D. Hottel
 Meier, Inc.

Richard E. Kelly
 Clipper Belt Lacer Company

John C. Kennedy
 Autocam Corporation

Birgit M. Klohs
 The Right Place Program

Roger L. Martin
 Steeles Inc.

Charles E. McCallum
 Warner, Horrocks & Judd

Cyril F. Moore
 BDO Seidman

Richard A. Morton
 The Grand Rapids Press

Patrick M. Owen
 Spartan Stores, Inc.

William W. Rohrer
 Grand Rapids Area
 Chamber of Commerce

Hilary F. Snel
 Varnum, Riddering
 Schmidt & Howlett

Frank Thomas
 Madison Food Center

Richard E. Tierney
 Smiths Industries

David L. Van Andel
 Aramco Corporation

Adam G. Walters
 Michigan National Bank

Ronald A. Williams
 DLP Division of Medtronic, Inc.

Cassy Wondersperg
 Aramco Corporation

Richard W. Zeman
 MICHCan

July 20, 1995

The Honorable Carl Levin
 United States Senate
 110 Michigan Avenue, Room 134
 Grand Rapids, Michigan 49503

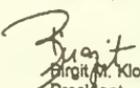
Dear Carl,

Thank you for your recent letter regarding Senate Bill 929 which would eliminate the Department of Commerce and terminate, among others, the International Trade Administration. The Right Place Program supports the ITA/Domestic Commercial Service. In fact, several years ago we paid for a support staff person for Tom Maguire. We also work very closely with his staff and the Detroit office organizing World Trade Week events in West Michigan each year.

We feel very strongly that the local ITA office is extremely important to assist small and medium-sized companies who want to enter the export market.

On behalf of The Right Place Program thank you for requesting our input on S.929 and allowing me the opportunity to offer support for the International Trade Administration/Domestic Commercial Service.

Sincerely,


 Birgit M. Klohs
 President

BMK/mam



AMPRO Industries Inc.

July 7, 1995



**Lawn Patch
Wild Flowers**

Congressman John Dingell
Room #2328 Rayburn House Office Building
Washington, DC 20515

RE: The Department of Commerce
International Trade Administration
US & Foreign Commercial Service



**Bio-Flush
Cat Litter**

Dear Congressman Dingell,

I have noticed much discussion in the local papers about disbanding the Department of Commerce. I would like to tell you about my experiences with their division, the International Trade Administration, US & Foreign Commercial Services.

Bradley:
P.O. Box 6
Bradley, MI
49311-0006

(616) 792-2241
(800) 632-1998
Fax: (616) 792-4241

Ampro Industries is a Michigan based company which produces lawn & garden and pet related products from recycled newspaper. We operate out of a 64,000 square foot facility in Bradley, MI, have about \$14 million in sales and employ up to 90 people in peak season. About five years ago we received an order from Canada. After the ultimate run-around from numerous agencies in Washington, including the main office of the Department of Commerce, we stumbled on to the local Detroit office of the International Trade Administration. These people were and are fabulous. They not only helped with our immediate problem, crossing the border with our first shipment, but have helped to educate us in exporting through their seminars and open new markets. We recently received our first order from South Africa!

Brighton:
850 Old US 23
Brighton, MI
48116

(810) 632-5640
(800) 482-3130
Fax: (810) 632-5840

Congressman, the US & FCS and the ITA are two very useful tools for the small businessmen of Michigan. They have allowed us to expand our markets in a safe and profitable manner. I strongly feel that this function should continue and that it is the best use of my tax dollars that I have found to date.

Sincerely,

D.R. "Denny" Zelek
Vice President of Marketing & Exporting



AMPRO Industries Inc.

July 7, 1995



Senator Carl Levin
Room #459 Russell Building
Washington, DC 20510



RE: Meeting with the US&FCS and ITA

Dear Senator Levin,

Thank you very much for the opportunity to attend and discuss the future of the US Foreign Commercial Service and the International Trade Administration yesterday afternoon the Greater Detroit Chamber of Commerce. Your time and questions were much appreciated by me and, I am sure, all those who attended.

Bradley:
P.O. Box 6
Bradley, MI
49311-0006

(616) 792-2241
(800) 632-1998
Fax: (616) 792-4241

Brighton:
850 Old US 23
Brighton, MI
48116

(810) 632-5640
(800) 482-3130
Fax: (810) 632-5840

I would just like to take a few moments of your time to put our experiences with the US&FCS and exporting story in writing for your file and potential use in the upcoming hearings. Ampro Industries has been a Michigan based company for nearly fifty years. Our beginnings were in the agricultural farmer dealer business which developed into a full time farm seed wholesale operation. With the decline in the farming industry in Michigan, we expanded into the turf grass and landscape supply wholesale industry. About eight years ago, the principles of Ampro developed a product line called "Lawn Patch" which is a combination of grass seed, fertilizer and ground recycled newspaper which was targeted at the homeowner for use in repairing bare spots in their lawn. Since then we have added numerous sister products and currently operate out of a 64,000 square foot facility in Bradley, MI. Our peak employment will approach 90 employees.

Our initial venture into exporting came almost by accident. We received an order for our products from K-Mart of Canada about five years ago. With the help of our trade mark attorney, we were able to register with the Canadian Authorities and their Agriculture Department. Our main problem at this point was crossing the border with the shipment. We started with our local Department of Agriculture office and got nowhere. We were directed to the Department of Agriculture in Washington, DC. After numerous transfers and hang ups, we were referred to the Department of Commerce in Washington, DC. After telling my story to who ever would listen, (most people I spoke with were rude, barely spoke English and could have cared less) we

were referred to our local Border Patrol and Immigration Inspections in Detroit. Once again, no luck. I wish I could remember who, along the way, suggested I call the International Trade Administration in Detroit. This person was doing their job!

Senator, of all the calls I made that morning and afternoon and all the messages I left (giving out our toll free number) looking for any information, the ONLY person to return my call was Mr. Bob Janning of the ITA from Detroit. Bob knew exactly what I needed to do and immediately forwarded information on where to obtain forms, how to fill out the forms and the duty of customs brokers. Since then, Canada has become our sixth largest customer! Now whenever we start looking at a new country to add to our exporting list, we start with Dean Peterson, Martha Butwin and their people at the ITA. Thanks to their help, seminars and expertise, we recently set up a distributor for our products in South Africa and are continuing to have discussions with numerous Japanese companies.

I would also like to follow up on your question/comment about "Corporate Welfare" Senator, the small businessmen who were in the meeting yesterday, Mr. Falk, Mr. Kokmeyer, Mr. Stanley, myself and all the others, we are the tax payers who fund the government. We are the people who employ others to increase the United States tax base. We are the entrepreneurs who, by employing others, are creating wealth for everyone in this country. By using our tax dollars for a worthwhile entity like the ITA we can continue on this course. Welfare is a term that connotes receiving something for nothing. With the ITA, we are receiving something for something, information and help for our tax dollars. This is not welfare, Senator, this is buying a service. We send our money to Washington, you, in turn, provide us with a worthwhile service, The US&FCS and the ITA. Please remember Senator, it is not Washington's money, it is not the United States Government's money, it is not your money, it is our money, the tax payer.

Thank you once again for your time and ear yesterday. We appreciate the fact that you would listen to us talk about a division of a government agency that IS working and DOES make a difference.

Sincerely,



D.R. "Denny" Zelek
Vice President of Marketing and Exporting

DRZ/mf

July 7, 1995

Senator Spencer Abraham
Room #105 Dirksen Building
Washington, DC 20510

RE: The Department of Commerce
International Trade Administration
US & Foreign Commercial Service

Dear Senator Abraham,

I have noticed much discussion in the local papers about disbanding the Department of Commerce. I would like to tell you about my experiences with their division, the International Trade Administration, US & Foreign Commercial Services.

Ampro Industries is a Michigan based company which produces lawn & garden and pet related products from recycled newspaper. We operate out of a 64,000 square foot facility in Bradley, MI, have about \$14 million in sales and employ up to 90 people in peak season. About five years ago we received an order from Canada. After the ultimate run-around from numerous agencies in Washington, including the main office of the Department of Commerce, we stumbled on to the local Detroit office of the International Trade Administration. These people were and are fabulous. They not only helped with our immediate problem, crossing the border with our first shipment, but have helped to educate us in exporting through their seminars and open new markets. We recently received our first order from South Africa!

Senator, the US & FCS and the ITA are two very useful tools for the small businessmen of Michigan. They have allowed us to expand our markets in a safe and profitable manner. I strongly feel that this function should continue and that it is the best use of my tax dollars that I have found to date.

Sincerely,

D.R. "Denny" Zelek
Vice President of Marketing & Exporting

Durametallic
Sealing Systems Worldwide

Thomas E. Hoan
Executive Vice President
Chief Operating Officer

18 July 1995

Carl Levin
United States Senator
110 Michigan Avenue, Room 134
Grand Rapids MI 49503

Dear Senator Levin:

Thank you for your letter dated 11 July 1995 regarding pending Senate Bill S.929 which would eliminate the Department of Commerce.

In my view, the export assistance programs provided by the International Trade Administration are an invaluable service to medium and small businesses. In our case, Durametallic has used the expertise of the Detroit and Grand Rapids offices numerous times, as well as called on the commercial attaches at several U.S. embassies.

To consider this corporate welfare I think is ridiculous. Not only do these offices provide us expertise on export matters which helps us to build export sales and therefore add jobs in the state of Michigan they also advise us on government policy and regulations. It can be argued these services could be provided by private sources at a fee; however:

- A. Small businesses just starting in the export arena face enough roadblocks without having to seek expensive consultative services.
- B. The private advice is rarely neutral in that the service providers usually have an agenda for additional business in some form or another. ITA and DCS are providing unbiased expert advice that would be difficult, if not impossible, to replace in the private sector.

I think it would be a serious mistake to eliminate the export assistance programs provided by the Internal Trade Administration and the Domestic

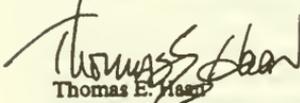
Commercial Service. It will hurt small businesses particularly and negatively impact employment in the state of Michigan.

The world economies will be growing at a faster rate than the United States economy for the foreseeable future. If we want to reduce unemployment, we should be focusing on the promotion of exports and how government can help encourage exports, not eliminating export assistance programs.

At the same time, I have read about grants provided for feasibility studies to companies who should be able to well afford to do their own feasibility studies, and perhaps that is a way to save a certain amount of money as Congress and the Administration work towards the necessary objective of a balance budget.

I hope this adequately responds to your letter. If any further information or clarification is required, please feel free to contact me.

Regards,



Thomas E. Hahn
Executive Vice President
Chief Operating Officer

krd



healthmark
INDUSTRIES CO

health care products

22522 East Nine Mile Road
St. Clair Shores, Michigan 48080-1999
Telephone (810) 774-7000

Fax: (810) 774-6473

July 19, 1995

The Honorable John D. Dingell
United States House of Representatives
Committee on Commerce
Room 2125
Rayburn House Office Building
Washington, DC 20515-6115

Re: House Bill H.R. 1756

Dear Sir:

In response to your request for Healthmark's position on House bill H.R. 1756, we at Healthmark are very much concerned as to the ramifications of this bill. We believe that the Department of Commerce has been an effective advocate for our business interests abroad. The House bill H.R. 1756 fundamentally abolishes the effectiveness of the U.S. and foreign commercial services, regional and country analysis used to support trade promotion, and international negotiations.

The abolition of these services is of concern to us is because we have contacted the foreign commercial services both for country and regional information to help us market effectively. We have used the Department of Commerce's local liaison in the target countries to help us assist in contacting potential business partners. As a direct result of these contacts, and the information we've attained, our export business has increased ten-fold. The foreign service staff has been helpful and courteous, a true gem among the federal bureaucracy.

We continue today, to use the Department of Commerce's aforementioned services, and feel that the House of Representatives Committee on Commerce would be remiss in recommending the elimination of the Department of Commerce and its services.

Sincerely,

HEALTHMARK INDUSTRIES CO.



Mark D. Basile
President

MDB/mi

c: Honorable Ronald H. Brown, Secretary
Department of Commerce

HR1756



600 West Lafayette Boulevard
P.O. Box 33840
Detroit, Michigan 48232-0840
(313) 964-4000

July 7, 1995

The Honorable Senator Carl Levin
United States Senator
The Office of Senator Carl Levin
477 Michigan Avenue, Room 1860
Detroit, Michigan 48226

Dear Senator:

On behalf of the World Trade Club of the Greater Detroit Chamber of Commerce, thank you for providing us with an opportunity to meet with you yesterday to discuss Congressional proposals to eliminate funding for the domestic field structure of the U. S. & Foreign Commercial Service/ International Trade Administration (ITA)

As you know, the ITA serves an important function by assisting small- and medium-sized companies which export their goods and services abroad. These companies include Chamber members who depend on the ITA's vast network of international resources which effectively identifies promising trade and investment opportunities overseas. The elimination of the ITA would significantly diminish many companies access to international markets which are critical for our region's continued economic growth and employment development. Hence, we urge you to support the continued funding of the ITA.

It was a pleasure to meet with you yesterday and I thank you again for giving us an opportunity to voice our support for the ITA.

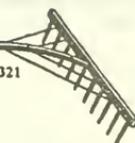
Yours very truly,

A handwritten signature in black ink that reads "Kevin H. McKervey".

Kevin H. McKervey
Chairman
World Trade Club

CHEESEBROUGH SINCE 1872
WOOD RAKES & SPECIALTIES

P.O. BOX 161, 260 DIVISION, FREEPORT, MI USA 49325 - PHONE: 616-765-5143 FAX: 616-765-5321



July 12, 1995

Senator Carl Levin
 110 Michigan Ave. Rm 134
 Grand Rapids MI 49503

Dear Senator Levin,

In response to your query of our opinion on bill S.929, I would certainly be unhappy to see it pass. In developing our markets overseas, Tom Maquire and his office have been our right hand. True, it does benefit us as a private business, but I believe that benefit is for our entire country as most small business in the U.S.A. hire U.S. citizens as they grow. We small industries would not be able to develop in this market on our own, and it is an important part of our future as the world opens up. In short, if small business in America cannot receive help to enter the world market, America will become a smaller player than many other countries.

Best regards,

Ken Van Tol

Ken Van Tol

*BS.
 He has helped us
 level off contacts in over
 10 countries date. We are
 planning for wonderful
 increases because of it!*

July 13, 1995

Senator Carl Levin
Grand Rapids Office
110 Michigan Avenue, Room 134
Grand Rapids, MI 49503

Subject: Pending Bill S.929

Dear Senator Levin:

I am responding to your July 11, 1995 correspondence regarding pending bill S.929.

Eight years ago, we, in good faith, heeded the call of our government urging small and mid-size manufacturers to export their products. While the decision to become an active exporter in part fulfilled a sense of patriotic duty, the bottom line was . . . it made good business sense for the future growth of JWI.

Today we have our pollution control equipment operating in over 40 countries with installations on every continent. Indirect sales agents have been established globally, and we have opened a subsidiary (JWI-Europe GmbH) in Germany to manage activities in Europe, Africa and the Middle East. A company our size simply cannot hire "experts" (consultants or direct staff) to perform the myriad of things necessary to establish a presence in foreign markets and actively pursue business opportunities. Both our state and federal governments have offered assistance to companies such as ourselves through selected agencies. We have taken full advantage of these services including trade show coordination, catalog shows, matchmaker missions, industry specific trade missions, country profiles, specific company profiles, embassy assistance, potential customer inquiries, and duty/taxation/bonding/financing/shipping issues. Our point man for the majority of this assistance has been Tom Maquire and his staff in the Grand Rapids office. The following are only two installations of many in which Tom Maquire's efforts "made the difference."

◆ TRANS TOKYO BAY PROJECT

- Large tunneling project under Tokyo Bay, Japan.
- JWI was the only non-Japanese manufacturer to supply filtering equipment for this project.
- Tom Maquire coordinated Foreign Commercial Service and other embassy personnel introductions/activities both in the U.S. and Japan on behalf of JWI.
- Tom Maquire provided JWI with strategic feedback during the lengthy negotiation phase by the Japanese.

Senator Carl Levin
July 13, 1995
Page Two

◆ MOSVODOCANAL MUNICIPAL ENTERPRISE

- Municipal waste treatment plant expansion and lagoon clean-up for the City of Moscow, Russia.
- JWI was able to become one of only four bidders worldwide to qualify for this project and receive an invitation to bid. The other firms were two German and one Italian.
- The Italian firm was awarded this contract based on extremely low price and "other" issues.
- Tom Maquire enabled JWI to become one of the four bidders by providing:
 - Assistance in obtaining the necessary documents allowing the Russians to visit the USA.
 - Background profile on Mosvodocanal.
 - Background profile on Russian contractor to do the work for Mosvodocanal.
 - Complete country profile on Russia including business conditions, financing and political risk analysis.
 - Financing and risk insurance guidance.
 - Introduction to Moscow U.S. Embassy Foreign Commercial Service personnel.
 - Ongoing liaison between JWI and Moscow U.S. embassy.

Since our commitment to the international marketplace, I have learned that the playing field is by no means level, and U.S. companies have an uphill run. Foreign governments actively support their companies via many methods; putting their "money where their mouth is" via bonding, financing, and risk programs as well as eliminating regulatory restrictions to fit "local culture." While there are isolated abuse cases in any program, I strongly disagree that the Domestic Commercial Service constitutes "corporate welfare." We have "stepped up to the window" and reduced our short-term profits to become an international supplier. We are not looking for a handout but merely assistance to keep our balance on the tilted playing field.

The 153 families at JWI are strongly committed to maintaining an active international presence and urge you to strongly support retention of the Domestic Commercial Service.

Sincerely,

JWI®



David J. Spyker
President



July 13, 1995

Senator Carl Levin
 c/o Ms. Cassandra Woods, Deputy Director
 Senator Carl Levin's Office
 1860 McNamara Building
 477 Michigan Avenue
 Detroit, MI 48226

Dear Senator Levin:

I was especially appalled by the term, "corporate welfare", I read in your letter of July 11, 1995. These opponents to the Department of Commerce must have their heads in the sand or are simply choosing to ignore what other governments, specifically Japan, do to support private enterprise. The Japanese government actively conducts commercial espionage and shares the secrets they obtain with a few hand-picked Japanese corporations who compete head to head with American companies. In the U.S., although our intelligence agencies often gain useful commercial secrets from our foreign competition, U.S. law dictates they are not allowed to share it with any specific U.S. company because of the American tradition of "all people (companies) will be treated equal". We need to establish a policy for distributing these trade secrets or Japan will continue to beat us at every turn.

Secondly, Japan contributes billions, if not trillions of yen in direct funding, again to a few hand-picked companies in strategic industries (automotive, telecommunications, semi-conductors), for the very straight-forward aim of beating out foreign competition, specifically the U.S. If that's not "corporate welfare", I don't know what is. Maybe we should try a little of that. I'm sure it would help the IBM's, Apple's and Ford Motor Company's of the world.

Thirdly, a main problem for U.S. companies trying to do business overseas is that the U.S. government confuses human rights and political issues with trade and business issues. We should not make the mistake of thinking we are an international police force of sorts. This policy is not only ineffective in it's own right, but also has a great negative impact on U.S. companies trying very desperately to do business in any developing country. We are killing our own future in China, for example. The 1990's are the formative years of China's automotive industry. Foreign enterprises getting in the door now will control the market, not just for automobiles, but also for machines tools and other components that are used to build these vehicles in the 21st century. This has been proven by companies such as Shanghai Volkswagen and Tianjin Auto Works (a joint venture with Daihatsu) when they only purchase equipment and other components from suppliers in their mother country. With the largest vehicle assembly project in five years awarded to Mercedes July 12, the Japanese and the Germans now have almost full control.

Because our government is so afraid of helping one company in an industry without helping them all, we wind up helping no one. We need a commercial policy, which is not solely dependent upon political policy, to address these issues so we can begin to spend our Department of Commerce funding effectively. By all means, we do not need to abolish the International Trade Administration - - it is doing as much good as possible based upon the lack of power or authority we've given them. We need to study what other internationally effective countries (i.e. Japan, Germany) are doing and write a policy modeling particular aspects of that.

Now that I've written what was on my mind regarding the issues of U.S. corporations' ability to compete internationally, the following is a more direct response to your request:

The International Trade Administration has been very important to our company, Electro-Wire Products, Inc. (EWP), a medium-sized privately owned company located in Dearborn, Michigan. We have specifically used the services of the U.S. and Foreign Commercial Service (US&FCS) located here, in Detroit. Martha Butwin and Ruth Mayo, at that office, have been able to help us in numerous ways over the past three years. They have given us assistance in country research, introductions overseas, and communication for foreign business people trying to obtain visas to enter our country.

As a traditionally domestic-oriented company, three years ago we had no information about the automotive industry overseas when it was decided we must go global in order to grow our business. A quick call to the US&FCS was all it took to get general country information and specific automotive industry facts for China and Korea, the two countries in which EWP was considering investing at the time. These reports were free. When we decided upon a few specific companies we were interested in, a nominal \$100 fee was charged for a detailed report of their operations. There is no private source I am aware of who is able to obtain such a large amount and detailed account of other countries for such a small fee.

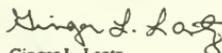
When we planned our first trip to China, we again telephoned the local US&FCS to set up meetings for us with appropriate U.S. embassy personnel in Beijing. These meetings proved very effective as the Beijing embassy and Shanghai consulate members gave us information on current Chinese methods of doing business and the latest political trends that would affect our dealings in China.

Most recently, our joint venture for assembling automotive wire harnesses in China was at the point of completing and signing a feasibility study. In order to accomplish this, as well as for the overall benefit of our Chinese partner seeing how we conduct business, they needed to get to the states within only two weeks time of our invitation to them. This was early December and with the U.S. holidays coming, immediately followed by Chinese New Year, if they didn't arrive immediately, the entire project would have to be pushed back by at least two months. With the help of our Detroit US&FCS branch, we received an answer right away regarding when our Chinese visitors would receive their U.S. visas. This enabled us to plan the very complicated trip which included a visit to the Mexican consulate in the U.S. for them to obtain Mexican visas in order to see our facilities in that country.

Although the three areas described above were obviously helpful to our company, these are all examples of "soft" or "indirect" assistance. They, alone, are not enough to maintain our country as an economic superpower into the 21st century. Japan and other countries offer their private enterprises hard, cold cash in grant form and specific trade secrets of direct competitors. I do not believe we should uniformly adopt the policies of Japan or Germany or anywhere else for that matter. However, I cannot believe that a country of our economic magnitude has not been able to develop an international or economic business policy with over 200 years of experience. Let's learn from other nations and adopt what is useful to us, throwing away what is not.

If you have any questions or require further details to support my comments, feel free to write or telephone me at the address or telephone number displayed on this letterhead. Thank you for requesting my opinion and that of Electro-Wire, Products, Inc.

Sincerely,



Ginger L. Lantz

Manager

China Business Development

HASTINGS RECEIVED JUL 19 1995
RECEIVED JUL 19 1995HASTINGS MANUFACTURING COMPANY
115 North Waterloo Drive
Hastings, MI 49058-1098 USA
Fax 616/943-4687
Phone 616/943-2481FIBER BOND
LIFEBOAT FILTERS
CANNY PRODUCTS
SPECIALTY TOOLS

June 27, 1995

The Honorable Carl Levin
110 Michigan Avenue, Room 134
Grand Rapids MI 49503

Dear Senator Levin:

This is in response to your correspondence dated July 11 regarding the potential elimination of the Department of Commerce and its Domestic Commercial Service offices.

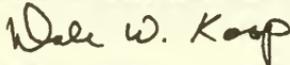
I have had the experience of consulting with the Commercial Service office in Grand Rapids, specifically with Tom Maguire. Our company found the assistance rendered by Mr. Maguire to be extremely valuable in terms of understanding the procedures required to correctly and legally perform technology sales as well as product sales.

Tom Maguire's interest and enthusiasm to facilitate the growth of U.S. exports and to be of assistance to all parties in so doing is highly commendable. I cannot help but believe that if this (corporate welfare) assistance were not available, there would be a considerable reduction in export activities by businesses, and I am sure this is one of those programs that in reality is a revenue producing segment of our government.

Thank you for the opportunity to express our company's support for this service. I trust our input will be helpful to you.

Cordially,

HASTINGS MANUFACTURING COMPANY

Dale W. Koop
Vice President - Engineering

DWK:ch/k01-1

BISSELL inc.P.O. Box 1888
Grand Rapids, MI 49501
U.S.A.2345 Walker N.W.
Grand Rapids, MI 49504
U.S.A.

Telephone (616) 453-4451

Telex: 432-0165 BISL UI

Fax: (616) 453-1383

RECEIVED JUL 19 1995

July 18, 1995

Senator Carl Levin
United States Senate
110 Michigan Ave., Rm. 134
Grand Rapids, MI 49503

Dear Senator Levin:

It is very easy for me to address the value of Domestic Commercial Service, and specifically, the Grand Rapids office. Western Michigan is fortunate to have a solid manufacturing base and many of the companies like ours have good export potential.

Having local export assistance means that companies are able to gain maximum benefit from the programs offered by the Domestic Commercial Service. I have frequently used these programs, and they have proven to increase export sales and thus help the economy of our country.

Tom McGuire is highly respected in the Western Michigan community and very professionally manages the Domestic Commercial Service office. He has been able to bring a local and personal touch to big government and in doing so, has been a great asset to the Department of Commerce.

Thank you for asking my opinion. I do not feel the export assistance program should be terminated, and I feel the local office should be a part of this.

Sincerely,

Don R. Seale
Director of International Sales

DRS/eb

MASCO
A S C O R P O R A T I O N

July 14, 1995
GNH95/164

Senator Carl Levin
1860 McNamara Building
477 Michigan Avenue
Detroit, Michigan 48226

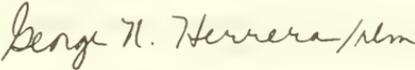
Dear Senator Levin:

I am sure you have received many letters in support of the U.S. and Foreign Commercial Service. Rather than to claim litaney which you have heard before, I am enclosing a fax which came to me today from Frank Betté, one of our International Account Executives, who happens to be traveling in Malaysia.

Thanks to the U.S. Embassy's Gold Key Service, he was able to contact a number of companies. Without this service it would have taken us at least an additional 4-5 days to find these companies.

I think this is a typical example of the good work that even large companies can obtain from the U.S. Department of Commerce.

Best regards,

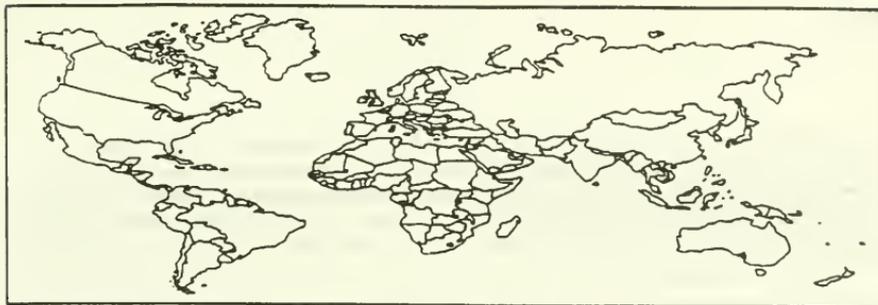


George N. Herrera
Director, International Sales
GNH/rlm

cc:

Dean Peterson (Department of Commerce)

MASCO INTERNATIONAL DEPARTMENT



21001 VAN BORN ROAD
TAYLOR, MICHIGAN 48180 U.S.A.
PHONE (313) 274-7400 FAX (313) 374-6936

TELECOPY TRANSMITTAL COVER SHEET

To: Masco Corporation - Taylor, Michigan Fax #: 9,00713133746936
Attn: George Herrera Tel #: 9,00713133746339
From: Frank Betté Date: July 13, 1995
Number of Pages (Including Cover): 3 Ref: FB95/6-517

Subject: **Malaysia**

Dear George:

I had a great day today after meeting with potential Merillat direct accounts / distributors. Thanks to the U.S. Embassy's Gold Key Service in Kuala Lumpur that I contacted the following companies:

- Uniteers Tradetec Sdn. Bhd.
(Member of UEM Group-United Engineers (Malaysia) Berhad).
- Ipmuda Berhad
- CMCM Perniagaan Sdn. Bhd.
- MayFrance Kitchen Creation

George Herrera

July 13, 1995

Page 2

The first three, each one of them belong to a very large conglomerate in Malaysia. I do not know if you were aware that Malaysia has been designated to host the 1998 Commonwealth Games and for that purpose, the amount of construction activity in this country is beyond imagination. High rise buildings for commercial and apartment use are seen everywhere and according to the government statistics, the Malaysian economy is growing at a rate of six percent (6%) YTD and grew at almost nine percent (9%) FY 1994. !

The Uniteers Tradetec Sdn. Bhd. was the first company I had an appointment with and after explaining and introducing to them Merillat cabinetry information, I was asked to quote to them:

Five thousands (5,000) Apartments for the Commonwealth Games Villages.

They will provide to me the lay-out on above villages and I will suggest Peter Fallon to quote on Woodward series which are the least expensive. If everything goes well, according to our discussions on Merillat, they will buy directly from us for their own projects and it will be Amera cabinetry. Woodward will be our best shot for the five thousands (5,000) units because there, they are looking for lower prices, as long as we can find the right kitchen cabinetry for them.

I am going to ask David Smith to, think about this unique business opportunity in Malaysia and if he could give them eighty percent (80%) discount. I have informed these people that they would get sixty-four percent (64%) discount, off the current price list, as agreed with David for the international markets.

I will instruct Marlene to send Amera full product information with prices and wood finish samples. They were very receptive with me and so far they are open for other Masco products for which I gave them the name and address of our Masco Office in Singapore, and to contact Mr. Bjorn Mader, Director Far East.

The second company I visited, Ipmda Berhad, Mr. C.S.Teh already knows you when he visited you at Masco HQ. He sends you regards and was very enthusiastic about buying Merillat cabinetry for their own projects. They have four (4) showrooms in Malaysia, a partnership in Hong Kong and another one at the border with China, (Kom Chao). When he visited you, he was interested in SteelCraft and as I go through their Annual Report, they carry similar product lines like us at Masco. I.e. Door-knobs, Door Locks, faucets etc. . . They will send me at Masco a lay out for us to quote them several apartment projects in hundred units.

The third company, CMCM Perniagaan Sdn. Bhd. is the largest cement conglomerate in Malaysia and are listed in the Malaysian Stock Exchange. They also showed interest in Merillat for other construction projects they are engaged with, as long as we are competitive. They will be glad to submit to us lay outs for projects related to the Commonwealth Games. Mr. Tham Sing Kheong, Business Development Manager, will be interested in future, in a joint deal with Masco to produce / manufacture some products in Malaysia to have a presence here for the Asia / Pacific Rim Countries. He said that Europeans are flooding the region with local presence. (Either with manufacturing / assembly operations) to capitalize on the cheap labor and tax free benefits by importing the components and when exporting, they get an export credit of five (5%) percent, which makes them very competitive.

George Herrera

July 13, 1995

Page 3

The fourth one was MayFrance Kitchen Creation, a small kitchen cabinet distributor with one showroom. I met with Mr. Y.F.Boey and he mainly distributes locally made kitchen cabinets. He did not show a great enthusiasm, though, he will be glad to receive from Merillat, different quotations based on the layout submitted to me. He said he will import one kitchen at a time, but I re-emphasized to him that it would be to his advantage to import on a container basis, otherwise he will not be able to compete in the local market, so will see what will happen.

Best regards,

Frank

GERALD A. HILTY

VICE PRESIDENT - INTERNATIONAL OPERATIONS

May 25, 1995

Ms. Susan Hammond
U.S. Department of Commerce
International Trade Administration
Advocacy Center
Washington, D.C. 90330

REF: DEPARTMENT OF COMMERCE SUPPORT - JAPAN & THAILAND

Dear Ms. Hammond:

This note is written to thank you personally and all others involved for the Department of Commerce's continuing support

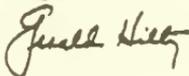
More specifically, the DOC's support was very instrumental in our success for airport baggage handling systems in Bangkok (Thailand) and Tokyo (Japan). Additionally, the DOC office in Bangkok has been very helpful to Rapistan Demag Corp. in maintaining strong relationships with many Thai suppliers and influencers.

Without a local presence to promote our business interests on an ongoing basis, we don't believe we would have been successful in Bangkok (Bangkok International Airport \$US4M) or Tokyo (Narita Expansion of Terminal #1 - \$5.5M). Also, DOC's support for future projects in many countries around the world is key to Rapistan Demag's success in the international marketplace. More specifically, the DOC office in Bangkok is being extremely supportive by keeping Rapistan Demag promptly informed of developments on the Second Bangkok International Airport project (SBIA) which involves a baggage handling system estimated at \$80M.

The ability to deal with DOC's local office in Grand Rapids, as well as Washington D.C. and each individual country is an asset to us.

Thanks again for your valuable help.

Best regards,





July 17, 1995

The Honorable Carl Levin
United States Senate
Grand Rapids Office
110 Michigan Ave.
Room 134
Grand Rapids, MI 49503

REF: Senate Bill S.929

Dear Senator Levin:

Thank you for your letter requesting our thoughts on Senate Bill S.929. Johnston Boiler Co. is a medium size manufacturer and we have been working very closely with the Michigan Offices of the Department of Commerce. The people in these offices have been very instrumental in help us grow our international sales from less than 2% of our annual sales to over 20% and still increasing.

This is not "corporate welfare" lining the pockets of Johnston Boiler Co. or any of the other companies we have met in our association with the Department of Commerce. The increase in export sales that we have experienced are the result of a great deal of work on the part of Johnston Boiler Co. They were developed using the resources of the Department of Commerce, to meet with other successful exports, to meet with business official from various countries traveling in the United States and to help us gain specific information on several problems that developed in learning to work in the export market. In all, a very modest amount of time and expense from the Department of Commerce was devoted to Johnston Boiler Co.

The pay back from their and our efforts has been very good for Johnston Boiler Co., the state of Michigan and the United States. The increased growth in sales this export business has developed has created at least 10 new jobs. Jobs that pay state and federal taxes worth more than the

expense of the Department of Commerce's cost to help us get started. The material used to manufacture our boilers for export have created additional new jobs in many other parts of the United States.

