

RYAN AERONAUTICAL COMPANY

NEWS LETTER

MARCH, 1946

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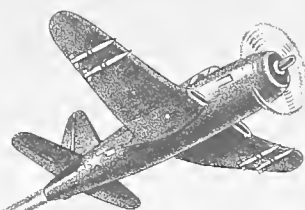
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RYAN AERONAUTICAL COMPANY

LINDBERGH FIELD, SAN DIEGO, CALIF.



## *News Letter*

March 22, 1946

To keep all who are interested in the affairs of the Ryan company informed about our progress, plans and people, we're adopting this news-letter type of bulletin, feeling that it will perform a useful service to employees, stockholders and others interested in the Ryan organization. As long as it serves a purpose, and readers find it worthwhile, we'll keep it coming. But bear in mind that these bulletins often contain information of a strictly confidential nature which, if improperly used, could work to the disadvantage of the company and its plans due to improper timing or inaccurate quotation. All public announcements concerning material in these bulletins will be made only by the company. These bulletins are for your personal use and information only.

Of great scope and importance to the company and its employees at the present time is our major project, which is for the U. S. Navy - the advanced version of the basic Fireball type of composite-engined combat aircraft. Work has been in progress for some months on design and development, and our engineering and experimental departments are beehives of activity. This program is scheduled over an extended period of time, and is expected to be supplemented by still further orders of both a development and production nature.

Navy officials here recently inspecting the mock-up of our newest fighter model have returned to the Bureau of Aeronautics at Washington. We have reason to feel that our accomplishments on this project has been well received by the group of experienced combat pilots and design experts who spent a great deal of time working here in the closest cooperation with our engineers and technicians. All Ryan personnel who have been working on the project are to be congratulated on the excellent progress we have made to date. Ed Rhodes, assistant chief engineer, has just returned from Washington where he had been coordinating the work which necessarily followed the recent Navy inspection trip at the plant.

The Stainless Steel Manufacturing Division, an important unit of the company's operations, formerly known as the Exhaust Systems Manufacturing Division, is now operating under this new and more appropriate title, due to the broadening of its line of products. Its present production volume represents a gratifyingly high percentage of its wartime level. Its products, of course, are aircraft exhaust systems and allied accessories such as heat exchangers, shrouding, flame dampeners, turbo-supercharger housings, wing anti-icing ducts, etc. It also includes an expanding volume of parts and accessories for jet and gas turbine engines.

In the rapidly developing jet field our organization is in a uniquely advantageous position due to its intimate engineering knowledge of this highly technical subject. This knowledge has been gained through the research and development work we are doing in connection with designing and building airplanes utilizing turbo-jet power, and the great advantage it gives our accessory manufacturing division can be readily appreciated.

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A number of non-aeronautical products of stainless steel which fit the facilities and techniques of this division are being developed for early production. Our sales and manufacturing executives are very active and are successfully developing new sources of business for additional products of a similar nature. Ryan's wartime production experience as one of the largest fabricators in the world of products made from stainless steel sheet, places us in a very strategic position.

Contracts totaling more than \$2,500,000 in new exhaust manifold business have been signed in the last 60 days assuring a continuing high production rate in this section of the stainless steel manufacturing division. A large share of this post-war business is for installation of Ryan manifolds on the country's newest and largest four-engined long-range passenger and cargo transport airliners.

These orders are valuable not only for present production but for future business through replacement requirements. Transport planes have a five to ten year period of service use, during which the exhaust systems must be periodically replaced because of the gradual deterioration of even the finest heat-resistant alloys due to continuous exposure to the extreme temperatures which the manifolds are required to handle on engines of two and three thousand horsepower.

Ryan manifolds will be standard equipment on the giant Boeing C-97 Stratocruisers and on Douglas Aircraft's DC-6 airliners, both of which will make their appearance later this year on the commercial skyways. Ryan manifolds, under the new contracts will also be furnished for the B-50 superbomber, which is the advanced version of the B-29; for the C-54 military transport, Douglas C-74 Globemaster transports and Northrop's radical B-35 flying wing bomber.

Employees and management alike can find real satisfaction in the knowledge that labor difficulties, so widely and seriously interfering with necessary peacetime production elsewhere throughout the country, will not jeopardize the welfare of the Ryan company and its workers. Committees representing the management, the United Automobile Workers and United Aircraft Welders have by extended, but sincere, negotiations reached agreement on all points, assuring uninterrupted production and payrolls. We should all feel fortunate that labor and management at Ryan have succeeded where others have failed, and that the road ahead is clear.

Wage increases for all hourly-paid employees, including those in technical, office and engineering capacities, will be granted to Ryan workers, retroactive to February 18th, if, as anticipated, government approval for which the company has already applied is obtained. Employees receiving less than \$1.10 per hour are granted increases of 16 cents per hour, and those earning \$1.15 or more per hour are advanced 17 cents. In the case of welders, the provisions are somewhat different under their contract but the benefits are comparable. In the future, all hourly-paid employees will receive 12 days (eight work hours each) leave of absence with pay, which may be used as vacation, sick leave or time off with pay on recognized holidays falling on work days. (When time off is used for sick leave, a doctor's certificate is no longer necessary).

To speed up payments to employees under the higher wage rates, Robert L. Clark, head of Wage and Salary Administration, has flown to Washington for conferences with the Wage Stabilization Board and Salary Stabilization unit of the Treasury Department. This should eliminate any of the unnecessary delays which other companies have experienced when trying to handle the matter by mail. We sincerely hope for early government approval of the increases recently announced.



An Interim Report to stockholders covering the first nine months of the year 1945 has been issued. This included the announcement that the regular annual report covering the full fiscal year of 1945, normally issued about March first, has been postponed for approximately ninety days. This was found necessary due to the major effect, on the year end financial statements, of the results of the final settlement of terminated government contracts, which are now so indefinite as to make any statements issued at this time inaccurate. For that reason, the Interim Statement was issued and covers the first nine months only. The Interim Statement shows a total dollar volume of business for the nine-month period of \$43,077,815, and a net profit of \$244,895.

Indicative of the management's confidence in the future is the fact, probably heretofore little known to employees, that the company is in the process of investing more than half a million dollars of its capital in equipment which is being acquired from the Defense Plant Corporation. Surveys have been completed of all government-owned manufacturing equipment, machinery, fixtures and facilities which during the war were supplied to supplement company-owned equipment used in war production. That which can best be used by the company in its peacetime and continuing military development programs is being acquired by outright purchase.

The company has been signally honored by the Navy in extending an invitation to have a representative of the Ryan organization fly with the Naval Air Transport Service on a two-weeks air tour of the Pacific war areas which will take executives of several selected companies which manufacture equipment for NATS to Tokyo and return. As your representative, I'm to leave in a Douglas DC-4 (the Navy calls them R5Ds) from Oakland this week-end. The trip is planned so that the various company men will have an opportunity to study their own products in service. It will be an excellent chance for me to see how Ryan manifolds stand up in actual operation and how our service organization's cooperation with NATS can be still further improved. We'll be stopping at Honolulu, Guam, Manila and Shanghai - but like others who will be aboard, I'll be looking forward with most interest to the trip to Tokyo and an opportunity to see the effects of air power on the Japanese home islands.

It's my hope that soon after our return there will be a chance for me to talk informally with many of you personally and to report at some length to all of you in these pages. For the past two weeks the Navy has been seeing to it that I'm properly inoculated for all the tropical diseases - cholera, tetanus, typhoid, typhus and cowpox. This gave one of our employees (who was taking care of the arrangements for the "needlework") the chance to tell me to my face that I was "half shot," and, since he was right, I had to let him get away with it!

An intensified FR-1 final demonstration and test program is being hurried to conclusion. It should be explained that during the war few, if any, operational airplanes completed the final demonstration tests required by the formal government contracts because of the concentration on getting combat planes into operation. Now, with ample time available, final demonstrations of the Fireball are being conducted. Al Conover, Head of Flight Research and Chief Test Pilot, is now at the Naval Air Test Center, Patuxent, Maryland, conducting final high speed dives and high G pull-outs. The work is proceeding satisfactorily with project engineer Bill Immenschuh, servicemen Ed Sly and engineer Karsten Solheim on hand to aid Conover.

At the Naval Aircraft Materiel Center, Philadelphia, the Fireball, along with the F7F and F8F fighters, is undergoing final static tests. The tests are being made of a production airplane in order to prove the results of the static tests conducted by our company, as the contractor, here at the plant. Meanwhile, the Escort Aircraft Carrier, Bairoko, is operating out of San Diego with the Fireball fighter squadron of Air Group 41, under command of Lieut. Comdr. John F. Gray, aboard to conduct further pilot qualification tests.

The first carrier landing of a plane under jet power only, though it has not been widely publicized, is claimed for the Ryan FR-1 Fireball by the U. S. Navy according to word received from Washington where the Bureau of Aeronautics released the story to the nation's newspaper, radio and magazine writers. The landing of the jet-pushed, propeller-pulled Fireball, using its jet engine only, was unpremeditated. It was made in November aboard the escort carrier "Wake Island" by a pilot of Air Group 41 who made the pioneer jet landing when his plane experienced an almost complete power failure in the conventional engine as he was making his landing approach. Quickly starting his jet engine, he continued his approach and landed safely.