Many of the export orders we have received have been won in stiff competition with foreign manufactures. Manufactures that are some times located in the country we are exporting to but most often, manufacturer's from other major industrial countries. These sales have developed new jobs for this country and helped reduce our trade deficit.

It is very important to understand that the efforts of the Department of Commerce are not "corporate welfare". This is a teaming of U.S. industry and the United States Government to bring trade, jobs and dollars to our country. The efforts and expenses of the Department of Commerce are paid back many times in the taxes paid by the new job created and reduced unemployment benefits paid out by states and federal funds.

Our competition from other industrial countries have already teamed with their government to a far greater level of support and financial backing than anything the United State Government has ever considered. The small and medium size manufacturers in this country need the Department of Commerce to work as a central pool of knowledge helping them compete in the international market. If there is a reduction in the size, or the elimination of the Department of Commerce, many small and medium size U.S. manufactures who want to enter the export market may never have that opportunity.

Enactment of Senate Bill S.929 will result in fewer new jobs created in this country, a larger imbalance in our balance of payments and a diminishing world wide demand for U.S. manufactured products. If there is anything we can do to help defeat Senate Bill S.929, please let us know.

Regards,



Brad Carson
Vice President Sales & Marketing



701 MAIN STREET • ST. JOSEPH, MICHIGAN 49085
MAIL CODE 9025 • PHONE: 816-923-4645 • FAX: 816-923-4652

A. J. TAKACS
VICE PRESIDENT
GOVERNMENT RELATIONS

July 14, 1995

The Honorable Carl M. Levin
United States Senate
Grand Rapids Office
110 Michigan Avenue, Room 134
Grand Rapids, MI 49503

Dear Carl:

This is in reply to your request about S.929, which could eliminate the Department of Commerce.

We are in full support of DOC, especially the ITA --- foreign and domestic services --- because ITA has been a big help to us as we expand globally. Both Tom and Dean have provided assistance that benefits our ability to sustain and/or create jobs.

As for the buzz-word, "corporate welfare," it's a sad misnomer to apply it to DOC/ITA, because their services are actually a "corporate investment," since they help with job creation or stabilization.

Best wishes,

A handwritten signature in cursive script that reads "Andy". The signature is written in dark ink and is positioned below the typed name "Andy".



BURKE E. PORTER MACHINERY COMPANY 730 PLYMOUTH N.E. GRAND RAPIDS, MICHIGAN 49505
TWX 810-273-8073 B E PORTER GDR
TELEFAX 616-489-1033
AREA CODE 616/489-0631

July 13, 1995

Carl Levin
 U.S. Senator
 Grand Rapids Office
 110 Michigan Ave., Rm. 134
 Grand Rapids, MI 49503

Dear Mr. Levin,

I am responding to your survey regarding the possible elimination of the Department of Commerce and the resulting termination of the Domestic Commercial Service.

I agree that these export assistance programs could be constituted as "corporate welfare" if they were only being accessed by large businesses. However over 41,000 small to medium sized companies are assisted each year through these programs on how to break into foreign markets. Additionally, since exports account for a growing part of U.S. annual economic growth and small businesses are even now seriously underrepresented as a very small percentage of the total U.S. export picture, the growth of the small to medium sized business sector will be seriously hampered if not assisted in developing its overseas markets. I believe that the Commerce Dept. and its programs offer much needed resources to small and medium sized companies that do not have their own resources, or can not afford to hire the expertise necessary to access foreign marketing information, or to work effectively with foreign governments.

Presently, the United States government has a far less aggressive role than other major trading countries in promoting its exports. Foreign governments invest far more monies as well as staffing resources in the act of assisting their exporters in winning in the international commercial arena. Continued U.S. government support is critical to ensure that U.S. companies get their share of the enormous world market. The elimination of the Department of Commerce and the resulting termination of the Domestic Commercial Service would be a step backwards that would not only limit the growth of new jobs in the U.S. but cause us to be left behind in international competition.

I feel strongly that the activities of Department of Commerce and the Domestic Commercial Service are critical to the future of America and urge you to support keeping it intact.

Sincerely,

BURKE E PORTER MACHINERY COMPANY

Andrew Murch

Andrew Murch, President



Hart & Cooley, Inc.
600 East Eighth Street
Holland, Michigan 49423 U.S.A.
Telephone: 616 392 7855
Facsimile: 616 392 3534

Michael Bee
Manager, International Sales &
Marketing

July 18, 1995

Senator Carl Levin
Grand Rapids Office
110 Michigan Ave, Rm 134
Grand Rapids, MI 49503

Dear Senator Levin:

Thank-you for your letter of July 11, 1995 concerning Senate bill S.929. We are a mid-size company which provides air distribution and air management products for the residential and commercial markets. Hart & Cooley was established in 1901 and has a major share of the grilles, registers and diffuser markets for air-conditioning markets.

We are aware of the importance for International Operations and I was hired in 1992 to direct the company in that area. We forecast the International contribution as 40% of the revenues by 1999. This is an aggressive number, considering International was less than 1% of sales in 1991. We plan to accomplish this growth by a combination of export sales and strategic alliances.

Tom Maguire of the Department of Commerce Domestic Commercial Service has been extremely helpful and supportive of our program. I do not believe he provides "corporate welfare", rather, serves as an important part of our efforts. The DOC has been instrumental in our export business through on-site visits and consultation. We rely on the census data for product identification and market analysis. Tom has helped us in locating export support services; such as the EXIM bank, assistance in export documentation and guidance in qualifying strategic partners. He brings a wealth of knowledge to this arena. We could use consultants for the same information, however, Tom is an unbiased source of information. Not only Tom, but George Frank and the rest of the group are very responsive to our questions. I have heard similar compliments by other area companies entering the export markets for the first time.

Our business has been fortunate until now in a rich, captured market domestically. Our opportunities for the future lie outside the U.S. borders. Other nations have looked at the world as their backyard; we will do the same and need the assistance of Tom Maguire and the Department of Commerce to insure our success.

Sincerely,

Michael A. Bee



202 South Broadway
 Hastings, Michigan 49058
 USA
 (816) 948-3860
 FAX: (816) 948-3860

July 18, 1995

Senator Carl Levin
 Michigan
 United States Senate
 Grand Rapids Office
 110 Michigan Ave., Rm 134
 Grand Rapids, MI 49503

Subject: Senate Bill, S.929

Dear Senator:

We are very concerned that there is considerations in Washington to terminate our Domestic Commercial Service program within the International Trade Administration of our Department of Commerce.

The idea or argument that this program is considered "CORPORATE WELFARE" is absolutely wrong, our company VIATEC is currently working closely with the Domestic Commercial Service staff in the Grand Rapids, Michigan office and know first hand that this is not the case.

If any thing, this valuable program is an "INVESTMENT" that produces returns back to the American taxpayers with more high-paying skilled jobs, higher tax paying citizens, U.S.A. purchased materials, etc. etc.

Please help defeat this pending Senate Bill S.929.

Sincerely,

A handwritten signature in black ink, appearing to read "Kenneth Kensington", with a stylized flourish at the end.

Kenneth Kensington † CEO

cc: file

cc: Tom Maguire
 U.S. Department of Commerce
 300 Monroe Avenue NW
 Room 406
 Grand Rapids, MI 49503



MEDUSA CEMENT COMPANY

P O Box 367 • CHARLEVOIX MICHIGAN 49720 • 616 547-9971

June 28, 1995

JOHN R. DIXON
Plant Manager

The Honorable Carl Levin
United States Senator
459 Russell Building
Washington, DC 20510

Re: Department of Commerce

Dear Senator Levin:

Medusa produces construction products (principally gray portland cement) and provides construction services in the Eastern one-half of the United States. I manage Medusa's Charlevoix Plant.

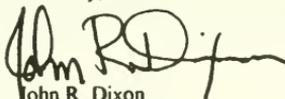
While Medusa supports ongoing efforts in Congress to reduce the budget deficit, we at Medusa are very concerned about proposals to eliminate the Department of Commerce and to shift the functions of the International Trade Administration to another federal agency. The adoption of these proposals would seriously reduce the effectiveness of United States trade policy in the enforcement of U.S. laws against unfairly traded imports and in the promotion of U.S. exports.

The Commerce Department's International Trade Administration has substantially benefited U.S. businesses and U.S. workers by enforcing U.S. unfair trade laws and by promoting U.S. exports. It is the one agency with the experience required to understand the practical problems of domestic business and to incorporate those concerns and ideas into effective trade policy. A strong industrial base is a necessary underpinning of deficit reduction, and the International Trade Administration is essential to preserve and expand our industrial base.

Moving the functions of the International Trade Administration to the U.S. International Trade Commission, to the Treasury Department, to the Office of the U.S. Trade Representative, or to some other agency would not save any tax dollars and would result in less effective enforcement of U.S. unfair trade laws and less effective export promotion.

Accordingly, we request your support for preserving the Department of Commerce as a cabinet level agency. In addition, we request your support for appropriating the funds that the International Trade Administration needs to enforce U.S. laws against unfair trade.

Sincerely,



John R. Dixon
Plant Manager

STATEMENT
on the
INTERNATIONAL TRADE ADMINISTRATION
and the
U.S. & FOREIGN COMMERCIAL SERVICE
for
U.S. SENATOR CARL LEVIN
for the
Ann Arbor Area Chamber of Commerce
by
Dale Apley
Director of Public Policy
July 6, 1995

The Ann Arbor Area Chamber of Commerce appreciates this opportunity to express its views on the benefits of the services of the International Trade Administration and the U.S. & Foreign Commercial Service program. The Chamber represents over 1250 business members throughout Washtenaw County.

More than 95% of the Chamber's members are small businesses with fewer than 100 employees, 82% of which have fewer than 10 employees. We are particularly cognizant of the problems of smaller businesses in Washtenaw County, as well as issues facing the business community at large.

Washtenaw County is an international center for the development of sophisticated technologies in support of advanced manufacturing. Our educated workforce has been a magnet to high tech and research related industry and business. Nearly two-thirds of all robotics, machine vision, and intelligent manufacturing technologies have originated in the "Automation Alley", the corridor extending from Ann Arbor to Detroit. The Ann Arbor area is also one of the top ten areas in the U.S. for software development.

A recent survey of businesses within the Ann Arbor area with 1-25 employees indicated that 32% of the respondents are currently exporting to Canada, Mexico, New Zealand, Australia, Germany, Luxembourg, India, Japan, Israel as well as the Pacific Rim and South American countries. 14% of the respondents expressed interest in learning how to export to Mexico, South America, Europe, Taiwan and Japan.

A majority of these companies utilized the services provided by the U.S. & Foreign Commercial Services. Our exporting members who have worked with the U.S & FCS have commented that the export marketing and trade finance assistance programs were a catalyst in increasing their level of international business.

Small and medium-sized businesses within the Ann Arbor area offer tremendous export potential. However, they need the resources of U.S. & FCS to evaluate their needs and assist them in developing customized international business strategies.

An increase in exports is vital to the further creation of high-wage jobs in the Ann Arbor area. Therefore, the Chamber urges the Senator to support a continuation of the International Trade Administration and the U.S. & Foreign Commercial Service program.

In conclusion, American technology has been a major source of U.S. export strength and is vital to businesses remaining in leadership positions in our global economy. The U.S. & Foreign Commercial Service program provided businesses with the knowledge and strategies to enter and further open global markets.

JULY 14, 1995

SENATOR CARL LEVIN
 GRAND RAPIDS OFFICE
 110 MICHIGAN AVE, RM 134
 GRAND RAPIDS, MI 49503, U.S.A.

RECEIVED JUL 18 1995

DEAR SENATOR LEVIN,

THANK YOU FOR YOUR LETTER REGARDING THE PENDING BILL, S.929, WHICH WOULD "ELIMINATE THE DOMESTIC COMMERCIAL SERVICE". IN ANSWER TO YOUR REQUEST FOR FEEDBACK I WILL DRAW YOUR ATTENTION TO ONE OF THE FASTEST GROWING FREE MARKET NATIONS IN ASIA: MALAYSIA.

WHILE INITIALLY, AN ABUNDANT SUPPLY OF NATURAL RESOURCES AND LOW COST LABOR LURED MANUFACTURING JOBS TO MALAYSIA, NEARLY FULL EMPLOYMENT AND THE SUBSEQUENT INCREASES IN LABOR WAGES AND STANDARD OF LIVING HAVE RESULTED IN JOB MIGRATION TO LESSER DEVELOPED NATIONS SUCH AS INDONESIA.

IN ORDER TO DEAL WITH THIS THREAT, MALAYSIA HAS PUT INTO PLACE A STRATEGIC PLAN TO "LURE" NON-POLLUTING INDUSTRY WHICH DOES NOT RELY ON LOW COST LABOR FOR COMPETITIVE ADVANTAGE. THEREFORE, MALAYSIA IS CURRENTLY OFFERING SIGNIFICANT TAX ADVANTAGES TO "SELECTIVE" INDUSTRIES WHICH FIT THIS CATEGORY.

THE KEY IS THAT THE GOVERNMENT IS ESTABLISHING A STRATEGIC PLAN TO CONTINUE ECONOMIC GROWTH THROUGH "DEVELOPMENT" OF SELECTIVE INDUSTRIAL SECTORS. CALL IT "SUBSIDIZING", IF YOU WISH.

WE KNOW THAT EXPORTING REDUCES THE TRADE DEFICIT AND UNEMPLOYMENT, INCREASES TAX REVENUES AND MAKES U.S. COMPANIES MORE COMPETITIVE. EXPORTING IS QUITE SIMPLY GOOD FOR AMERICA!

THE LARGEST REASON WHY U.S. COMPANIES DO NOT TAKE FULL ADVANTAGE OF EXPORT OPPORTUNITIES IS THAT THEY ARE INEXPERIENCED. THEY ARE IN NEED OF TRAINING, CONSULTATION AND INFORMATION.

THE DOMESTIC COMMERCIAL SERVICE IN GRAND RAPIDS, HEADED BY TOM MAGUIRE, IS A LOW COST RESOURCE WHICH IS PROVIDING U.S. COMPANIES WITH TRAINING, CONSULTATION AND INFORMATION FOR EXPORTING.

I AM CERTAIN THAT YOU WILL ANALYZE THIS SITUATION CORRECTLY, AND MAKE THE CORRECT DECISION IN THIS MATTER.

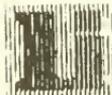
WITH BEST REGARDS,



ROBERT J. HUISINGH
 SALES MANAGER - ASIA

rjh

CC: MR. MIRAN SARKISSIAN

LORIN
INDUSTRIES

180-9002

1950 S. Roberts

P.O. Box 706

Muskegon, MI U.S.A.
49443-0766

816-722-1631

FAX 616-728-6186

Core Industries Inc
500 North Woodward
P O. Box 2000
Bloomfield Hills, Michigan 48303-2000 USA
(810) 901-1565 Fax (810) 642-6816

Matthew P. Marko
Vice President - International Sales

FAXED
7-11-95



July 11, 1995

Ms. Cassandra Woods, Deputy Director
Senator Carl Levin's Office
1860 McNamara Building
477 Michigan Avenue
Detroit, Michigan 48226

Dear Senator Levin,

It was a pleasure to meet with you last week at the Greater Detroit Chamber of Commerce regarding the Department of Commerce's International Trade Administration. I have been an extensive customer of the ITA's services and I feel it provides an important service to the country.

As one who is directly involved with the challenge of establishing distribution for our U.S. made products around the world, I am on the front lines of what is a very competitive battlefield. We compete with products produced by companies in other countries, in every region of the world. Those companies get strong support from their governments. Canada, for example, subsidizes their companies to exhibit products internationally. Dissolving the ITA would be unilaterally disarming while the enemy continues to fight.

In addition to establishing worldwide distribution for my company's products, I am involved in helping other U.S. firms export. As a member of the District Export Council and several other committees dedicated to helping other companies at the state and local levels, I see the reluctance of middle and small sized companies to attempt to actively export. The ITA offers a convenient access at affordable prices which is ideally suited to get a company started into exporting.

Senator, I have used and experienced the results of the ITA and will be willing to give you specific details if requested. I am sure the ITA could be made better, but should not be devolved.

Regards,

A handwritten signature in black ink, appearing to read "Matt Marko".

Matthew P. Marko

pa

Arbor tech*"When filtration is critical"*

ARBOR TECHNOLOGIES, INC.
 401 West Morgan Road
 Ann Arbor, MI 48108-9109 USA

**FAX**

SENATOR CARL LEVIN

FAX NO 313-226-3657
 FROM MARY BOOMUS
 DATE JULY 5 1995

Phone: (313) 665-3300 Fax: (313) 665-3516

Dear Senator Levin:

REF: SENATE COMMERCE COMMITTEE HEARINGS

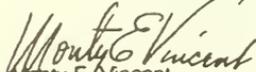
You may remember Arbor Technologies from the presentation by you of the "E" Award for Excellence in Exporting to us last February. We were very honored at your participation in this celebration, which also included a celebration of a record sales year and the opening of our new plant in Ann Arbor.

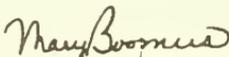
As you know, we are very proud of Arbor tech and the awards we have received in the past, including honors by the Department of Commerce. You should know that the Department of Commerce, and particularly Paul Litton, have assisted us in many ways to expand our business, thus build our new facility, and increase jobs in Michigan. The Dept. of Commerce has helped us strengthen our efforts in the international market, and to export products strengthens not only Michigan, but the U.S. Anytime we have questions about exportation, markets, foreign companies, financial stability of potential international domains, etc., the Dept. of Commerce has been available to help us get whatever information we needed to make sound decisions.

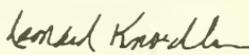
I humbly ask you to do whatever you can to help strengthen the Department of Commerce, rather than to see it diminish, melt into other committees, or become non-existent. We need them.

Sincerely yours,

ARBOR TECHNOLOGIES, INC.


 Monty E. Vincent
 President


 Mary Boomus
 Sr. Vice President
 Sales & Marketing


 Leonard Knoedler
 Sr. Vice President
 Operations

SI

July 6, 1995

The Honorable Carl Levin
U.S. Senate
Washington, D.C. 20510

Dear Senator Levin:

I would like to add my support for maintaining an active U.S. Department of Commerce office in the Detroit metropolitan area.

My support is based on many years of personal business experience with the U.S. Commerce Department starting in the early 60's. In 1960 I founded Sarns, Inc. in Ann Arbor, a medical device company which builds life support equipment systems for use during open heart surgery.

Our relationship with the U.S. Department of Commerce began after receiving a trickle of orders from hospitals outside the United States. Mr. Larry Good, the director of the Detroit office of the Department of Commerce was invaluable in helping us deal with the processing of these orders - the many forms, insurance, legal issues, and methods of payment.

In 1967 we engaged the services of the Commerce Department to launch a major marketing campaign to export our products to Europe. That same year we exhibited at a show in Milan, Italy, which was sponsored and coordinated by the Department of Commerce. This exposure lead to the development of a distribution system through international dealers in several European countries.

The following year we solicited the services of the U.S. Department of Commerce in launching a similar marketing campaign in Asia.

Our overseas sales expanded rapidly and the U.S. Government presented our company with a Presidential E Award in 1972. These overseas sales added greatly to the stability of our business and provided our company with the marketing intelligence to maintain our leadership throughout world markets.

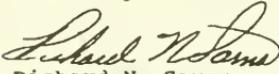
S.I. Company
325 E. Eisenhower Parkway, Suite 14
Ann Arbor, Michigan 48108-3306
(313) 761-5504 (313) 663-9922
Fax (313) 761-9292

Page 2 to Senator Levin from Richard Sarns dated 7-6-95

Sarns, Inc. was acquired by the 3M Company in 1981 and continues to be the leading worldwide producer of medical device systems used in open heart surgery. Sarns/3M Health Care employs over 400 people in the Ann Arbor area.

The U.S. Department of Commerce played a vital role in establishing Sarns Inc. products in the world market. With an expanding global economy and increasing challenges facing U.S. companies, U.S. businesses today have a critical need for assistance from the U.S. Department of Commerce to enter and successfully compete in world markets.

Sincerely,



Richard N. Sarns

Armstrong International, Inc.

816 Maple Street
Three Rivers, MI 49093
(616) 273-1415
Fax: 616-278-6555

FAX TRANSMISSION COVER SHEET

Date: August 1, 1995
To: John D. Dingell, Ranking Member
U.S. House of Representatives Committee on Commerce
Fax: 202-225-2525
Re: Letter of July 13, 1995

YOU SHOULD RECEIVE 1 PAGE(S), INCLUDING THIS COVER SHEET. IF YOU DO NOT RECEIVE ALL THE PAGES, PLEASE CALL (616) 273-1415.

Dear Senator Dingell:

First of all, my apologies for not responding sooner to your letter of July 13, 1995. I, in my position of International Sales Manager with Armstrong International, Inc., have had numerous dealings with the Grand Rapids and also Detroit office for the U.S. Department of Commerce. Both offices have been most helpful to me in providing information to assist Armstrong in our International activities. Particularly, I've worked many times with Tom McGuire of the Grand Rapids office. Tom has been very, very helpful. I have attended seminars that have been held in Grand Rapids involving international business and Tom has visited me several times to discuss international activities.

Sincerely,

ARMSTRONG INTERNATIONAL, INC.



R. E. Masnari
International Sales Manager

REM/mm



Moti Enterprises International

July 18, 1995

Carl Levin
United States Senator
Carl Levin's Office
477 Michigan Ave. Room 1860
Detroit, Michigan 48226

Senate bill, s. 929, Elimination of department of commerce

Dear Senator Levin:

Moti Enterprises International & MEI-Financial Corporation have worked with Dean Peterson on a number of occasions. In our experience this relationship has been very beneficial to our company's, and our partners abroad.

Through the Detroit office of the Domestic Commercial Service, headed by Dean Peterson, MEI has been introduced to many of our current international customers and joint venture partners. On the suggestion of Mr. Peterson MEI executives have attended several different roundtable conferences, which have always led to furthering our customer base.

Personally I don't understand the argument that these export assistance programs constitute "corporate welfare," these programs have assisted MEI in exporting problems and concerns many times in the past. Without the help of these programs costly overruns, which we were able to avoid thanks to Mr. Peterson's staff, could have left MEI in serious financial trouble.

Please do what you can to save these vital and beneficial programs, I have worked personally with these agencies and can honestly say that they are extremely necessary to the future of small businesses in Michigan.

Sincerely,

Patrick A. Dell
Manager, International Operations

RECEIVED AUG 01 1995

OLIVER
PRODUCTS COMPANY

445 5th St., N.W., Grand Rapids, Michigan 49504-5298 • (616) 456-7711 • 800/253-3893

July 25, 1995

Honorable Carl Levin
United States Senator
110 Michigan Avenue, Rm. 134
Grand Rapids, MI 49503

Dear Mr. Levin:

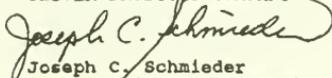
This letter is in response to your letter of July 11, 1995, regarding a 929, which would eliminate the Department of Commerce. Your specific request was for input regarding the termination of the Domestic Commercial Service.

Over the past ten years, I have gotten to know Mr. Tom Maguire, who heads up the Grand Rapids office of the U.S. and Foreign Commercial Service. He has been a big help to our company in passing on sales inquiries as well as getting us information on various country markets which we are attempting to enter. No doubt this assistance helped us earn Michigan's Exporter of the Year Award in 1992.

The office in Grand Rapids has been instrumental in helping develop an international mindset in West Michigan. Every year Mr. Maguire and his team spearhead the World Trade Week effort which has resulted in bringing numerous officials of the highest level from various countries for business meetings and training on international commerce. Since I do not know the exact cost of this office, I cannot respond thoroughly to the cost/benefit relationship. All I can do is inform you that the benefit from this office has been great for the community, and specifically helpful to us over the years.

Sincerely,

OLIVER PRODUCTS COMPANY



Joseph C. Schmieder
Vice President, Converting Business Unit

/abm



SOUTHWESTERN MICHIGAN COMMISSION

185 East Main St., Suite 701. Benton Harbor, Michigan 49022 4440
Phone 616/925-1137 · FAX 616/925-0288

Local Government Services · Regional Information Center · Regional Planning
Niles and Twin Cities Area Transportation · Criminal Justice Training
Human Resources Commission

20 July 1995

COPY

The Honorable John D. Dingell
United States House of Representatives
Committee on Commerce
Room 2125, Rayburn House Office Building
Washington, D.C. 20515-6115

Dear Representative Dingell:

Speaking for the Southwestern Michigan Commission, I thank you for your interest in evaluating the impact of the Economic Development Administration and other federal development programs. We consider ourselves a partner in the work of the federal government that provides economic expansion in our nation and communities.

The Southwestern Michigan Commission represents a voluntary intergovernmental coalition of three counties, comprising 88 local units of government, for the purpose of anticipating and addressing regional issues. We contribute a variety of services for technical and management assistance in local, state, and federal programs that meet established area-wide planning and development goals.

As an EDA Economic Development District, our organization has helped many communities bring about projects important to business development. For example:

- X The Cornerstone Industrial Park – a cooperative venture between The City of Benton Harbor and Benton Charter Township, constructed with \$438,000 in federal funds as part of a total \$730,000 investment that created 116 jobs in two new manufacturing companies.
- X The Niles Center for Business Development – a small business incubator with 30 current tenants that has already launched 27 "graduate" companies into the area, creating 129 jobs, from an initial \$400,000 federal grant that matched a \$100,000 community commitment.

· Berrien · Cass · Van Buren

Since 1982, approximately 2.3 million federal dollars leveraged \$3.1 million in public infrastructure investment for our region. It provided the needed seeds for countless dollars of private investment and growth. Without federal support, these successes would not have been achieved. In my own county, there waits an industrial/commercial business park that depends on a federal infusion of dollars to match limited local and state funds. The project will immediately create over 100 jobs in an area with unemployment nearly double that of the state.

Another part of EDA that provides immeasurable benefits to local communities is the Economic Development District program, of which SWMC is one. With 75 percent federal and 25 percent local funds, we can hire professional staff to carry out regional and local planning which helps ensure that local officials make careful decisions and spend federal, state and local dollars with the most effective results. It is one of few federal programs in which local needs determine all of the implementation activities. Without assistance, many of our communities would be technically unable use the programs and tools that allow them to prosper for little dollars that can be shared across three counties. An elimination of EDA and the district program, would create a gap in service delivery that is currently very critical in an era of a shrinking federal role. The district program could continue helping communities with necessary adjustments to a different circumstance.

I hope that we can count on your support for EDA and other federal planning and development programs. Please consider the Southwestern Michigan Commission a resource upon which you may call for additional information about how federal programs affect and improve our communities.

Thank you for your consideration.

Sincerely,



Wilbur Ingrham

Chairperson, Southwestern Michigan Commission
representing Van Buren County Board of Commissioners



WEST MICHIGAN SHORELINE REGIONAL DEVELOPMENT COMMISSION

Furthering the Goals of Regional Cooperation

July 17, 1995

The Honorable John D. Dingell
Ranking Member
U.S. House of Representatives
Committee on Commerce
Room 2125 Rayburn House Office Building
Washington, DC 20515-6115

Post-it® Fax Note	7671	Date	7/17	# of pages	3
To	Rep. John D. Dingell	From	Sandrup Day		
Co./Dept.		Co.	WMSRDC		
Phone #	202-225-3641	Phone #	616-722-7871		
Fax #	202-225-2525	Fax #	616-722-9362		

Dear Representative Dingell:

This is in reference to your letter dated July 14, 1995 with respect to legislation (House Bill, H.R. 1756) that has been introduced recently in the House of Representatives to abolish the Department of Commerce (DOC).

The West Michigan Shoreline Regional Development Commission, which represents 120 general purpose local governments in West Michigan, is opposed to the elimination of the United States Department of Commerce and its affiliated agencies. It is the Commission's position that the United States Department of Commerce is, amongst other things, performing a very important role in expanding investment opportunities for American corporations abroad. This in turn creates jobs for American workers and strengthens our national economy.

The Regional Commission is most familiar with the work of the United States Department of Commerce's Economic Development Administration, which has performed an extremely important role in our region in creating jobs for our local communities.

The West Michigan Shoreline Regional Development Commission is an Economic Development Administration (EDA) Economic Development District serving five counties and 120 local governments in our region. Our organization provides a variety of services including comprehensive community economic development planning, transportation planning, environmental management, housing, data center services, and others.

Our organization has been responsible for obtaining a number of important projects for our communities, including:

137 MUSKEGON MALL
P.O. BOX 387

MUSKEGON, MICHIGAN 49443-0387

(516) 722-7878
FAX (516) 722-9362

- The Muskegon County Smart Park[®], the first G I E SmartPark in Michigan, currently under construction with a \$950,000 EDA grant, is expected to create 540 new private sector jobs when fully utilized.
- The Port City Industrial Park in the City of Muskegon, which has benefited from three EDA grants totaling \$1.8 million, currently provides over 2,400 new private sector jobs.
- The Fremont Industrial Park, located in the home city of Gerber Baby Foods Inc., received a \$1.2 million EDA grant for a new industrial park which, when completed and fully utilized, will employ over 1,000 people.

Since 1975, we have been instrumental in leveraging small federal investments with local and private sector funds to stimulate private sector economic growth and job creation. Without the federal government's small but essential involvement, the projects mentioned above would not have been possible. A summary of all EDA funded economic development projects, leveraged funds and jobs created are attached in the enclosed summary.

Sincerely,



Raymond Rathbun, Chairman
West Michigan Shoreline
Regional Development Commission

Mayor, City of Fremont

RR:mas

Enclosure

West Michigan Shoreline Regional Development Commission
 Lake, Mason, Muskegon, Newaygo, Oceana and Ottawa Counties*
 EDA Funded Projects, 1968-1983**

Title and UPW Projects	Real Estate	County	Year	Total Amount	EDA Portion	Number of Jobs	Estimated other Investment
City Park	City of Hart	Oceana	1968	64,000	64,000	n/a	870,000
Sanitary Sewer	Village of Portwater	Oceana	1968	400,000	271,000	160	1,000,000
City Park	City of Hart	Oceana	1968	38,000	18,000	n/a	100,000
Sewers Collection/Disposal	Village of Shelby	Oceana	1968	1,310,000	1,048,000	78	2,800,000
City Hall	City of Muskegon Heights	Muskegon	1970	300,000	400,000	28	1,000,000
Sewer Collection Lines	City of Hart	Oceana	1973	100,000	200,000	100	2,000,000
Port City Industrial Park	City of Muskegon	Muskegon	1978	780,000	630,000	1,800	60,000,000
Nature Park	City of Muskegon Heights	Muskegon	1975	40,000	100,000	5	50,000
Muskegon College	Dorton Township	Muskegon	1976	107,000	107,000	n/a	1,000
Community School Service Building	Frudon Park Schools	Muskegon	1976	60,000	75,000	10	50,000
Aerobics/Club Improvements	Frudon Township	Muskegon	1976	60,000	35,000	10	160,000
Local Road Improvements	Frudon Township	Muskegon	1976	100,000	100,000	120	2,600,000
Local Road Improvements	Wagon Township	Muskegon	1976	60,000	75,000	15	1,000,000
Levin Ingleton Improvements	Lambert Township	Muskegon	1976	60,000	60,000	n/a	1,000
Marion Industrial Center	City of Horton Shores	Muskegon	1976	120,000	100,000	240	20,000,000
West Spring Lake Bridge	Spring Lake Township	Ottawa	1976	260,000	300,000	100	11,700,000
Industrial Park Development	Spring Lake Township	Ottawa	1976	40,000	300,000	200	20,000,000
Industrial Air Port	City of Grand Haven	Ottawa	1977	1,300,000	1,120,000	1,720	40,000,000
Industrial Park	Village of Shelby	Oceana	1977	800,000	314,000	100	10,000,000
Economic Adjustment Fund (EAF)	Muskegon County	Muskegon	1977	1,500,000	1,300,000	300	10,800,700
Industrial Park	City of Muskegon	Muskegon	1979	400,000	210,000	300	10,000,000
Energy Management (EMW)	Muskegon County	Muskegon	1980	400,000	300,000	5,000	270,000,000
Water/Sewer Improvements	City of Muskegon	Muskegon	1980	600,000	300,000	300	100,000,000
Utilities Improvements	City of Muskegon Heights	Muskegon	1980	600,000	400,000	100	50,000,000
Marine Corridor	City of Grand Haven	Ottawa	1983	700,000	500,000	75	7,500,000
Water System Expansion	Alameda Township	Ottawa	1984	600,000	270,000	60	6,500,000
Industrial Utilities Improvement	City of Whitefish	Muskegon	1984	600,000	400,000	3,700	120,000,000
Industrial Park	Island Township	Ottawa	1985	780,000	400,000	2,000	200,000,000
Reversing Lean Fossil	Oceana County	Oceana	1986	100,000	80,000	200	12,800,000
Access Road	City of Muskegon	Muskegon	1986	610,000	671,000	170	14,500,000
Wastewater Treatment Plant Expansion***	City of Hart	Oceana	1986	600,000	600,000	80	1,300,000
Business/Industrial Park	City of Grand Haven	Ottawa	1986	600,000	300,000	400	30,000,000
Water/Sewer Plant Improvements	Alameda Charter Township	Ottawa	1989	1,000,000	600,000	300	60,000,000
Water System Expansion***	City of Muskegon	Muskegon	1989	600,000	540,000	190	30,000,000
Water System Expansion	Muskegon County DPW	Muskegon	1990	600,000	300,000	600	50,000,000
Robert's Street Corridor***	City of Muskegon	Muskegon	1992	600,000	670,000	190	10,000,000
Industrial Park***	Pine Marquette Township	Mason	1992	1,200,000	730,000	170	10,000,000
Technical Training Center	West Shore Community Coll	Mason	1992	2,100,000	780,000	60	11,000,000
Marion Industrial Center, Phase II	City of Horton Shores	Muskegon	1993	600,000	370,000	140	22,000,000
GTE "Smart Park"***	County of Muskegon	Muskegon	1993	1,200,000	600,000	800	80,000,000
Industrial Park***	City of Protost	Newaygo	1994	1,000,000	1,200,000	1,000	40,000,000
Airport Terminal Construction***	County of Muskegon	Muskegon	1994	800,000	750,000	100	20,000,000
Total of 41 projects				22,470,304	21,919,140	22,700	21,400,000,000

* - Lake, Muskegon, Newaygo, Oceana and Ottawa Counties.

** - Assume Development 1980-1985.

*** - Based on 1980-1985, 1980-1985 Economic Review and Projections.

Source: West Michigan Shoreline Regional Development Commission

DENNIS W. ARCHER, MAYOR
CITY OF DETROIT
EXECUTIVE OFFICE

1126 CITY-COUNTY BUILDING
DETROIT, MICHIGAN 48226
PHONE 313-224-3400
FAX 313-224-4128

July 25, 1995

The Honorable John Dingell
2328 Rayburn House Office Building
Washington, D.C. 20515

Dear Congressman Dingell:

As you know, Congressman Dick Chrysler and Senator Spencer Abraham have introduced identical bills to eliminate the Department of Commerce. I write to advise that I respectfully but vigorously oppose this legislation. The Department of Commerce's purpose and programs have benefitted both the State of Michigan and our cities.

The State of Michigan, for example, has 2,000 clients in the Department of Commerce's regional Grand Rapids and Detroit offices. These clients helped Michigan account for \$36.8 billion in export sales in FY 1994. These exports helped to support 513,900 jobs in the State of Michigan. Without the Department of Commerce, many small- to medium-sized businesses would not be able to broaden their horizons, expand their operations, or create more jobs in the State of Michigan.

The Greater Detroit metro area had export sales of \$19.5 billion in 1993. This total includes automobiles, industrial machinery, fabricated metal products, and electric and electronic equipment. Detroit, along with the cities of Pontiac, Fremont, and Saginaw, received four of the 27 Economic Development Administration's grants to the State for FY 1994, which totalled \$17.4 million. These grants go directly to municipalities for short- and long-term economic development.

The Department of Commerce has been a job-creation machine for the State of Michigan and our cities. Please review the enclosed information. If some aspect within the auspices of the Department of Commerce needs to be fixed, let's fix it. Elimination of the Department of Commerce is not the answer. Local and state elected officials already know of the fruit borne of the broad economic development missions, goals and achievements of the Department of Commerce, and I firmly oppose legislation eliminating this agency.

With warm regards.

Sincerely,



Dennis W. Archer
Mayor

East Central Michigan Planning & Development Region



July 20, 1995

3535 State Street
Saginaw, MI 48602

Telephone:
(517) 797-0800

Fax:
(517) 797-0896

Rideshare:
(517) 797-0885

The Honorable John D. Dingell
Ranking Member
U.S. House of Representatives
Committee on Commerce
Room 2125 Rayburn House Office Building
Washington, D.C. 20515-6115

Dear Representative Dingell:

This letter is in reference to H.R. 1756 recently introduced in the House of Representatives to abolish the Department of Commerce. The East Central Michigan Planning and Development Regional Commission which represents 338 local governments in Michigan is opposed to the elimination of the U.S. Department of Commerce and its subsidiary agencies. It is our Commission's perception that the U.S. Department of Commerce performs an important role in expanding investment opportunities for American businesses abroad. This in turn, creates jobs for American workers and strengthens our domestic economy.

Our Regional Commission has worked closely with the U.S. Department of Commerce's Economic Development Administration (EDA). The EDA has been of strategic importance to our Region by creating jobs for our local communities. The East Central Michigan Planning and Development Regional Commission is an EDA Economic Development District which serves fourteen counties, their 324 sub-county local governments and one tribal government. Our organization provides a variety of services to these communities and their businesses including comprehensive economic development planning, transportation planning, environmental management, rideshare coordination, demographic services and governmental planning.

Our Region has been responsible for developing a number of vital projects for our member communities, such as:

The Iosco County Wurtsmith AFB Conversion Title IX grant of \$9,717,500 has created 644 of the 700 civilian jobs lost in 1993. American International Airways employs 325 persons with 50 more jobs projected after a \$2.6 million expansion. The Bounty Division of AIA converts passenger planes to cargo jets.

*Arenac
Bay
Clare
Gladwin
Gratiot
Huron
Iosco
Isabella
Midland
Ogemaw
Roscommon
Saginaw
Sanilac
Tuscola*

The City of Alma Industrial Park received two EDA grants of \$578,680. This Certified Park has Alma Products Co. and United Technologies Corp. employing 811 persons in its expanded North Section. The older South Section has Lobdell-Emerly Mfg. Co. and Total Petroleum, Inc. employing 880 persons.

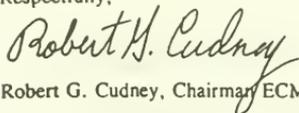
The City of Mt. Pleasant has received \$1,182,080 from EDA for its Research Technical Park and its Industrial Park. The parks employ 341 persons in their initial companies CME Corporation, Maple Roll Leaf and TB Woods & Sons Co. The Middle Michigan Development Corporation attracted the former two companies from Japan and Canada respectively with Department of Commerce assistance.

The Village of Deckerville has been able to retain 520 jobs at Dott Industries, Inc. and Newcor, Inc. with an EDA \$361,152 Water System Project Grant. The former industry was able to create 75 new jobs when unemployment was at 16% in Sanilac County.

In the early 1980's our staff documented a loss of 11,283 jobs in our Region. We subsequently obtained an EDA Revolving Loan Fund (RLF) called the Auto Community Adjustment Program (ACAP). We have loaned and re-loaned the \$375,000 RLF to create or save 457 jobs, leveraging \$9.4 million in private capital. The ratio of Federal dollars to jobs is merely \$821 per job.

If you combine all the jobs and grant dollars above, each job averaged only \$3,211 in federal dollars. Since 1973 over \$62 million in EDA grant funds for our local communities has been responsible for over 20,000 jobs in East Central Michigan. EDA is needed as a stimulus for private sector job development since the 1990's downsizing of General Motors Corporation and the resulting pool of highly qualified workers.

Respectfully,



Robert G. Cudney, Chairman ECMPDR

Vice-Chairman, Iosco County Board of Commissioners

RGC/ls

cc: Rep. James A. Barcia, Rep. David E. Camp

NORTHWEST MICHIGAN

Council of Governments

Connecting People With Progress

Chairman
Donald R. Smith

Director
Alton M. Shipstead



Employment & Training
Economic Development
Regional Planning & Development
Information Services
Community Corrections

July 17, 1995

The Honorable John D. Dingell
Ranking Member
U. S. House of Representatives
Committee on Commerce
Room 2125 Rayburn House Office Building
Washington, DC 20515-6115

Dear Representative Dingell:

In your deliberations towards reducing the budget deficit and the elimination of various departments and agencies, I would direct your attention at what the Department of Commerce (DOC) and their Economic Development Administration (EDA) has accomplished in the past 30 years in Northwest Michigan.

Beginning in September 1965 to the present, EDA has injected \$18,880,000 in grant funds to the region. This was matched by the private sector and local governments in the amount of \$20,120,000 for a grand total of \$39,000,000. Of these funds, \$1,171,625 or 3% were used by the regional planning agency for administration and the remainder was used for infrastructure.

The infrastructure projects ranged in scope from simple water tower projects in small rural villages to multi-million dollar industrial parks that fostered economic growth and the provision of good jobs for the region's workforce.

I urge you to consider carefully the impact the DOC and EDA has had on our region and then cast your vote accordingly. Thank you for your time and interest.

Sincerely,

Richard J. Beldin
Associate Director
Economic Development

REGIONAL
A WYSI Agency

Antrim • Benzie • Charlevoix • Emmet • Grand Traverse • Kalamazoo • Leelanau • Manistee • Muskegon • Wexford

P.O. Box 506 • Traverse City, MI 49685-0506 • Phone: (616) 929-5000 • Fax: (616) 929-5012

LANSING

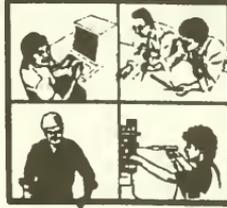
REDT

REGIONAL ECONOMIC DEVELOPMENT TEAM

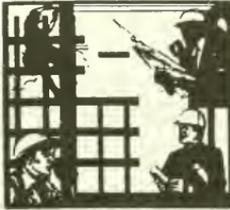
July 18, 1995

The Honorable John D. Dingell
U. S. House of Representatives
Committee on Commerce
Room 2125 Rayburn House Office Bldg.
Washington, DC 20515-6115

Dear Rep. Dingell.



Creating good private sector jobs is the best way to increase the welfare of our citizens without



dependance on handouts. With the help of the *Economic Development Administration (EDA)* our development district of Clinton, Eaton and Ingham counties has rebounded from the devastating recession in the auto industry during the 1980s and General Motor's consequent downsizing actions.

The Tri-County Regional Planning Commission (TCRPC) and the Lansing Regional Economic Development (RED) Team are working hard to leverage small federal investments with local and private sector funds to stimulate economic growth and job creation. These good paying manufacturing and base industry jobs are created with public private cooperation on infrastructure development.

We are committed to EDA's philosophy of cooperative and regional approaches to urban/suburban/rural development issues that eliminate duplication of services and costly "turf war" behavior. EDA is leading the way on regional cooperative efforts to retain, expand and attract jobs.

EDA gets people off public bankrolls and on private payrolls.
Invest in infrastructure not the welfare structure.

Help people work for their pay - keep EDA !

Sincerely,

Jon W. Coleman, Chair/Executive Director

Capital Region Airport
Authority

Delta Charter Township

City of Lansing

Lansing Regional Chamber
of Commerce

Michigan State University

County of Clinton

County of Eaton

Lansing Board of Water
and LightLansing Tri-County Emp. &
Training Part. & PICMichigan Technology
CouncilConsumers Power
Company

County of Ingham

Lansing Community
College

Meriden Charter Township

Tri-County Regional
Planning Commission



Western Upper Peninsula
Planning & Development Regional Commission

P.O. BOX 365 • HOUGHTON, MICHIGAN 49931
906-482-7205 • FAX 906-482-9032

May 11, 1995

Senator Carl Levin
459 Russell Senate Office Building
Washington, D.C. 20510-2201

Dear Senator Levin:

The Western Upper Peninsula Planning and Development Region is an Economic Development Administration (EDA) Economic Development District serving the six western counties and 69 local governments in Michigan's Upper Peninsula. This region of Michigan has not kept pace with the economies of Michigan or the nation and continues to have very high poverty rates, unemployment rates and a declining population. Communities are not able to improve, expand or even maintain infrastructure needs with their current economic base and population.

The Economic Development Administration has played a vital role in economic development and job creation. EDA has invested more than \$23 million in projects in our region and provides an essential source of funds to rural communities. Without EDA assistance with industrial parks, infrastructure and revolving loan funds our economy and employment opportunities would be extremely depressed.

Our Commission, representing local units of government, strongly encourages your support for continuation of the Economic Development Administration in the federal government budget process. We need federal programs like EDA to continue in partnership with State, local and private investment to provide economic incentives that have been proven to work in stimulating growth, creating jobs and generating revenues. We have a long way to go and need EDA programs to assist us in improving our economy.

Thank you for your consideration of this request.

Sincerely,

Gerald Perreault,
Chairperson

GP/skh

**WEST MICHIGAN REGIONAL
PLANNING COMMISSION**

June 23, 1995

RECEIVED JUL 20 1995

The Honorable Carl Levin
U.S. Senator
459 Russell
Senate Office Building
Washington D.C. 20510

Dear Senator Levin:

This letter is to inform you that the West Michigan Regional Planning Commission (WMRPC) has completed its 1995 Annual Report for its Overall Economic Development Program (OEDP) under the U.S. Economic Development Administration (U.S. EDA).

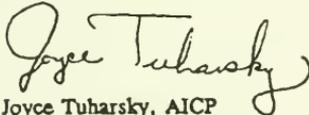
The Report serves to assess economic successes and opportunities within the WMRPC (Region 8) service area, which includes the counties of Allegan, Ionia, Kent, Mecosta, Montcalm, Osceola, and Ottawa.

Our 1995 Report identifies 101 proposed public improvement projects, any of which, if implemented would help fulfill the economic development goals of the Region. Enclosed is a list and brief description of these projects by county. Also, enclosed are excerpts from the Report which discuss the progress in economic development which has taken place during the past year within each of our counties.

As you are probably aware, there are proposals in the U.S. Congress to abolish EDA. This is of great concern to our local communities. EDA is one of the last remaining programs (either at the federal or state level) which provides seed money for local economic development projects, particularly for public infra-structure improvements needed to support business growth and job creation in West Michigan.

Any efforts on your part to assure that communities have adequate tools to encourage economic development would be greatly appreciated. We are also very interested in pursuing implementation of the very important projects identified on the enclosed list.

Sincerely,



Joyce Tuharsky, AICP
Director



Great Lakes Commission

The Argus II Building ☐ 400 Fourth St. Ann Arbor, Michigan 48103-4816
Office (313) 665-9135 ☐ Fax (313) 665-4370 ☐ E-mail: glc@great-lakes.net

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MICHAEL J. DONAHUE, Ph.D.

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Environmental Resources
Harrisburg, Pennsylvania

NATHANIEL E. ROBINSON
Wisconsin Dept. of
Administration
Madison, Wisconsin

July 20, 1995

The Honorable John Dingell
United States House of Representatives
House Office Building
Washington, D.C. 20515

Dear Representative Dingell:

On behalf of the eight Great Lakes states, I am writing to urge your support for continuation of the Department of Commerce's National Telecommunications and Information Administration (NTIA). This program provides funding for the Great Lakes Information Network (GLIN), a critical regional initiative spearheaded by the Great Lakes Commission, an interstate compact agency founded in state and federal law.

GLIN is a collaborative project of agencies and organizations in the binational Great Lakes region to link data, information and people via the Internet, and is one of the nation's first regional efforts to implement the "National Information Superhighway" concept embraced by both the Administration and Congress. GLIN enhances communication and information sharing by providing quick and easy access to current data as well as to researchers, policymakers, and the entire community of Great Lakes interests, including individual citizens. Its data and information services span environmental quality, resource management, transportation, demographic and economic data and more in the Great Lakes region of the United States and Canada.

By funding GLIN, the NTIA provides the following benefits:

- Assists U.S. federal agencies in fulfilling binational commitments under the International Boundary Waters Treaty of 1909 and the U.S.-Canada Great Lakes Water Quality Agreement by providing an open line of communication between the two federal governments, thus enhancing program coordination and joint initiatives.
- Streamlines government and organizational operations by providing a simple, cost-effective method for conducting business and sharing information among both colleagues and the general public. This benefit is especially important in times of fiscal austerity, when organizations must ensure the greatest results for dollars spent.
- Strengthens partnerships between state, provincial and federal governments; business and industry, and citizen groups in the binational Great Lakes region. Specifically, NTIA support has and will continue to assist us in advancing partnerships for cleanup of Areas of Concern, interstate air quality initiatives, pollution prevention, regional economic development and promotion, and many other applications.

Established in 1955 by interstate compact "to promote the orderly, integrated and comprehensive development, use and conservation of the water resources of the Great Lakes Basin."

- Leverages financial and in-kind support from agencies and organizations in the region. Our NTIA grant has leveraged significant additional support from GLIN partners in the form of labor, equipment allocation and development of Internet servers. In addition, NTIA support has induced other agencies and organizations to provide financial backing, including the U.S. Environmental Protection Agency, U.S. Army Corps of Engineers and Council of Great Lakes Governors.

Thanks to our NTIA demonstration grant, GLIN is being successfully emulated in other regions of the country.

Your leadership and support on this matter are very much appreciated.

Sincerely,



Michael J. Donahue, Ph.D.
Executive Director



July 17, 1995

John D. Dingell
 U.S. House of Representatives
 Committee on Commerce
 Room 2125, Rayburn House Office Building
 Washington, DC 20515-6115

Public Broadcasting Services
 Public TV 13 & Public Radio 90
 1401 Presque Isle Avenue
 Marquette, MI 49855-5156
 906-227-WNMU
 800-227-WNMU
 FAX 906-227-2905

Dear Representative Dingell:

Thank you for your initiative to check with your constituents regarding something as important as upcoming HR 1756 designed to abolish the Department of Commerce. I am pleased that you had the insight to ask public broadcasters regarding the support they have received over the years through the Department of Commerce and through NTIA. Many of us have also had support from TILAP as well.

I've been a public broadcaster in Michigan since 1970 and have been the general manager of the Marquette-based stations for the past 15 years. It is clear to me that we would never have been able to establish and maintain broadcast facilities to serve the modest populations in the Upper Peninsula without some significant help from both the Department of Commerce. This help came initially for our transmitter grant in 1972 and then for continuing upgrading of old equipment through NTIA. Ironically, we are presently completing an NTIA grant to replace the production switcher and engineering monitoring facilities of WNMU-TV. In effect, we are replacing a 17-year-old switcher used to produce all of our local programming. Without NTIA's help, this \$75,000 acquisition would have been way beyond our reach.

On another front, the NTIA has funded an educational microwave system which we use to interconnect the four central cities of Escanaba, Iron Mountain, Houghton and Marquette. This provides us with a network for communications among these population centers on behalf of government, K-12 schools, postsecondary institutions, and the general population.

I am very much in favor of continuing the Department of Commerce, so that the good works registered in the past may continue.

Sincerely,

Scott K. Seaman
 General Manager

SKS/bp



MICHIGAN
ASSOCIATION
FOR LOCAL
PUBLIC HEALTH

Executive Director
Mark J. Bertler

July 19, 1995

The Honorable John D. Dingell
U.S. House of Representatives
Committee on Commerce
Minority Counsel
2322 Rayburn House Office Building
Washington, D.C. 20515

35 JUL 27 11:10:00
JOHN D. DINGELL
U.S. HOUSE OF REP.

Dear Representative Dingell,

I am forwarding my comments regarding the Committee's deliberations on H.R. 1756 which would abolish the U.S. Department of Commerce and eliminate the National Telecommunications and Information Administration (NTIA). I won't claim to be an expert on national telecommunications policy. I am, however, very concerned that proposed legislation eliminating or curtailing NTIA could have a serious negative impacts on Michigan's citizens.

Our organization, the Michigan Association for Local Public Health, represents all 50 of Michigan's city, county and district public health departments which cover all 83 counties in our state. In 1994 we were the recipient of a Telecommunications and Information Infrastructure Assistance Program (TIAP) grant. This grant, matched by State of Michigan general fund resources, provided direct and immediate benefits to local governments throughout the state and continues to promote the health of Michigan's citizens. The grant is helping to build an information exchange infrastructure connecting all 50 local health departments and the Michigan Department of Public Health. This project will allow virtually all of Michigan's thousands of Public Health professionals to better collaborate, share vital health information, conduct research between and among jurisdictions, as well as providing easier access to innumerable state and federal databases. In addition this project is increasing contact between public health professionals and the general public via electronic communication and the Internet.

Providing this technological assistance was a great boon to our state, yet NTIA's assistance went far beyond merely funding to make the program an even greater success. By exhibiting the all too rare phenomenon of interagency cooperation, NTIA was able to coordinate its program with the Statewide Immunization Information System (SIIS) project administered by the Centers for



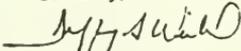
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P.O. Box 13276 ♦ Lansing, Michigan 48901 ♦ (517) 485-0660
215 North Walnut ♦ Lansing, Michigan 48933 ♦ (517) 485-6412 Fax

Disease Control and Prevention (CDC). This cooperation helped serve the additional goal of building the electronic infrastructure to support Michigan's proposed statewide immunization registry. It is indeed refreshing to find that government projects don't always have to be in competition or conflict but can (and do) cooperate to assist state and local units of government in a coordinated fashion.

We have been very pleasantly surprised in our dealings with NTIA staff at the Department of Commerce. We have found them to be professional, accessible, knowledgeable and to respond in a timely fashion. We found NTIA's grant process to be very fair and workable. It would truly be a shame to eliminate a program that does such good work to ensure that our national information infrastructure will continue to serve the public good, especially by improving the health of Michigan's citizens.

Sincerely,



Jeffrey S. Wehl
Sr. Data Analyst
Michigan Association for
Local Public Health

cc: Steven Downs, U.S. Dept. of Commerce
David McLaury, Michigan Dept. of Public Health

FVEFPTBAFNL756 LTR



W T V S

July 20, 1995

The Honorable John D. Dingell
U. S. House of Representatives
2328 Rayburn HOB
Washington, D.C. 20515

Dear Congressman Dingell:

Thank you for the opportunity to apprise you of the importance the Department of Commerce (DOC) has to WTVS and the effect its elimination by H.R. 1756 would have on our operation. This station and all of public broadcasting consider DOC's National Telecommunications and Information Administration (NTIA) our second most important source of federal support after the Corporation for Public Broadcasting (CPB).

Just as CPB assists public broadcasting by partially funding program production expenses (software), NTIA, through the Public Telecommunications Facilities Program (PTFP), assists with partial funding for broadcast operations equipment (hardware). Public broadcasting's ability to reach 99% of America with a non-commercial signal could not have happened without PTFP's partnership in the purchase of such or, as regards WTVS, most of our broadcast hardware.

Given the extent to which WTVS and other public broadcasting entities rely on PTFP to maintain and upgrade our increasingly expensive technical base, the loss of that support would quickly impair our production and broadcast capability and severely curtail plans to convert from analog to digital broadcast technology.

PTFP funding is essential if public broadcasting is to be kept on a level playing field with our commercial counterparts. Like any high-tech industry, broadcast efficiency (radio or television) is based on constantly evolving technology. Just as each successive generation increases capacities and/or capabilities, its cost increases proportionally. Commercial broadcasters have an open and expanding revenue base with which to replace and/or upgrade

Congressman John D. Dingell
 July 20, 1995
 page 2.

equipment. Public television stations, like WTVS, subsist on nearly "fixed incomes." Our increments of growth (slow and small in the best of times) are quickly reversed when negative local and/or national economic fluctuations adversely affect the contribution behavior of viewers, businesses and foundations on which we depend. As a result, public broadcasting can't possibly keep pace with ever-inflating replacement costs, and certainly not more costly technology upgrades.

WTVS has greatly benefited from PTFP during our fifteen year funding history. Since 1980 PTFP has awarded WTVS with five grants totaling \$1,336,597 to purchase \$1,804,542 in equipment. After extensive evaluation, PTFP determined that each of these purchases was essential to provide southeast Michigan with a quality service (see attached list).

PTFP has shown unusual sensitivity to local economic conditions and variances in their deliberations. Given the recession and loss of manufacturing jobs metropolitan Detroit experienced during the '80s and the industrial downsizing of the '90s, PTFP not only acknowledged that these purchases were imperative, but more importantly, comprehended that those replacements would have been impossible without their assistance.

In addition, WTVS has sought funding from two other important NTIA sources. First, the station considers the Endowment for Children's Educational Television (NECET) indispensable for expanding opportunities to develop new, creative and meaningful children's programming. While our 1992 application was unsuccessful, the existence of NECET is important because it encourages producing public stations like WTVS to use the medium to educate our nation's youth.

Second, WTVS has also submitted two applications to the Telecommunications and Information Infrastructure Assistance Program (TIIAP). These proposals seek to setup, train and operate nine Internet/World Wide Web connected computer public access sites in several of metro Detroit's neediest and most disadvantaged areas. Without a government agency like TIIAP emphasizing community service and education programs, the superinformation highway will assuredly bypass poor inner cities and urban areas.

Congressman John D. Dingell
July 20, 1995
page 3

Regarding the final two areas of your inquiry, the Telecommunication Demonstration Act and Section 210 of H.R. 1756 which transfers spectrum management to the FCC, WTVS does not have a position or interest in those considerations.

In conclusion, WTVS considers DOC's NTIA, PTFP, TIIAP and NECET essential programs that should continue to be funded. If relocation of NTIA is proposed and considered, WTVS has no preference for its placement, but we hope the program remains intact.

Again, thank you for an opportunity to assist you in this matter.

Warm regards,



Robert F. Larson
President and
General Manager

Attachment

cc: Bob Scott
Dan Alpert
Dan Krichbaum
Nancy Ewing
Jo Trainor
Clarence Abram
Janis Hazel

HISTORY OF PTFP GRANT AWARDS TO WTVE

<u>Year</u>	<u>Grant #</u>	<u>Total Project</u>	<u>PTFP Award</u>	<u>WTVE Share</u>
1980-3 (Transmitter & antennae)	04808	\$300,000	\$300,000	
1986-7 (Studio Switcher, studio console, Three lighting dimmer)	66153	\$259,385	\$177,000	\$82,385 Three - 1" Videotape recorders
1990 (4 - studio cameras and studio lighting equipment)	90068	\$523,150	\$392,000	\$131,150
1991 (Broadcast operations amplifiers, master control switcher and related equipment)	91119	\$426,375	\$319,781	\$106,594
1994 (2 - Betacam SP field production cameras, lighting and sound equipment, 6 studio and edit Betacam SP recorder/players)	94096	\$295,632	\$147,816	\$147,816
<hr/>				
TOTAL PTFP GRANTS RECEIVED:				
	FY 80-95	\$1,804,542	\$1,336,597	\$467,945

WTVE GRANT APPLICATIONS UNDER CONSIDERATION BY MTIA

PTFP				
1995 (Ku digital uplink, emergency backup generator for broadcast tower, studio control switcher and character generator)	95220	\$657,670	\$493,252	\$164,418
<hr/>				
TIIAP				
1995 (9 computer public access sites with training component)	951571	\$510,266	\$253,746	\$256,520
<hr/>				
TOTAL MTIA GRANTS UNDER CONSIDERATION				
		\$1,167,936	\$746,998	\$420,938

Z PACE

Telecommunications

Consortium

Providing Academics Cost Effectively

6085 Learning Lane • Indian River, MI 49749
Director, Jack A. Keck • (616) 238-9394 • FAX (616) 238-7153

July 21, 1995

Honorable John D. Dingell
Ranking Member
Committee on Commerce
U.S. House of Representatives
Committee on Commerce
Room 2322, Rayburn House Office Building
Washington, DC 20515-6115

Dear Honorable Dingell:

PACE Telecommunications is an educational television network that serves the school districts and communities in six counties in northern Michigan: Charlevoix, Emmet, Cheboygan, Otsego, Presque Isle, Antrim. Over its four channels (three into the schools and one into the homes as well), it transmits high school classes, elementary level classes, college courses, programming of general interest, professional development and community awareness. PACE utilizes both nationally downlinked as well as locally-produced programming. It reaches 16 school districts, 2 intermediate school districts and approximately 16,000 cable subscribers and interacts with the local community college.

Through a NTLA/PTFP grant through the U.S. Department of Commerce in 1990 and again in 1994, PACE Telecommunications has been able to support educational needs via the information highway and accomplish what it set out to do as defined in its narrative in these grants:

Construction of the public telecommunications facilities proposed in this application is critical at this time for the following reasons:

--Local educational agencies, the general public, businesses, and governmental agencies firmly believe that advanced high school courses are essential to permit the area to compete and develop economically. The proposed telecommunications system meets this need cost-effectively, efficiently, and with public acceptance.

--Construction and integrated networking of ITFS, microwave, and cable facilities is needed to correct the existing condition of students graduating from high schools without adequate advanced courses in math, science and language. The absence of advanced courses limits the economic growth of the area, ensures future unemployment, and leads to larger long-term social program costs.

Cheboygan-Otsego-Presque Isle ISD
6085 Learning Lane
Indian River, MI 49749

James Mich, Superintendent

Charlevoix-Emmet ISD
60508 Marver Boulevard
Charlevoix, MI 49728

Mark Eckhardt, Superintendent

North Central Michigan College
1618 Howard Street
Petoskey, MI 49770

Paul D. ...

Hon. John D. Dingell
 July 21, 1995
 Page Two

--The area suffers from an unusually high unemployment rate and is economically depressed (see exhibit N). Adult education, inservice and job re-training activities will be offered by the project for the first time to the community at large.

--The project, if delayed, will result in substantially greater costs to the local area as the school districts struggle to use alternate and more costly methods in the delivery of instructional programs. Major engineering, site selection, cooperative planning, and program development have been accomplished. If progress toward construction and implementation of the project is not accomplished in the planned time span, confederal matching funds will be depleted due to expenditures on less-effective alternatives.

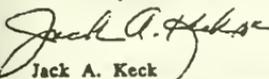
Implementation of the above objectives has benefitted the entire community, not just the schools. Business/industry, profit/nonprofit, governmental/nongovernmental and public/private have all been recipients of educational resources PACE has provided via ITFS, cable, compressed and microwave communications.

Because of PACE Telecommunications' receiving financial support in the form of these grants from the NTIA/PTFP sections of the Department of Commerce, it has been able to interconnect 16 school districts and reach home viewers totalling approximately 16,000 subscribers. Without the cooperation and valuable long-term experience of the department's personnel, PACE Telecommunications would have been unable to fulfill an ethical obligation to its community.

The Department of Commerce has a proven track record as is evidenced by their ability to evaluate from experience the probability of grant proposals to succeed, and hence, to approve those applications. However, the FCC has a proven track record regulatory in nature only. In addition, they are understaffed and already carry an overwhelming workload. Therefore, the FCC does not appear to be the appropriate agency to handle large grant applications. And, combining these two agencies would create inefficiency and greater delays, which would cause hardship to those applying for grants.

From the perspective of PACE Telecommunications Consortium, maintaining the present organizational structure of the Department of Commerce and the FCC is desirable. The NTIA/PTFP housed under the Department of Commerce allows for organizations such as PACE Telecommunications to serve its community. Changing that approach would most likely endanger PACE's ability to provide its community with necessary educational input.

Sincerely,



Jack A. Keck
 Director

JAK:jk

BLUE LAKE

public radio

TWIN LAKE, MICHIGAN 49457

WBLV FM 90.3, TWIN LAKE / MUSKEGON
(616) 894-2616

WBLU FM 88.9, GRAND RAPIDS
(616) 458-9258

July 20, 1995

The Honorable John D. Dingell
Ranking Member
U.S. House of Representatives
Committee on Commerce
Room 2125, Rayburn House Office Building
Washington, DC 20515-6115

Dear Mr. Dingell:

Thank you for inviting us to comment on the H.R. 1756 and its possible impact on public radio. I am sure you are aware that many public stations like ours exist in part due to the NTIA PTFP program. Equipment to first establish Blue Lake Fine Arts Camp's public radio station 13 years ago was financed primarily by a PTFP grant. In addition, we are able to compete technically in the marketplace as a result of equipment purchases through the program. As older equipment wears out and new technical developments appear, we have used the PTFP program to update and upgrade. Blue Lake Public Radio serves residents in 10 Western Michigan counties, many of whom would not otherwise be able to hear the type of cultural and informational programs that we provide.

Blue Lake Public Radio has received five PTFP grants totaling \$220,621. The grants generated \$94,055 in local matching funds. Many of the equipment purchases also generated income for local providers and, of course, manufacturers.

We feel strongly that public broadcasting is an important part of our cultural, political, and economic landscape. I know that it's popular now in some circles to denigrate public radio and television, but the fact is that a majority of Americans supports federal funding of them, and the positive impact of public broadcasting on our society over the last 25 years is undeniable. Commercial broadcasters, one of whom I was for the better part of 25 years, cannot and will not do what public broadcasters do every day -- that is to bring the American people programming that stimulates, educates, entertains and enlightens without commercial influence. We do this for every American who chooses to listen or watch... without regard to

economic standing, political leaning, racial or ethnic background, or educational attainment. Those who would set public broadcasters apart as some sort of elitist group do not understand the very basis of our mission... to provide this culturally significant material to as many people as will listen or watch... to broaden the horizon of American culture... and to encourage everyone to use their minds, think for themselves and explore new ideas.

Yes, there are many things wrong with our government, but financial assistance for public broadcasting is not one of them. We strongly encourage the committee to defeat any attempt to weaken the public broadcasting system by eliminating the NTIA and its programs.

Sincerely,

A handwritten signature in black ink, appearing to read "Dave Myers", with a long horizontal flourish extending to the right.

Dave Myers
General Manager

VIA FACSIMILE

July 19, 1995

Representative John Dingell
Committee on Commerce
Room 2125
Rayburn House Office Building
Washington, D.C. 20515-6115

Dear Representative Dingell:

Thank you for your letter of July 14, and for the opportunity to comment on H.R. 1756, regarding the U.S. Department of Commerce.

It is my understanding that H.R. 1756 proposes to eliminate the National Telecommunications and Information Administration (NTIA), which provides equipment money to public radio and television stations around the country. I am very concerned about the loss of NTIA funding, which at the least is critical to the maintenance of the existing public radio and television infrastructure.

Further, with the development of new technologies, such as enhanced and high definition television, digital radio, multichannel services and other systems, NTIA funding is essential in providing the ever important seed money for stations to incorporate this technology. Past performance is indeed impressive. Public Radio and Television developed, and were the first to distribute programming via satellite; a common industry wide practice today. Public stations have in the past, and continue to develop new and unique program services that are only copied by the "private sector" stations.

Locally, funding through the Public Telecommunications Facilities Program has given Central Michigan University the opportunity to provide public radio and television service to unserved areas that could not receive programming through a locally licensed independent entity. In addition to the construction of the radio and television facilities in Mt. Pleasant, NTIA funds allowed us to provide radio and/or television service to residents in and around Alpena, Traverse City, Sault Ste. Marie, Bay City, Cadillac, and Manistee.

I realize that the proposed elimination of NTIA is part of a larger concern: the future of public broadcasting in general. It has been said that public broadcasting programming can be better produced and distributed by the "private sector." Watching and listening to the programming available on commercial broadcasts, cable, and satellite underscores the fact that the "private sector" is unwilling to produce high

quality educational material for general and target audiences. Talk shows dealing with incest and adultery, dramas laced with violence and human misery, sensational gossip productions, mindless cartoons, and radio talk show hosts spitting out their venomous hatred prove beyond a shadow of a doubt that the United States must preserve this precious public resource called public broadcasting. This preservation is accomplished through continued facilities funding through NTIA coupled with tamper proof funding for programming and production through the Corporation for Public Broadcasting. Certainly commercial broadcasters are capable of producing high quality educational material, but they are unwilling to accept the mandate. As profit making entities, commercial broadcasters should not be expected to produce these programs. Public broadcasters, on the other hand, accept the challenge and willingly develop new and innovate programming, not because there is a federal mandate, but because it is their mission.