"This landing confirms our long-held belief that such a feat could be accomplished successfully," Navy spokesmen are reported to have commented in releasing the announcement. The Fireballs, of course, have made innumerable carrier landings using both power plants, or the front engine only, but never before had a plane landed on its jet unit only. Since last November, the British have landed one of their all-jet planes on a carrier, but this was on the deck of one of their large carriers, whereas the Fireball was landed on the much smaller escort type.

The other day I came across an editorial advertisement, one of an excellent series prepared by the Warner and Swasey people who make turret lathes, which has a lot of good, sound thinking, and I'd like to pass it along as something I believe you'll find worth reading -

"Wealth is not money - it is the things we use: houses, radios, food, clothes. The only good anyone can get out of money is to use it to buy these things. If you had all the money in the world and there were no things to buy, you'd starve and freeze. True wealth - the things that make life worth living -- can't be distributed like so many playing cards -- it has to be produced every hour of every day of every year, or there would be none and we'd all soon die of starvation, cold and disease. Nobody can distribute what isn't made. First it has to be produced, and the people who produce it will share in it. Some of the production of course has to go to pay for the factory or farm that makes it possible. Some has to go to the honest government that safeguards the factory and farm and workers. The rest (and it's two-thirds or more of the total wealth produced) goes to the people who did the producing, in the form of wages. The more they produce efficiently, the more there is for them to divide. And that's the way wealth should be distributed -- the only way it can be distributed....the more you add to the world's goods, the more there is for you to share."

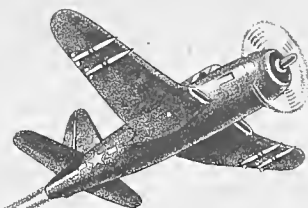
Cordially,

*J. Claude Ryan*



RYAN AERONAUTICAL COMPANY

LINDBERGH FIELD, SAN DIEGO, CALIF.



## News Letter

April 5, 1946

"Operation Frostbite." That's the intriguing designation of the Navy's important sub-arctic operational carrier trials in which Ryan's jet-pushed, propeller-pulled FR-1 Fireball fighter plane recently took part. The tests were conducted aboard the giant aircraft carrier "Midway" between Labrador and Greenland to learn whether a carrier built for the temperate and tropic zones can operate its planes effectively among the icebergs in Far Northern waters.

Cold-weather operation of jet propulsion engines was evaluated aboard the "Midway" by tests of the Fireball, the only jet-powered aircraft assigned by the Navy to this important equipment research project. Because the Ryan FR-1 is the Navy's first combat plane to use jet propulsion, it was a logical choice for the sub-arctic operational test assignment. New equipment tested in the frigid regions included such innovations as snowplows to clean the giant flight deck of the carrier, a helicopter for effecting air-sea rescues, baskets attached to cranes projecting from destroyers to snatch crashed pilots from the icy waters, and exposure suits to protect fliers when forced down.

Favorable comments regarding the mock-up of Model 30 (designated XF2R-2 by the Navy) and the manner in which it was presented at the factory to a special Navy board from Washington are continuing to come in. Officers both at the Bureau of Aeronautics, Washington, and at the Patuxent, Maryland, Test Base have remarked on how well the job was handled. We have a very pressing schedule on Model 30 work, but all departments concerned are hitting the ball, and schedules are being kept. As of this week, 57 percent of engineering information was due to be in the hands of the Bureau, while 58 percent has actually been submitted. The percentage of completion for all engineering information on Model 30 is now 46%, compared with 47% scheduled to have been done at this time.

Ryan's dominant place in manufacture of exhaust manifold systems, and the concentration of this industry in San Diego, has again been forcefully called to the attention of this city and its business leaders through a main-feature pictorial story in a recent issue of the San Diego Journal.

A paradox in the present employment picture, not only locally, but all over the country, is the fact that there exists today a greater demand for skilled aircraft engineers than ever before in history. Basically the reason is that there are now more new design projects than during the war, when the Army and Navy encouraged concentration of but one or two design and production programs in each of the aircraft plants. Now all of the companies have returned to a competitive basis for new contracts from the military services, and for transport, commercial and private airplane business. Each is making a supreme effort to originate the most advanced new designs for further development and production. Because of several new projects on which Ryan is working, our need for additional experienced engineers is very acute.

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We especially need stress analysts, design engineers and structures engineers. You can assist the company by passing this information along to anyone you know who might qualify for one of these positions.

Another exceptionally busy spot in the Ryan plant is the Modeling Department which is now on a 58-hour, 6-day work week. New projects for exhaust manifolds, military aircraft and a number of non-aeronautical products are the reason for the heavy work schedule. The company is trying to hire additional plaster pattern makers, and in the meantime is temporarily sub-contracting some of the new modeling work to Los Angeles firms. With modeling the first stage of many of our manufacturing processes, the heavy schedules in this section indicate that an increased tempo in production departments can be anticipated.

Maintaining liaison with the Army and Navy in order that the company keeps fully abreast of current thinking and new design trends of the military services has always been of major importance to the future of the Ryan organization. Because this is as true today as during the war; hardly a week goes by without some of our people "on the road" between the plant and Washington. Early next week, for example, Art Mankey, assistant to the President, in charge of engineering-manufacturing coordination, and Ben Salmon, chief engineer, leave for conferences at Washington with the Navy's Bureau of Aeronautics and at Wright Field, Dayton, with the Army's Air Materiel Command concerning new projects in which the company is interested. Shortly before his scheduled departure, Salmon spent two days at Muroc Dry Lake, the Army's principal west coast test base, and the center of much new development work on jet propulsion.

Engineers specifically assigned to Model 30, are also kept busy with military and industry contacts. Dave Williams, project engineer, and William Edell, power plant group leader, have been at the Bureau of Aeronautics this past week, and yesterday were due at the General Electric jet plant at Lynn, Mass., to coordinate power plant problems of the advanced version of the Fireball. Today they will be at the Westinghouse plant at Philadelphia to acquire details of that company's jet propulsion engine projects. Robert Close, meanwhile, is at the Bureau coordinating Model 30 fuselage drawings which have been submitted for approval.

The Equipment, Armament and Electronics Laboratories at the Army's Air Materiel Command headquarters, Wright Field, will be visited next week by Sam Beaudry, electrical and radio design engineer, and Harold Hasenbeck, supervisor of the engineering laboratory. The Air Forces have called a conference of technical experts of those aircraft companies working on advanced type combat aircraft to discuss new research programs. This occasion will permit industry engineers to become familiar with Wright Field laboratory facilities and personnel, and to learn the present state of development of new and greatly advanced techniques. Later, with standards engineer Tom Hearne, Beaudry will attend the Chicago meeting of the National Aircraft Standards Committee, and will then visit the Bureau of Aeronautics, Washington, and the Airborne Instruments Laboratory, New York, before returning to San Diego.

Jobs come from ideas! Ideas, for example, like a mechanical refrigerator. In 1921 this invention was dismissed by one critic as a futile experiment. Today there are more than 20,000,000 such refrigerators in America - and the public is clamoring for more. ....An idea is a radio. In January 1922, an editorial writer said that radio belonged in the toy world. Today there are 32,500,000 radios in the nation. ....An idea is a typewriter. One of the first attempts to conduct a class in typewriting was called foolish and misguided. Today it is estimated that 1,500,000 women are employed as typists, stenographers and secretaries.

But an idea in the raw is only the first step; It is only good if it works! Who makes it work? Who bridges the gap between inspiration and production? All of us -- employees, stockholders, management -- have a hand in that. But the greatest responsibility for bridging that gap falls on management, for it must find the money (it costs an average of \$5000 to create a single job in modern industry), hire the employees; perfect special techniques for economic manufacture, organize the distribution, inform and persuade the potential buyer. To make new ideas work -- and our company has its share of them -- takes the cooperation and interest of all of us. Then, and only then, does the idea become productive and serve the greatest number of people. Only then does it turn into a pay envelope.

The final demonstration of the FR-1 Fireball being made by Al Conover at Patuxent is progressing exceptionally well despite the inevitable delays of weather and minor adjustments. Practically all of the dives have been completed, and it now appears that the flight phase of the demonstration, barring unforeseen contingencies, will be completed by the time this news-letter is in your hands. On Monday of this week, Conover made six separate flights, getting six dives and other demonstrations out of the way -- a good days performance for any pilot. FR-1 project engineer, Bill Immenschuh, who was with the group during the major part of the program, has returned to San Diego, and Karsten Solheim, instrumentation engineer, and Ed Sly, service representative, are continuing on the job to the finish. All of our people working on this project deserve the highest commendation for the manner in which the tests have been carried on.

One-third of all Ryan employees have at least 5-years service with the company! That outstanding record is the best possible evidence that the calibre of personnel now comprising our key organization is the highest in the company's history, consisting of experienced, energetic men and women who know their jobs. The fact that 503 of our people have been with us five years or more came to light the other day when service pins were being presented to employees recently returned from duty with the Army, Navy and Marines, who were given Ryan seniority credit for the time they spent in military service. Just before his departure on an inspection flight of the Pacific with the Naval Air Transport Service, Claude Ryan presented 10-year service awards to two of our older employees - Erich Faulwetter, foreman of the sheet metal department, and Ford Lehman, welding research analyst in the laboratory.

You'll soon be seeing the Fireball in the newsreels again. Test Pilot Al Conover reports from the Navy Test Center, Maryland, that he flew the FR-1 for an hour and a half one day last week for Fox Movietone Newsreel cameramen. The special flights were sandwiched-in between the final demonstration acceptance tests Conover is now running for the Navy. Five newsreel companies last fall covered the first public demonstration of Fireballs both at San Diego and at Washington.

"The Ryan S-T is still ten years ahead of most other light aircraft." That's the opinion expressed by an Australian pilot-instructor in a recent letter to our airplane service department. Bringing our records up-to-date on the disposition of Ryan trainers built in war-time, the Australian correspondent reported that "I am at present flying a Ryan STM which was released by the Royal Australian Air Force for our civil flying. It was formerly used as a seaplane by the Netherlands East Indies government and is one of about 20 that will soon be operating here in Australia."

Pioneering work of the Ryan company in combining for the first time in the Fireball, the advantages of composite-engined power from propeller and jet propulsion is starting a whole new trend which is being closely watched by aeronautical experts throughout the world. Already the Army has announced its counterpart of the Fireball - the

XP-81, which uses a gas turbine (in place of a conventional reciprocating engine) turning a propeller in combination with a thermal jet engine in the tail. Other composite-engined designs are on the way, but are not yet ready for public announcement.

Further refinement of the gas turbine engine and development of new super-fuels of high chemical energy in relation to weight are the two most important factors which will extend the economic advantage of the airplane. This was the message given members of the San Diego section of the Institute of the Aeronautical Sciences recently by Ben Salmon, Ryan's chief engineer. Given a liquid fuel of high energy content, turbine designers will transform that chemical energy into mechanical motion which the aeronautical engineer will convert into more efficient and economical air transportation than any we have yet envisioned.

"There exists no doubt," Salmon told the engineers, "that, given a set of requirements for a new airplane so long as they include a specification for high cruising or top speed, that plane which is designed around a composite power plant (jet and propeller) will excel in overall performance. Such a power combination is indicated in those cases where more high-speed performance is required than is obtainable from a propeller-driven power plant alone, and where range, take-off characteristics, climb and maneuverability cannot be compromised, as is now the case with the all-jet airplane."

How effortlessly and safely a lad of 13 or younger can be taught to fly an airplane is the theme of a motion picture to be produced by a group of four military veterans newly set up in the movie business, according to Hollywood reports. The star of the picture will be 13-year-old Marvin Whiteman, Jr., who recently completed his sixty-first hour in the air at the controls of his father's Ryan S-T -- all dual time, of course. Young Whiteman began taking instruction from his dad at the ripe old age of eight. Taking up flying at an early age seems to run in the family. His father is now teaching Marvin's 11-year-old sister, Lynn Carol, to fly. The Whitemans are engaged in a campaign to try to convince the Civil Aeronautics Administration that Marvin, Jr., and other qualified young pilots should be given licenses in spite of their age.

Word from the Naval Air Transport Service, as this news-Letter went to press, was that Claude Ryan and other aircraft executives on the trans-Pacific survey flight had departed from Guam on Monday for Manila. By this time, however, they should be in Shanghai, and early next week will visit Tokyo before starting the return flight. Mr. Ryan's departure out of San Francisco was held up one day so that the aircraft executives might make the flight to Honolulu in a Mars four-engined flying boat. At Hawaii, they resumed the trip in a Navy R5D four-engine landplane. Here at the plant where Ryan makes the manifolds for the plane, we know the R5D better by its Army designation, C-54.

Since Mr. Ryan left on his trip a considerable volume of material of interest to employees and stockholders has crossed our desks, and we wanted to take this means to pass along information we felt would be of value to news-letter readers.

Cordially,

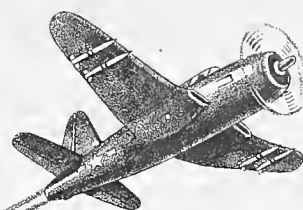
Earl A. Puckett  
G. B. Goodard





## RYAN AERONAUTICAL COMPANY

LINDBERGH FIELD, SAN DIEGO, CALIF.



# News Letter

May 7, 1946

Only highlights of a three-week, 20,000-mile trans-Pacific air trip can be covered in a report this brief, but having traveled with the Naval Air Transport Service as a Ryan representative, I feel you will want to know something of my experiences and impressions. In so brief a time no one can become an "expert." I know, then, you will accept my views as those of an average American traveler, with the advantage, however, of many informal talks with leading naval and military men well-versed in conditions in the Orient. Details of much of our sightseeing must necessarily be left out, but our hosts, Rear Admiral J. W. Reeves, Jr. and Commander George Fouch, provided most amply.

Great admiration for the marvelous NATS organization was foremost in the minds of the aircraft officials who made the trip to observe their products in actual use. Spreading from island to island across a vast ocean, NATS is one of the world's great airlines, operating quietly and efficiently in peacetime as in war without proper recognition. The potentialities of commercial airline traffic in the years ahead were dramatically emphasized by the great distances, which by plane, reduce to hours the days required for surface travel.

Lasting impressions of the trip: Our too-rapid demobilization which has left insufficient manpower to handle even routine duties. Inflation in China - \$4,000 for dinner (\$2 in American money). Importance of our bases at Hawaii, Kwajalein and Guam. The 1898-style guns with which we tried to defend Corregidor - a lesson for the future. Enjoyable hours spent in the co-pilot's seat, flying with Comdr. "Dutch" Shuttleworth, our plane commander. The destruction of Jap cities, particularly Hiroshima, and the beauty of Mt. Fujiyama. The feeling that our failure to "stand up" to Russia is winning us only their contempt. Flying along the coast of Hawaii where waterfalls plunge hundreds of feet directly into the blue Pacific. The cooperation and self-reliance of Japanese civilians - a tribute to the authority and exceptional ability of General MacArthur. Meeting old friends, mostly San Diegans, half way around the world. Shanghai, cross-roads of the east - one of the great cosmopolitan cities of the world. The wreckage of Jap-dynamited and bombed Manila. The dependence of the Philippines upon the United States; a dependence which has retarded initiative on their part in getting back on their feet.

\* \* \*

The Martin Mars, largest seaplane flying, was lying alongside the Alameda Naval Air Station float with its navigation lights burning, as we boarded her at dusk. We had just come from the flight office where we had been briefed on "ditching" procedure and survival at sea on a life raft in the eventuality of an emergency landing. We rose rapidly off the water climbing over the Bay and San Francisco bridges with the early evening lights of San Francisco and the Bay Region vanishing in the distance as we headed 2400 miles west over the Pacific. A double-deck flying boat, the Mars can be very spacious as a transport, but our plane was a freighter without soundproofing or usual passenger comforts. I stayed up late on the large flight deck to learn what I could about piloting and navigation techniques on over-water flights.

Landing at Honolulu on the island of Oahu, we were met by Naval officials and newspapermen. On an inspection trip of the Naval Air Station, I met some of the officers in charge of maintenance and overhaul and discussed our exhaust manifold service and maintenance with them. There were no particular problems, but they did request certain additional servicing information which is being forwarded to them. I also suggested that we might aid in improving the Navy's service manual in certain respects pertaining to manifolds.

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The next day, we flew on a side trip to Hilo on the island of Hawaii. One of the most memorable events of the whole trip was the enthralling sight of hundreds and hundreds of beautiful waterfalls coming down the sides of the mountains and cliffs directly into the ocean, seen from the plane as we flew low along the shores of this largest island of the Hawaiian group. From Hilo, we visited Mauna Loa volcano; and before returning to Honolulu sent our wives beautiful leis made of two dozen orchids - purchased for only five dollars, including air express charges.

The four-hour flight from Honolulu to Johnston Island was an easy one in the Douglas R5D Skymaster landplane transport which we used on the balance of the trip. In Navy parlance, it was a "plush" job - with airline-type chairs instead of hard buckets seats of the freighters. Johnston is a tiny coral atoll just large enough for a runway, taxi-strip and a few buildings. They say the runway is 300 feet longer than the island; because when the Seabees got started they couldn't stop them in time! The water is a beautiful turquoise, delightfully warm and swarming with fish.

After refueling, a swim and lunch, we were off for Kwajalein in the Marshall Islands, where we landed after dark. This island is almost completely devoid of tropical jungle due to bombing and shell fire. It is one of the busiest places in the Pacific these days, swarming with shipping for Operation Crossroads, the atomic bomb test. An old friend, Commodore Benny Wyatt is in command of the Marshalls and has been busy accepting the surrender of Jap officers on the hundreds of islands in the group ever since V-J Day. Virtually all the natives are Protestant Christians. They are intelligent and cooperative and everyone is fond of them.

From Kwajalein, we left for Guam and on crossing the international date line Commander Fouch initiated us into the Royal Order of the Golden Dragon. On the long flight, with nothing to see but ocean and clouds, I spent a good deal of time in the cockpit with the pilot and navigator to study the operation of these long-range overseas type aircraft. At Guam, which has a fine harbor and is a permanent base, there are tremendous quantities of every type of equipment. With not sufficient manpower on hand because of too-rapid demobilization, supplies and machinery are standing out in the open and rapidly deteriorating. Ships that have been waiting for months due to lack of manpower are gradually being unloaded with materiel intended for the war. Here Jap prisoners do much of the work, and seem to prefer working for Uncle Sam rather than return to Japan. Small groups of Japs who have been living in the interior of the island are still being brought in.