NTIA funding fosters regional and local programming and public access. Reduction or elimination of these funds contributes to the danger that many public stations will be forced to cease operations, thereby taking away service to many smaller communities.

It is interesting to note that sections of H.R. 1756 would transfer existing (or remaining) NTIA functions to the Federal Communications Commission. This would place an undue burden on the Commission, by diverting staff away from regulatory functions. It is my understanding that the proposal to eliminate the Federal Communications Commission has been put forth by some members of Congress. Let me remind those who are students of history to examine the reason why the FCC (then Federal Radio Commission) was established in the first place: to make order out of the chaos that existed in an unregulated environment, when spectrum space was treated as personal property, and infringement by early electronic "pirates" ran rampant. Whether we like government regulation or not, it is absolutely necessary in this context.

Thank you for your past and future support of public broadcasting. If I can be of further assistance, please advise.

Sincerely,

Thomas Hunt
 Manager
 CMU Public Radio
 Mt. Pleasant, MI 48859

(517) 774-3105

Regional Educational Media Center 10

Robert Townsend, Director
 4415 S. Seeger St., Cass Cty. Michigan 48726
 (517) 872-4212
 FAX (517) 872-2226

July 17, 1996

Honorable John D Dingell
 Ranking Member
 Committee on Commerce
 U.S. House of Representatives
 Washington DC 20515

Dear Congressman,

It is inconceivable to me that members of Congress would even think about eliminating the NTIA at a time when the information explosion threatens to overwhelm us. The National Telecommunications and Information Administration is that agency which has the potential of assuring nation-wide standards by which we can help participate in the electronic world to come. There must be a national clearing house, else we will end up with "have and have-not" states competing on a very uneven playing field.

REMC #10 would not have its Thumb Area Television project without the assistance of the Public Telecommunications Facilities Program (PTFP) of the NTIA (US Department of Commerce). Life in the electronic world is complex, and a national agency is necessary to guide us through.

Specifically,

- Staff members of PTFP willingly and without hesitation provided information on the availability of federal funds to assist agencies like my K-12 support center in establishing distance learning projects.
- Staff members of PTFP willingly and without hesitation sat down, in Washington, with myself and various Intermediate School District superintendents to explain the ramifications of the program and how to work with it.
- Staff members of PTFP willingly and without hesitation provided suggestions as to raising the necessary matching money in order that we might attain eligibility for federal dollars.

A Consortium of Huron, Sanilac and Tuscola Intermediate School Districts

• Once awarded a matching funds grant, the staff members of PTFP willingly and without hesitation provided guidance through the regulations and procedures time and time again. I have never been involved in such a project. While I might have struggled through, staff members at PTFP, especially Mr. Richard Harland, were invaluable. I would have wasted a great deal of time and money without his guidance.

- Guidelines call for attorney certified leases, where leases are necessary, in order that federal dollars be safeguarded.
- Guidelines call for open bidding procedures to ensure fairness.
- Guidelines demand an inventory system to keep track of items purchased with federal dollars.
- Guidelines demand any leases for tower space, etc. be for a minimum of ten years, again to safeguard items purchased with federal dollars.
- Guidelines demand a comparison between equipment for which we wanted the federal dollars and that which was actually purchased. Changes must be justified.
- Fund transfer is by EFT, a safe, secure and efficient method of transferring money.
- Guidelines demand quarterly reports on all related events and financial activities.

Up until this PTFP grant procedure, by which our area will be provided cost-effective distance learning for our rural area, I had never given much thought to the people who work each day, day in and day out, within the federal departments. Through this procedure, I have gained a whole new respect for these mostly unknown persons.

I have found people willing to share their expertise, their encouragement, and the knowledge of their varied programs so that I, a complete neophyte (I'm an educator not a television engineer), might provide my 24 small school districts with an opportunity which otherwise just would not happen.

I salute the staff of NTIA/PTFP. With their assistance, we break ground next month for an educational television station which will eventually serve, with the cooperation of local area cable companies, students in ninety five school buildings across three rural Michigan counties AND provide an avenue of training opportunities to the residences of up to 20,000 households within that same area. My office will serve the schools with the distance learning system; together with the local school districts, we will serve the communities!

HR 1756 is short-sighted. It would eliminate services to a lot of little people, like my rural school district people. Those services cannot be provided by anyone else. HR 1756 should be soundly defeated.

Sincerely

A handwritten signature in cursive script, appearing to read "Robert Townsend". The signature is written in dark ink and is positioned above the printed name.

Robert Townsend



Michigan
Boating
Industries
Association

July 21, 1995

The Honorable Carl Levin
United State Senate
459 Russell Senate Office Building
Washington, D. C. 20510

Dear Senator Levin:

I am writing today on behalf of 350 member firms of the Michigan Boating Industries Association who produce and sell boats and marine equipment as well as provide services to recreational boaters throughout Michigan.

As an industry that is primarily made up of small, entrepreneurial family operated businesses, we are acutely aware of the importance of downsizing government, reducing government bureaucracy, and consolidating services. We do, however, have grave concerns regarding pending legislation which will, in our opinion, have a negative impact on boating, fishing, and tourism in Michigan. I am referring to Senate Bill 929.

Recreational boating will be affected in four basic ways: research, boater safety, fisheries, and manufacturing. The Sea Grant Program provides research data which helps manage, protect and conserve our natural resources as well as understand our marine environment. From a safety standpoint, the Department of Commerce through NOAA produces navigational charts which are extremely important to the safe operation of thousands of boaters in Michigan. Without accurate and timely navigational charts, there is the likelihood that there will be increased vessel (property) damage, increased accidents and a chance for more personal injury and loss of life. Also, marine weather forecast (part of NOAA) are an important ingredient to safe boating. Over 50% of the recreational boating activity in Michigan relates to sport fishing. It is imperative that our fisheries be managed efficiently and affectively to not only sustain but to improve our fisheries for future generations. The Department of Commerce has assist manufacturers in the export market. We, in the boating industry, are proud of the fact that our industry has an excellent record of exporting American marine products overseas; this is important in terms of employment.

Overall, recreational boating in Michigan is an important aspect of tourism. It is high time that the "Tourism Industry" be recognized as one of the most important segments of the American economy.



We want you to know the various ways the Department helps the recreational boating industry and consumers. We hope that the Senate as well as the House of Representatives will look long and hard at the issues we have discussed.

Thank you for the opportunity to express our views.

Sincerely,

A handwritten signature in dark ink, appearing to read "Van W. Spider, Jr." with a stylized flourish at the end.

Van W. Spider, Jr., CAE
President

VWS/lc

NATURAL RESOURCES
COMMISSION

JERRY C. BARTNIK
KEITH J. CHARTERS
LARRY DEVLIN
PAUL EISELE
JAMES P. HILL
DAVID HOLLT
JOEY M. SPANO

STATE OF MICHIGAN



JOHN ENGLER, Governor

DEPARTMENT OF NATURAL RESOURCES

ROLAND HARMES, Director

LAKE ST. CLAIR FISHERIES RESEARCH STATION
33135 S. RIVER RD.
MC CLEAREN MI 480
Phone (810) 465-4771 FAX (810) 465-71
E-Mail Bob.Haas@um.cc.umich.edu

July 17, 1995

John D. Dingell
Ranking Member
U. S. House of Representatives
Committee on Commerce, Minority Counsel
Room 2322, Rayburn House Office Building
Washington, DC 20515-6115

Dear Representative Dingell:

Thank you for the opportunity to comment upon H. R. 1756 and related proposals to abolish the Department of Commerce. Of greatest concern to me would be the loss or diminution of the very valuable studies on the aquatic ecosystems of the Great Lakes by NOAA's Great Lakes Environmental Research Lab in Ann Arbor.

I have been conducting fisheries research on the lower Great Lakes for the State of Michigan for 30-plus years. During that time I collaborated on numerous occasions with, or relied upon, aquatic research conducted by NOAA personnel from Ann Arbor lab. I have been using meteorological summaries and analyses provided free by them to determine causes of changes in fish populations. For about five years I have been involved in cooperative studies with NOAA scientists to determine effects of zebra mussels and other exotic species on the ecosystems of Lake St. Clair, Saginaw Bay, and Lake Erie. Personnel from NOAA have been very helpful in developing a 1995 study and management plan to address the aquatic plant problem that developed on Lake St. Clair in 1994. I have also been studying the plankton populations of Lake St. Clair, Saginaw Bay, and Lake Erie for six years to determine their importance to walleye spawning success and NOAA scientists were the experts on plankton research that I turned to for advice on study design, techniques, and assistance with interpretation of results.

The staff of aquatic scientists and technicians at NOAA's Ann Arbor lab are very knowledgeable and competent scientists that have been conducting valuable studies on lower trophic levels, including physical and biological aspects, of the Great Lakes ecosystem. Their work on exotic species invasions and nutrient dynamics has been an invaluable aid in interpreting results from my own research on Great Lakes fish populations. I know of no other agency, nor group of scientists, that could have performed that work. Therefore, I strongly recommend that NOAA's Great Lakes Environmental Research Lab be maintained as is which would definitely benefit the State of Michigan.

Sincerely,

Robert C. Haas
Biologist In Charge

Bay Metropolitan Water Treatment Plant

City of Bay City

John A. DeKam, Superintendent Extension 202

2691 N. Euclid Rd.

Bay City, MI 48706

Phone (517) 686-6500

FAX (517) 624-6969

July 17, 1995

The Honorable John D. Dingell
 U.S. House of Representatives
 Commerce Committee Minority Counsel
 2322 Rayburn House Office Building
 Washington, D.C. 20515

FAX: (202) 225-2525

Subject: H.R. 1756

Dear Representative Dingell,

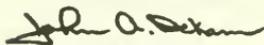
I am responding to your request of July 14 for comments on my evaluation of the Department of Commerce's effectiveness and on pending legislation to abolish NOAA and the Department of Commerce. While I am generally in favor of reducing the size of the Federal Government, I would not want to see NOAA abolished.

As you are aware NOAA has for several years been studying the impact of zebra mussels on the Great Lakes. Beginning in about 1991 they began studying the Saginaw Bay to determine existing benthic populations, prior to complete infestation, and with the intention of tracking the changes to this environment as the zebra mussels took hold. Over the past two years their funding has been reduced, and I understand will be eliminated this year. I feel it is critical that these studies be continued in order to give all concerned a clear idea of what changes a body of water undergoes as this pest populates the area. The results of their studies to date have helped me in particular as superintendent of the Bay Metropolitan Water Treatment Plant, since our water intake and water quality has been dramatically impacted by the zebra mussels. Other NOAA programs and studies through out the U.S. are, in my opinion, also very important.

While I cannot speak with great knowledge about other programs of the Department of Commerce, I would like to see a general reduction in the size of the federal government. There seems to be too many levels of bureaucracy, especially at the top. I believe in empowering people at lower levels to make decisions, thus reducing costs, and making for efficiency, effectiveness, and speedier outcomes.

I appreciate your asking for my input, and I hope you will be successful in retaining NOAA, while at the same time creating a more efficient government.

Sincerely,



John A. DeKam
 Superintendent

To: Honorable John D. Dingell (Attn. David Tittsworth), FAX 202-225-2525
From: Jon G. Stanley, Ph.D., FAX 313-971-7862, phone 313-971-7874 3 Pages

**Comments from Jon G. Stanley, Ph.D.
H.R. 1756 and value of NOAA programs In DOC**

July 17, 1995

My name is Jon G. Stanley and I am commenting on H.R. 1756 as a private citizen. Last year I took a buyout from Federal service and resigned as Center Director of the Great Lakes Science Center of the National Biological Service. In 9 years in that position I had numerous dealings with the Great Lakes Environmental Research Laboratory of NOAA In Ann Arbor, Michigan. I speak from personal experience in saying that the Director and staff of that laboratory exhibited the highest level of public service and delivered quality information essential for ecosystem management of the Great Lakes. I have also had numerous dealings the NOAA's Sea Grant program and can also attest to its effectiveness. Some specifics:

- Zebra mussel work done by the Great Lakes Environmental Research Laboratory and Sea Grant has been essential for agency and public understanding of Great Lakes problems and their solution. The zebra mussel represents biological pollution caused by unidentified shipping resulting in environmental damage of billions of dollars. NOAA cooperated with my research center in assembling world information on zebra mussels and co-editing a major book. This book and subsequent joint studies provide the foundation for addressing the zebra mussel problem. We now know that Lake Erie has experienced the most rapid ecological changes ever seen in an ecosystem of that size. As agencies and industry further struggle with mitigation attempts it is essential that strong research programs provide information on what to do and assessment of the results of actions.
- Pollution prevention is a program that promises to revolutionize the way industry efficiently manufacture products while maintaining a clean environment. NOAA has worked closely with the International Joint Commission (with which I was associated as the Chair of the Council of Great Lakes Research Managers) to provide information and advisory support. Research on modeling of Great Lakes physical and biological responses to pollution prevention are essential for evaluation of the benefits of this program. Strong NOAA programs based here in the Great Lakes are needed to help minimize cost to industry and the American economy.

- Pollution clean up is a multibillion dollar cost -- but worth it. The Great Lakes are significantly cleaner than two decades ago. Marine bird populations have recovered and now reproduce successfully, many native fish returned such as lake herring in Lake Superior and whitefish in the upper Lakes. Bloater chubs are replacing the alewife and smelt invaders. Are we prepared to declare victory and relax environmental standards? Probably not! Several species of Great Lakes fish continue to have healthy advisories limiting their consumption by the public. We need to continue to collect and analyze basic environmental data on how the ecosystem functions and responds to further decreases in input. The Great Lakes States have established a \$100 million Great Lakes Protection Fund to provide environmental research and programs to get information to the public and policy makers, with an assumption that they would be partners with Federal research laboratories. If Federal efforts were curtailed now, it would betray this arrangement.
- Fisheries statistics are a vital component of management of fisheries. My research center provided information to the National Marine Fisheries Service on Great Lakes fish catch. Such information has been essential for management of stable fisheries. I recently completed an analysis of whether the commercial fisheries in the Tribal treaty ceded waters of the Great Lakes was sustainable. The data clearly showed that catches of whitefish by native American commercial fisheries increased after the 1985 agreement with the State of Michigan and has reached a sustainable level. The agreement expires in the year 2000 and agencies will need must have current information at that time to renegotiate a fair that will continue to sustain the resource. Existing programs should be strengthened in the next five years so the Federal trust responsibility for tribal units can be assured for the coming century.

The current system of partnerships in research and resource management has evolved over the last 20 years. Different State and Federal agencies have assumed specific responsibilities and exchange information and collaborate on joint projects. I conducted an analysis of collaboration at the National Biological Service Center that I formerly directed and found that over half the scientific papers had coauthors outside the Center, many with NOAA scientists. Reorganizations and attempts at control from Washington will disrupt these fine-tuned relationships. I urge that Congress strengthen NOAA programs and not disperse them into many other agencies where another 20 years would be needed to restore their full potential.

Jon Gibson Stanley, Ph.D.
 School of Natural Resources and Environment
 University of Michigan
 Dana Building 430 East University
 Ann Arbor, MI 48109-1115
 313/763-4712 • Home 313/971-7874 • FAX 313/971-7862

Goals and Background

Career Goal: To manage a research or academic organization

Education: A.B., University of Missouri, 1960, Wildlife Conservation
 A.M., University of Missouri, 1963, Zoology
 Ph.D., University of Missouri, 1966, Zoology
 M.B.A. Candidate, University of Maine, completed 27 semester hours.

Relevant Experience

- 1966 - 1995** **University Faculty:** Received tenure in the University of Wisconsin system and promoted to full professor at the University of Maine. **Adjunct Professor, 1986-Present, University of Michigan, Ann Arbor, Michigan; Professor, 1977-91, Associate Professor, 1975-77, University of Maine, Orono, Maine; Associate Professor, 1971-72, Assistant Professor, 1969-71, University of Wisconsin-Milwaukee, Milwaukee, Wisconsin; Assistant Professor, 1966-69, DePaul University, Chicago, Illinois.** Taught environmental biology, ecology, fishery biology, physiology, and cell biology. Conducted research in environmental biology and resource management. Supervised graduate students. Chaired and served on numerous faculty committees.
- 1985 - 1994** **Center Director, Great Lakes Science Center of the National Biological Service;** formerly the Fisheries Research Center-Great Lakes, U.S. Fish and Wildlife Service (Name changed in 1993), Ann Arbor, Michigan. Managed \$7 million research and development program that inventoried natural resources, monitored contaminant trends in aquatic organisms, and advised the fisheries industry of management options. Supervised staff of 107 chemists, biologists, computer scientists, and statisticians.
- 1983 - 1985** **Supervisory Fishery Biologist, Division of Cooperative Units, U.S. Fish and Wildlife Service, Washington, D.C.** Managed national program of \$20 million with research units on 27 major universities. Program dealt with all aspects of natural resource management and the environment. Worked with U.S. Congress and State cooperators to secure funding. Helped rescue program from budget cuts.
- 1977 - 1983** **Unit Leader, Maine Cooperative Fisheries Research Unit, Orono, Maine.** Managed research program and conducted environmental research in freshwater and marine environments. Supervised graduate students, wrote proposals for about \$2 million including 2 of 3 proposals receiving funding from N.S.F. Work was recognized as high quality and was rewarded by election and appointments to office in professional organizations, and appointments to advisory boards. Honored as a National Academy of Sciences visiting scholar to Czechoslovakia.
- 1972 - 1975** **Fisheries Biologist (Research), Fish Farming Experimental Station (Stuttgart, Arkansas) and the Fish Control Laboratory (Warm Springs, Georgia).** I pioneered development of chromosome manipulations in aquaculture. This work was widely recognized and I continue to receive requests for information concerning this work.



The Argus II Building ☐ 400 Fourth St., Ann Arbor, Michigan 48103-4816
Office (313) 665-9135 ☐ Fax (313) 665-4370 ☐ E-mail: glc@great-lakes.net

July 20, 1995

EXECUTIVE DIRECTOR
MICHAEL J. DOMANIVE, Ph.D.

EXECUTIVE COMMITTEE

CHAIR
PATRICY B. RALETON
Deputy
Indiana Dept. of
Natural Resources
Indianapolis, Indiana

VICE CHAIR
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Governor's Appointee
Chicago, Illinois

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Attorney General
State of Michigan
Lansing, Michigan

THOMAS E. HUNTLEY
Minnesota State Representative
Duluth, Minnesota

MICHAEL D. ZAGATA
Commissioner
New York State Dept. of
Environmental Conservation
Albany, New York

DONALD C. ANDERSON
Deputy
Ohio Dept. of Natural Resources
Columbus, Ohio

BEENE BROOKS
Pennsylvania Dept. of
Environmental Resources
Harrisburg, Pennsylvania

NATHANIEL E. ROBINSON
Wisconsin Dept. of
Administration
Madison, Wisconsin

The Honorable John D. Dingell
United States House of Representatives
House Office Building
Washington, D.C. 20515

Dear Representative Dingell:

Thank you for your letter of July 14 and your invitation to share my views on the programs of the National Oceanic and Atmospheric Administration. Specifically, I will address the work of NOAA's Great Lakes Environmental Research Laboratory (GLERL) based in Ann Arbor, Michigan. I speak on behalf of the entire eight state membership of the Great Lakes Commission which, by unanimous and enthusiastic vote, has adopted a policy position in support of continued and enhanced GLERL funding.

The Great Lakes Commission opposes any Congressional initiative that would compromise GLERL's current mandate and programs, whether it be through privatization, budget cuts or elimination of functions. We do recognize and applaud Congressional efforts to enhance efficiency in the administration of federally supported programs. We further recognize that deficit reduction goals necessitate careful review and evaluation of such programs. With regard to GLERL, however, we find that its programs are a sound and essential investment in the sustainable use, development and protection of the international Great Lakes system.

GLERL's programs must be maintained to ensure that:

- the historic federal role in Great Lakes research and management—as recognized in U.S. law—is fulfilled;
- federally-mandated management programs are adequately funded to meet critical, Congressionally-established goals;
- treaty, convention and agreement obligations with Canada are met;
- baseline research necessary for informed public policy decisions is maintained; and
- an environmental infrastructure exists to meet current and future needs.

GLERL plays a critical role in the region's state/federal partnerships, and provides basic and applied research in the physical and biological sciences, such as hydrology, toxicology and oceanography. Such research improves our basic understanding of the decisionmaking activity. Knowledge and expertise gained through GLERL's research provide benefits beyond our region, as many of the problems affecting the Great Lakes ecosystem are common to other coastal environments.

The Laboratory's ongoing zebra mussel research program is unique to the nation, as it focuses on an entire ecosystem. Research results have provided a basis for federal, state, municipal and private sector prevention and control efforts. Continuation of that research is essential as new threats, such as the Eurasian ruffe, emerge.

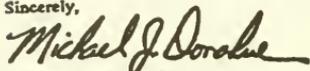
GLERL's nearshore hydrodynamics program examines the nearshore environment. This area provides critical spawning habitat for many Great Lakes fish, yet is plagued by a developing effective remediation and protection measures.

Established in 1955 by interstate compact "to promote the orderly, integrated and comprehensive development, use and conservation of the water resources of the Great Lakes Basin."

In summary, GLERL's research activities are fundamental to the continued vitality of the Great Lakes region. Maintenance of GLERL's mission and functions, coupled with a small increase in GLERL's funding, is an investment necessary to ensure that policy makers and managers can continue to prevent as well as control threats to this nationally significant resource and the economy that depends on it. We recommend an FY1996 funding level of \$5.96 million. This figure would maintain the GLERL base budget at \$4.55 million, and provide an additional \$.91 million for zebra mussel/aquatic nuisance species research, and \$.5 million for its nearshore hydrodynamics program.

As always, we appreciate your leadership, and urge you—on behalf of our eight member states—to maintain and enhance the programs of NOAA's Great Lakes Environmental Research Laboratory.

Sincerely,



Michael J. Donahue, Ph.D.
Executive Director

MJD/rjs

**ERIM**P.O. Box 134001
Ann Arbor, MI 48113-4001

313-994-1200

24 July 1995

The Honorable John D. Dingell
U.S. House of Representatives
Commerce Committee Minority Counsel
2322 Rayburn House Office Building
Washington, DC 20515

RE: Consequences of H.R. 1756

Dear Sir,

This letter summarizes my views on House bill H.R. 1756 which would abolish the Department of Commerce (DOC) and specifically dissolves many of the functions of NOAA. I cannot comment on the Commerce side of things, but I am certainly very familiar with the operations of NOAA. As an earth scientist at the Environmental Research Institute of Michigan (ERIM), as well as adjunct professor in the Atmospheric, Oceanic, and Space Science Department at the University of Michigan, I am very concerned about (1) the irreparable harm to our nation's observing systems for weather and severe storms; (2) the abrupt stop of data flow essential to environmental studies that affect this nation's well-being; and (3) the harm to a large range of basic science research currently on-going through out the country, that would result if this bill is enacted.

Privatizing the data centers will not work; the Landsat experience taught us that lesson when utilization of the data by the scientific community drastically decreased as a result of its increased cost. Privatization will threaten current international agreements for the free exchange of weather and environmental data. The continuous flow of data among participating governments would not be guaranteed, and the amount of data available to NOAA and the private and public sector in the U.S. would decrease, significantly affecting on-going civilian research. NOAA's GOES and Polar satellites support a variety of NOAA activities in addition to the National Weather Service (NWS). The National Environmental Satellite Data and Information Service (NESDIS) operates the satellites and transforms the data into products that both the NWS, as well as other government users such as the Department of Agriculture, EPA, USGS, and NOAA need to carry out their work on an operational and research basis. If the NWS were to assume responsibility for satellite operations and the development of new satellites and sensors, the links with the other, non-weather data users would become cumbersome and likely would suffer.

Privatization of NESDIS would also result in the loss of continuity of data for the national archives. The long-time-series data in the archives generated by NESDIS

is of critical importance to understanding ecosystem processes and variability. Anthropogenic influences and changes in weather patterns may lead to changes in ecosystem structures and functions that we cannot now predict with any certainty. Further maintenance of this long-term monitoring program is essential for identifying change, and when combined with appropriate work on key ecological processes, is important for development of appropriate mitigation strategies. Selling the assets to commercial enterprise will not ensure archiving or access by the general public; certain data sets lack commercial value, but are very necessary for the long-time-series studies. There is no guarantee that industry would maintain, for general use, the NOAA oceanographic, atmospheric, and geophysical data bases that are unprofitable yet are recognized as critical to environmental understanding. Privatization could also raise the cost of data access by the research community (including U.S. government employees) to the point that they could no longer afford to utilize it.

The information highway (i.e. internet) has made data from the NOAA centers readily available. This available data is used by private firms to generate their own value-added products. Commercialization will add a cost to the value-added products that in some cases will be prohibitive to the ultimate user. ERIM and other Michigan companies generate "value-added" products using NOAA satellite data now, but increased cost of "raw data" could lead to a decrease in revenues of these products which would stop their generation and result in loss of jobs in Michigan.

The remainder of my letter addresses the impact of the proposed twenty-five percent reduction in FY '94 level of funding (i.e. the Chrysler legislation) for NOAA. The reduction proposed by this legislation would pare in half the future weather satellite coverage, resulting in a blackout should a currently working satellite fail. Gaps in satellite coverage, critical for weather warnings and forecasts, would be unavoidable because procurement of replacement satellites could not be fully funded. The elimination of one GOES would prevent the early warning of Atlantic storms and coverage of the Hawaiian archipelago. Elimination of one Polar satellite reduces by half the coverage of Alaska. With this minimal program, all weather warnings would be severely degraded, hurricane predictions would be jeopardized, and the accuracy and reliability of 3-5 day weather predictions would be degraded. It eliminates 4-hour global coverage which negatively impacts U.S. interests abroad, including global military operational support. Event detection, such as volcanic ash for airplane warnings, would also be curtailed. Search and rescue time will be doubled thereby threatening lives, which is critical to all private and public sectors, most notably aviation. Several requirements of non-weather users would alter the planned operations of GOES for the NWS forecast mission. The continuance of such services as Search and Rescue and the GOES archive, not being in the mainstream of NWS day-to-day activities, would likely be restricted or even abolished under NWS control. The development of new sensors, a traditional NESDIS function, would have little support in the NWS and would most likely be abandoned. It would also be impossible to

implement NOAA's polar satellite follow-on program as conceived through convergence with DoD and NASA at seventy-five percent of FY '94 funding.

Another NOAA matter, the proposed elimination of the Coastal Ocean Program, suggests an insensitivity to the environmental and life-sustaining importance of coastal regions, and the cumulative impacts of expanding human population on such regions. From an environmental perspective, coastal environments are transitional regions which comprise about eight percent of the earth's surface and are subject to the combined influence of high energy land, ocean, and atmospheric processes. These environments are characterized by highly dynamic natural processes such as water runoff, materials transport, evaporation and precipitation, and biological production which both affect, and are affected by, the global environment. For life-sustaining purposes, coastal environments include some of the most productive ecosystems on earth, estimated to contribute around 25 percent of global biological production and providing more than 90 percent of the world's marine fish catch.

The demographics of global and U.S. populations, and the cumulative effect of their activities pose a significant threat to the future health and productivity of coastal environments. More than 75 percent of the global population is now estimated to live within 50 km of the sea. In the U.S., approximately 54 percent of the total population lives on the 10 percent of the land area defined as coastal. These burgeoning populations are placing increasing demands on the land and biological resources of coastal environments for habitation, recreation, and transportation. The health of ecosystems is being threatened through the use of fertilizers and pesticides, accidental releases of environmental contaminants, and disposal of toxic and human waste materials.

The Coastal Ocean Program represents a vital activity within NOAA with the mandate for developing the Agency's scientific capabilities for coastal ocean management. Research and monitoring programs are specifically focused on improving understanding of the natural systems of coastal regions and the ecological impacts of human-induced stresses on the systems. I believe these programs to be essential for developing the scientific underpinnings necessary for formulating the appropriate legislative and management programs in coastal regions. I am personally aware of technology development efforts involving coastal remote sensing and believe that the development of such monitoring capabilities will contribute vital information on coastal region processes, dramatically improving our understanding of coastal dynamic processes such as ice formation and movement, sediment resuspension events, and nearshore hydrodynamics.

Again, researchers at ERIM, as well as the University of Michigan, are funded under this NOAA coastal initiative. Elimination or a reduction in funding level will

put people out of work in Michigan. Michigan, with its extensive Great Lakes coastline, also directly benefits from the NOAA coastal thrust.

I hope the enclosed comments are useful in your deliberation. Feel free to contact me at (313) 994-1200 ex. 2590 if you require further details.

Sincerely,

A handwritten signature in cursive script, appearing to read "Robert Shuchman".

Robert A. Shuchman, Ph.D.



Te DT

Great Lakes Fishery Commission

ESTABLISHED BY CONVENTION BETWEEN CANADA AND THE UNITED STATES TO IMPROVE AND PERPETUATE FISHERY RESOURCES

July 20, 1995

Hon. John D. Dingell
 Ranking Member, Committee on Commerce
 2322 Rayburn House Office Building
 Washington, DC 20515

RECEIVED
 U.S. DEPARTMENT OF COMMERCE
 JUL 27 11:08 AM '95

Dear Representative Dingell:

Pursuant to your letter of July 14, 1995, I am pleased to provide comments relevant to H.R. 1756, a bill to dissolve the Department of Commerce. The Great Lakes Fishery Commission, as you know, interacts with the Department of Commerce primarily through the National Oceanic and Atmospheric Administration's (NOAA) Great Lakes Environmental Research Laboratory (GLERL). The proposed dismantling of the Department of Commerce will, if implemented, result in the loss of essential scientific infrastructure for the Great Lakes.

In 1955 the Governments of Canada and the United States directed the Great Lakes Fishery Commission to study and advise the Governments on issues threatening the beneficial uses of Great Lakes fishes. In doing so, the Commission was directed, as much as is feasible, to make use of government agencies (today, NOAA, NBS and Fisheries and Oceans Canada, for example). Further, the Commission is mandated to coordinate research into the Great Lakes fish stocks of common concern to the United States and Canada. The Commission, therefore, is obligated to comment on the proposed dismantling of the Department of Commerce.

Broadly, the Great Lakes Fishery Commission is concerned that one Canadian research laboratory and two U.S. research laboratories on the Great Lakes are unilaterally proposed for elimination or significant reduction. Essentially, recent proposals in Congress (including appropriations bills and H.R. 1756) would eliminate most, if not all, U.S. federal aquatic research on the Great Lakes. Indeed, besides NOAA's Great Lakes Environmental Research Laboratory, the National Biological Service's Great Lakes Science Center, and Fisheries and Oceans Canada's Great Lakes Fisheries and Aquatic Sciences Lab are planned for significant reductions.

Hon. John D. Dingell
Page 2

The Commission is also concerned that the Great Lakes region seems to be disproportionately targeted for scientific cuts relative to the rest of the U.S. (and Canada). The Great Lakes represent 20% of the world's surface fresh water, and possess a coastline equivalent in length to the east coast of the United States. Yet, proposals would essentially leave this region with significantly reduced aquatic research capabilities. Great Lakes management has evolved to an admirable level of interdependence, the cornerstone of which is sound science. By working together, agencies, on both sides of the border and at all levels, leverage each other's resources to produce the science we all rely on for management decisions.

In order to realize economies without jeopardizing our collective ability to meet future resource needs, it is important that *Federal Governments* recognize and maintain research functions which cannot otherwise be delivered. First, Federal Government researchers excel in documenting problems (e.g. eutrophication, toxic contamination) and producing technical solutions (e.g. the chemical lampricide TFM), in part because of the basinwide aspect of such work, but also because of its time-consuming nature. Also, Federal research provides a common framework of information used to understand Great Lakes processes and functions on an ecosystem level. Such common understanding provides context for general management decisions, and for shorter-term local or regional studies such as those conducted by university researchers. In other words, Federal Government researchers in the Great Lakes provide information which otherwise would not be generated.

During the first 15 years of the Strategic Plan, NOAA's Great Lakes Environmental Research Laboratory provided critical information on physical phenomena and the lower food web, which, for example, allowed fishery managers

- to identify traditional lake trout spawning reefs for stocking and protection,
- to plan for management of sea lamprey in the St. Marys River,
- to identify the patterns of lake-currents around the Apostle Islands (one of the few remaining sites where lake trout spawn) to understand the physical characteristics that have contributed to sustained viability of native Great Lakes lake trout populations,
- to better understand the impact of zebra mussels on the Great Lakes ecosystem and the fishery,
- to calculate probable impacts of proposed projects such as winter navigation and large scale diversion of Great Lakes waters,

Hon John D. Dingell
Page 3

- to relate ice cover to subsequent abundance of whitefish, and
- to understand some early insights into the causes of Early Mortality Syndrome in the Great Lakes. A similar syndrome in the Baltic Sea has decimated Atlantic salmon stocks.

Continued progress is highly dependent on the continued availability of a sound science framework from NOAA's Great Lakes Environmental Research Laboratory and from its counterparts in the National Biological Service and Fisheries and Oceans Canada. The Commission believes the next 15 years could see great progress in melding fisheries and environmental management--a significant advance for the ecosystem and its beneficiaries.

While all levels of Government face the need to reduce current levels of expenditure, it is important that irreplaceable services not be lost, that information crucial to coordinated management of our unique and precious Great Lakes not be sacrificed, and that Governments not lose the basis for both making and assessing their decisions. We believe that NOAA's Great Lakes Environmental Research Laboratory, like its NBS and DFO counterparts, are vital components in delivering these important functions. We hope that essential research capabilities will be preserved as the basis for thoughtful, cooperative management of the Great Lakes.