Between Guam and Manila, we flew 600 miles north of the normal course to go around a typhoon, but our navigator smartly picked up a strong tail-wind, and after a smooth ride we dropped down through a hole in the clouds directly over Corregidor and landed at Nichols Field on schedule. Manila is a picture of complete destruction. Virtually no buildings are left undamaged; the streets are in horrible condition, but life seems to go on in some strange manner. There is little evidence of any effort to clean up the rubble and rebuild. Everywhere you see native Filipinos with G. I. clothes, eating G. I. food, and many of them driving jeeps. You cannot help but admire the fortitude of the Filipinos in war, but they seem now to lack initiative and be waiting for American help to put them back on their feet.

After a day in Manila we went by Navy crash boat to Corregidor in the company of Colonel Greene, the Army's historian who is officially recording the Philippine phase of the war. The 1898-type guns we saw pretty well summed up the conditions under which General Wainwright and his men held out so valiantly. From Corregidor our boat took us to the Cavite Naval Base, almost completely destroyed by the Japs but now returned to full use. From there we could see the area on Bataan where the infamous death march took place. Many armed Japanese soldiers still at large infest the jungles of Bataan. Back in Manila, we saw vast areas of boxed airplanes and other war supplies accumulated for the invasion of the Japanese home islands.



## NEWS     H I G H - L I G H T S

A million dollars in new orders for exhaust manifold systems, designed and to be manufactured by our Metal Products Division, were received in the first three weeks of April. These contracts are in addition to the \$2,500,000 in new orders which our news-letter of March 22nd announced had been received in the previous 60 days. New business from the Douglas, North American, Lockheed, Fairchild and Northrop aircraft companies made up the bulk of the orders.

Production in the manifold department can be maintained at a high level with the present employees already assigned. Little change in total employment will result since the new work will be replacing that which is now being delivered in heavy volume to our manifold customers.

Final demonstration and acceptance tests of the FR-1 Fireball, successfully completed last month by Al Conover, head of flight research and chief test pilot, earned for Al, the Fireball and the company a "well done" from Capt. C. E. Giese, Director of Flight Test at the Navy's Air Test Center, Patuxent, Maryland. Commander E. M. Owens, senior project officer of carrier based aircraft, reported that the demonstration was among the most satisfactory ever presented, particularly so because the assignment was one of the most difficult ever given a contractor.

Toughest part of the acceptance test was the demonstration of high speed and high G pullout dives. In all, more than 20 dives were made by Conover. About half of these were maximum speed dives made at ten, twenty and thirty thousand feet, while the balance were pullouts at  $3\frac{1}{2}$  to  $7\frac{1}{2}$  times the force of gravity. In every one of his demonstrations Conover gave the Navy more altitude, more speed and higher G pullouts than required. So far, he has made 46 dives into the compressibility range - the barrier to high speed flight approximating the speed of sound.

All demonstration test results were verified by instrument and visual observation. On each flight, a Navy test pilot-observer flew in an accompanying fighter plane, while motion picture cameras installed in the Fireball recorded instrument panel readings and photographed the control surfaces. Karsten Solheim, Ryan instrumentation engineer, and Ed Sly, field service representative, remained at Patuxent for the six weeks of the tests, while Bill Immenschuh, FR-1 project engineer, was there at the start of the demonstration program.

After successfully completing one of the most difficult acceptance tests ever flown, virtually without incident, Conover, paradoxically, had the misfortune to encounter engine trouble while flying through a violent snow-storm in New Mexico while en route home, necessitating a forced landing on the desert. Fortunately, Al made a beautiful wheels-up belly landing, without damage to the airplane or himself. A crew from Experimental under Bill Billings, and Lieut. Mickey Mihalko of the Navy office, soon had the plane back in service and Conover flew it on in to the plant from the Army Base at Albuquerque.

Keeping abreast of the progress of other aircraft manufacturers, Conover flew the Army's P-59 jet fighter and the Navy's twin-engine F7F fighter while on his recent trip.

General of the Army H. H. Arnold, war-time commanding general of the Army Air Forces, has just written me upon his retirement from the service and asked that I pass along to all Ryan employees his personal appreciation of their support of the Air Forces during the war. He paid glowing tribute to "the scientists, the industrialists, and the workers who conceived, designed and produced the myriad weapons and other necessities without which such a force would have been helpless."

"I add my commendation and thanks," wrote General Arnold, "to those of freedom-loving people everywhere and transmit them with pleasure to all who contributed to the successful accomplishment of the wartime mission of the Army Air Forces. We have met the challenge of the foes of freedom and, in history's greatest demonstration of brotherly cooperation, preserved the right of the common man to be free. Our mission now is to cooperate in the same manner to build up industrial and economic peacetime America and to guarantee the future peace of the world."

Recent visitors have included Capt. C. A. Nicholson, chief of the piloted aircraft division, and Capt. R. E. Dixon, head of military requirements, both of the Bureau of Aeronautics at Washington, here to confer on contract and lease matters. Also in for a quick inspection of Model 30 and future design projects was Comdr. A. B. Metzger, head of the Navy's fighter aircraft design section, and Lieut. W. J. Pattison, of the power plant section.

West Coast Aviation Writers will have as their guests this week, Al Conover, head of flight research and chief test pilot, and Ben Salmon, chief engineer, who will give leading aviation press representatives some off-the-record comments on the trend of aircraft design and the problems of super-sonic flight. This meeting with aviation writers is part of the company's continuing policy of keeping the country's editors informed of Ryan's contributions to aviation development. The reprint of Fireball articles distributed last week gave you some idea of the widespread interest the FR-1 has created and the prominence the plane has brought the company.

"It's like taking dope. You can't leave it alone." Those are the unusual words the owner of a Ryan PT-22 surplus Army trainer chose to describe the war-time version of the company's long line of S-T type trainers. He wrote our airplane service manager to tell us that "I sold my ST-3KR in September and have just recently bought it back. I had thought of getting a new 1946 model side-by-side plane, but was rather disappointed in what is offered at this time for the prices asked. Anyway, after flying this little Ryan number, if you like it at all, it's like taking dope - You can't leave it alone."

Ryan manifolds will be on the Northrop XB-35 Flying Wing Bomber when it makes its first test flights this fall. First details of the revolutionary bomber, just released by the Army's Air Materiel Command, reveal that the wing span of the tailless aircraft will be 30 feet greater than that of the B-29 superfortress, and that the wing will be seven feet thick. The B-35 will be powered with four giant four-row Wasp engines, of approximately 3000 horsepower each, equipped with Ryan-designed and manufactured exhaust systems. Shafts extending from the engines buried within the huge wing will turn the two, four-bladed contra-rotating propellers of each of the four giant power plants.

Contract and engineering design matters with the Army and Navy occupied Walter O. Locke and W. Art Markey, assistants to the president, and Ben Salmon, chief engineer, during their recent eastern trip. They spent considerable time in conferences with contract and technical personnel of the Navy's Bureau of Aeronautics in Washington and with officers of the Army Air Forces' Air Materiel Command at Wright Field. While it would be premature to announce definite commitments as a result of the trip, it can be said that negotiations were of a very important nature.

The typhoon was still milling around when we took off for Shanghai and was then centered around Okinawa, so we had to abandon our plan to visit that base. I believe I would have recognized the coastal lowlands, when we approached the Asiatic mainland, as China by the way every square foot was cultivated, with large canals criss-crossing as far as we could see; just as the travel books say. Even the hills were completely terraced.

The airport at Shanghai was thickly packed with every type of American plane, but the moment we landed there was no doubt we were really in China. Roads into Shanghai were in terrible condition. They were lined with Chinese men, women and children carrying heavy loads on long poles, while others pushed or pulled the oddest imaginable vehicles piled high with all sorts of queer cargos. We noticed large numbers of Japanese soldiers and civilians at liberty, simply because the Chinese didn't have enough room in prison camps to handle them. They all wear identifying arm-bands, have limited liberty in the daytime, but are required to be in barracks after eight o'clock at night. They apparently give little trouble.

Our quarters were in the Cathay Hotel in the modern section of the city, facing the bund and overlooking the Whangpoo River, which serves as a deep water harbor. Here in cosmopolitan Shanghai one finds a true blending of modern, western civilization and the centuries-old culture and low living standards of the Orient. I was so fascinated by the contrasting river traffic that I spent hours looking out the window at the strange Oriental scene. One of the most majestic sights I have ever seen was the American fleet of big warships in the Whangpoo. As the little Chinese junks and sampans, propelled by dirty sails or sculled by Chinese boathands, swarmed around them, the warships stood out as a symbol of American power and stability.

In the evening we visited two cafes - one operated by White Russians and the other by Chinese. The Russian dinner was very elaborate; some of the food was excellent while other was odd to the American taste. Perhaps it would have tasted better had we mixed more vodka with it, but that didn't taste too good, either. Nor was there any use trying to be polite and drink vodka, for they simply kept the glasses filled all the time. There was no gaining on it! Both the Chinese and Russian cafes had numerous taxi dancers - considered quite respectable even in the best places there - available as dinner and dancing partners at \$1.40 per hour, American money. They spoke only Russian, Chinese or very poor pigeon English. None of our party sought their companionship.

My ride in a rickshaw the next day was quite an experience. There are thousands of them, and they are everywhere. I had a typical coolie, dressed in typical garb; and he was a traditional bargainer, since no standard rates are established. The rickshaw boys set a pretty lively pace all the time, and have remarkable endurance. In the teeming streets and alleys, to my amazement, we missed all pedestrians; and all vehicles missed us, but I don't know how. With the aid of a passer-by who could speak fair English, and my poor attempts at pigeon English, my coolie managed to get me to the Army Post Exchange, to a department store on a shopping trip, and back to the Cathay Hotel. He was so delighted with me as a customer, since he got what was probably several times the usual rate, that he wanted to come back the next day.