Sincerely,



Chris Goddard
Executive Secretary

cc: GLFC Commissioners

MI



THE UNIVERSITY OF MICHIGAN
 COLLEGE OF ENGINEERING
 DEPARTMENT OF NAVAL ARCHITECTURE
 AND MARINE ENGINEERING

2445 DRAPER RD. NORTH CAMPUS
 ANN ARBOR MICHIGAN 48106-2145
 (313) 763-4421 FAX 313-763-4420

19 July 1995

Honorable John D. Dingell
 U.S. House of Representatives
 Committee on Commerce
 Rm. 2125
 Rayburn House Office Building
 Washington, D.C. 20515-6115

Dear Representative Dingell:

Thank you for the opportunity to respond to your request for information regarding the Department of Commerce (DOC) and the National Oceanic and Atmospheric Administration (NOAA) in particular. As I am sure you are well aware, DOC's activities through NOAA have had a marked positive effect on the people of the eight Great Lakes states. Working to insure clean, safe drinking water, a safe and hazard free transportation system, and understanding the complex interactions controlling the Great Lakes ecosystem are only a few of NOAA's major accomplishments. These accomplishments have been achieved through team work with other government, state and university researchers.

The University of Michigan houses one of only eight NOAA Cooperative Institutes nationwide. The Cooperative Institute for Limnology and Ecosystems Research (CILER), brings together common interests in research, education and provides for cooperative efforts between NOAA and all Great Lakes Universities. Over the past five years, CILER, working collaboratively with NOAA's Great Lakes Environmental Research Laboratory (GLERL), also slated for elimination from the FY 96 budget (see attached newspaper article), has grown considerably, providing funds to support research projects at various departments here at the University of Michigan and many universities throughout the Great Lakes Basin. For your review, attached is a list of CILER's activities. Through its brief history, CILER and NOAA have jointly brought approximately \$5.4 million in cooperative research to the Universities of the Great Lakes basin. These funds have supported 61 students, 16 post-doctoral research fellows, 5 visiting fellows, and resulted in many important discoveries directly affecting the health of the Great Lakes and coastal ocean. These interactions have taken many forms, and research far beyond the boundaries of DOC.

Needles to say, DOC, NOAA, and GLERL play a major roll in Great Lakes health, education and research. The dismantling of DOC, loss of NOAA and GLERL, would have a major negative effect on Michigan and Great Lakes universities in general. I strongly support your efforts to thoroughly research the effects of the proposed legislation. Thank you for the opportunity to comment.

Sincerely,

Guy A. Meadows
 Associate Professor and Acting Director

GAM:ks
 encl.

(CILER)

General Information Regarding CILER Activities
7/90 - 6/95Number Of Research Projects

<u>University</u>	<u>Department</u>	<u>No. of Projects</u>
Alpena Community College	Math & Science	1
Bowling Green State University	Biological Sciences	1
University of Cincinnati	Civil & Environmental Engineering	1
Harbor Branch Oceanographic Institute Big Pine Key, FL	Coastal Ocean Sciences	1
Johnson University, Johnson, VT	Environmental & Health Sciences	1
Kent State University	Biological Science	1
Michigan State University	Fisheries & Wildlife	2
Middlebury College, Middlebury, VT		1
Old Dominion University		1
Ohio State University	Civil Engineering	2
	Zoology	1
	Sea Grant College Program	1
Texas A&M University, College Park, TX	Fisheries & Wildlife	1
University of Michigan	AOSS	1
	CGLAS	4
	CILER	36
	Geology	2
	NA&ME	4
	SPH	3
University of Minnesota	Ecology & Behavioral Biology	1
University of Vermont	School of Natural Resources	1
University of Wisconsin - Madison	Civil & Environmental Engineering	1
University of Wisconsin - Milwaukee	Biological Sciences	1
	Geosciences	1
	Civil Engineering & Mechanics	1
	Engineering & Applied Sciences	1
	Center for Great Lakes Studies	1
Williams College Mystic Seaport, Mystic, CT	Maritime Studies Program	1
Representation from other universities through CILER Fellows are as follows:		
	Michigan Technological University	
	Purdue University	
	SUNY, New York	

Great Lakes targeted by Congressional budget cutters

By PETER F. LANDRUM

The environment is under siege. The new majority in Congress has selected the environment as the scapegoat under the theme of budget reduction. However, the projected appropriations for the military are to increase \$7 billion (News, July 9). The most recent attack is elimination of essentially all federal research on the Great Lakes.

Congressional memory is so short. Only 20 years ago news headlines read, "Lake Erie is dead."

Yet, just the appropriations committees have put forth bills to reduce the National Biological Service by approximately 30 percent, which will result in closing the Great Lakes Science Center on Green Road, and set the budget for NOAA's Great Lakes Environmental Research Laboratory to zero for 1984.

Will this be the end of federal research to protect the Great Lakes? It would seem so. The U.S. Environmental Protection Agency has regulatory responsibility for the Great Lakes, but only its field station at Green Isle is dedicated to Great Lakes research.

Are there still important problems for the Great Lakes? Certainly, residents on Lake St. Clair with massive weed problems know that issues remain. The cause appears to be the zebra mussel, which is causing massive changes in the Great Lakes biological community. Toxic contaminants, while not producing fish kills, are responsible for reproductive problems in mink, otter and fish-eating birds such as eagles in the Great Lakes. Fish consumption advisories remain in effect for the Great Lakes and there have been suggestions of human health effects.

OTHER VOICES

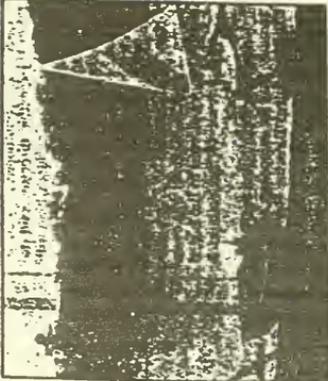
The Great Lakes are not the only target. Congressional cuts are proposed throughout the environmental research portion of the federal budget. Further bills have been introduced by Rep. Dick Chrysler and Sen. Spencer Abraham to eliminate the Department of Commerce.

What many people do not know is the impact this will have on environmental research and their daily lives. The weather service and weather-related research will be set back and the ability to predict the weather restricted. Fisheries research under NOAA will die, and fisheries monitoring will be limited. The satellite services will not be able to support bow gages for weather tracking and prediction.

Finally, environmental bills such as the renewal of the Clean Water Act are being written with strong industrial input and if passed will set the environmental protection back 20 to 30 years ago there was virtually no environmental protection.

John H. Gibbons, director of the Office of Science and Technology has said "Congress' actions are the scientific policies that are defined by politics and not science" (Chemical and Engineering News, June 26, 1983).

The Eastern bloc countries can tell you what happens when the environment is given second shift to building a military establishment, the life span is shortened and child morbidity and mortality increase. Do the people of the United States want their environment raped for quick gain? The United States is the



NEWS FILE PHOTO

Boaters at Duck Lake State Park on Lake Michigan north of Muskegon.

world leader in environmental protection, and I do not believe that this Congress should sacrifice that leadership.

Peter F. Landrum lives in Ann Arbor and is an environmental toxicologist with the Great Lakes Environmental Research Lab. News readers can contribute to "Other Voices." Please call the editorial page editor about writing information at 994-6863.

AZ news 7/12

[Handwritten signature]

Michigan Technological University



1400 Townsend Drive, Houghton, Michigan 49931-1200

College of Sciences and Arts
Department of Biological Sciences
908/487-3028

The honorable John D. Dingell, Ranking Member
Commerce Committee Minority Counsel
2322 Rayburn House Office Building
Washington, D.C. 20515

Dear Congressman Dingell:

Thank you for inviting me to comment on H.R. 1756. I have worked with several NOAA agencies over the years both at the University of Michigan and in my present position (National Office, newly established Office of Sustainable Development, GLERL, NURP, Sea Grant). The rather serious attempt to dismantle NOAA is alarming for various reasons. The National Oceanic and Atmospheric Administration (NOAA) overall mission includes two components: to conserve and wisely manage the Nation's marine and coastal resources, and to describe, monitor, and predict changes in the Earth's environment, with emphasis on marine and coastal resources. The agency promotes world-class research and development in several crucial areas (coastal forecasting) unduplicated by other agencies. Moreover, the environmental research done by the agency is objective, high quality environmental forecasting and research not directly connected to a regulatory function. The proposed legislation is akin to Sherman's march to the sea in the damage that it will do to forecasting and research programs related to marine and Great Lakes' transportation, weather, water quality and ecosystem health research. The proposed restructuring fragments a cohesive agency and sends the pieces to areas where the present forecasting and research developments, which depend on the strong physical, chemical, and biological integration, will not function.

The proposed restructuring also guts the objective middle of environmental research programs that provide important objective information to everyone. For example, in our mining impacts research, NOAA was seen by both academic and industry as an objective agency proceeding without the regulatory agenda associated with such agencies as EPA and the state DNRs. That is, NOAA's mission fills an important, objective middle ground not duplicated by other agencies. The void created by its demise would only increase polarization and promote recourse to litigation to solve environmental issues. In my experience, as currently functioning, the programs are reasonably well integrated, e.g. research by NOAA laboratories is coordinated with research programs in the largely academic Sea Grant College Program. Examples of Agency initiatives that cut across branches include:

- 1) development of reliable weather, climate, solar, ocean, and marine assessments and predictions;
- 2) development of environmental technology, including new global observing systems; and
- 3) implementation of environmental management and coastal resource development and environmental health programs.

As the Nation's fifth coast, the Great Lakes region and Michigan in particular, are especially concerned about the future of this important federal agency. The marine scale of the Great Lakes requires NOAA facilities and expertise. In the past and present, I have dealt

extensively with all the following branches, and thus feel qualified to comment on their functions and effectiveness. I've been impressed by the integration of functions and efforts by the agency branches to inform each other of activities. Research cruises often include individuals from several component branches in associate with individuals from other agencies that are interested in coastal environments. NOAA programs of importance to Michigan and Upper Peninsula residents include:

NOAA's Great Lakes Environmental Research Laboratory (GLERL), located in Ann Arbor, Michigan, is the sole NOAA laboratory responsible for the Laurentian Great Lakes. This agency with its 63 full-time and 25 part-time scientists and support staff is the sole NOAA lab responsible for tackling complex multidisciplinary marine-scale forecasting activities for the Great Lakes. Invited to its formal review last November, I was impressed to the diversity and strength of the positive reaction towards the Laboratory. The research program is one of few that completely and successfully integrates physical, chemical, and biological components. This lab has proven invaluable as a regional source of information on the Great Lakes. Scientific expertise is recognized as outstanding. The laboratory developed the Great Lakes Forecasting System, is respected for its hydrologic and lake circulation modeling, ice monitoring program, Pollutant Effects program, and is a recognized leader in nonindigenous species program, as the leading agency in zebra mussel research. The laboratory is known for its innovative research, currently is developing 3-dimensional water circulation forecasting models, yet also is cooperative with regional agencies and institutions, e.g. provides CoastWatch Satellite Imaging data to 22 institutions and agencies. Investigators are encouraged to develop and conduct research projects that have high scientific merit, whose publication in peer-reviewed journals is an integral part of promotion.

NOAA's National Undersea Research Program (NURP) specializes in submersible studies (Johnson Sea Link, ROV, diving) and is responsible for conducting underwater research, deployment of research and monitoring equipment, monitoring of coastline, lake and sea bed surfaces including ocean and Great Lakes dumpsites. Because of its vast size, Michigan depends on NURP for underwater research in the Great Lakes. Lake Superior research programs, because of the lake's large size, require marine scale operations such as those offered by NURP and its Johnson SeaLink, remotely operated vehicles (ROVs), and diving capabilities.

NOAA's CoastWatch Remote Sensing Program provides weather data to the academic and research communities as an online internet service, making this an invaluable tool for basic research in the areas of global climate change, forecasting marine and freshwater events, connecting up recreational fishers with realtime weather data, and monitoring exotic species effects on water quality. The Neadis data from the NOAA Tiros polar orbiting satellites are invaluable because of frequency and regional coverage. Applications include global warming, ice movement, coastal circulation, and oil spill impact forecasting and monitoring. Important attempts are underway to extend circulation models from 2-dimensional to 3-dimensional. The remote sensing data provided by NOAA is an essential element in this ambitious program. Privatizing the National Environmental Satellite, Data and Information Service will severely restrict public and institutional access to data and prevent real-time acquisition. Whereas Coastwatch AVHRR imagery is provided at little or no cost to interested individuals and agencies through Neadis, its commercial counterpart (TM imagery) costs between \$7,000 (initial) to \$750 (previously processed) a scene.

NOAA's National Sea Grant Program was established under federal law to provide research and outreach programs in coastal marine and freshwater environments. The program functions both in academic research applied to regional needs and outreach programs. The Sea Grant College network provides one of the most important means not only of supporting coastal research but of disseminating knowledge to the public. Michigan Sea Grant has been instrumental in supporting research aimed at understanding fisheries resources, exotic species impacts on foodwebs and municipal concerns, and global changes in the Great Lakes region.

Again I would stress that because of its integration of interdisciplinary research from the physical, chemical, and biological realms, NOAA is one of the few agencies capable of applying ecosystem perspective to resource management. The zebra mussel program clearly demonstrates its ability to work closely with state and local (municipal) concerns on coastal exotic species issues.

Sincerely yours,



W. Charles Kerfoot
Director, Lake Superior Ecosystem Research Center and
Professor, Biological Sciences
Michigan Technological University
Houghton, MI



CITY OF MONROE

Water Treatment Plant

June 12, 1995

The Honorable Carl M. Levin
United States Senate
Washington, D.C. 20510

Dear Senator Levin:

I was recently appalled to learn that the future of the National Sea Grant College Program of the National Oceanic and Atmospheric Administration is in jeopardy as a result of pending funding cuts in the next fiscal budget.

During more than forty years in the drinking water industry, I have seen no other federal dollars put to better use than those supporting Sea Grant activities. The valuable research supported by the Sea Grant Program has contributed immensely to a wealth of scientific knowledge and expertise in solving tough problems associated with the preservation of our priceless water resources. The Sea Grant technology transfer efforts are widespread and effective and touch every aspect of surface water use and user. This is especially true today when our surface waters are under siege by a host of non-indigenous aquatic plant and animal species which pose serious threats to the livelihood, recreation, the public health, and the treasury of a vast segment of the population. This is especially true in the Great Lakes and eastern and midwestern river systems where the zebra mussel has imposed tremendous expense on surface water users. The Michigan Sea Grant Program has done a banner job in helping to avert even sharper impacts.

I appeal to your wisdom and good judgement in this matter of national importance. I urge you to support the National Sea Grant College Program in any way possible... by funding in FY 96 and by co-sponsorship of HR 1175, the Sea Grant reauthorization bill which is currently in committee.

I can say with certainty that your favorable treatment of the Sea Grant Program will earn the appreciation and support not only of your constituents in Michigan, but of Sea Grant beneficiaries everywhere.

Sincerely,

Wilfred L. LePage, Superintendent
Water Treatment and Pumping Division
Monroe Water Department

NATIONAL MARINE

MANUFACTURERS ASSOCIATION

June 13, 1995

Hon. Jim Saxton, Chairman
Fisheries, Wildlife and Oceans Subcommittee
U.S. House of Representatives
Washington, D.C. 20515

Dear Mr. Chairman:

A second thank you for participating at our Legislative Conference last month, and for your interest in working with the recreational boating industry on fishing issues.

In this regard, we are vitally concerned about the Chrysler bill which proposes to eliminate the Department of Commerce and transfer the National Marine Fisheries Service to the Department of Interior. As you know, NMMA's members manufacture over 80 percent of the recreational boats, engines and related products sold in the U.S. Many of these products are used by sportfishing enthusiasts and the functions of NOAA and it's NMFS are considered critical to the conservation and preservation of our fishery resources. In fact, it is our feeling that no other agency has expressed responsibility of stewardship of marine resources to the degree that NOAA has and to eliminate that administration from the Commerce umbrella would not be in the best interest of the resource or business.

While we may not always agree with the NMFS on their approach to fisheries management, we would be remiss in not expressing our support of NOAA and the NMFS and the fact that they should remain intact, and in the Commerce Department. It is our sincere hope that you and members of the Subcommittee will concur.

NMMA and our industry colleagues are working on several major issues impacting on recreational boating. These issues, all in the Commerce Department, range from fisheries concerns to exports of products to South America and overseas and a relief from restrictive trade barriers. Secretary Brown has said that when government makes environmental or business decisions, industry should be involved in that decision making process. We couldn't agree more.

Please support the existing structure of the Department of Commerce so that we can look with optimism to the future while working

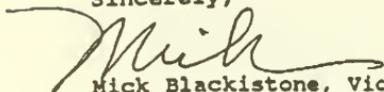


Washington Harbour, 3050 K Street, N.W., Suite 145
Washington, D.C. 20017 • 202/944-4980

in partnership with NOAA and the NMFS to build sustainable fisheries, recover protected species and see recreational and commercial fishing prosper.

Thank you, in advance, for your assistance.

Sincerely,



Mick Blackistone, Vice President
Government Relations

cc: Jeff Napier, President
Bob Healey, Viking Yachts
Dick Weber, South Jersey Yacht Sales
NMMA Government Relations Committee
James Baker, Administrator NOAA

Michigan Technological University


1400 Townsend Drive, Houghton, Michigan 49931-1200

 Vice President for Governmental Relations
 Secretary of the Board of Control
 906/487-2318
 FAX: 906/487-2935

July 18, 1995

The Honorable John D. Dingell
 Ranking Member
 U.S. House of Representatives
 Committee on Commerce
 Rayburn House Office Building, Room 2125
 Washington, D.C. 20515-6115

Dear Congressman Dingell:

During these challenging economic times, we recognize that budget reductions and greater efficiencies are necessary. However, we have great concerns re the potential elimination of the National Oceanic and Atmospheric Administration (NOAA).

It is essential to continue those functions aimed at conserving and wisely managing the Nation's marine and coastal resources, and describing, monitoring, and predicting changes in the Earth's environment, with emphasis on marine and coastal resources. The agency promotes world-class research and development in several crucial areas unduplicated by other agencies such as:

- development of reliable weather, climate, solar, ocean, and marine assessments and predictions;
- development of environmental technology, including new global observing systems; and
- implementation of environmental management and coastal resource development and environmental health programs.

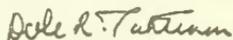
As the Nation's fifth coast, the Great Lakes region and Michigan in particular, are especially concerned about the future of this crucial federal agency. Specific NOAA initiatives of importance include the various activities of the Great Lakes Environmental Research Laboratory, the National Undersea Research Program, the Coast Watch Remote Sensing Program, and the National Sea Grant Program.

The Honorable John D Dingell
July 18, 1995
Page 2

Even though these highlighted activities positively impact the Great Lakes region, it is critically important to remember that those same efforts have a highly beneficial effect upon freshwater areas throughout the United States.

I urge you to consider these factors most carefully when deciding NOAA's fate.

Sincerely,



Dale R. Tahtinen, Ph.D.
Vice President for Governmental Relations
and Secretary of the Board of Control

ME

MICHIGAN STATE UNIVERSITY

DEPARTMENT OF FISHERIES AND WILDLIFE
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July 19, 1995

Hon. John D. Dingell
Room 2125
Rayburn House Office Bld.
Washington, D.C 20515-6115

Good Day:

I am writing in response to your letter of July 14, in which you requested my opinion on House Bill H.R. 1756 which is being considered by the House Committee on Commerce. I am opposed to that bill for several reasons:

First, I believe that there are certain functions that are best run by the federal government. In the case where there is no structure for competition to develop. Many of the functions of NOAA fall into this category. Things like the national weather service and the research and monitoring of atmospheric change are not appropriate to be handled by the private sector. If one does not think that atmospheric change is not an important function, they should think again. This function is vital to both national and international interests.

Second, the maps prepared by NOAA are vital to commerce, especially shipping, but also research and monitoring. If this is eliminated I do not see how competition could be fostered in the private sector. The immense cost of these programs would result in the maps becoming obsolete very rapidly. This would be a national tragedy. I would not be opposed to raising the prices charged to cover the costs of this program, but do not think that it should be privatized.

Third, relative to the privatization of NOAA functions, such as the National Environmental Satellite Data and Information Service, it seems unfair for the public at large to have paid to develop the system and generate the data and then allow a few individuals to make a great deal of profit. I have personal experience with this type of effect. When the Landsat program was privatized the costs of the information and pictures became too great for private individuals to afford. In addition, as a scientific researcher working on federally funded projects, I could not afford to acquire the information. Again, it was developed by the public at large, but a few individuals were allowed to profit. This is wrong!

Relative to the fisheries programs, I am not familiar with these specifically, but I have worked with

Hon. J. D. Dingell
July 19, 1995
Page 2 of 2

researchers from the Great Lakes Environmental Research Laboratory (GLERL) in Ann Arbor. The do very sophisticated, long-term research and monitoring of natural phenomena of the Great Lakes, which has been vital to our understanding and management of the Great Lakes as a national resource. Without that information we would not have been able to make the great strides in improvement of Great Lakes water quality. I do not see that this function could be privatized. There would not be a profit center to attract the type of investment necessary. Due to the long-term nature of these programs and that a number of jurisdictions, including states and provinces in Canada are involved, it would be very difficult if not impossible to have these functions taken over by private enterprise. This would then lead to a tragedy of the commons.

At some point in the future decision makers in state and federal agencies will need to provide leadership, manage resources and provide answers to complex technical issues without any information. NOAA, especially GLERL is a first-class research organization that maintains the continuity of a complex data base. If GLERL were to cease to exist this information would surely be lost, along with the expertise to interpret it. For the few dollars saved this would not be a wise decision.

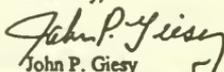
Finally, the public has indicated that they are concerned with the quality of the environment. As our populations grow and more and more demands are put on the natural resources the issues will become more and more difficult to manage. This will require detailed, long-term environmental information. Now is not the time to dismantle the infrastructure and knowledge base that has allowed us to make so much progress in the past 25 years.

In general, we in the United States spend the least proportion of our GDP on environmental research and management of any of the industrialized countries. This will cost us much more later than the small investment now.

In my professional opinion, it would be bad policy to eliminate or reassign the functions of NOAA. These functions are not appropriate for the private sector to assume and are managed in a very cost effect manner.

Thank you for the opportunity to comment on this legislation.

Sincerely,


John P. Giesy
Distinguished Professor

enc: short CV

John P. Giesy

Professor Giesy was born in 1948 in Youngstown Ohio, but considers himself a *Michigander*, since he has lived most of his life in the state of Michigan. Prof. Giesy is from Flint and attended Alma College in Alma, Michigan where, in 1970, he obtained a B.S. Degree, *Summa cum laude* with honors in Biology. Prof. Giesy obtained Masters and Doctor of Philosophy Degrees in Limnology from Michigan State University in 1971 and 1974, respectively. From 1974 until 1981 he was affiliated with the Savannah River Ecology Laboratory and a faculty member in the Institute of Ecology and Department of Zoology at the University of Georgia. Currently, he is University Distinguished Professor of Fisheries and Wildlife at Michigan State University in East Lansing, Michigan, where he is also on the faculties of the Pesticide Research Center and Institute for Environmental Toxicology. He is a NIEHS Preceptor and member of the National Institutes of Health Faculty. Prof. Giesy considers himself an aquatic toxicologist with interests in many aspects of this field, including both the fates and effects of potentially toxic compounds and elements. He has conducted research into the movement, bioaccumulation and effects of toxic substances at different levels of biological organization, ranging from biochemical to ecosystem. Prof. Giesy has done extensive research in the areas of metal speciation, multispecies toxicity testing, biochemical indicators of stress in aquatic organisms, fate and effects of polycyclic aromatic hydrocarbons and photo-enhanced toxicity of organic compounds. Currently Prof. Giesy and his research group are actively studying the toxicity and reproductive effects of organic compounds on fish and fish-eating birds and mammals in the Great Lakes region with a special interest in mink and raptors such as hawks and eagles. Prof. Giesy has been active in the development and application of methods for the assessment of the toxicity of contaminated sediments, especially in the North American Great Lakes. Prof. Giesy has received more than \$15,000,000 from many local, state, federal and international agencies and organizations to conduct his research, which has resulted in the publication of 196 peer-reviewed publications and hundreds of lectures, world-wide. Two of his books *Microcosms in Ecological Research* and *Sediments: The Chemistry and Toxicology of In-Place Pollutants* have become classics. Prof. Giesy works frequently in Europe with many universities, research establishments and government agencies. Prof. Giesy was president of the Michigan State University chapter of *Sigma Xi The Research Society* and in 1990, was the recipient of the *Sigma Xi Meritorious Research Award*. Prof. Giesy is also the recipient of the Chevron Distinguished Lectureship Award for his research on the toxic effects of environmental contaminants on wildlife and the CIBA-GEIGY Agricultural Recognition Award for his work on microcosms and pesticides and the Willard F. Shepard Award from the *Michigan Water Pollution Control Assoc.* In 1994 Prof. Giesy received the prestigious Vollenwelder Lectureship In Aquatic Sciences Award from the *National Water Research Institute of Canada* for his work on contaminants in the North American Great Lakes. Prof. Giesy is a member of the Boards of Directors of the *International Association for Sediment and Water Science* and the *International Association of Great Lakes Research*. Prof. Giesy has served on the Board of Directors of the *Society of Environmental Toxicology and Chemistry (SETAC)* from 1986 until 1992 and as President of the Great Lakes Regional chapter in 1984 and of the international organization in 1990-1991. He was Chairman of the Board of Directors of the *SETAC Foundation for Environmental Education* in 1992-93 and is currently Vice President. Prof. Giesy is a Fellow of the *Cooperative Institute for Limnology and Ecosystems Research*. Prof. Giesy is a member of the Board of Directors of Alma College and President of the Alumni Organization. Prof. Giesy is listed in 23 biographical listings, including *Who's Who in the World*.



MERRA

Increasing Michigan's Growth Through Technology

July 20, 1995

Representative John D. Dingell
 U.S. House of Representatives
 Committee on Commerce
 Rayburn House Office Bldg., Rm2125
 Washington, DC 20515-6115

Dear Mr. Dingell,

Thank you for the opportunity to provide information to you on MERRA's experiences with the Advanced Technology Program (ATP) and the Manufacturing Extension Program (MEP) of the U.S. Department of Commerce. MERRA strongly supports these programs.

MERRA is a Michigan public/private partnership whose mission is to increase Michigan's economic growth through technology. Our membership consists of the most influential institutions in Michigan. It includes major corporations, both the executive and legislative branches of state government, universities and economic development organizations.

An important part of our program is providing assistance to Michigan companies in preparing proposals for solicitations under this program. We, therefore, have a lot of experience with the Advanced Technology Program.

Our members believe the ATP is important in transferring the results of fundamental research into practical products. This results in the creation of jobs and an increase in export sales. Its value to the industrial base of this country is shown by the willingness of companies to provide at least half of the funding in partnership with the federal government. Some important points which should be considered as the Congress debates this program are:

- Our international competitors in Japan and Europe receive assistance from their governments to commercialize new technology-based products. The assistance provided by the Ministry of International Trade and Industry (MITI) in Japan is well known. Assistance is also given by European governments to their companies under programs such as the Joint European Submicron Silicon Initiative (JESSI) which focus on the European electronics industry.

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■ The transistor and integrated circuit were invented in the United States whereas nearly 50% of the consumer electronic products today are imported. Government assistance is needed to ensure that the new inventions in the future are commercialized in this country. Even as the Congress debates the ATP program, it was announced this week that the last American-owned television manufacturer, Zenith Electronics, sold a controlling interest to the Korean manufacturer Goldstar.

■ Much of the technology developed in the ATP program is on the list produced by the National Critical Technology Review. This list defines those technologies which are driving forces in U.S. economic prosperity and national security. For example, MERRA assisted the Automotive Composites Consortium receive funding to develop composites technology for automobiles. This is a technology where the United States lead is being reduced by our foreign competitors. The Review data suggests that funding for these critical technologies should be increased rather than decreased.

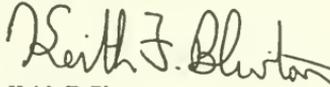
■ Although it is important for the federal government to fund fundamental research, it is not automatic for the results of this research to trickle down to practical use. Indeed, the results are published in the open literature and are picked up by corporations across the world. It is extremely important for the federal government to stimulate the application of this research in the United States.

MERRA's direct experience with the MEP is less extensive. However, several of our members have been part of this program. Therefore, we see the valuable assistance they are providing to small- and medium-sized companies. This has helped increase the quality of products manufactured by these companies and company profitability. This is invaluable in ensuring, for example, that U.S. auto companies purchase parts from American companies rather than from overseas.

As you requested, I have circulated your letter to our members with interest in these programs. I have asked that they respond to you directly.

I recognize the pressures the Congress will face with appropriating funds for FY96. However, the ATP and MEP are important programs benefiting the economy of the nation, and I encourage the Congress to continue their funding.

Cordially,



Keith F. Blurton
President

✓ cc: David Tittsworth



July 19, 1995

The Dow Chemical Company
Midland, Michigan 48674

The Honorable John Dingell
U.S. House of Representatives
2328 Rayburn House Office Building
Washington, DC 20515

Support of the Advanced Technology Program - Dept. of Commerce

Dear Congressman Dingell:

The following comments concern legislative bill H.R. 1756.

The Dow Chemical Company supports the Advanced Technology Program (ATP) of the Department of Commerce. We have submitted proposals to this program, and we also serve as a subcontractor in one awarded contract. Also, in late 1993 and 1994, we actively sent in ideas and "white paper" concepts for the focused area programs of ATP, e.g. advanced materials processing, manufacturing, and catalysis technologies. We feel that these Focused Programs are very positive additions to the ATP, and they offer important opportunities for U.S. Industry. We have submitted proposals to these areas.

One of the recent focused programs announced is "Catalysis and Biocatalysis Technologies." Especially for the U.S. Chemical Industry, Dow believes that this Focused Program can be a very valuable partnership program. Along with the Council for Chemical Research (CCR), the Chemical Manufacturers Association (CMA), and other companies, Dow actively supported the creation of this ATP technology area. A high percentage of industrial process chemistries depend upon catalysis for operation. Breakthroughs in catalysis technologies can significantly lower capital costs of plants as well as processing costs associated with energy, raw materials, and environmental operations. This program is a good example of how the ATP can be of value to Dow Chemical as well as U.S. industry. The 50 percent cost sharing requirement for joint ventures assures serious industry commitment.

The ATP is one of the few federal programs which targets civilian commercial technology development as a goal for improving U.S. competitiveness. Dow Chemical supports the continuance of the ATP. It is an excellent program which has not been given enough time to prove its true value.

A handwritten signature in dark ink, appearing to read "R. J. Pangborn".

R.J. Pangborn
Vice President, Ventures/Central R&D



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SENT VIA FAX (202) 225-2525

July 17, 1995

The Honorable John D. Dingell
U.S. House of Representatives
Ranking Member, Committee on Commerce
Room 2322 Rayburn House Office Building
Washington, DC 20515

Dear Congressman Dingell:

I am writing to urge your support for continued federal funding for the U.S. Commerce Department's National Institute of Standards and Technology Advanced Technology Program (NIST ATP). During this period of Congressional evaluation of publicly funded programs, we feel it is appropriate for the private sector to provide input on programs in which we are involved.

We recognize that the national trade deficit is increasing and that two-thirds of the deficit is auto related. The Michigan team has a responsibility to reverse this imbalance -- the NIST ATP program is a significant catalyst to enable us to accomplish this objective. NIST has a tradition of being a positive contributor to the competitiveness of the U.S. industry and the ATP program is an excellent example of how the federal government can help.

In order to assist your Committee, attached is a private sector evaluation of the NIST ATP program. Again, we strongly urge your support of the NIST ATP program. If we may provide further information or assistance, please do not hesitate to call.

Sincerely,

Dwight D. Carlson
President and CEO

DDC:arb

Attachment

**A PRIVATE SECTOR EVALUATION OF THE
NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY'S
ADVANCED TECHNOLOGY PROGRAM**

**Prepared by Dwight D. Carlson
Chairman, Auto Body Consortium
President & CEO, Perceptron, Inc.**

**On behalf of
The Auto Body Consortium**

**APX International
ASC
Classic Design
Detroit Center Tool
ISI
Modern Engineering
Perceptron
Progressive Tool**

July 1995

Introduction

The purpose of this document is to present a first-hand private sector evaluation of the effectiveness of the National Institute of Standards and Technology's Advanced Technology Program (NIST ATP). This evaluation has been prepared on behalf of the Auto Body Consortium (ABC), a not-for-profit consortium of eight innovative small business technology suppliers to the U.S. auto industry.

In 1992, ABC teamed with General Motors, Chrysler, The University of Michigan and Wayne State University under a NIST ATP grant to jointly develop advanced technology to solve a critical auto industry assembly problem. This program was called the ATP 2mm Program.

This evaluation provides a first-hand accounting of the successful results of the ATP 2mm Program which is in its third year. It then defines the keys to that success and the vital role that the NIST ATP played. Finally, it establishes the reasons why further auto industry ATP support is critical, and how the ATP's Motor Vehicle Manufacturing Technology (MVMT) program area can deliver it.

2mm Program ATP

In 1991, the Auto Body Consortium (ABC) teamed with General Motors, Chrysler, the University of Michigan, and Wayne State University to identify a critical auto body assembly technical problem and proposed a joint technology development proposal to solve it. The team submitted an ATP proposal to NIST called the 2mm Program, and in 1992 received a three-year, five million dollar grant. The private sector (ABC, General Motors, and Chrysler) committed an additional seven million dollars to the program. The program runs from September 1992 through September 1995.

The 2mm Program ATP consists of ten research projects aimed at reducing auto body assembly dimensional variation to less than 2mm, plus a technology transfer research project.

The 2mm Team

The 2mm Program is organized as follows:

- Research is performed by the research university personnel from The University of Michigan and Wayne State University. The University of Michigan brings the expertise in mechanical and precision engineering required to attack and solve the 2mm problem. Wayne State brings unique technology transfer expertise to the team. The three-year research program provides sufficient time and funding for worthwhile Ph.D.-level research to be conducted. The coupling of the university researchers with the auto suppliers and auto manufacturers also provides a rich environment for defining future research agendas. U.S. research universities are a unique resource and competitive advantage for U.S. competitiveness.
- Innovation is performed by the small business technology supplier companies that form ABC. This is where the U.S. auto industry designs and produces its manufacturing processes, and where a process solution to the 2mm problem must come from. The

companies receive the ideas and inventions from research and innovate products and services. Teaming and coordination between these companies is also essential to effect any significant process changes required to meet our 2mm goal. These smaller-type companies are also a unique competitive advantage for the U.S. auto industry.