Inflation in China is beyond our comprehension. It takes 2000 Chinese dollars to make one American dollar. Before inflation the ratio was three to one. Paper money has been printed until it is relatively worthless, while much of the goods that is available is traded only on the black market at uncontrolled, sky-high prices. I tried my hand at bargaining according to the instructions of those used to buying on the Chinese market. The price of \$5000 in Chinese (\$2.50 American) was asked for one article. I offered \$2000 and the merchant seemed so pleased with the bargain that he snapped it right up. Normal values are so cheapened that it's a common sight to see a small boy clutching a big roll of paper money which he wagers while shooting coins to a crack in the pavement.

To a far lesser extent, of course, we're beginning to see inflation in this country. Looking at our present economic problems objectively and without prejudice to any group, it's all too apparent that the real price of many commodities is being set by black markets rather than the OPA. Wherever you find too much money and too little goods, as we now have, you find that your dollar is worth less in terms of what it will buy - and that's inflation. And when we try to halt inflation more by price control than by stimulation of production we get black markets. Limited price control for a limited time is certainly necessary during this trying period, but the only sound solution to the problem would seem to be production on a scale such as we've never seen before, so that the laws of supply and demand can freely operate. We'll find stability only when the economic force of the money available for purchases and the amount of goods available to be purchased more nearly balance. As long as production is stopped in vital industries like coal, throwing the whole industrial machine out of time; and while some goods already produced is withheld from the market because its sale at present prices means a loss to the producer, we'll be delayed in full adjustment to the scale of peace-time operation which can provide the greatest employment and security for all. We should all remember that the more we add to the world's goods, the more there is for us to share.

During the Japanese occupation the Chinese didn't have inflation and their money was worth something. At least so we were told by a very cultured White Russian woman, who had lived in Shanghai for 27 years, and was a guest at one of the entertainments. Since the Americans have taken over, their money has become almost worthless; so, in some respects, we haven't made life too pleasant for them. At other social functions, we met a number of well-educated, cultured Chinese girls who had learned English in Shanghai high schools and were now attending universities or working as secretaries for American firms. Apparently, all of the better schools teach English, for most of the upper-class Chinese merchants and business people speak it well.

The majority of Chinese appear well fed and healthy in spite of the almost complete lack of sanitation and decent standards of living, but there are numerous beggars on the streets. Typical was one youngster who would come up to Americans with an appealing smile and an extended hand to beg, "No mama, no papa; no flight pay, no per diem!" Shanghai is overpopulated and the problem of food is a very real one. And yet the people we saw had chubby faces and good complexions. The Chinese appear to be happy and cheerful in spite of their hardships, and stoically take their fate as a matter of course.

My old friend, General Chennault, organizer of the Flying Tigers and top airman in China, was at one of the parties for Army and Navy officers, radio and magazine correspondents and civic leaders, and I enjoyed the opportunity to have a long personal visit with him. He told me much about the Chinese pilot training operations under his command in which our Ryan STM and PT-22 planes were used, and the excellent job they did under almost unbelievably poor conditions. General Chennault is, in my opinion, one of the great heroes of the war.

A carnival rather than religious atmosphere seemed to mark the festival corresponding to our Easter at the Buddhist Temple we visited. Each building had a large variety of small Buddhas - each representing a God to which prayers were directed for some particular favor. Our Chinese guide pointed out the one Chinese women prayed to when they wanted a child and I couldn't help but observe that he was quite a benevolent deity, judging from the appearance of the population!

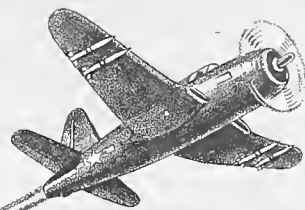
The concluding portion of this report, covering the flight and visit to Tokyo, and trip home, will be given in the next news-letter.

Cordially, *J. Claude Ryan*



RYAN AERONAUTICAL COMPANY

LINDBERGH FIELD, SAN DIEGO, CALIF.



## News Letter

June 7, 1946

To the ORIENT with the NAVAL AIR TRANSPORT SERVICE.....(Conclusion)

Three hours after our take-off from Shanghai, we sighted the southern tip of the Japanese home islands, with the intention of flying over Nagasaki, where the second atomic bomb was dropped; but the clouds were so thick we decided to fly on to Hiroshima. En route we saw a new volcano in violent eruption, with black smoke shooting thousands of feet into the air, forming a mushroom smoke cloud very similar to photographs of the atomic bomb explosion. After our arrival in Tokyo we found that the volcano had erupted just before we flew over, and that the flow of hot lava had wiped out two villages.

Hiroshima is a shambles. We circled low three times and had a perfect view of the first city completely destroyed by atomic power. With the exception of some houses on the outskirts and the shells of a few concrete buildings, Hiroshima has vanished, leaving only the bare rust-colored debris. In flying on from Hiroshima, we passed over many cities that had been destroyed by fire bombs and they gave the same impression of complete destruction, though it took many bombing missions in hundreds of planes to accomplish what the atom bomb had done with a single explosion.

Magnificent Mt. Fujiyama was first sighted towering above the clouds, and in a few minutes we were circling it at 13,000 feet with the wing-tip of our Douglas Skymaster seemingly almost touching the snow just below its peak. Pure white, and glistening in the sun, it was a sight never to be forgotten. We landed at dusk at Kiushiu Naval Base, formerly flight training headquarters for Japanese naval aviation cadets, where the infamous Kamakazi pilots were trained. We were quartered in one of the barracks, which are permanent-type reinforced concrete structures. We found the Japanese employees of the base extremely efficient, friendly and courteous, and as one officer said it is impossible to keep from being impressed with them individually in spite of the fact that they were such vicious enemies only a few months before.

We flew to Yokohama next morning in a Marine Corps shuttle plane, and were driven the short distance into Tokyo. Like Manila, Yokohama was a picture of complete destruction. There were many shipyards and steel plants, and all types of heavy industry lining the bay, most of which appeared to be well knocked out of commission. Only the railroads seemed to have been relatively undamaged, and were said to be operating pretty much on schedule. Roadbeds appeared comparable to ours and the trains travel at a rapid rate. Tokyo also has some elevated railways and a sizeable system of subways still in operation.

The trash and rubble seemed to be pretty well cleaned up at Tokyo and Yokohama, but few real buildings were in evidence except the small houses repaired with corrugated iron salvaged from the wreckage. Army G. I.s are supervising Japanese labor, and using heavy American equipment, in repairing the streets. We drove to General MacArthur's headquarters opposite the Imperial Palace Grounds to inquire for General K. B. Wolfe, with whom we were well acquainted, since most of Ryan's Army plane contracts had been

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carried out under his direction. He was in conference with a group of Japanese but joined us at lunch at the Imperial Hotel, the ultra-modern earthquake-proof hotel designed by Frank Lloyd Wright, noted American architect.

We accepted General Wolfe's invitation to stay over an extra day with him and with General Whitehead who were living on the outskirts of Tokyo, but first took advantage of his offer to conduct our party on a tour of the city. We visited the Imperial Palace Grounds, which were large and quite pretty, and the Japanese Diet (Parliament) Building which is quite similar to the Capitol in Washington. Among the very few undamaged buildings were the American, British and Russian Embassies, a fact which gave the Japanese a profound respect for the accuracy of our bombing.

The Japanese people in the streets paid little attention to us. As we drove by or walked among them they looked at us curiously, but without expression, revealing neither fear, hate nor friendliness. Theirs were just "deadpan" faces, so that we had no idea what their true feeling might be. The Japanese still worship the Emperor, but General MacArthur has achieved a popularity we in this country can hardly imagine. Of all occupation administrations, it is universally recognized that MacArthur's has been most effective. There are always hundreds of Japs outside his headquarters to bow to him when he leaves.

American soldiers are better ambassadors of good-will than many reports would have us believe. They are behaving reasonably well toward the Japanese population, which was told by its own government to expect the worse in case of defeat. This has made a profound impression especially on the lower class Japs, who are extremely antagonistic to their own military clique. Just before we arrived in Tokyo, a Japanese air force general was pulled from his car and stoned to death before he could be saved from the mob.

We visited many of the former Japanese air force fields near Tokyo. All have large numbers of American planes stored, together with large piles of destroyed Jap aircraft. At one field we visited a school where American enlisted men just in from the States were being trained to fill the desperate need for skilled mechanics and technicians, most of whom have been discharged.

One of the largest Japanese aircraft factories, adjacent to one of the fields, was still standing. We estimated it to have at least a million and a half square feet, and to be comparable in size and structure to some of our major factories. We saw one of the Japs latest model planes, which had not reached combat. It was a twin-engine, high speed, light bomber, which pretty well followed standard design practice in this country. When the factory was taken over by American troops, we were told, the American officer was greeted by the Japanese plant manager whom he recognized as having spent a good deal of time at aircraft plants in this country before the war, studying our methods!

The most interesting airport we visited was the Japanese air force experimental station, similar to the U. S. Army's Wright Field. They had very extensive buildings, laboratories and wind tunnels; however, most of them were badly damaged or destroyed. One wind tunnel with a 24-foot throat was little damaged and we found it quite interesting. The runways on all Jap air fields had to be rebuilt to handle our heavier, faster-landing planes. Some of them are being used temporarily with steel matting; others are being replaced with modern, heavy concrete runways of extended length.

The palatial former residence of a Japanese marquis was the headquarters of Generals Whitehead and Wolfe, and like the homes of other high Japanese officials had been turned over, with a full complement of extremely efficient and polite servants, to American occupation officers. The servants were lined up at the door as we entered and all bowed in typical Japanese fashion. From then on we were waited upon hand and foot. I

## NEWS     H I G H - L I G H T S

Ryan collector rings and allied exhaust system accessories, provided by our Metal Products Division, have been specified by Consolidated-Vultee for their new twin-engine 240 airliners. The initial order is for approximately \$200,000 and is based on requirements for the 120 Convair airliners which have been contracted for by American Airlines and Western Air Lines. In aircraft industry circles, it is reported that other airlines will soon order 240s, increasing Ryan's initial manifold order considerably.

We have long been providing exhaust systems for America's leading transports including the twin and four-engine Douglas DC-3 and DC-4 airliners, now so widely used on the country's airways. Ryan manifolds have also been selected as standard equipment on the newer transport aircraft just now getting into production, including, in addition to Convair's twin-engine 240, the four-engine Boeing Stratocruiser and the giant Douglas' DC-6 and DC-7 transports, along with a number of other new models.

Test and display samples of several new Ryan products have been built and are now in the hands of dealers and distributors, while other items have been developed for manufacturers who will use them as accessories and assemblies for their own products. Engineers of our Metal Products Division, who have gone east with certain of our new items, have brought back very encouraging reports; while executives of other firms who have visited the plant lately have been most enthusiastic, and highly complimentary about the workmanship of our production men and women.

Stockholders living in the Los Angeles area had an opportunity to see a squadron of our jet-pushed, propeller-pulled Fireball fighters in special flight demonstrations June 1st and 2nd at Los Angeles Municipal Airport, Inglewood. The Navy cooperated by sending Air Group 41, the first to be equipped with Fireballs, to the show. The squadron is from the Naval Air Station, San Diego, and is under command of Lieut. Comdr. John F. Gray.

Substantial earnings for the 1945 fiscal year, ending October 31, last, are indicated even though major contract cut-backs and cancellations occurred throughout the year. As previously announced, issuance of the annual report was postponed until final results of settlement of government contracts were determined. Although still incomplete, settlements are now so far along, and the results sufficiently clear, that the management believes the annual report can be issued within the next six or eight weeks.

Results of operations for the first five months of the present fiscal year are also indicated to be substantially in the black. In common with other companies, Ryan did an abnormally high volume of business during the war years and has had to readjust operations sharply downward, but preliminary estimates covering recent operations would indicate that the company has accomplished effective adjustments to the present changed conditions.

Indicative of the stability which the Ryan Aeronautical Company has reached, in spite of the problems of reconversion to peacetime operation, is the recently announced policy of the Board of Directors to declare dividend payments on a regularly quarterly basis. Giving effect to the new policy, an initial quarterly dividend of 10 cents per share will be paid June 10 to stockholders to record as of May 25th. At the same time the Directors declared a special dividend of 15 cents a share payable on the same date.

Adoption of a policy of making regular quarterly dividend payments was felt to be justified by information now available as to results of operations for the 1945 fiscal year and the prospects of continuing profitable operations. This expression of confidence by the Board of Directors in future operations, will, we feel sure, be received by the company's stockholders and employees as the best possible assurance of our belief in the stability of their investment and employment.

Eastern Headquarters of Ryan Metal Products Division of the Ryan Aeronautical Company have been established in Washington, D. C. to further promote the sales and service of our exhaust manifold systems and new non-aeronautical products. The Metal Products Division will occupy space in the company's established offices at 516 Bond Building. Richard D. Peterson, who recently joined the Ryan organization with a background of seven years sales experience in the aircraft manifold field, has been appointed Sales Engineer for the eastern territory. He will serve as sales and engineering consultant on exhaust manifold projects and will work with eastern aircraft manufacturers to whom we supply exhaust systems, jet engine parts and allied accessories.

Technical documents from conquered countries containing much valuable data on advanced research projects aboard are being studied by Ryan engineering and production men to determine what new research information, not previously available, may be incorporated into Ryan projects. We are fortunate in having three of our key employees, each with more than 10 years of service with Ryan, who are able to read, digest and put to practical uses this extensive research material, most of which is written in German. Will Vandermeer, design engineer, and Haym Jan "John" van der Linde, assistant superintendent, both of whom were born in Holland, are doing most of the work on the project, with considerable assistance being furnished by Erich Faulwetter, foreman of the sheet metal department.

A technical paper on Composite-Engined Aircraft (those using both propeller and jet propulsion, like the Ryan Fireball) was presented last week before the Los Angeles Section of the Institute of the Aeronautical Sciences by our chief engineer, Ben T. Salmon.

Ryan technical research is receiving wide recognition as the result of a program of publicizing information that can be released about the latest developments of our engineering and laboratory investigations. The program is being carried out under the direction of William P. Brotherton, technical editor, who is cooperating with experts in our various technical groups in the preparation of papers for leading journals. Listed here are the recent articles which have appeared. They are, of course, in addition to the wide publicity given the FR-1 Fireball Navy fighter, examples of which were included in the reprint recently distributed.

- Atomic Hydrogen Welding in Aviation, by Frederick S. Dever, in THE WELDING JOURNAL for April, 1946.
- Composite-Engined Aircraft as a Basic Conception, by Robert B. Johnston, in AVIATION for April, 1946.
- The Effect of Stabilizing and Stress Relief Heat Treatment Upon Welded 18-8 Stainless Steel, by Wilson G. Hubbell, in STEEL PROCESSING for March, 1946.
- Design and Tooling Aspects of the Ryan Fireball Fighter, by Ben T. Salmon, in AUTOMOTIVE AND AVIATION INDUSTRIES for February 15, 1946.
- Causes and Prevention of Defects in Welding, by Frederick S. Dever, in PRODUCT ENGINEERING for February, 1946.
- Production Riveting by Machine, by J. E. Cooper, in WESTERN MACHINERY AND STEEL WORLD for November, 1945.
- Laboratory Research Aids Flow Production, by Harold Hasenbeck, in PRODUCTION ENGINEERING AND MANAGEMENT for December, 1945.
- Welding Thin-Gauge Stainless Steel, by William P. Brotherton, in THE WELDING ENGINEER for April, 1946.
- Tooling the FR-1 Fireball, by William P. Brotherton, in WESTERN MACHINERY AND STEEL WORLD for April, 1946.
- Causes and Prevention of Defects in Welding, by Frederick S. Dever, in WESTERN MACHINERY AND STEEL WORLD for March, 1946.
- Effect of Exhaust Gases on Stainless Steel Manifolds by Wilson G. Hubbell, in AUTOMOTIVE AND AVIATION INDUSTRIES for September 15, 1945.



found it impossible to light a cigarette anywhere without having a servant instantly ready with a match, which, Mrs. Ryan still says, has completely spoiled me.

We learned a great deal about conditions in Japan and Korea, much of it of a confidential nature, from our hosts. The Generals intimate knowledge of the war in that area and conditions in Korea, where we share the occupation with Russia, made the informal talks in their study extremely interesting and thought-provoking. The aggressive expansionist activities of the Russians -- as in Manchuria, where industrial machinery was confiscated and sent back to Russia, and in Korea, where conditions are worse under joint American-Russian occupation than under the Japs - make for a very difficult situation.

A General just back from Korea told us some astounding things about the situation there, and the attitude of the Russians who occupy the northern part of that unhappy country. Only the State Department can act to correct some of the serious conditions faced by our Army which can do nothing without their help and authority.

A chance to see the countryside and villages near Tokyo was afforded by an automobile trip to beautiful and famous Hotel Fujya, well up the slopes of Mt. Fujiyama, 40 miles from the city. Some of the scenes reminded me of Southern California - truck gardens and orange groves against a backdrop of snow-capped mountains in the distance. Cultivation is intense, and the crops, though I was unfamiliar with them, looked good. Much of the former population of Tokyo, which was evacuated during the heavy bombing, is now living in other parts of Japan. There is no opportunity for them to be self-supporting in the city as yet.

We saw no barren desert-like spots anywhere, nor dry river beds. The mountains are covered with pines, firs and other evergreens. We noted trees planted in a regular pattern on a distant mountain, and found they were artificially planted in exact rows as the result of reforestation projects. The village near the resort hotel was very pretty, particularly since it was cherry blossom time, with the road completely lined with cherry trees in full bloom. Along the entire way Japanese were walking on both sides of the road. Many of the women carried babies on their backs; some were carrying wood and others surprisingly large and heavy loads. There were also oxcarts loaded with wood and other cargo and some large carts drawn by men and women. We saw no horse-driven or motor-driven vehicles except in Tokyo where there are a few busses and an occasional private car; all of which were fuelled by large charcoal generators on the rear.

The flight to Iwo Jima, though 750 miles, seemed comparatively short after flying the whole Pacific. We landed there in mid-afternoon and toured the island with the commanding officer. There is little there except a terrific amount of bloody American history. It is virtually a barren island of volcanic ash and supports no vegetation. It has excellent runways, a few buildings and several cemeteries for the marines who gave their lives for the capture of that tiny, vital Pacific base. We visited the cemeteries and found them neat and perfectly maintained; and some in our party located the graves of buddies of their own soldier sons. The area is still cluttered with knocked-out tanks, landing barges and all types of equipment. For a long time after the war Japs were still living in the caves along the shore and only a week before our arrival several, who were walking skeletons, came out to give themselves up.