- Implementation is performed by the major manufacturers, which face fierce global competition. In fact, several Japanese manufacturers have already attained less than 2mm variation in their auto body assembly processes. Since knowledgeable leadership and empowered teams are the key to success in implementing robust technology in the auto manufacturing environment, teaming with the ABC companies and universities to understand how to use the new technology is essential.

The successful teaming of these three elements is necessary to solve the 2mm problem. The major manufacturers need new products and services from the ABC companies, the ABC companies need access to the university researchers, and they all need each other because of the significant process changes required to solve the problem.

Objectives of 2mm Program ATP

The objectives of the 2mm Program are as follows:

- Reach world class levels of auto body assembly variation.
- Reach these levels in world class launch times.
- Maintain world class levels of process performance for the production life of the vehicle.

In other words, build auto bodies better than the foreign competition. Success hinges on the ability to do three things very well. First, to develop knowledgeable leadership within the team that will lead to the successful implementation of the 2mm Program in an auto assembly plant. Second, to empower the plant's entire body shop organization to successfully implement the 2mm Program. Third, to develop robust technology to provide enhanced tools and techniques to reduce auto body variation.

Achievements of the 2mm Program ATP

Beginning at the Chrysler Jefferson assembly plant which produces the Jeep Cherokee, the 2mm Program has been implemented in several auto/truck assembly plants. The first objective of the program to reduce variation to 2mm was achieved at Chrysler Jefferson in 44 weeks. With improved tools and techniques, the 2mm objective was recently achieved in 15 weeks at the GM Shreveport (Louisiana) assembly plant. The objective of maintaining world-class levels of variation on a continuous basis has been exceeded at the GM Linden (New Jersey) plant where variation levels are now running at 1.74mm.

An analysis of the payback for implementing the 2mm Program in a plant was conducted by Eastern Michigan University's Business School. Payback proved to be less than one year.

Once the concept of variation reduction is grasped in a plant and the 2mm Program tools and techniques are understood by an empowered workforce, variation reduction initiatives are spreading to other areas of the vehicle assembly process.

Plants implementing the 2mm Program are significantly improving their customer satisfaction scores as well.

The results to date of the 2mm Program ATP program's approach to variation reduction in auto/truck body manufacturing is exceeding expectations.

Keys To Success of the 2mm Program ATP

It is important to identify the keys to success of the 2mm Program. Using it as a model, the domestic auto industry can harness the unique cultural strengths of U.S. research, small businesses, and our major manufacturers to regain leadership in global competition.

- Teaming for International Competitiveness

Prior to the NIST ATP program, there was no authorization which provided the necessary teaming structure and monetary support for auto companies, smaller suppliers, universities, and government to establish teams to improve the competitiveness of the domestic auto industry. At the onset of the 2mm Program, there was a great deal of skepticism and discomfort about this new teaming concept. Today, after three years of working together to prepare the proposal and execute the program, the teaming momentum is building and the initial skepticism has subsided. People are starting to believe that a partnership between industry and universities in America, enabled by government, can work.

Without the comfort provided by the federal government through NIST that it is "o.k." to form teams to address industrial competitiveness issues, a "2mm Program" would not be possible.

In today's fierce international auto industry competition, this form of teaming is necessary and is being done in other nations.

- Research Funding for Small and Medium Size Companies

The National Science Foundation conducted research that concluded companies with less than 200 people achieved 25 times the innovation per investment dollar as do major corporations with 10,000 or more people. In America, it is these smaller companies which design and produce the manufacturing processes to build domestic vehicles. In the past, automobile manufacturing was somewhat of a low-tech environment. It was possible then to design and build the needed manufacturing processes within the cycle time of a new model. Not so today -- today's auto manufacturing plant is a high-tech environment going to even higher tech. Three-dimensional machine vision systems guide robots for flexible assembly and manufacturing data is networked by computers and displayed on screens throughout the plant.

The major difference is research for manufacturing. You can no longer wait for a purchase order to begin the research on an auto manufacturing process in today's high-tech, global auto manufacturing environment.

The first question is where are the small and medium size companies in America going to obtain research dollars to provide the next generation of auto manufacturing processes.

The second question is how are the small and medium size companies going to attract the researchers to perform the research.

The time span from research to commercialization of a new industrial technology is too long to be a viable venture capital investment.

Similarly, researchers are not attracted to smaller companies due to the lack of research facilities and research funding.

Therefore, without an answer to this situation, America's unique strength of innovation from smaller companies cannot be harnessed to solve the trade deficit problems.

As a solution, NIST ATP funding provides research dollars to small and medium size companies which are responsible for the success of the projects, thereby solving the research funding problem. Second, the smaller companies subcontract to the research universities that have the research facilities and Ph.D.'s to perform the research.

The 2mm Program ATP is a model for harnessing America's unique innovation strength to solve our nation's number one trade deficit problem -- auto related products.

- Teaming for Technology Transfer

In the past, the government's trickle down funding approach for research has had limited impact on industrial competitiveness. The challenge of this approach is the difficulty to link the researchers, the innovators and the implementors.

The 2mm Program ATP has built-in links between the university researchers performing the leading edge Ph.D. research and the innovative industrial technology companies that make up the Auto Body Consortium. These companies receive the ideas and inventions from the researchers and develop innovative products and services.

The final link is the implementation in the large auto companies that receive the products and services and implement them into the auto manufacturing process.

With this built-in linkage, research findings are being processed through the chain on a continual basis.

- The Private Sector Is in Charge

While the ATP Program enables the essential teaming described above, it was the auto industry that was and is in charge of the 2mm project. The industry defined the problem, proposed the technology development required to solve the problem, and constructed the team.

And it is the auto industry team that is responsible for directing the technology development during the 2mm ATP timeframe and, of course, will be responsible for any commercialization efforts after the ATP concludes.

The ATP's role was simply to ensure the industry critical nature of the 2mm problem, assess the promise of the technologies described in the proposed technology solution, validate the commitment of the proposed team members, and ensure the necessity of ATP funds and its teaming environment.

The ATP then got out of the way and let the U.S. auto industry help itself.

Why More ATP Support for the Auto Industry ??

The automotive industry is critically important to the economic health of the nation. Just ten years ago, conventional wisdom was predicting the U.S. would lose its auto industry to low labor cost competitors, and with it, the high paying jobs it supports. Fortunately, industry leaders with some government support have performed a near miracle in beginning to turn this prediction around by significantly improving productivity, maintaining labor costs, improving quality and stopping the slide in market share.

However, the battle is not over. It rages on with new competitors such as the Koreans who are committed to double their substantial auto production of two million units to four million units by the year 2000.

Global auto and truck competition is a fierce team sport with new competitors like Korea entering all the time. There is too much to lose, and the foreign competition too tough -- we must view the competitiveness of the domestic auto industry as a strategic priority for the nation.

The NIST ATP program through the 2mm Program has proven to be critical to teaming research universities, smaller automotive suppliers and the Big Three to accomplish what no one sector could have done alone. Through this program, we now have a powerful industrial competitiveness formula. We need to apply it to the next set of significant auto industry problems.

The next few sections expand on these points.

The Domestic Auto Industry's Impact On The U.S. Economy

The domestic auto industry has a significant impact on the U.S. economy:

- One in every seven jobs in the U.S. are auto related.
- The auto industry makes up 4% of the U.S. Gross Domestic Product.
- Autos and auto parts make up two-thirds of the U.S. trade deficit.
- U.S. trade deficit in motor vehicles went from \$39 billion in 1991 to \$44 billion in 1993.

And, the auto industry's impact on the U.S. economy is growing.

The Current Global Competitive Status of the U.S. Auto Industry

The global competition in the auto/truck market is fierce and will become even more so as global capacity exceeds global demand by 2000. New competitors like Korea are entering the market all the time.

- Recent J.D. Powers data indicates that Japanese automobiles captured eight of the top ten places in initial quality rankings.
- Model changeover losses on the 1995 Chevrolet Lumina were \$191-244 million. Model changeover losses for 1994 Honda Accord were \$7-8 million.
- The three most productive North American vehicle plants are Japanese owned.

The continued strengthening of the yen against the dollar has provided significant competitive relief; however, this cannot be relied on for the long term. Also, the 25 percent import tariff on trucks has also provided protection in a lucrative segment of the U.S. market. This, too, cannot be thought of as a long-term solution.

The only long-term strategy that will work is to continually improve the competitiveness of every aspect of the business to further delight customers.

Manufacturing Process Technology and Its Impact On Global Auto Industry Competitiveness

A significant difference exists in the allocation of strategic research and development investments made by the Japanese industry and U.S. industry. The Japanese invest 80 percent of their research and development into manufacturing process related research and development and 20 percent into product related research and development. The U.S. industry completely reverses its strategic research investments -- 20 percent process and 80 percent product.

As a result, a competitive gap exists in manufacturing tools, techniques, knowledge and workforce empowerment skills.

From a strategic perspective, it is easier to copy a new Ford Taurus product design than it is to copy and implement the now famous Toyota Production System. This system enabled Toyota to come to Kentucky and in a short time establish an auto assembly plant that produces at world class manufacturing performance levels as good, if not better, than Toyota plants in Japan. Toyota is the world class auto industry benchmark because of the Toyota Production System.

Fortunately, over the past five to ten years, this competitive gap has been recognized. However, the approach to rectify this situation has not been developed and remains a puzzle due to the inherent structure of the domestic industry as it relates to manufacturing process.

Who Designs and Builds Auto Manufacturing Processes in America

Unlike the Japanese auto industry which designs and produces its manufacturing processes internally, the domestic auto manufacturers rely on hundreds of small and medium sized companies.

In the past, these innovative companies could rapidly respond providing low tech solutions after receiving a purchase order and deliver within the time frame of the new model schedule. Today, the auto manufacturing environment has transformed from a low tech environment to one where high tech three-dimensional machine vision systems guide robots to flexibly assemble the vehicle and manufacturing process performance data is collected in seconds and networked around to plant-wide display screens.

These high-tech manufacturing process technologies of today require years of research and development. This creates a significant challenge for small and medium size companies expected to provide these state-of-the-art manufacturing processes.

The Need For Research and Development Funding

Research funding for manufacturing process research and development is extremely scarce in the United States. The venture capital industry which supplies a great deal of research and development money for high tech products has determined that the time frame from research to commercialization of manufacturing process technology is too long to be a viable venture capital investment candidate.

The Motor Vehicle Manufacturing Technology (MVMT) Program Area

In December 1994, after months of auto industry led discussion with the NIST ATP program, NIST announced the Motor Vehicle Manufacturing Technology (MVMT) program area. It is a five-year, \$185 million program to foster innovations in manufacturing technologies that can strengthen our current manufacturing capabilities and lead to dramatic advances along the entire automotive production chain.

This program area will enable the U.S. auto industry to attack and solve the significant technological advances and process changes required for the U.S. auto industry to erase the gap in the J.D. Powers Survey results.

It will foster innovations that could slash time-to-market to 24 months, markedly better than even the best times logged to date by foreign or domestic car makers. Advances will lead to more versatile equipment, better control and integration of processes, and greater operational flexibility at all levels, from suppliers of parts, dies, and machine tools to assembly plants.

This is exactly the kind of government support the U.S. auto industry needs to remain competitive.

NIST ATP Evaluation Summary and Recommendations

Our NIST ATP experience over the past four years has been one of unqualified success. The program enabled the U.S. auto industry with its small business technology suppliers to address and solve a critical industry technology problem we would NOT have solved without ATP support. The 2mm ATP Program has enabled the U.S. to reach world class levels of auto body assembly variation and launch times, leading to higher U.S. auto quality, lower U.S. auto costs, and increased U.S. auto customer satisfaction.

From our perspective, the ATP Program is doing exactly what it should — it is helping the U.S. auto industry help itself. It was the auto industry that identified the 2mm problem and the technological solution. But it was the teaming of the Big 3, its small business technology suppliers, and key university researchers that was necessary to solve it and was possible only through the ATP teaming structure and support. The ATP carefully ensured the industry critical nature of the 2mm problem, the promise of the technology solution, the commitment of the industry to solve it, and why the ATP was necessary at all before offering support. It then got out of our way.

But the U.S. auto industry and ATP partnership has just begun. In December, after months of auto industry led discussion, NIST announced the Motor Vehicle Manufacturing Technology (MVMT) ATP program area to further help the U.S. auto industry, and other manufacturing industries, solve their most critical technology problems. We believe this program area will be, and needs to be, equally successful in helping the U.S. auto industry help itself against increasingly fierce foreign auto industry competition.

Based on the U.S. auto industry's success with the ATP, the industry-empowering and effective manner in which the ATP provides support, and the critical need for continued support, our private sector evaluation strongly recommends continued support for the NIST ATP Program, particularly the Motor Vehicle Manufacturing Technology program area.



Automotive Industry Action Group
26200 Lahser Road, Suite 200
Southfield, MI 48034
Phone (810) 358-3570
Fax (810) 358-3253

July 27, 1995

Honorable John D. Dingell
U.S. House of Representatives
Committee on Commerce
Room 2125, Rayburn House Office Building
Washington, DC 20515-6115

Dear Sir:

H.R. 1756, being discussed by your committee, is of interest to the Automotive Industry Action Group (AIAG). The National Institute for Standards and Technology (NIST), a very active and critical partner in several efforts involving the North American automotive industry, will be adversely affected by passage of H.R. 1756.

NIST currently provides unique technical assistance to a current program managed by AIAG. This program, called AutoSTEP, seeks to migrate an emerging international STandard for Exchange of Product data (STEP) throughout the automotive supply chain. This effort has strong automotive industry backing, not only with the North American OEMs but also with the major European OEMs. NIST is a central point for STEP development in the United States. Several areas where they contribute are:

- Coordination of several diverse efforts to gather industry requirements for product data exchange. This insures these requirements drive STEP development and incorporates the needs of the North American automotive industry.
- Insuring the United States retains the global lead in development and implementation STEP. The U.S. auto industry depends upon a single set of standards for their operations. Standards that act as trade barriers are not good!
- Leading the effort to insure the U.S. paces the world in STEP conformance and interoperability testing, insuring the error free exchange of product data.
- Supporting several industry pilots that seek to ease the adoption and use by major U.S. automotive manufacturers and their suppliers.

STEP and the assistance NIST provides in its development and implementation is critical to the full integration of U.S. OEMs with their global supplier community. Design time and cost is reduced while quality substantially improved through this global integration.

Mr. Dingell, your support in defeating H.R. 1756 will be appreciated.

Sincerely,

A handwritten signature in cursive script that reads "Theo D. Merrill".

Theo D. Merrill
Executive Director, AIAG
Ford Motor Company

Ernest O. Vahala
 President
 ABC/2 mm Program, Inc.



AUTO BODY CONSORTIUM

July 27, 1995

John D. Dingell
 Ranking Member
 U.S. House of Representatives
 Committee on Commerce
 Room 2125, Rayburn House Office Building
 Washington, DC 20515-6115

Dear Representative Dingell:

It has come to our attention that the bill H.R. 1756 has been introduced in the House of Representatives to abolish the Department of Commerce, along with it the NIST Advanced Technology Program. It is quite ironic that members of the House of Representatives from the State of Michigan introduced this bill, because the ATP is positively impacting a substantial part of the Michigan-based automotive industry.

The Auto Body Consortium has 50 different companies involved in eight programs, including the 2 mm Program, which is currently in the final phases of its three-year effort. The 2 mm Program is comprised of eight automotive supply companies in conjunction with General Motors and Chrysler. The focus of the program has been on the body engineering of automotive vehicles in an effort to reduce the variation in the bodies. It has achieved great success in minimizing body variation from 5 millimeters down to 2 millimeters.

However, more importantly, I do not believe that the congressmen introducing these bills realize that the ATP is probably one of the few government programs where *at least 50%* of the funding for the program comes from the companies themselves, and then the ATP program provides the remaining 50%. These companies are putting up what is more often than not, very scarce R & D resources for the program because they realize how very important these programs are. Without the ATP program, these projects would not be a reality. In addition, over the last five years the growth of employment in small companies has more than offset the downsizing occurring in the corporate giants by a approximately one million jobs. The ATP program focuses on these smaller companies where the potential for new jobs is the greatest.

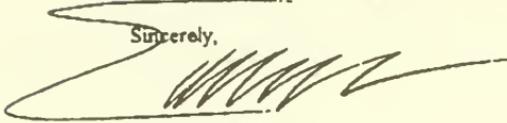
Our driving motivation has been to take on the quality and cost parameters that make us currently non-competitive in the world marketplace. By the year 2000 our goal is to be #1 in the world, and the ATP and its Motor Vehicle Manufacturing Technology focus program are the foundation stones to that effort. To see all this potential eliminated leaves me greatly concerned about the

2901 Hubbard Road, Ann Arbor, MI 48105-2467 Ph: (313)741-5905 & (313)741-5906 Fax: (313)741-5912

"steamroller" effect in Washington where programs that are value-added will be eliminated without much in-depth research into their worth. It is especially concerning since government and industry were just starting to learn to work together for the benefit for more jobs in the supply industries serving the motor vehicle industry

I thank you for letting us know of this effort. Your concern and leadership is very much appreciated in this very critical period.

Sincerely,



Ernest O. Vahala
President
Auto Body Consortium



NIST/MICHIGAN MANUFACTURING TECHNOLOGY CENTER

July 28, 1995

The Honorable John Dingell
 United States House of Representatives
 2328 Rayburn Office Building
 Washington, DC 20515

Dear Congressman Dingell:

Thank you very much for contacting me for information regarding the Michigan Manufacturing Technology Center and it's relationship with the Department of Commerce. I am happy to respond.

The MMTC was established by NIST in 1991 as part of it's Manufacturing Extension Partnership (MEP) network. MMTC is headquartered at the Industrial Technology Institute in Ann Arbor, Michigan. The NIST funding along with the state match funds is used to cover outreach costs and education for manufacturers, including identifying modernization opportunities, seminars and training workshops. The manufacturers themselves pay all costs of implementing the MMTC recommended improvements.

The MMTC serves manufacturers with up to 500 employees throughout the state of Michigan through six regional offices. All are partnerships with other organizations who have strong regional support by the manufacturers in their respective parts of the state. Regional offices and affiliations are as follows:

MMTC-West Michigan	The Right Place Program	Grand Rapids
MMTC-Genesee Valley	GEAR, Inc.	Flint
MMTC-Saginaw Valley/NE	Saginaw Valley State Univ.	Saginaw
MMTC - Northwest	Northwestern MI College	Traverse City
MMTC - UP	Northern Initiatives	Marquette
MMTC-SE Michigan	Industrial Technology Institute	Ann Arbor

We have provided over 500 companies with direct technical assistance through over 1000 projects. Impact on our customers' business includes an increase in sales by manufacturers of \$35.8 million, labor and material savings of \$8.8

Congressman John Dingell
page 2

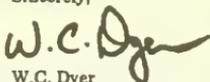
July 23, 1995

million, and inventory reductions of \$7.3 million. The majority of MMTC customers have less than 250 employees. Most often these companies do not have the available resources to determine their modernization needs and train their employees. Therefore, the NIST MEP support is critical to the modernization efforts of Michigan's small manufacturers.

We have recently sent your office a packet of information titled "*MMTC Impact of Michigan*" which contains success stories and direct quotes from our customers. Please feel free to use this information in your efforts, or contact me if you need more information. Enclosed with this letter are additional support letters received since information was sent to you.

Do not hesitate to contact me at (800)292-4484 ext. 4474 if I you have any questions, or if I can be of further assistance to you or your staff.

Sincerely,



W.C. Dyer
Executive Director, MMTC

Enclosures



NIST/MIDWEST MANUFACTURING TECHNOLOGY CENTER

July 12, 1995

Honorable Carl Levin
US Senate
459 SROB
Constitution Avenue
Washington, DC 20510-2202

Dear Senator Levin:

I am writing in regard to the proposal to eliminate the U.S. Department of Commerce.

As the Director of the Michigan Manufacturing Technology Center, I work with the National Institute of Standards and Technology (NIST), a division of the U.S. Department of Commerce. We are part of the NIST Manufacturing Extension Partnership's network of manufacturing extension centers. These centers help small manufacturers apply appropriate manufacturing techniques and technologies, so as to improve manufacturers' competitive ability.

Our experience with the Department of Commerce is based on our work with the NIST Manufacturing Extension Partnership. We believe that MEP is an example of a state and federal-partnership that works. It works because MEP advocates, in policy and in action, delivery approaches based on the unique characteristics of each center's marketplace, and fosters continuous improvement and shared learning to help each center and the network of centers maximize their value to small and medium-sized manufacturers.

As a taxpayer and as a representative of the Michigan Manufacturing Technology Center, I applaud efforts to make government as efficient as possible. I support efforts to re-examine, re-engineer and, if necessary, re-configure government programs.

At the same time, I believe there is value in having a cabinet level department working for and with American enterprise. I also believe that the prospect of shutting down an entire business division of government without a thorough examination is, at the very least, unwise. Such an action would send a damaging signal to U.S. industry and to our international trade partners and competitors.

Sincerely,

W.C. Dyer
Executive Director

WCD:crw



MICHIGAN QUALITY COUNCIL™

*Elise
CYI
Ch*

*James
Director*

*Erica Whitman
Assistant Director
P.O. Box 30004
Lansing MI 48909
517-373-7868*

*Jack Bourget
Chairman, Board of Trustees
CEO and President
Manpower of Detroit, Inc.*

Founding Members:

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Automotive Industries, Inc.
Berry, Moorman, King & Hudson
Chrysler Corporation
Cold Heading Company
Dow Chemical Company
Eaton Corporation
Eschbacher Public Relations
First of America Bank Corp.
Ford Motor Company
General Motors Corporation
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Management Consultants
Herworth Incorporated
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Incorporated
Michigan Consolidated
Gas Company
Michigan Department
of Commerce
Oakland University
Organization Performance
Resources
Phillips Display
Components Company
Phelps & Mann, LLP
Accountants and
Management Consultants
Ring Screw Works
Rockwell Automotive
State of Michigan -
Office of the Governor
Steakcase North America
The Transformation Network
Unisys Corporation
The Uppjohn Company
Whitpool Corporation*

June 19, 1995

The Honorable Carl Levin
United States Senate
459 Russell Building
Washington DC 20510

Dear Senator Levin:

Both the House and the Senate bills for reducing the budget in the Department of Commerce call for the elimination of \$525 million that's associated with the Advanced Technology Program and the Manufacturing Extension Partnership. Although it is not identified, part of that \$525 million is \$3 million funding for the Malcolm Baldrige National Quality Award (MBNQA), a very successful business/government partnership. I am writing to gain your support for separating the \$3 million for this program from the planned cut and continue funding through a different appropriation.

The State of Michigan is one of approximately 40 states that have a quality award program based on the national Baldrige Award. As chairperson of the Michigan Quality Council, I can attest to the fact that we depend on the national Baldrige Award program as a guide for our Michigan Quality Leadership Award. This relationship has been extremely successful since its inception two years ago.

The shared learnings from use of the MBNQA criteria have substantially contributed to the turnaround of the manufacturing industry and improvement in the service industry that contribute to the overall economic improvement in the U.S. The General Accounting Office (GAO) has concluded that the practice of TQM is directly related to the financial success and increases in shareholder value of American companies.

We ask for your support in ensuring that these bills separate the \$3 million out of the \$525 million total that is being cut, so that our business/government partnership with the MBNQA can continue.

Sincerely,

Bill Kalmar

Bill Kalmar
Director

BK/jp

Design of the MQC logo and collateral materials was provided by the Design Michigan Program of the Cranbrook Academy of Art in collaboration with the Detroit Chapter of the American Institute of Graphic Arts (AIGA), a society of professional graphic designers.

Oakland University 523 O'Dowd Hall
Rochester, Michigan 48309-4401
810.370.4550 Fax 810.370.4202



Wayne State University

Central Instrumentation Facility
Department of Chemistry
Dr. Robin J. Hood, Director

Detroit, Michigan 48202

Tel: (313) 577-2046
Fax: (313) 577-1377

July 21, 1995

Senator Cari Levin
Attn: Ms. Elise Bean
SR-459 Russell Senate Office Building
Washington, DC 20510

Dear Senator Levin:

I am writing with regards to Bill S-929, "Department of Commerce Dismantling Act," SEC 206(b), National Institute of Standards and Technology, which is being considered by a committee on which you are a member. I am the Director of the Central Instrumentation Facility at Wayne State University which provides analytical support to the research program at the University and a voter in the state of Michigan. It is my understanding that this section of this bill would privatize or dismantle the laboratory program of NIST. I would strongly urge you to oppose this action.

While I in general support efforts to balance the Federal Budget and eliminate programs that are better carried out in the private sector, I am most concerned about decreasing support for basic research. From my experience, I know that the laboratory program at NIST provides valuable contributions to the basic scientific infrastructure of our country. If we are to remain a strong nation, we must continue to invest in basic research to provide for future growth. Thank you for your consideration of my opinion.

Sincerely,

A handwritten signature in cursive script that reads "Robin J. Hood".

Robin J. Hood, Director
Central Instrumentation Facility

RJH/ld

THE UNIVERSITY OF MICHIGAN

Department of Astronomy
David M. Dennison Building

Ann Arbor Michigan 48109-1090
313/764-3440
cowley@astro.lsa.umich.edu
20 July 1995

Senator Carl Levin
SR-459 Russell Senate Office Building
Washington, DC
20510-2202

Dear Senator Levin,

This is a letter to support the National Institute of Standards and Technology or NIST. The institute may be better known under its old name, the National Bureau of Standards.

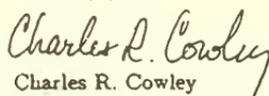
It is my understanding that the NIST laboratories may be terminated under Senate Bill 929, Section 206(b)3. If NIST were to cease to exist, much of my research work and that of my colleagues would be severely affected.

The scientists at NIST do both forefront research and perform service functions, as suggested by the old name, Bureau of Standards. It is to NIST that we now turn for definitive values of the physical quantities that form the backbone of our research. While NIST scientists make measurements and calculations of their own, they are recognized by the world's scientific community as "critical evaluators" of scientific results from around the world.

We have had NIST, and before it, "The Bureau" for so long it is difficult to imagine how we would do research without it. I suppose at least half of my scientific papers directly acknowledge advice or help from NIST personnel. My recent Cambridge University Press book *An Introduction to Cosmochemistry* (p. xi) specifically thanks colleagues at NIST. I have tried to find an analogy of what it would be like to do research without this organization. It might be something like driving an automobile if there were no laws or police to let us know when we broke them. We could still drive, but there would certainly be a lot more crashes!

I hope that you will do whatever you to save this essential laboratory.

Sincerely yours,


Charles R. Cowley
Professor of Astronomy

**Sprague
Pruttsman, Inc.**
SUBSIDIARY OF SPRAGUE DEVICES, INC.

255 1/2 Aero Park Drive
Troy, Mich. 48064

Tel. No. 313-231-8074

July 27, 1995

The Honorable John Dingell
U.S. House of Representatives
Washington, D.C. 20515

Dear Congressman Dingell:

This is written as I thought you might be interested in hearing about the valuable assistance Sprague Pruttsman Inc. received, thanks to federal support.

My company - Sprague Pruttsman Inc. - has 50 employees which manufactures heavy duty truck accessories. SPI ships to the contiguous 48 states as well as Australia, Canada and Mexico. Approximately 15-20 percent of goods and services are provided by Michigan suppliers.

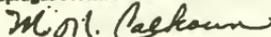
Many times we have had the opportunity to work with CBI (Center for Business and Industry), which is part of NIST Manufacturing Extension Partnership. Most recently we worked together applying for federal funding for job training of new and existing employees.

As global sourcing and new technology become more of a reality, we can expect increased competition for our market share. Training, continuous improvement ergonomics, and improved safety and processes are critical issues for Sprague Pruttsman's continued growth and profitability.

Our Company is small and our location is somewhat remote. Until recently much of the federal program information was not readily available to small, remote companies. Through CBI representatives, federal support information is being made known. It is through their assistance, that we received approval for the state grant. I thought you might be interested in knowing that we feel this federal support a great opportunity for improvement.

Sincerely,

Sprague Pruttsman Inc.



M. M. Calhoun
Quality Assurance Mgr.

SPECIALISTS IN HEAVY DUTY TRUCK ACCESSORIES



July 27, 1985

Honorable John D. Dingell
Ranking Member
US House of Representatives
Committee on Commerce
Rm. 2125 Rayburn HOB
Washington, DC 20515-6115

RE: HR 1756

Dear Congressman Dingell:

I am writing to voice my support for the National Institute for Standards and Technology (NIST) and its core program of technical research and standards support.

The Industrial Technology Institute is a Michigan not-for-profit with a mission to enhance the productivity and competitiveness of US manufacturing firms. We are proud of the fact that we host the Michigan Manufacturing Technology Center, sponsored by NIST and the Michigan Jobs Commission. Through this center we have been able to provide assistance to over 1,000 small and medium sized manufacturing firms in our state. In addition to our work with small firms we are partnering with the NIST laboratories and several of the leading manufacturing firms in this country to develop and deploy a new, global standard for the exchange of product and engineering data.

For years the costly and error-prone process of exchanging product data has been a major impediment to reducing the cost and time required by US firms to design and manufacture new products. It has also been a barrier that prevents smaller supplier firms from participating in the design process and, thereby, gaining a greater portion of the profitable business that results from partnering with your customers on the design of new products.

NIST and its industrial partners have led the way in developing the Standard for the Exchange of Product model data (STEP). We have had the good fortune to partner with NIST on one important aspect of STEP, the testing and certification of CAD systems to this new standard. Industry recognizes that a new standard

without the technical means to certify conformance will most likely mean that the CAD systems built to the standard will still not be able to interoperate and exchange data without error. NIST and the Department of Defense partnered to develop an program to provide, on a voluntary basis testing tools for STEP systems. We have worked now with NIST for four years to complete these tools. I want to assure you that NIST technical staff have shown real insight in this effort. They have involved not only the end users of CAD systems (large manufacturing firms and the DoD) but have also involved the CAD system vendors in the process and made this whole program a "win-win" for industry. STEP will have a great impact on the US ability to compete with and beat global competition and NIST deserves a large share of the credit.

STEP and other critical information standards will be the basis for much of the worlds commerce over the next twenty years. NIST is the key ingredient in public-private partnerships to keep the US as the leader in information process technologies and standards.

Sincerely,

A handwritten signature in black ink, appearing to read "John F. White". The signature is fluid and cursive, with a large initial "J".

John F. White, Director

Center for Electronic Commerce



July 31, 1995

The Honorable John Dingell
U.S. House of Representatives
Washington, DC 20515

Dear Congressman Dingell;

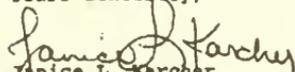
The Manufacturers' Innovation Council is a regional manufacturers' association located in Flint, Michigan. Our region represents nearly 800 small manufacturers in the heart of the automotive and appliance industries.

I thought you might be interested in hearing about the valuable assistance our members have received, thanks to federal support.

We serve small manufacturers in the area in conjunction with the Michigan Manufacturing Technology Center (MMTC) which is part of the NIST Manufacturing Extension Partnership.

Letters follow from some of our members detailing the invaluable assistance they have received.

Yours sincerely,


Janice L. Karcher
Program Manager



GENESEE AREA

**FOCUS
FUND,
INC.**

March 7, 1995

The Honorable Carl Levin
United States Senator
459 Russell Senate Office Bldg.
Washington, DC 20515-2202

Dear Senator Levin:

The purpose of this letter is to express my strong support for the NIST Program which program supports the Midwest Manufacturing Technology Center and our own Manufacturer's Innovation Center. Attached is a copy of Anderson Consulting's Worldwide Manufacturing Competitiveness Study. Please note the chart on Country Performance which indicates "incoming defects" from suppliers is the worst in the U.S. Improving the performance of suppliers is a very important aspect of the MMTC program and one which has enormous impact on the economy of this region.

I trust you will give every consideration to continue budget support for NIST and the MMTC.

Respectfully,

William J. Donohue
President

WJD/tr

Enclosure

810 Mori Foundation Building

Flint, Michigan 48502

(313) 232-6420



ATLAS TECHNOLOGIES

201 South Alloy Dr.
Fenton, Michigan 48430-1797
(810) 829-8563 FAX: (310) 529-9145

March 17, 1995

The Honorable Dale Kildee
2187 Rayburn Office Building
United States Representative
Washington, DC 20515-2209

Dear Congressman Kildee:

Atlas Technologies is a small business located in Fenton, Michigan that is the leading supplier of advanced manufacturing technology for sheet metal stamping processes for the world's automotive and appliance manufacturers. We currently supply 100% of the quick die change technology that is being implemented in the Big 3 auto makers press shops to help make them "agile". We are also a primary supplier (one of the three worldwide), for key types of stamping automation and processing technology.

Atlas has been in business in Michigan for 30 years and employs 200 highly skilled engineers and technicians, mostly in Michigan. Although we do most of our business in North America, we are beginning to see substantial gains in our export business to Europe and Asia. Our overall sales volumes have been rapidly increasing over the last two years, and will reach \$30 million this year, and we are growing at a 30% rate.

In the last four years, we have begun to work more closely with government and academic to integrate them into the business world, at the urging of the Flint area Manufacturer's Innovation Council (MIC/NIST), which is part of the NIST Manufacturing Extension Partnership. With the help of MIC/NIST we have:

- Won a grant from the state to pursue important research on new automation that we upgrade existing stamping plants (as opposed to requiring 10 times the investment in completely new plants, generally in other states) using GMI and NIST/MMTC researchers.
- Won state grants to pursue training of our people (using Mott Community College instructors) in new computer software, as well as synchronous manufacturing principles like problem solving, teamwork, communications, lean and agile manufacturing, etc.
- Applied for federal ATP grants to assist with technical research, and also have learned a great deal of general information helpful to small businesses.

Page 2

March 17, 1995

- I have personally received (as have many of my associates at Atlas) a great deal of general information helpful to my business, topics such as: how to lower my health care costs, export marketing, what is involved in participating in an innovative school to work transition program like the MTP program in the Flint area, how an employee handbook can help prevent unwarranted lawsuits, etc.

The MIC/NIST partnership helps me find what I need, lets me know what is locally available and stimulates me to take positive actions within my company. It is a real help to our business and to our future.

In the past, we have never really tried to use the help of the government and academia, but through the urging of MIC/NIST, we have finally seen how we can access government and academic resources. I was shocked to find that there was far less bureaucracy than I had anticipated and so many ways that this could help my company and employees. I thought you should know that NIST has been very helpful.

Sincerely,

Ronald M. Prime
President

5081 Exchange Drive
Farmington, MI 48307

(810) 230-8680
Fax (810) 230-7233

March 7, 1995

The Honorable Richard Chrysler
U.S. House of Representatives
327 Cannon House Office Bldg.
Washington, DC 20515-2208

Dear Congressman Chrysler,

I thought you might be interested in learning about the valuable assistance Compak Inc. and Webcor Packaging Corporation have received through Federal support.

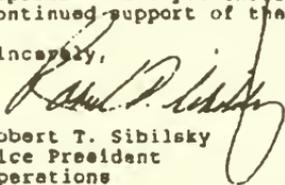
Our two companies total approximately 150 employees, manufacturing graphic-intensive corrugated packaging materials that are highly compatible with today's high speed automated packaging equipment.

We are working with the Manufacturers' Innovation Council, which is part of the NIST Manufacturing Extension Partnership. With their help, we have been able to undertake an extensive New Market Analysis that had been outside the scope of our internal resources and expertise. This data has provided us with a market roadmap for the future. Additionally, we have been able to cost-effectively utilize the experiences and expertise of an outside manufacturing consultant to review our plants and provide specific recommendations in the areas of employee involvement and supervisory development.

The assistance we have received from the Manufacturers' Innovation Council helped make these results possible. Through this organization we are more aware of the actions that we must take to enhance our competitive position. Best of all, we now know that there are other companies and resources that we can work with, through the Manufacturers' Innovation Council.

To be frank, I can count on one hand the number of times anything connected to a Federal program has helped our small companies. This was decidedly one of those times and I thought it was important that you should know. As always, we will appreciate your continued support of the manufacturing community.

Sincerely,



Robert T. Sibilsky
Vice President
Operations

Semtron, Inc.

G-8465 CORUNNA ROAD • FLINT, MICHIGAN 48532 • (313) 732-8080

3-6-95

THE HONORABLE SPENCER ABRAMAM
UNITED STATES SENATE
WASHINGTON, DC 20510

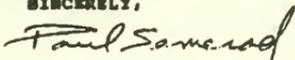
DEAR SENATOR ABRAMAM:

OUR COMPANY, SEMTRON INC. IS SMALL. WE HAVE 23 EMPLOYEES. OUR MAIN PRODUCTS ARE RELATED TO COMPUTER NETWORKING. WE REALIZE THAT CONSTANT TRAINING AND RETRAINING IS ESSENTIAL TO REMAIN COMPETITIVE.

WE HAVE BEEN WORKING WITH THE INNOVATION COUNCIL, WHICH IS PART OF THE M.I.S.T. MANUFACTURING EXTENSION PARTNERSHIP. THE TRAINING THAT WE HAVE LEARNED HAS BEEN EXTREMELY VALUABLE. WE HAVE LEARNED HIRING PROCEDURES. WE WERE INTRODUCED TO TQM, ISO9000, AND HAVE PUT TO USE MANY COMMUNICATION TECHNIQUES. ALSO A RECENT BENCHMARK SURVEY HAS GIVEN US MANY MORE AVENUES OF IMPROVEMENT THAT WE NEED TO PURSUE.

IN GENERAL, I DO NOT BELIEVE THAT THE FEDERAL GOVERNMENT SHOULD BE GROWING, BUT IN THIS AREA I BELIEVE, THAT IF WE AS A NATION DO NOT DO EVERYTHING TO STRENGTHEN SMALL BUSINESS, THERE WILL SOON BE NO BUSINESS TO WORRY ABOUT.

SINCERELY,



PAUL SEMERAD
PRESIDENT

PRODUCTS FOR COMPUTERS

IATRICS

6 March, 1995

The Honorable Spencer Abraham
United States Senator
Dirksen Senate Office Building, B40
Washington, DC 20510-2203

Dear Sen. Abraham:

I thought you might be interested to hear about the valuable assistance IATRICS has received, thanks to Federal support.

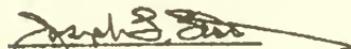
My company is a small, 40 employee manufacturing firm engaged in the design, development and manufacturing of medical devices, located in Fenton, Michigan. Although small, we are the recognized leader in a steadily growing, niche market of specialty diagnostic, patient care and health worker protection products. We have worked for over five years with the Manufacturer's Innovation Council, which is part of the NIST Manufacturing Extension Partnership.

With their help, we have grown in sales by an average 20% per year, and have added 25 new, full-time employees over five years. We have received their help with Employee communications, strategic planning, international marketing, Total Quality Management, systems improvement, and other advice and consultations too numerous to mention. We have seen positive results in the form of smaller order backlogs, faster turnaround time on orders, and better control of financial data, especially labor and material costs.

The assistance we have received in partnership with the Manufacturer's Innovation Council was a cornerstone of our success. We could not have come as far without their knowledge, support, and connection to resources necessary to be competitive and financially strong.

I cannot imagine a better use of Federal aid than in direct community involvement through programs such as NIST. The investment they have made has resulted in a solid return in jobs, competitiveness in a global marketplace, and security in facing an uncertain future for the Medical Industry. I hope you will give serious consideration to the impact of these fine programs when Congress debates these issues.

Sincerely,



Joseph L. Scott
Vice President, IATRICS
Manufacturer's Innovation Council Charter Member; Board of Directors

July 27, 1995

The Honorable John Dingell
U.S. House of Representatives
Washington, D.C. 20515

Dear Congressman Dingell:

I thought you might be interested in hearing about the valuable assistance Chivas Products Limited - Plastics Division received, thanks to federal support.

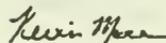
Chivas Plastics is a (100) person operation in Canton, Michigan that manufactures injected molded interior trim components for the automotive industry. We recently worked with the Michigan Manufacturing Technology Center, which is part of the NIST Manufacturing Extension Partnership.

With their help, we have benchmarked our operations with other injection molders across the country, utilized an energy audit which will substantially reduce our energy consumption, and I have personally been involved with the Plastics Council which offers assistance to MMTc in supporting the needs of small to medium sized manufactures.

The assistance we got from Michigan Manufacturing Technology Center helped make these results possible. We are more aware of the actions we can take to stay competitive. Best of all, we now know that there are other companies and resources that we can work with, through the Michigan Manufacturing Technology Center.

To be frank, I can count on one hand the number of times anything connected to a federal program has helped my small company. This was decidedly one of those times. I thought you should know.

Sincerely,



Kevin Moore
General Manager

Corporate Headquarters

Iron and Lighting Division
42505 Mason

Stearing Heights, MI 48314-3266

(313) 264-3515

FAX (313) 366-4910

Plastics Division

8095 Borden Circle
Canton, MI 48107

(313) 451-1171

FAX (313) 481-1990

Design and Development

Westshore Division

4100 17 Mile Road

Stearing Heights, MI 48314-2102

(313) 776-2140

FAX (313) 726-4916

Lighting Division

6200 19 Mile Road

Stearing Heights, MI 48314-2103

(313) 776-3100

FAX (313) 731-8520

Asian Office

3-1-8 Asahidai

Minatoku, Tokyo 106 Japan

(81) 3-564-0339

FAX (81) 369-0930


Gilco Inc.
DIVERSIFIED PRODUCTS OF THE SPRING INDUSTRY

 18300 Common Roseville, Michigan 48068 (810) 778-8880
 FAX (810) 778-7180

July 26, 1995

The Honorable John Dingell
 U.S. House of Representatives
 Washington, D.C. 20515

Dear Congressman Dingell:

I thought you might be interested in hearing about the valuable assistance Gilco Incorporated received, thanks to federal support.

My company is a 60-person operation in Roseville that makes springs, clips and stampings. We recently worked with the Michigan Manufacturing Technology Center (MMTC), which is part of the NIST Manufacturing Extension Partnership.

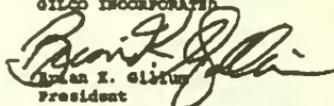
With their help, we will be implementing an ISO 9000 Program to better serve our international customers. The ISO 9000 Program standardises corporate procedures to create a universal program.

The assistance we got from the MMTC helped make these results possible. We are more aware of the actions we can take to stay competitive. Best of all, we now know that there are other companies and resources that we can work with, through the MMTC.

To be frank, I can count on one hand the number of times anything connected to a federal program has helped my small company. This was decidedly one of those times. I thought you should know.

Very truly yours,

GILCO INCORPORATED



Brian K. Gilman
 President

BKG/cmk



Wayne State University

Professor Gene P. Reck

Department of Chemistry

Detroit, MI 48202-3489

(313) 577-2602

Fax (313) 577-8822

July 20, 1995

Senator Carl Levin
ATTN: Ms. Elise Bean
SR-459 Russell Senate Office Building
Washington, DC 20510-2202

Dear Senator Levin:

As a voter in the State of Michigan I am writing you to express my concern and dismay at the wholesale sell-off of National Resources that have recently been proposed in Congress. I refer specifically to two issues: 1) the sell-off of much of our National Park System and 2) the dismantling of the Department of Commerce and sell-off of the National Institute of Standards and Technology. While both of these issues are vital to the future of our nation, my letter will focus on the latter issue because I can speak with some expertise about Bill S.929 Sec 206(b) after 32 years of research.

In the current climate of declining moneys for research in the universities, the absolute retreat of industries from support of basic research and even development and the negative discussion of the role of the national laboratories including NIST, I am worried about the future. We have developed the strongest, most productive scientific research program in the world. It is now being dismantled. Once it is gone, it will be no trivial matter to bring it back. I doubt that we even could. The laboratories and staff of NIST have made and are making a valuable contribution to the success of our nation.

I hope you will be able to help stop this ill conceived plan or at least see that the NIST is transferred to the NSF intact. Thank you for any help you can give. If I can be of any help to you in this matter, please feel free to call upon me.

Sincerely,

A handwritten signature in dark ink that reads "Gene P. Reck". The signature is fluid and cursive, with the first letters of the first and last names being capitalized and prominent.

Gene P. Reck
Professor of Chemistry

GPR/mab

COMMITTEE ON SCIENCE
STATEMENT BY CONGRESSMAN CURT WELDON
SEPTEMBER 12, 1995

MR. CHAIRMAN, OVER THE RECENT AUGUST BREAK, I HAD THE OPPORTUNITY TO READ AN EXCELLENT BOOK WRITTEN BY DR. SYLVIA EARLE ENTITLED "SEA CHANGE." AFTER SPENDING A PORTION OF MY BREAK LEARNING MORE ABOUT OUR NATION'S OCEAN RESOURCES AND REAFFIRMING MY COMMITMENT TO INCREASING OUR AWARENESS OF THE MARINE ENVIRONMENT, I WAS DISCOURAGED TO ARRIVE BACK IN TOWN LAST WEEK TO FIND ON MY SCHEDULE THIS HEARING TO DISMANTLE THE DEPARTMENT OF COMMERCE. WHILE I GENERALLY SUPPORT THE CHRYSLER BILL, I BELIEVE THE LEGISLATION SHORTSIGHTEDLY TERMINATES MANY OF NOAA'S IMPORTANT FUNCTIONS.

AS MANY OF YOU MAY KNOW, DR. EARLE IS A PROMINENT MARINE BIOLOGIST AND FORMER CHIEF SCIENTIST AT NOAA. TO PUT IN PERSPECTIVE THE AMOUNT OF FEDERAL MONIES WE SPEND EACH YEAR TO LEARN MORE ABOUT THE MARINE ENVIRONMENT AS COMPARED TO THE AMOUNT OF MONEY WE SPEND TO EXPLORE SPACE, I WILL REFER TO AN EXAMPLE DR. EARLE ONCE SHARED WITH ME. SHE SAID IN HER TENURE AS CHIEF SCIENTIST, THE GOVERNMENT ONCE COMMITTED \$26 MILLION FOR A SPACE SHUTTLE TOILET IN THE SAME YEAR IT RECOMMENDED ZERO FUNDING FOR THE NATION'S UNDERWATER CENTERS. IT IS NOT SURPRISING THEN THAT WE KNOW MORE ABOUT MARS THAN WE KNOW ABOUT THE OCEANS HERE ON OUR OWN PLANET.

JUST AS NASA HAS PROVIDED OUR COUNTRY WITH THE RESOURCES AND KNOWLEDGE NECESSARY TO BE A GLOBAL LEADER IN SPACE EXPLORATION, NOAA IS THE FEDERAL AGENCY BEST SUITED TO SERVE AS THE FOCAL POINT FOR OCEANS RESEARCH. TODAY OUR COMMITTEE WILL HEAR TESTIMONY FROM A

WITNESS WHO I CONSIDER TO BE A LEADER IN THE FIELD OF MARINE RESEARCH -- ADMIRAL JAMES D. WATKINS. I URGE MY COLLEAGUES TO LISTEN TO ADMIRAL WATKIN'S TESTIMONY CAREFULLY AND TO CONSIDER THE NUMEROUS BENEFITS DERIVED FROM INCREASING OUR KNOWLEDGE OF THE MARINE ENVIRONMENT AND THE ADVERSE EFFECT THE CHRYSLER BILL WILL HAVE ON NOAA'S CORE OCEAN MISSION. I THINK MY COLLEAGUES WILL AGREE THAT KEEPING NOAA INTACT PROVIDES ECONOMIC BENEFIT TO OUR NATION, PROTECTS THE LIVES OF OUR CITIZENS, AND STRENGTHENS OUR NATIONAL SECURITY.

ACCORDINGLY, I LOOK FORWARD TO WORKING WITH CHAIRMAN WALKER AND THE CHAIRMAN OF THE SUBCOMMITTEE ON ENERGY AND ENVIRONMENT, CONGRESSMAN ROHRBACHER, TO DETERMINE THE MOST SUITABLE HOME FOR THE NATIONAL OCEANOGRAPHIC AND ATMOSPHERIC ADMINISTRATION. I BELIEVE THERE IS A BROAD CONSENSUS AMONG OUR COLLEAGUES ON BOTH SIDES OF THE HILL-- AS WITNESSED IN THE RECENT SENATE MARK-UP OF SIMILAR LEGISLATION TO DISMANTLE THE DEPARTMENT OF COMMERCE --THAT WE SHOULD NOT TEAR NOAA APART. WHETHER THIS COMMITTEE DECIDES THAT NOAA SHOULD TAKE THE FORM OF AN INDEPENDENT AGENCY OR SHOULD BE TRANSFERRED TO THE JURISDICTION OF A SEPARATE FEDERAL DEPARTMENT, I AM COMMITTED TO ENSURING THE SCARCE RESOURCES WE CURRENTLY DIRECT TOWARDS OCEAN RESEARCH ARE NOT JEOPARDIZED.

FINALLY, AS THE CHAIRMAN OF THE SUBCOMMITTEE ON RESEARCH AND DEVELOPMENT OF THE HOUSE NATIONAL SECURITY COMMITTEE, I WILL HOLD A HEARING LATER THIS FALL-- PROBABLY IN OCTOBER --TO FURTHER EXAMINE THE DUAL USE OF TECHNOLOGY, RESOURCES, AND DATA TO ADVANCE OCEAN RESEARCH AND MANAGEMENT. THE MILITARY HAS BEEN THE UNDISPUTED LEADER

IN U.S. TECHNOLOGY DEVELOPMENT, AND IT HAS AN ARRAY OF EQUIPMENT AND TECHNOLOGIES WHICH CAN BE SHARED TO FURTHER UNDERSTAND THE OCEANS WITHOUT THREATENING NATIONAL SECURITY. I INTEND TO INVITE BOTH THE SUBCOMMITTEE ON ENERGY AND ENVIRONMENT AS WELL AS THE SUBCOMMITTEE ON FISHERIES, WILDLIFE, AND OCEANS OF THE HOUSE RESOURCES COMMITTEE TO PARTICIPATE IN THE HEARING. I HOPE BOTH SUBCOMMITTEES WILL JOIN ME IN THE JOINT HEARING TO PROMOTE OCEANS RESEARCH.

AMERICAN ASSOCIATION OF LAW LIBRARIES



WASHINGTON AFFAIRS REPRESENTATIVE

Robert L. Oakley*Director of the Law Library & Professor of Law
Georgetown University Law Center*

September 14, 1995

Honorable Robert S. Walker
Chairman, Committee on Science
United States House of Representatives

Dear Representative Walker,

The American Association of Law Libraries (AALL) is a nonprofit educational organization headquartered in Chicago with over 5,000 members nationwide. Our members respond to the legal and governmental information needs of legislators, judges, and other public officials at all levels of government, corporations and small businesses, law professors and students, attorneys, and members of the general public.

On behalf of AALL, I am writing today to express our concerns related to the provision in H.R. 1756 to privatize the National Technical Information Service (NTIS) and to request that a copy of this letter be placed in the record of the hearing on this issue. NTIS serves as the central clearinghouse for the collection and dissemination of scientific, technical, engineering and business-related information produced by the Federal government, and thus, paid for by tax dollars. As a self-supporting entity, NTIS receives no appropriations and its funding comes solely from the sale of its products and services.

The NTIS collection focuses on the environment, health, medicine and business, all areas of prime concern to students, researchers, the private sector and the American public. Many of these resources are available nowhere else, including from the issuing agency. The NTIS collection includes more than 2.6 million documents dating from the early 1920's. Through its indexing and abstracting service, NTIS provides permanent access to this vast historical collection as well as to current reports.

In addition, the collection has grown substantially since passage in 1992 of the American Technology Preeminence Act when agencies were mandated to supply scientific and technical information (STI) to NTIS. In 1994, NTIS added more than 80,000 new reports to the collection. An innovative user of new technologies, NTIS has been remarkably successful in developing online capabilities for improved access to and dissemination of the STI collection. The FEDWORLD system is a model in providing agency information in a timely and efficient manner.

Due to the mandate that NTIS be self-supporting, this vast collection is available for the most part only through a sales program. STI is not actively disseminated to the public and thus the value of these resources to the business, research and academic communities is not fully realized. We believe that this situation would be exacerbated if NTIS were to be privatized with the result that public access to these important government reports would be

even more limited than it is today. Further, we doubt that a private sector entity would continue to preserve and provide access to the older scientific and technical materials.

However, the determining question relative to the future of NTIS must not be one of deciding whether or not the agency should be privatized. The decision should be based on how best to provide the public with equal, equitable and timely access to STI resources. In the past, the Government Printing Office and NTIS have discussed means to include NTIS documents in the Federal Depository Library Program (FDLP). Unfortunately, efforts to disseminate STI to the public through the almost 1400 Congressionally-designated federal depository libraries have never been successful.

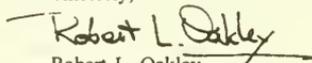
As part of the National Performance Review, the Federal government is undergoing a careful examination of how agencies can deliver information and services to the public with more efficiency and lower costs. Concurrently, the 104th Congress is involved in critical debate that will determine how the public obtains government information in the future. We believe that NTIS must be carefully examined within this broader context.

During the recent debate on H.R. 1854, the Legislative Branch Appropriations bill, Congress announced its intent to review Federal information policy issues. Pursuant to S. Rept. 104-114, the Public Printer has initiated a study to examine the Federal Depository Library Program and current information laws, regulations and policies. The study will include recommendations on how information not currently available to the public through the FDLP could become so in a more electronically-based environment. The question of how to make the NTIS collection available to the public should be resolved through either the GPO or a similar Congressionally-mandated study.

NTIS provides a critical and unique function within the government which we do not believe could be properly carried out by a non-government entity. Rather than remove the rich and comprehensive collection of the government's scientific and technical resources to the private sector, Congress should determine means to more effectively disseminate STI to the public in a timely, efficient and low-cost manner.

We urge members of the House Science Committee to strike Sec. 206 (c) to privatize NTIS from H.R. 1756. We propose instead that the Committee recommend a comprehensive study to examine all the issues, including how the government's scientific and technical information produced by tax dollars can be made more accessible to the American public. Thank you for your consideration of this important issue.

Sincerely,



Robert L. Oakley
American Association of Law Libraries
Washington Affairs Representative

cc: Honorable George Brown, Ranking Minority Member, House Science Committee

ADA

Washington Office

August 25, 1995

The Honorable Robert S. Walker
2369 Rayburn House Office Building
Washington, DC 20515

Dear Representative Walker:

The American Dental Association (ADA) respectfully requests that the Committee strike provisions in Section 206 of the "Department of Commerce Dismantling Act" (HR 1756) that could result in the dismantling and privatization of the National Institute of Standards and Technology (NIST).

Created in 1901 to facilitate the involvement of American businesses in international trade, the NIST laboratories represent the core function of the agency. The activity of "fix[ing] the standards of weights and measures" was considered so vital to the economic well-being of our country that it is expressly stated as a responsibility of the United States Congress in Article I, Section 8 of the Constitution. Congress wisely delegated that responsibility to NIST, whose laboratories are known for uncompromising technical excellence and objectivity.

Today, virtually all countries recognize that they must compete in the global marketplace if their people are to enjoy a higher standard of living. NIST continues to offer a vital service devoted to the science and practice of measurement, which is crucial if American firms are to compete. For example, the laboratories ensure confidence in measurements used for cellular telephones, air bags, heat-seeking missiles, fax machines and DNA profiling standards.

Privatizing the NIST laboratories, and thereby separating them would have a devastating impact on American companies:

Loss of Impartiality - Because NIST is an independent entity, its measurement methods, standards and testing procedures are accepted throughout the world by vendors and users, regulators and industry, and prosecutors and defense attorneys. Privatizing NIST would destroy its acknowledged impartiality and credibility.

International Clout - NIST laboratories ensure that American products meet specific standards so that they can

Page Two
August 25, 1995

be traded. In 1994, U.S. companies sold over \$500 billion worth of goods overseas. Products displaying conformance with NIST standards are readily accepted by foreign governments saving American manufacturers time and money.

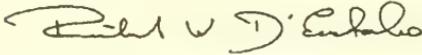
Long Term Commitment - Metrology, the science of weights and measurements, requires a long term commitment. Many standards developed by NIST evolved over 5 to 10 years. The integrated voltage standards took NIST almost 19 years to develop. A private NIST would have to recover its costs on a much shorter time scale than 10 years and would not be willing to undertake such long term projects.

Since 1928, the ADA has collaborated with the Paffenbarger Research Center (PRC), the NIST dental materials research program. Scientists at the PRC are responsible for developing the high speed drill, composite resins and the panoramic X-ray. In addition, more than 50 standards or specifications have been developed by PRC researchers for such products as dental chairs, orthodontic wires and impression materials. These developments have saved taxpayers billions of dollars. As of 1987, the high-speed drill was estimated to have saved more than \$1.4 billion in reduced treatment time.

Currently, the PRC is conducting research trials on a mercury-free silver filling and a shield to protect cancer patients' healthy tissue from harmful radiation as they undergo treatments for oral tumors. PRC researchers state that they would not have been able to develop these products outside of NIST. Working in the same facility has enabled them to easily collaborate with other NIST metallurgists, polymer scientists and radiation physicists.

The Association urges the Committee to strike language in HR 1756 which would dismantle NIST and sell its laboratories. Setting nationally and internationally recognized standards for American products must be totally independent and impartial to maintain integrity. NIST's strong and credible labs contribute substantially to America's competitiveness. NIST is a vital American resource that must be preserved.

Sincerely,



Richard W. D'Eustachio, D.D.S.
President



John S. Zapp, D.D.S.
Executive Director

RWD:JSZ:js

NIST LABORATORY PROGRAM: SERVICES AND BENEFITS

The Commerce Department's National Institute of Standards and Technology (NIST) provides the nation with unique research and services in measurement and standards matters that help industry, consumers, and the scientific community and contribute to improved public health and safety, law enforcement, and national defense. Among other roles, NIST acts as the nation's measurement laboratory—serving as a neutral third party in ways that could not be duplicated by private organizations. Examples of NIST services and benefits follow.

Industry

Higher quality products, more reliable and more flexible processes, fewer rejected parts, speedier product development, more efficient market transactions, higher levels of interoperability among machines, factories, and companies. These are some of the practical advantages that U.S. companies realize from the NIST laboratories' research, services, and standards-related activities. The ultimate U.S. reference point for measurements with counterpart organizations throughout the world, the laboratories provide companies, entire industries, and the whole science and technology community with the equivalent of a common language needed in nearly every stage of technical activity.

- Without NIST, electrical utilities and consumers would have no reliable source for accurate calibrations of watt-hour meters that serve 100 million homes and buildings and track nearly \$200 billion of electricity. Just a 1 percent measurement error would cost consumers or the utilities \$100 million.
- Gas producers, distributors, processors, and consumers save about \$150 million annually from NIST research and measurement methods that improve accuracy in natural gas pipeline metering.
- Electric power grids, communications networks, banking systems, and satellite and guided missile navigation systems rely on NIST's super-accurate atomic clock for time and frequency signals. Los Angeles County, for example, saves an estimated 22 million gallons of gasoline per year and 55,000 hours of driving time each day by synchronizing traffic lights with NIST's time and frequency services.
- Entire industries rely heavily on NIST's Standard Reference Materials for accuracy and quality assurance. The steel industry relies on over 125 different NIST measurement standards for reliability of raw materials and finished steel components that go into bridges, buildings, and other structures.
- U.S. producers and users of optical fibers depended on NIST to develop the technical foundation for more than 20 voluntary measurement standards credited with accelerating the growth of the optical fiber market and communications networks.

- The U.S. automotive industry relies on more than 350 different NIST-developed measurement tools and services for quality control systems—everything from purity of glass and steel to reliability of fuel, highway cement, and exhaust systems.
- Semiconductor manufacturing equipment companies have counted on NIST measurement research and tools to drive down the size and drive up the performance of their products—enabling improvements by the makers and users of integrated circuits. Industry estimated that just one NIST project—which could not be undertaken by any single company—saved industry over \$30 million, a return of more than 100 times the cost of the work.
- U.S. engineers in aerospace, automotive, and other industries trying to take advantage of computer-aided manufacturing technologies are benefiting from NIST's management of a 26-nation effort leading to an important new data-exchange standard. In the automotive industry alone, costs due to incompatible systems are estimated to approach \$100 million.
- U.S. semiconductor manufacturers attributed 4 percent of their productivity growth over a five-year period and annual savings of up to \$500 million to NIST research.
- American companies could gain between \$20 billion and \$40 billion worth of exports if NIST succeeds in its efforts to help eliminate non-tariff-related barriers to trade such as restrictive standards and testing requirements imposed by other nations.
- The nuclear energy industry and the public depend on measurement standards developed by NIST that are essential for continued safe operation of 109 power plants. NIST develops and updates industry testing procedures and advises the Nuclear Regulatory Commission on judging the strength of reactor pressure vessels, a task that requires special measurement expertise and impartiality.
- The aircraft industry and public rely on unique NIST facilities and expertise needed to understand metal failures such as those that caused the top of an Aloha Airlines passenger jet to rip off in flight. In similar work, NIST materials and construction expertise helped explain why an oil storage tank released 4 million gallons of oil into a Pennsylvania river, shutting down drinking water for Pittsburgh and other cities; NIST recommendations for tougher safety standards were quickly adopted by the industry.
- NIST created the world's most accurate instrument to measure layers on silicon chips at thicknesses the semiconductor industry demands for precise manufacturing control. The Semiconductor Industry Association noted, "NIST is the only place in the U.S. where the broad range of measurements needed for semiconductor processing are routinely and systematically developed."
- NIST helped telecommunications companies to synchronize their transmissions to provide their users error-free connections. "By my calculation, NIST saved us almost one year in the time it took to develop the proper synchronization standard," says Rodney J. Boehm, chairman of a subcommittee of the telecommunica-

tions industry's Exchange Carriers Association. "It is imperative that NIST continue to be involved to help guide us and ensure that we use [NIST] expertise to speed up the standards process for the good of the entire industry," Boehm adds.

- Virtually the entire space-based communications industry has adopted NIST-developed methods to test microwave antennas, saving companies millions of dollars. One company estimates it has saved \$35 million by implementing the NIST near-field techniques. NIST-developed techniques for trouble-shooting and repairing complex antenna arrays also have produced substantial savings. McClellan Air Force Base in California was able to reduce repair time from as much as a year to "only a few weeks" as a result of NIST assistance.

- Manufacturers of electronic products or products with numerous electronic components use commercial versions of a NIST-developed TEM cell to check for electromagnetic interference or unwanted emissions. The automotive industry tests vehicles for radiated emissions in huge TEM cells before placing them on the market. "It saves us about three days per car in testing time," says a Ford engineer. TEM cell techniques are included as part of electromagnetic interference standards by the Society of Automotive Engineers, the American National Standards Institute, and the Institute of Electronic and Electrical Engineers, among others. TEM cells now are produced by a dozen companies.

- Large segments of the U.S. medical, agricultural, food processing, paper, plastics, and building materials industries save an estimated \$500 million per year as a result of a NIST-developed method for measuring light reflection.

- The National Association of Home Builders estimates that NIST recommendations for improved plumbing standards made possible hundreds of millions of dollars in savings in materials costs for the construction industry and for homeowners from reduced water usage.

- NIST-developed smoke detector performance requirements, installation guidelines, and subsequent studies have played an essential role in establishing a \$100 million U.S. residential smoke detector market and enabled U.S. manufacturers to acquire a 50-percent share of the world market. Since 1975, the percentage of homes protected with at least one smoke detector has grown to about 80 percent. This has been a major factor in the dramatic reduction in fire death rate in the United States, from more than 60 people per million population to fewer than 30 per million.

Law Enforcement

Since 1971, NIST has helped state and local police fight crime and lower costs by coordinating development of nearly 200 law enforcement standards. These standards include measurement methods and testing methodologies that help police make better use of evidence, ensure the quality of critical police equipment, and save tax dollars by improving police procurement.

- NIST developed the computerized system the Federal Bureau of Investigation uses to match fingerprint evidence against 30 million records, so that local police can identify and arrest suspects. NIST researchers are now working to automate

the last remaining manual step in fingerprint analysis, an accomplishment expected to save the FBI 80 percent of its current labor costs for this procedure.

- A DNA profiling Standard Reference Material developed by NIST in 1992 has been key to establishing the reliability of this powerful law enforcement tool. Another NIST SRM for a newer, faster method of DNA profiling was issued in June 1995. "We don't like to go to court unless we have standard references that we can use in our testing," says David Bing of CBR Laboratory in Boston. "And you don't want the labs that are doing the testing to develop the standards because then there is no check on their objectivity."

- For the Department of Justice, NIST developed the performance standards now used throughout much of the world to test police soft body armor. According to industry figures, more than 2,000 U.S. police officers owe their lives to body armor, resulting in savings to taxpayers of over \$800 million in death benefits and other costs.

- NIST standard test methods for radar guns and other speed-measuring devices have helped to improve substantially the accuracy of such devices. Prior to the NIST standard the reliability of radar devices was unknown and often was challenged successfully in court.

Health and Medicine

In matters of health and medicine, measurement errors and uncertainties can kill. In the case of radiation therapy, for example, an overdose can be lethal, while an underdose may fail to check the spread of a life-threatening tumor. Similarly, errors and uncertainties can undermine effective responses to public health problems, sometimes leading to erroneous conclusions that inflate risks and divert resources from legitimate public needs. As the nation's measurement authority, NIST laboratories provide services and conduct research that form much of the foundation for nationwide safety and quality-assurance systems that ensure the accuracy of health care measurements. In addition, NIST's measurement expertise and data services and its one-of-a-kind instruments have become valuable resources for health and biomedical researchers across the country. Finally, NIST experts often are called upon to speed or narrow the search for answers to suspected health problems, which often pose difficult measurement challenges.

- Accuracy of clinical measurements of cholesterol levels in blood serum has improved dramatically—to 95 percent, as compared with about 70 percent—since NIST issued a benchmark Standard Reference Material, a sample of serum containing certified amounts of human cholesterol. Greatly increased confidence in the results of cholesterol translates into better decisions on treatment and lifestyle management. "Every dollar spent at NIST for clinical laboratory standards has a multiplying effect of at least 10 times that in value for the public in improved diagnosis." —George Bowers, Hartford Hospital

- The 600,000 people who undergo radiation therapy for cancer each year and the several million more who undergo radiodiagnostic and radiotherapeutic procedures count on NIST calibrations, reference materials, and laboratory accreditation services to ensure the accuracy of radiation doses.

■ A NIST invention should significantly improve the quality of soft tissue images obtained in the more than 22 million X-ray mammography procedures performed each year. The improvement should translate into more accurate diagnoses, reducing the number of unnecessary biopsies (due to false positive results) and undetected tumors (due to false negative results). The new device, a spinoff from NIST's core competency in X-ray measurement technology, measures voltage applied to the X-ray source and the resultant energy distribution of X-rays that women receive during breast cancer screening 10 times more accurately than existing field calibration units. The new device "appears to be an almost ideal way of routinely measuring X-ray spectra from X-ray diagnostic machines."—T.J. Quinn, Bureau International des Poids et Mesures

■ NIST researchers also are developing new measurement technology with the potential to identify women at risk for breast cancer before they actually develop the disease. The new system, which measures tiny amounts of estrogen byproducts, capitalizes on an analytical technique that is more reliable, faster, and less costly than conventional methods of hormone measurement.

■ NIST studies of DNA damage by free radicals are helping uncover how these molecules promote certain cancers and other diseases. Among the benefits is a method for identifying and assessing molecular-level damage to DNA in cells and organs. Understanding the mechanism of DNA damage and repair potentially could help other researchers to develop the necessary means to prevent or repair the DNA damage in cells.

■ At the Center for Advanced Research in Biotechnology (CARB), which is sponsored by NIST, the University of Maryland, and Montgomery County, scientists have shed light on the structure for a series of important bacterial sugar-transport proteins that may help pharmaceutical companies design new antibiotics that target bacteria. CARB analyses of other proteins could be the foundation for developing more effective chemotherapy drugs as well as enzyme inhibitors that would make cancer cells more susceptible to chemotherapy.

■ NIST-led efforts are ensuring that international monitoring of ground-level changes in ultraviolet radiation will yield accurate, reliable measurement results, enabling scientists to assess the health effects of upper-atmosphere ozone depletion and the consequent increase in UV radiation.