We left for Saipan after a few hours at Iwo Jima and found it to be an island about the size of Guam. It is quite beautiful with inland tropical jungles and a beautiful bay formed by coral reefs and filled with many Navy ships, including aircraft carriers. We saw the beaches where the marines landed to recapture the island. There were Japanese pillboxes and caves similar to those on Iwo Jima and, here too, loss of life was very heavy. The picturesque village of the native Shamorians was

clean and sanitary, and filled with happy-appearing people. Perhaps the Navy's influence had something to do with the cleanliness and sanitation.

The Island of Tinian, famous take-off point for the B-29 bombing of Japan, is visible a few miles distant from Saipan and we had an excellent view of it as we took off for Kwajalein after our overnight stop. The entire island is made up of tremendous runways in groups of 5 or 6 parallel runways of 8000 to 10,000-foot length, between which are elaborate taxi-ways and parking areas.

Kwajalein was a long hop, and we landed there in the late evening. Since we had stopped on our way out, our stay was brief; just long enough to dine with my friend, Commodore Benny Wyatt, stretch our legs, and get the plane serviced. We took off again at 11 p.m. for Honolulu, carrying a heavy load of gas to enable us to fly through without landing at Johnston Island. This was the longest hop of our trip, covering 2500 miles.

I spent a good deal of time in the cockpit on this flight and was up there from four o'clock in the morning until dawn. It was a beautiful sight flying at 9000 feet above the clouds. It was on this hop that we again crossed the international date line, so we had two days that were both April 11th, instead of skipping a day as we did flying west. When we landed in Honolulu we went to the Moana Hotel and we were soon in our trunks and swimming at Waikiki Beach. That evening we had dinner with another old friend, Admiral John Towers, Chief of Naval Operations in the Pacific. It was a pleasant surprise to also meet Capt. John Burroughs, who was a pilot for our company years ago and is now a Master Pilot for Pan-American Airways.

Our take-off for the mainland was made at 3 p.m. the next day, and after a pleasant, overnight hop we made an instrument approach through the high fog over San Francisco and landed at Oakland right on schedule at 6 a.m. Through the courtesy of Consolidated-Vultee a four-engined transport arrived to take the Los Angeles and San Diego groups home, and to my pleasant surprise, I found that they had been thoughtful enough to invite Mrs. Ryan and two of our sons to make the trip to meet us.

No trip could have been more informative or pleasant than the Pacific tour arranged for us by Admiral Reeves and the excellent personnel of the Naval Air Transport Service. We came back indebted to them for their hospitality to us personally and with a fine understanding of the excellent job they have done in war and continue to do in peacetime. We learned much of their operational problems and feel that in the future the Ryan company can better serve them as a result of this Familiarization trip.

Oh, yes, about the Ryan manifolds? They functioned perfectly on the entire trip.

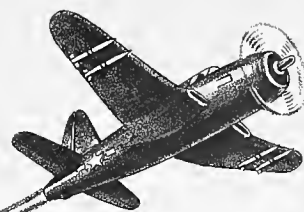
Cordially,

*J. Claude Ryan*



## RYAN AERONAUTICAL COMPANY

LINDBERGH FIELD, SAN DIEGO, CALIF.



# News Letter

SPECIAL BULLETIN

Wednesday, June 9

TO ALL RYAN EMPLOYEES:

In a final effort to reach a basis for agreement with the U.A.W. - C.I.O. Local 506 so as to avert the production atonpage and financial hardship to employees which would result from a strike, management representatives of the Ryan Aeronautical Company met with union representatives this morning.

In a completely frank discussion, management spokesmen disclosed to workers' representatives the financial results of current operations so there could be no misunderstanding whatever concerning the company's financial ability in respect to wage adjustments. The committee was shown an advance printer's proof of a Report to Stockholders being mailed today, showing financial results of operations for the first six months of the 1948 fiscal year.

This report disclosed that for the first half of the present fiscal year, net profit of the company was \$50,410 after provision for payment of \$33,459 in federal and state taxes on income. On gross business of \$3,415,885 for the six months period, which ended April 30, 1948, the net profit of \$50,410 was somewhat less than 1½% on sales volume. Thus, after a net loss of \$127,600 last year, the company is just now reaching the position where it is able to operate slightly above the "break-even" point.

Despite its extremely narrow margin of profitable operation at this time, and in the face of the grave risk involved in meeting the huge additional financial burden, an offer of a substantial increase in wages was made as an all-the-way, final proposition.

Management today proposed to the union committee a blanket wage increase of 6 cents per hour for all employees in the bargaining unit plus 80 hours vacation with pay and 6 paid holidays for all employees with one or more years service. When consideration is given to the paid holidays, this figures out to be the equivalent of better than 8 cents per hour increased wages, and based on present employment, increases the company's costs by approximately \$250,000 per year.

The union has recently rejected the impartial suggestions of Harry C. Malcom, U.S. Conciliator, designed to re-open negotiations so that bargaining of wage rates under normal conditions of contract discussion might be resumed. By this refusal, and the setting of a strike deadline for next Wednesday, the union has placed the company in the position of having to make its final proposal with no time for negotiating. Accordingly, the 6 cents per hour increase is the COMPANY'S ONLY AND FINAL OFFER FOR WAGE ADJUSTMENT. No other wage plan can or will be offered since the company has gone to the absolute limit of its financial soundness in making this proposal.

**1922** Twenty-four Years of Leadership in Aviation **1946**



We believe union leaders will recognize the sincerity of today's frank discussions and the finality of the company's offer. The increased wage rates can be put into effect promptly upon the union's signature of acceptance, since other points of a new contract have been settled in previous negotiations.

The company has gone to the limit in its wage offer, but the financial stability of the company need not be jeopardized if all of us get back promptly to our individual work assignments and devote our full energies to improving production and efficiency. In this way the security and interests of all parties can best be served.

Employees should clearly understand, however, that the decision is now squarely up to the union. Should their leaders refuse to recognize economic realities and call their members out on strike, there will be needless hardships on employees and their families. Equally serious will be the delays in production for the United States Government and other customers on which the Ryan Aeronautical Company and its workers must depend for the uninterrupted flow of orders which assure the continuation of our business and your jobs.

Ryan Management





To the Stockholders of The Ryan Aeronautical Co.:

The following report of the results of operations for the first half of the 1948 fiscal year, as shown by the books of the company and its wholly owned subsidiary is presented herewith:

For the six months ended April 30, 1948, Gross Sales amounted to \$3,415,884.52 which resulted in a Net Profit before Taxes of \$83,869.59. After Provision for Federal and State Taxes on Income in the amount of \$33,459.48, the Net Profit for the period was \$50,410.11.

San Diego, California  
June 8, 1948

THE RYAN AERONAUTICAL CO.  
By T. Claude Ryan, President

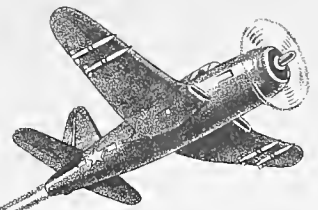






RYAN AERONAUTICAL COMPANY

LINDBERGH FIELD, SAN DIEGO, CALIF.



## News Letter

July 11, 1946

A matter of more than usual significance is the announcement we are making today that Ryan has entered another new field of stainless steel products through our Metal Products Division. We have begun manufacture of high quality durable alloy metal casket shells to be supplied to casket manufacturers and finishers throughout the country. The management is most enthusiastic over the future possibilities of this new line and the excellent business already booked.

First showing of the Ryan casket shells, featuring entirely new and distinctive styling made possible by the company's extensive experience in metal design and fabrication, has just been completed at Kansas City to casket industry representatives assembled from all parts of the country. The one-week showing, arranged through Earl T. Newcomer, recently appointed national distributor for Ryan, resulted in firm orders for 20 carloads of caskets with a value in excess of \$350,000.

These represent the highest volume orders for a new casket design ever placed in a like period of time in the industry, and indicate the wide acceptance which the new Ryan product has immediately received. The enthusiastic reception the Ryan casket shells have received and the large initial orders just placed have resulted in a large-scale manufacturing program being scheduled.

Volume production tooling is now being set up and a schedule has been established calling for a delivery rate of 1000 casket shells per month to be reached by early fall. Precision steel dies, which assure great accuracy and ease of manufacture on a production line basis, are now being machined in Ryan's tooling department and will soon be ready for the expanded production schedules. While the first production orders are for chrome nickel alloy casket shells, other high quality durable alloys, principally copper and bronze, will also be used on subsequent runs.

Ryan's entrance into manufacture of non-aeronautical products through the Metal Products Division does not represent any lessening of our interest and activities in the strictly aircraft field. Rather, it supplements and supports our airplane development and production work by providing fuller utilization of the company's war-expanded manufacturing facilities, and assures a more stable flow of production and stability of employment.

Ryan Fireball fighters continue to make an excellent showing wherever they are demonstrated - at public air shows, at industrial exhibits and to Navy personnel. Recently a number of individual and squadron demonstrations have been staged to show the outstanding characteristics of the Ryan-designed FR-1 fighter, first plane in the world to combine the advantages of jet propulsion and propeller-driving engines.