■ NIST measurements were crucial to efforts that identified automobile emissions as a significant environmental source of lead, a toxic metal that is especially hazardous to children during neurological development. NIST's continuing support of efforts to reduce lead exposure includes more than 40 reference materials certified for lead concentration. These are used to ensure the accuracy of laboratory and field measurements of lead levels in, for example, blood and bone and of the lead concentrations on painted surfaces and in water. Reference materials containing certified levels of lead in soil samples are under development.

■ The NIST dental materials research program, a 67-year-old collaboration with the American Dental Association, continues to be the source of key enabling technologies that have helped to improve the practice of dentistry and the dental health of Americans. Some examples:

- NIST and ADA researchers developed the prototype technology leading to the air-driven turbine drill now found in virtually all dentist offices.
- A simple new shielding device developed by NIST and ADA collaborators will protect patients' healthy tissues from radiation while they undergo therapy for oral tumors and lesions. "I would not have been able to develop the new shielding method outside of NIST. By working here, I was able to draw upon the expertise of NIST metallurgists, polymer scientists, and radiation physicists."—Frederick E. Eichmiller, inventor of the new shielding technology
- A mercury-free dental amalgam developed by NIST and ADA researchers can eliminate concerns over the long-term effect of mercury-containing dental materials on public health and the environment.
- A substantially improved method for calibrating radiation doses delivered by a new neurosurgical tool called the gamma knife resulted from a collaboration involving NIST radiation experts, three oncology centers, and a New Jersey company. The calibration method is key to exploiting thin-film technology that generates pre-treatment maps precisely indicating radiation targets within the brain and radiation-dose levels within the target area.
- NIST provides important research and measurement support to the nation's health and biomedical scientists. For example:
 - NIST-developed and -maintained databases ensure that biological models and the calculations they are based on use accurate, reliable data. One newly added database, for instance, contains evaluated data on the properties of more than 900 lipids, a group of molecules intensely studied by pharmaceutical and food technology researchers.
 - NIST research yielded reliable methods for measuring electric and magnetic fields from power systems. Widely adopted by researchers, these methods are needed to resolve questions concerning the health effects of exposure to electric and magnetic fields, asserted to increase the risk of leukemia, cancer, and other disorders.
 - NIST and University of Maryland researchers have determined the three-dimensional molecular structure of a liver detoxification enzyme, aiding efforts to explain how the liver filters cancer-causing substances from the body. The accomplishment could lead to more effective chemotherapy drugs.

National Defense

The U.S. Defense Department relies heavily on NIST measurement research, services, and facilities to ensure, for example, that:

- battlefield equipment performs effectively and reliably,
- military communications are not disrupted by technical failures, and

- impartial expertise is available to troubleshoot complex measurement problems encountered during development, manufacture, and operation of advanced weapon and communication systems.

From its very beginning as the National Bureau of Standards in 1901, NIST has contributed to U.S. efforts to build and maintain the world's best and most advanced national security system. Two of the first laboratories established at NIST were devoted to providing measurement support to shepherd development of an emerging advanced technology then being eyed for military communications—the radio. Today, the NIST laboratories are building the measurement base and defining the measurement standards needed for next-generation military technologies. NIST measurement techniques and reference standards are essential quality-assurance tools. They ensure high levels of confidence in the accuracy of measurements of diverse physical quantities—from laser power for advanced guidance and weapons systems to screw-thread dimensions of “submarine safe” fasteners to the mechanical properties of aerospace alloys.

- Across its vast network of facilities and contractors, the Defense Department specifies that systems and components be calibrated with equipment and methods traceable to NIST.
- NIST's success in developing the world's most accurate voltage reference source, known as the Josephson voltage standard, is paying national security dividends. The Army, for example, now has its own Josephson standard. The primary standard provides the Army with an added level of assurance that precision weaponry and other advanced instrumentation are calibrated accurately, preventing measurement uncertainties that can result in missed targets, surveillance failures, and inaccurate data transmissions. The Army will install a version of the standard directly into some of its equipment, leading to further performance gains and estimated annual savings totaling \$3 million.
- “The system has proven to be a valuable addition to our high power microwave measurement capability, which as you know, is critical to many of the Army weapons, radars, and communications systems ... I believe your (NIST's) work ... has made significant contributions to the state of the art in high power microwave measurement metrology.”—Senior Engineer, U.S. Army Primary Standards Laboratory Directorate
- NIST developed specialized equipment that the U.S. military uses to calibrate—and thereby ensure the accuracy of—range-finder and target-acquisition systems deployed on jets, helicopters, and missiles.
- During Operation Desert Storm, NIST scientists used their near-field antenna-scanning techniques to diagnose the causes of failures in a phased-array antenna that was part of a critical communications link between the United States and the theater of operations. Instead of being sent to the factory for conventional repairs, which would have taken months, the advanced antenna was rapidly diagnosed, repaired, and used throughout the conflict. The NIST precision antenna-scanning methods have been adopted by the Defense Department.

- NIST experts identified and solved a technical problem that had led inspectors aboard a U.S. Navy vessel to reject functional infrared-seeking missiles and order unnecessary and expensive rework. The NIST personnel pegged the problem to improperly calibrated testing equipment and provided a temporary measurement standard for use aboard the ship.
- When the Air Force learned that more than half of its coordinate measuring machines (CMMs)—key pieces of inspection equipment—failed their annual recertification check for accuracy, it immediately recognized that, because of measurement errors, inspectors may have been accepting bad parts and rejecting good ones. It turned to NIST for a solution, which then discovered similar problems at commercial manufacturing plants. Laboratory researchers developed an easy-to-use tool for quickly assessing CMM performance, making daily, rather than annual, evaluations practical. The NIST innovation is becoming an important quality-assurance tool for a growing number of manufacturers inside and outside the defense industry.
- NIST's ultraprecise time-keeping services, including development and operation of one of the world's most accurate clocks, are key supporting elements of the Defense Department's Global Positioning System, a satellite-based navigation network, and are essential to many commercial activities, from synchronizing telecommunications and electric power grids to time stamping international financial transactions and commercial-aircraft voice and data transmissions.
- NIST's unique responsibility for ensuring that U.S. measurements conform with international standards helps to guarantee that U.S. weapons and communications systems achieve necessary levels of compatibility with the equipment of NATO allies and that of other countries participating in joint military operations. Such measurements include frequency and power levels of radio communication systems and IFF—Identification Friend or Foe—systems; time scale for synchronization of operations, advanced telecommunications, and navigation; and dimensions of weapons, munitions, and interchangeable parts.

Environmental Technologies

NIST supports and complements industry efforts to develop, commercialize, and use environmental technologies. NIST has a demonstrated record of providing measurement methods, materials, and technologies; sensors; and evaluated data that are key to industrial process design and control, waste minimization and processing, and all types of environmental monitoring.

- NIST produces 230 different Standard Reference Materials that allow industry, university, and government researchers to measure more accurately pollutants in air, gas, water, soil, tissue, and other types of samples. Almost 10,000 individual units of these SRMs were sold by NIST in fiscal year 1994. Analysis of environmental pollutants often requires measurements of chemical concentrations at the parts-per-million or even parts-per-billion level, a precision that would be impossible without NIST SRMs, which are used to verify the accuracy of scientific instruments and laboratory procedures.

■ Facing a ban on ozone-destroying chlorofluorocarbons and the phaseout of related refrigerants, the nation's \$17 billion air conditioning and refrigeration industry is using a NIST-developed database to calculate properties of alternative refrigerants and mixtures. More than 500 copies of the NIST database, called REFPROP, have been sold, substantially accelerating the progress the industry has made in designing systems that use more environmentally benign replacements.

■ Ten years of NIST research on the environmental effects of burning oil spills have provided state and local officials with the data they need to respond more effectively to such accidents. NIST laboratory research, field tests, and computer models have shown that more than 90 percent of spilled oil (contained with booms on open water) can be removed through burning and that soot particles from such burns are typically below hazardous levels within a few kilometers of the burn site. Mechanical cleanup of oil spills typically removes only about 10 percent of spilled oil from the water.

■ A NIST-developed system that uses microwaves to identify trace gases promises to make emissions testing much faster and easier for automotive, chemical, and environmental researchers. The automated system can measure many different chemicals directly from an emissions source in real time with sensitivities down to 10 to 100 parts per billion. The system replaces current gas emissions measurement methods that require time-consuming bagging of emissions gases and produce substantially less precise data on gas concentrations.

■ A better than tenfold improvement in the accuracy of asbestos measurements due to NIST-developed methods and SRMs has greatly decreased the number of false positive test results that erroneously indicated the need for asbestos removal. Asbestos removal cost building owners an estimated \$3 billion in 1993.

■ Rhodium is a key ingredient in automobile catalytic converters that change polluting exhaust fumes into harmless gases. A NIST Standard Reference Material is helping manufacturers and metal recyclers measure rhodium concentrations as much as 20 times more accurately than is possible with current commercial standards. This means the SRM will help eliminate measurement errors in the \$30 million world market for rhodium.

■ A related NIST SRM provides certified concentrations levels for rhodium, platinum, and palladium recovered from recycled catalytic converters. Before the SRM was issued manufacturers measuring these precious metals typically had measurement errors of about ± 8 percent. Using the NIST SRM, manufacturers can now measure these metals with a measurement error of ± 1 percent, an improvement with the potential to save the automobile industry millions of dollars.

Scientific Community

In the high-tech world, the measurement system is rapidly and constantly evolving. Length, for example, needs to be measured with increasing accuracy for precision machines to operate properly. Entirely new methods need to be developed to observe and measure phenomena related to integrated circuits and magnetic storage devices. Using specialized, often custom-built, instrumentation, NIST experts conduct a broad range of long-term basic research with the goal of advancing measurement methodology. The results of their research aid the entire scientific community, including researchers in academe, industry, and government. ---

- NIST researchers developed a source of polarized electrons that now is used widely in scientific and technological applications from studies of recording heads and media by corporate research laboratories to high-energy physics research. A second product of the NIST research was the development of the SEMPA technique used to look at the small magnetic structures in materials used in computer disks and micron-scale magnetic devices. NIST worked with researchers in industry, the military, and universities to apply SEMPA to their specific problems.

- More than 15,000 copies of NIST's Mass Spectral Database, which helps identify unknown chemical compounds, are used by academic and industrial scientists in chemical, pharmaceutical, food and beverage, rubber, petroleum, aerospace, telecommunications, and computer companies as well as hospitals, environmental laboratories, and law enforcement agencies.

- NIST researchers have achieved the coldest temperatures in the universe with lasers and magnetic traps that chill atoms to near absolute zero, far colder than interstellar space. Such experiments help to improve atomic timekeeping and can be used to advance experimental measurements since ultracold atoms are easier to manipulate than room-temperature atoms. These experiments may lead to a better understanding of quantum effects, such as superconductivity, as well as exotic forms of matter.

- Pharmaceutical companies and biological researchers are using NIST's Biological Macromolecule Crystallization Database to develop new drugs and to study protein structures. The database includes data on more than 2,000 crystal structures of 1,500 biological proteins and macromolecules. Growing protein crystals is often the first step in determining a protein's structure.

- An instrument developed at the NIST Cold Neutron Research Facility offers materials scientists in academia and industry an improved way to analyze hydrogen, which can embrittle metals found, for example, in jet engine turbine blades. NIST chemists are also developing reference standards for verifying the accuracy of analyses of hydrogen in metals.

- NIST researchers are investigating ways to tie the kilogram, the only international unit still based on a physical standard, to an invariable natural constant. The current kilogram mass standard is available in only one laboratory and can change weight due to dust and cleaning. The redefined kilogram standard would be more accurate and accessible to researchers worldwide.

- Scientists and engineers rely on atomic spectral data constants from NIST in new product development as well as to further understanding of the universe. For example, the semiconductor industry needs atomic spectral data when evaluating the characteristics of plasma gases used to etch semiconductors. Similarly, astronomers use spectral lines from stars to determine which elements are contained in a particular star.
- Using ultrafast optics and lasers, NIST physicists and chemists are opening a portal through which they can view the subtlest and quickest changes in atomic motions. Understanding these ultras-small, ultrafast changes could lead to new avenues for controlling chemical reactions at surfaces. This emerging field of femtosecond (quadrillionth of a second) chemistry could enable scientists to break chemical bonds selectively, spur reactions, and choose desired products.
- NIST's Synchrotron Ultraviolet Radiation Facility calibration facility is used in concert with NASA shuttle flight observations to record accurately the output of solar radiation. Data on solar radiation must be collected accurately over decades in order to frame scientifically valid regulatory policies on CFC compounds and determine the effect on stratospheric ozone.
- NIST physicists are making some of the most precise measurements ever of the neutron lifetime. Among the benefits of this research is a clearer view of one of the forces acting on subatomic particles as they cooled after the Big Bang. This so-called "weak force" is one of four forces in the "Standard Model," which physicists use to explain the behavior of particles.
- NIST's Electron Beam Ion Trap offers a window to otherwise inaccessible aspects of nature. Scientists now are using this instrument to learn more about the nature of space and time and to understand better energetic astrophysical phenomena. It creates highly exotic forms of matter by stripping most or all the electrons from atoms held in its core with a strong magnetic field.

June 1995

NATIONAL SCIENCE FOUNDATION
4201 WILSON BOULEVARD
ARLINGTON, VIRGINIA 22230



July 20, 1995

OFFICE OF THE
DIRECTOR

Honorable Carl Levin
Committee on Governmental Affairs.
United States Senate
Washington, D.C. 20510

Dear Senator Levin:

Thank you for allowing me the opportunity to comment on S. 929, the Department of Commerce Dismantling Act, and its impact on the National Science Foundation. As I understand S. 929, the weights and measures responsibilities of the National Institute of Standards and Technology would be transferred to the National Science Foundation, but without the existing NIST laboratories that perform these vital measurement functions.

NSF's mission since its founding in 1950 has been to support the progress of science, mathematics and engineering across all scientific disciplines. We are the only federal agency with such a broad and important mission. NSF carries out this mission by funding ideas based on scientific merit that come primarily from university-based individual investigators. The proposed transfer of the NIST weights and measures functions to NSF is fundamentally inconsistent with this mission and could significantly dilute the Foundation's vital support for basic research and science education.

For NSF to develop and manage uniform measurement standards would significantly alter NSF's role, operation and culture. NSF has historically concentrated on enabling the process of scientific discoveries at our nation's academic institutions. NIST -- as an integral component of the Department of Commerce -- is closely aligned with industry and is uniquely suited for the role of meeting the technical measurement needs of the private sector.

I am concerned that S. 929 would likely require NSF to utilize scarce resources on developing and disseminating measurement standards while administering or overseeing the unique research facilities necessary for performing this mission, regardless of whether these facilities are run by contractors. NSF does not have expertise in this area, nor does it have the administrative workforce necessary to perform these responsibilities.

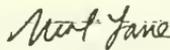
Providing measurement infrastructure requires an impartial third party, which is an argument for a continued federal role in this area. While S. 929 calls for NIST's in-house laboratories to be "privatized" or sold, many of these labs are unique, one-of-a-kind facilities that would be needed to continue the mission of providing technical infrastructure. It is likely that these laboratories would require significant levels of support from the federal government.

Requiring NSF to administer measurement standards would certainly change the very nature of NSF, causing a large increase in NSF internal operations which currently constitutes less than 4% of NSF's budget. This level of efficiency prohibits us from finding savings to pay for any new missions through cuts in administrative operations. I am very concerned that NSF might have to drastically curtail its highest priority -- investing in basic scientific research and education -- to take on the new responsibilities called for in S. 929.

NSF's long standing role has been to enrich the knowledge base that allows this nation to meet current and future needs. A reduction in support for these basic science activities will reduce the prospects for making discoveries and enhancing human resources that can benefit the Nation in the near term and enrich future generations. In my opinion, being asked to take on new weights and measures responsibilities that would limit our ability to invest in high-yield research and education efforts is not in the best long-term interests of the country.

Thank you for the opportunity to comment on this legislation.

Sincerely,



Neal Lane
Director

Barbara Franklin Enterprises

2600 Virginia Avenue NW

Suite 506

Washington, D.C. 20037

BARBARA HACKMAN FRANKLIN
PRESIDENTTELEPHONE 202-337-9100
FACSIMILE 202-337-9104

September 18, 1995

The Honorable Robert Walker
Chairman, Committee on Science
House of Representatives
Washington, DC 20515

Dear Mr. Chairman:

Once again, I want to express my appreciation for the opportunity to participate in the Committee's September 12 hearing about proposals to dismantle the Department of Commerce and the appropriate action that should be taken regarding the Department's agencies which are under the jurisdiction of the Committee on Science. It is a great pleasure to be able to contribute to this exciting -- and overdue -- process of rethinking and remaking the structure of the Federal Government. I am glad to have had the chance to work with the Committee on this particular part of the venture.

There is one issue that arose during the course of the hearing that I would like to take this opportunity to address more fully for the record. That concerns my position regarding the Advanced Technology Program (ATP). So that there is no confusion in the minds of any Members of the Committee, I want to make my position crystal clear.

I strongly support the action of the House of Representatives that zeroed out ATP in FY 1996. ATP has evolved since my time as Secretary of Commerce from an experimental program designed to stimulate early technology development into a pork barrel for industrial policy. The evidence of this is found in the following facts.

1. The Federal Government is now selecting the technology areas from which grant proposals will be solicited as opposed to promoting an open process that allows any promising private sector technology to apply. So in essence, the government is making the decisions, picking winners and losers among technologies and favorites among companies -- something that should be done only by the private sector. Furthermore, I do not believe that the Federal Government is competent to choose which technologies could or should be developed.

The Honorable Robert Walker
Page 2
September 18, 1995

2. ATP has exploded in size. It is now nearly ten times as large as when I was in office. Thus, what began as an "experimental" program has mushroomed into a large \$431 million giveaway in Fiscal Year 1995.

ATP and other programs administered by the National Institute of Standards and Technology (NIST) also have suffered from a perception that the agency has been politicized. Over the years, NIST has achieved a sterling reputation for the independence of its work -- a reputation reinforced by the fact that the Director, although a Presidential appointment, was always selected from the ranks of senior level civil servants within the agency. This changed with the Clinton Administration. Never before had the head of NIST changed with an election. The Director in place when we left office, an extremely well-qualified professional, was replaced after the election with an individual selected from outside the agency. And while I have no reason to believe that the current Director is anything other than competent, I do believe that the appointment set an unfortunate precedent and made NIST vulnerable to the perception that the scientific work of the agency can be influenced by politics.

The Federal Government does have a role to play in setting standards and conducting the research necessary to carry out this responsibility. This is why I support preserving the heart of NIST. But, there is no appropriate role for government in picking winners and losers among industries and companies. The laggard economies of countries around the world that once maintained hosts of state-sponsored industries are ample proof of this. That is why ATP should go.

Sincerely,



Barbara Hackman Franklin
Former U.S. Secretary of Commerce



UNITED STATES DEPARTMENT OF COMMERCE
National Institute of Standards and Technology
Gaithersburg, Maryland 20899-0001
OFFICE OF THE DIRECTOR

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SEP 19 1995

Committee on Science

Honorable Robert S. Walker
Chairman, Committee on Science
House of Representatives
Washington, D.C. 20515-8301

Dear Mr. Chairman:

In her testimony before the House Science Committee on September 12, former Secretary of Commerce Barbara Hackman Franklin discussed the National Institute of Standards and Technology (NIST) and the Advanced Technology Program (ATP). She stated that both the NIST directorship and the ATP selection process had become politicized since her term in office. However, the facts are to the contrary.

The position of director of NIST (and its predecessor agency, the National Bureau of Standards) has been a Senate-confirmed Presidential appointment since 1901. Unlike most other such posts, however, this job has most often been filled from the civil service. In that tradition, I came to this position from within the civil service -- contrary to Mrs. Franklin's statement during oral testimony. It is also worth noting that there are no other political appointees within NIST.

The selection process that ATP uses today is the same as that used during Mrs. Franklin's tenure as Secretary of Commerce. Every dollar of ATP funding since its inception in 1990 has been awarded solely on the basis of technical and business merit of the proposals as evaluated by experts from both the public and private sectors. During the previous Administration, the final selection authority rested with the NIST director. Starting in 1993, however, that responsibility has been delegated down, so that no political appointee is involved with project selection.

Mr. Chairman, I respectfully request that this letter be included in the hearing record. Thank you for your consideration.

Sincerely,

Arati Prabhakar

Arati Prabhakar
Director

cc: Members, House Science Committee

1001
NIST



September 11, 1995

The Honorable Robert S. Walker
U. S. House of Representatives
Committee on Science
Suite 2320 Rayburn House Office Bldg.
Washington, D. C. 20515-6301

Dear Congressman Walker:

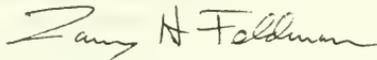
I am writing to express my concern regarding that section of the Department of Commerce Dismantling Act that calls for the sale or other disposition of the standards laboratories of the National Institute of Standards and Technology (NIST). In my opinion, that outcome would seriously impact the quality of the products we produce and our competitiveness.

The standards activities performed by NIST are, in general, uniquely governmental activities on which all U.S. commerce depends. They are functions which are constitutionally based and which NIST and its Federal predecessors have performed for as long as the United States has been industrialized.

My organization depends upon NIST for numerous critical measurements, artifacts, secondary standards, and traceability. This ensures the integrity of our quality systems for manufacturing and for independent third party audits under ISO 9001 and 9002. Without the services and functions NIST provides, we could jeopardize our registrations to these standards and our ability to sell products in many parts of the world.

I urge you to retain the status of NIST as a Federal entity and to strengthen its charter on behalf of our country and its industries.

Sincerely,



Dr. Larry H. Feldman, Director
Sensitized Products Quality Services

LHF : akw

NATIONAL SCIENCE FOUNDATION
4201 WILSON BOULEVARD
ARLINGTON, VIRGINIA 22230

September 1, 1995



OFFICE OF THE
DIRECTOR

Honorable Robert S. Walker
Chairman
Committee on Science
House of Representatives
Washington, D.C. 20515

Dear Mr. Chairman:

Thank you for allowing me the opportunity to comment on H.R. 1756, the Department of Commerce Dismantling Act.

There are many questions relating to the dismantling of the Department of Commerce proposed in H.R. 1756. Many of these questions relate to the consequences H.R. 1756 would have on activities now performed by the National Institute of Standards and Technology (NIST) and other entities within the Department of Commerce.

As a general comment, I strongly believe that the Department of Commerce, particularly its technology activities, are an important and critical part of this Nation's science and technology enterprise. Attempts to diminish this important national capability by the dismantlement of the Department should be resisted.

Now let me comment on a specific aspect of the bill. As I understand section 203(b) of H.R. 1756, the weights and measures responsibilities of the National Institute of Standards and Technology would be transferred to the National Science Foundation, but without the existing NIST laboratories that perform these vital measurement functions.

NSF's mission since its founding in 1950 has been to support the progress of science, mathematics and engineering across all scientific disciplines. We are the only federal agency with such a broad and important mission. NSF carries out this mission by funding ideas based on scientific merit that come primarily from university-based individual investigators. The proposed transfer of the NIST weights and measures functions to NSF is fundamentally inconsistent with this mission and could significantly dilute the Foundation's vital support for basic research and science education.

For NSF to develop and manage uniform measurement standards would significantly alter NSF's role, operation and culture. NSF has historically concentrated on enabling the process of scientific discoveries at our nation's academic institutions. NIST – as an integral component of the Department of Commerce – is closely aligned with industry and is uniquely suited for the role of meeting the technical measurement needs of the private sector.

I am concerned that H.R. 1756 would likely require NSF to utilize scarce resources on developing and disseminating measurement standards while administering or overseeing the unique research facilities necessary for performing this mission, regardless of whether these facilities are run by contractors. NSF does not have expertise in this area, nor does it have the administrative workforce necessary to perform these responsibilities.

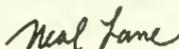
Providing measurement infrastructure requires an impartial third party, which is an argument for a continued federal role in this area. While H.R. 1756 calls for NIST's in-house laboratories to be "privatized" or sold, many of these labs are unique, one-of-a-kind facilities that would be needed to continue the mission of providing technical infrastructure. It is likely that these laboratories would require significant levels of support from the federal government.

Requiring NSF to administer measurement standards would certainly change the very nature of NSF, causing a large increase in NSF internal operations which currently constitutes less than 4% of NSF's budget. This level of efficiency prohibits us from finding savings to pay for any new missions through cuts in administrative operations. I am very concerned that NSF might have to drastically curtail its highest priority – investing in basic scientific research and education – to take on the new responsibilities called for in H.R. 1756.

NSF's long standing role has been to enrich the knowledge base that allows this nation to meet current and future needs. A reduction in support for these basic science activities will reduce the prospects for making discoveries and enhancing human resources that can benefit the Nation in the near term and enrich future generations. In my opinion, being asked to take on new weights and measures responsibilities that would limit our ability to invest in high-yield research and education efforts is not in the best long-term interests of the country.

Thank you for the opportunity to comment on this legislation.

Sincerely,



Neal Lane
Director



National Weather Service
Employees Organization

AFFILIATED WITH MEBA AFL-CIO

September 8, 1995

The Honorable Robert S. Walker
U.S. House of Representatives
Washington, D.C. 20515

Dear Congressman Walker:

We have been asked by ranking minority member George Brown to comment on H.R. 1756, the Department of Commerce Dismantling Act, on behalf of our members in the National Weather Service (NWS), the National Environmental Satellite and Data Information Systems (NESDIS), and NOAA's Office of the General Counsel. We appreciate the opportunity to also provide you with our views. NWSEO believes that NOAA should be established as an independent agency. OMB has designated NOAA as one of ten agencies whose National Performance Review and Government Performance and Results Act activities have been exemplary. According to an Atlanta Journal-Constitution poll conducted after the Oklahoma City bombing, the NWS' job performance placed second only to the armed forces with a 74% favorable rating. Instead of eviscerating NOAA, we recommend that Congress accept NOAA's offer to work with it, the DOC and the NWS, to identify appropriate ways to reduce Federal spending and eliminate waste.

There is no doubt that NOAA in its present form significantly enhances the Nation's economy through the services provided by the NWS. Neither is there any doubt about the impact that oceans have on the atmosphere and the resulting weather that affects the Earth. This "total system" relationship should be a sufficiently compelling reason to keep the scientific, managerial and operational "earth science" functions within NOAA, in addition to the efficiency and effectiveness gained from such an integration.

For example, NOAA's National Marine Fisheries Service (NMFS) Office of Enforcement, primarily responsible for enforcement of NOAA's fisheries laws, is not a "stand alone" office. It is a logical extension of NOAA's other programs. Its activities are inextricably intertwined with, and heavily dependent upon, NOAA's fisheries management and science programs, and data bases. Efficient and effective fisheries enforcement requires close coordination with fisheries management to ensure that management proposals are practical and feasible to enforce, and maximize benefits, to the fishing industry and consumers, while minimizing enforcement costs. NOAA's management of multiple fisheries is, of necessity, a fast-paced activity, requiring constant contacts, communication, and coordination among fisheries managers, scientists, and enforcement personnel. This team approach ensures that fisheries conservation and management measures are timely and effectively enforced.

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Rep. Walker
September 8, 1995

NOAA labs perform basic oceanic and atmospheric research. The NWS then builds upon this basic research by conducting its own specifically applied research. Applied meteorological and hydrometeorological research is essential to providing more timely and accurate warning and forecast services to the U.S. public. Attempts to privatize, eliminate, or transfer these labs have the potential to disturb the synergies within NOAA. This will weaken the NWS' effectiveness by interfering with the continual transfer of research results into critical forecast and warning capabilities, as well as the ability to understand long term climate changes. Privatization of these labs may destroy vital integrated data-gathering networks that support a wide range of NOAA activities, including weather forecasting.

Another example of the synergy within NOAA is the National Marine Mammal Laboratory's (NMML) administration of the Marine Mammal Protection Act. This function is an inherent Federal government activity. Privatizing such an activity, as called for in H.R. 1756, will result in no savings to the government whatsoever. Nor are other NOAA labs, serving similar functions, appropriate candidates for outsourcing. Whether private labs would be willing and capable of conducting the necessary research at a savings to the government should be ascertained before those labs are removed from NOAA's purview. We would like to point out that in 1991, NOAA could find no private sector interest to operate NOAA data centers when attempts were made to privatize them. Consequently, proponents of current privatization actions should be required to show sufficient private sector interest in assuming the responsibilities of these NOAA labs, and document how any near and long-term savings would be achieved.

With over half of the U.S. population now living on or near our coasts, it seems reckless to terminate NOAA's pollution research and estuarine, and coastal assessment research. Such research is invaluable in developing regulatory decisions about the impacts of cumulative environmental stresses on coastal areas, the health of coastal habitats, and the establishment and maintenance of national estuarine reserves as living laboratories for ecosystem management.

The NWS has traditionally been staffed at a "fair weather" level. During times of increased workload, additional staff are called in on overtime as necessary. The budget reductions in H.R. 1756 will result in field staff reductions below the level minimally necessary to operate during adverse weather conditions. Delays in the implementation of much-needed newer technology will prevent anticipated savings from the modernization and restructuring of the NWS. We believe that an agency that has demonstrated fiscal responsibility by reducing the number of field offices by 60%, its plans to reduce the number of regional headquarters by 50%, and its FTE levels by 16%, all by 1999, should not be penalized further. Furthermore, this funding for vital warning and forecast services comes at a cost of only \$2.50 per person.

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Rep. Walker
September 8, 1995

It has been estimated by NIST that the Modernization and Associated Restructuring (MAR) of the NWS will result in **eight dollars in national economic benefits for every dollar invested** in the ongoing MAR, which has been threatened by these proposed budget cuts. The funding levels in H.R. 1756 would reduce those anticipated benefits by:

- reducing the NWS field structure from 118 to 56 offices, resulting in a greater number of states without a weather office and in a corresponding degradation of service due to expanded areas of responsibility;
- increasing the number of life threatening gaps in radar coverage by eliminating funds to operate 42 of the new Doppler radars, part of a proposed network of only 118 NWS radars; and
- eliminate procurement of replacement satellites, resulting in a degradation of the timeliness, accuracy, and quality of warning and forecast services, which are heavily dependent on real time satellite data, particularly now that one half of the NWS field offices are already being closed.

Most importantly, NWSEO opposes the transfer of NOAA to any other existing department because none have the expertise to manage the agency's systems and programs. Indeed, some departments being considered for subsuming different NOAA agencies are also candidates for the budget ax. Such a transfer would generate up-front costs, no identified long-term savings to the Government, nor improved services to the public and the economy.

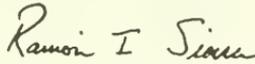
Recently, all of NOAA's operations and facilities in the National Capitol area were consolidated into one complex in Silver Spring, MD. NOAA has its own office of General Counsel which operates independently of DOC's Office of General Counsel, as well as four regional "Administrative Support Centers" providing personnel services to NOAA components throughout the country. NOAA is already constituted as a "stand alone" agency and can operate independently tomorrow. Placing NOAA within the structure of another cabinet department would continue, rather than eliminate, the current levels of bureaucracy.

Thus, because NOAA can not contribute to the accomplishment of the missions of existing Departments, or those being proposed, we prefer that NOAA be granted independent agency status with all its present components intact, should Congress and President Clinton agree to dismantle the Department of Commerce. For example, the mission of the Department of Interior is land management, while the primary mission of the NWS is public safety. NOAA's integrated programs are particularly effective because of the coordination provided by a single agency. Dismemberment of NOAA would destroy those synergies among its elements, and the unique nature of their services that provide cost-effective benefits to the entire Nation.

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Rep. Walker
September 8, 1995

We thank you for your consideration of our comments as part of the hearing record on this very important piece of legislation. Please let us know if we can provide any additional assistance.

Sincerely,

A handwritten signature in cursive script that reads "Ramon I Sierra". The signature is written in dark ink and is positioned above the typed name.

Ramon I. Sierra
National President



DEPARTMENT OF THE NAVY
OFFICE OF THE CHIEF OF NAVAL OPERATIONS
2000 NAVY PENTAGON
WASHINGTON, D.C. 20350-2000

IN REPLY REFER TO

5450
Ser 963/5U573338
21 July 1995

The Honorable Robert S. Walker
Chairman
House Committee on Science
Washington, DC 20515-3816

Dear Mr. Chairman:

The Navy has reviewed HR 1756, "To abolish the Department of Commerce." Although we take no position on the future of the Department, we are very concerned that the bill, as drafted, would undercut the cost-effective cooperation between Navy and National Oceanic and Atmospheric Administration (NOAA). Budget cuts and termination of some NOAA programs would decrease the real-time availability of meteorological and oceanographic data and negatively impact my ability to provide tactical support for warfighting and peacekeeping operations worldwide.

Most detrimental to the Navy are:

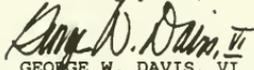
Meteorological Satellites: Polar-orbiting satellites are required to support Navy tactical operations. The across-the-board decrease in funding to 75% of FY 1994 levels would decrease NOAA's funding for a new converged interagency satellite program, the National Polar-orbiting Operational Environmental Satellite System. Without a major increase in DOD appropriations, the number of satellites would not be sufficient to satisfy the imagery refresh rate required for Navy operations, endangering military missions, personnel, and equipment. If NOAA is not a partner in a converged polar-orbiting system, it would jeopardize ongoing negotiations with the civilian European Space Agency to provide one of the three satellites, upon which the Navy refresh rate is dependent.

Privatization of the National Data Centers: The Navy relies heavily on the national data centers for input to our tactical systems. We are concerned that privatized centers would focus on data having the greatest commercial value, not on Federal or military requirements. International agreements that promote data sharing would be limited or disrupted by privatization, seriously degrading Navy access to tactically required real-time weather and ocean data worldwide.

I thank you for considering the national security implications of the proposed cuts to NOAA's programs. This letter is being sent also to the ranking members of the Senate Committee on Governmental Affairs. Please do not hesitate to

contact my office if you have any questions about the Navy position.

Sincerely yours,



GEORGE W. DAVIS, VI
Rear Admiral, U.S. Navy
Oceanographer of the Navy

Copy to:
The Honorable Dick Chrysler



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