Capt. John G. Crommelin, Jr., one of the Navy's truly great aerial combat experts arranged a recent exhibition of the Navy's fighting aircraft, given by pilots of the U. S. S. Saipan, our newest carrier, of which he is to be commanding officer. The

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1946

demonstrations were given as an expression of appreciation to shipyard workers of the New York Shipbuilding Corporation and the Philadelphia Navy Yard, and were witnessed by 50,000 persons. Capt. Crommelin sent us details of the event in a recent letter and told me that as each plane made its simulated strafing attack, it was described by a naval aviator over the public address system. Here is the way the Fireball was described:

"Diving now is the Ryan Fireball, the Navy's hottest thing in fighter planes. Fortunately for the Japs, this plane did not reach the combat area, as it was one of the fastest planes in existence and can climb almost straight up. The Fireball is unique in that it has both the standard gasoline engine and the jet engine; it combines in one plane the desirable features of both the propeller and the jet. It can fly on either alone, or both in combination. The Fireball is the only jet-propelled carrier plane in the world. When the Fireball makes its next pass, you will see a strange and thrilling sight: a plane flying at high speed with its propeller standing still. The Fireball will then be flying on its jet engine alone.

"In the Fireball you see a new era in aviation and the beginning of a new chapter in the history of man and his progress to a better life. In one plane you see the passing of the propeller-driven plane and the advent of the rocket plane, some day to be propelled by atomic power."

"The men and women of your organization," wrote Capt. Crommelin, "are equally deserving of the thanks and praise we feel was expressed to the shipyard workers by the demonstration of your plane."

One hundred scientists, industrialists and engineers, guests of the Secretary of the Navy, had an opportunity recently to see the Fireball demonstrated along with other of the newest rocket and jet weapons at the Naval Air Test Center, Patuxent River, Maryland. News reports state that in the exhibition, the Navy particularly emphasized the high-angle climb and superior acrobatic maneuvers of the Fireball.

"Sixteen Ryan Fireballs, the Navy's newest pride, feathering props to let their jet propulsion shoot them along, turning on everything to climb like frightened angels .....Fireballs in a simulated carrier landing, with the landing officer signalling them in with his paddles.....Fireballs lined up on the runway to take a bow with the precision of a well-drilled infantry platoon." That's how Marjorie Driscoll, top writer of the Los Angeles Examiner, described the part Ryan Fireballs played in the recent air show sponsored by that paper. And, describing the same show, at which 150,000 were in attendance, the North Islander, official publication of the Naval Air Station, San Diego, said:

"A dramatic show of a scintillating aerial demonstration of the Ryan jet and propeller-powered Navy carrier-based planes was given by Lieut. Comdr. John Gray's Fireballs. Swooping low across the field, the propellers were feathered (conventional engines stopped) and only the jet motor was used as was evidenced by the long trail of black vapor streaming out from the rear of the FR-1s.

"Out of nowhere two of these fast jet planes dove in across the field doing loops and other maneuvers which were made very difficult by the fact that the planes kept in almost perfect formation. The whole group of 16 jet fighters then streamed across the field in a single column breaking off to port and starboard alternately, performing what is known as a column-roll out or 'Opening Flower.' Bringing the planes in to land was a LSO (landing signal officer) showing the crowd the actual way planes are landed aboard an aircraft carrier."

Admiral of the Fleet Chester W. Nimitz was given a special demonstration of the Fireball on the occasion of his recent inspection visit to the Naval Air Training Center at Corpus Christi, Texas; and a Ryan FR-1 took a prominent part in the air show presented in connection with the opening of General Electric's Flight Research Center at Schenectady, New York.

Employment will approach the 2000 mark by late fall with 100 additional production workers and technicians to be added each month for the next four or five months. Since March, employment has been stabilized at about 1425, but during the past two weeks 25 aircraft engineers and 50 production workers in the airplane experimental development department have been added, bringing the personnel up to the present 1500 workers.

The increase of 100 employees per month will be required for execution of Ryan's military airplane development contracts, for production of exhaust manifold systems used on new multi-engined commercial airliners and for manufacture of jet engine parts and accessories of the company's design, as well as for new stainless steel products for which the company has received volume orders.

With emphasis upon new military aircraft and aerial weapon designs and upon advanced flight research projects, Ryan has strengthened its position by expanding its airplane engineering personnel by one-third in the past six months. In addition to engineering and manufacturing work under way on an advanced model of the jet-plus-propeller design of Navy fighter, similar in general type to the Fireball, Ryan also has several new confidential projects for the military services in the design stage.

Opportunity is not easy, but it is American. That's a basic truth none of us should forget be we employees, managers or owners. "Security" has a softer sound, but we ought to remember its significance in terms of what many people today are advocating.

The one thing that made this country great - the one thing that has given it the highest standard of living in the world - is individual opportunity which gives everyone the chance to rise as fast and as far as his productiveness and ability can take him, and allows him to become an owner or shareholder in a business enterprise. Yet today millions of Americans are being misled into thinking that "security" is better than opportunity, and this is in spite of the fact that in all history, no leader, no system, no economic theory has ever been able to deliver the security it promised - except the American system of individual opportunity earned by the individual American himself. Opportunity for all provides the best security.

Everyone wants the good things in life that a job and opportunity can earn for us. And those good things that make up our standard of living come from what we produce. That's the only way in which we can have them. Fifty million working Americans produce those things; and, the more they produce and add to the total supply, the more there is for everyone.

Never in American history has the country been so well equipped with the tools of production; never has there been such a demand for the things those tools can make. If we use those tools well, for more and efficient production, the costs of what is made will go down, demand will stay up, and there will be jobs for all and return on the investors money. But if production is limited and labor costs per article are high, demand will soon go down, and there will be no security for the worker and the investor. We all have to earn our jobs and keep on earning them by efficient production at costs which people will be willing to pay for what we make.

Metal Products Division Engineers Ralph Haver and Harry Goodin have been in close touch with the important problem of developing metals which will stand up under the extreme temperatures experienced in channelling volcanic gases from both conventional and jet propulsion aircraft engines.

The principal obstacle in the way of further development of both piston engine and gas turbine jet power plants is a metallurgical one involving the need for materials with greater heat resistance. This was pointed out in recent papers presented by these engineers before the Society of Automotive Engineers. Our Metal Products Division engineers now occupy a key position in the survey of this problem because of the years of experience they have accumulated in designing structures for high temperature performance.

The Ryan Laboratory was largely responsible for determining the most suitable stainless steel formula for use in the manufacture of aircraft exhaust equipment. This data has been requested by many other manufacturing concerns which have recognized this company's leadership as one of the country's greatest users and fabricators of stainless steel. Frequently, the steel mills send our Laboratory samples of new steels and ask that we make a study of their properties.

Ryan's large new photo-template camera has been given increased value as the result of new techniques worked out under the direction of Dyche Clark. Designed to reproduce engineering drawings by photographic methods, the huge new camera has made possible several new techniques which permit tremendous savings in time and costs. With a specially-devised Ryan solution, photographically sensitive emulsion can be sprayed on almost any substance and a drawing reproduced on it with unerring accuracy. By this means, it is possible to transfer drawing directly to the aluminum sheets which are cut and placed in an experimental airplane, eliminating several steps in the conventional procedure.

Certificates have been awarded to the 8500 Ryan workers who were employed on V-J Day as an expression of the company's appreciation for their loyal and faithful service in war production work. A number of friendly letters have reached my desk from employees, and one in particular is worthy of quotation:

"The slogan you publicize, 'A Better Place to Work,' certainly materialized. May I express my thanks for the pleasant working conditions your company offered during my stay. The War Work Certificate was a nice gesture and I appreciated it very much."

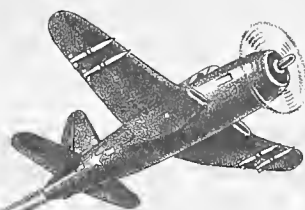
Cordially,

*J. Claude Ryan*



## RYAN AERONAUTICAL COMPANY

LINDBERGH FIELD, SAN DIEGO, CALIF.



August 16, 1946

### *News Letter*

Tests of the largest available jet propulsion and gas turbine engines, and allied equipment our company designs and builds, can now be conducted by Ryan's own research staff as the result of completion of a new concrete, steel reinforced test cell on our plant property. The new test house has been equipped with all instrumentation necessary to measure jet engine performance, thrust and fuel consumption, and will make it possible for the company to run complete ground tests of jet power plants.

Designed for maximum protection of Ryan research personnel assigned to jet engine studies, the test house is built somewhat along the lines of the Army's equipment at its Muroc Lake operational base, but has been modified to make it more flexible so as to accommodate different types of test units.

The jet equipment to be tested is placed in a test stand between concrete walls. Controls, instruments and personnel are located beyond the wall on one side, while the fuel is stored beyond the other wall to eliminate fire hazard. At the location where the turbine and compressor of the jet engine are sometimes spinning at the terrific speed of over 17,000 r.p.m. during test runs, operators are protected by one inch of steel armor plate and 18 inches of reinforced concrete, while heavy plate glass and small protecting steel grills give access for visual observation of the engine.

Ryan Metal Products Division is playing an important role in both engineering and manufacturing in the revolutionary new field of jet power. Already a leader in the design and production of exhaust systems for conventional reciprocating aircraft engines, Ryan now also supplies important equipment and does engineering design and development work for the newer jet propulsion and gas turbine engines now coming into wide use.

A contract for a metallurgical research program in connection with development of new types of materials suitable for jet power plant and exhaust systems equipment has been placed with Ryan's Metal Products Division by the Navy's Bureau of Aeronautics.

Details of the project have not been disclosed except for the basic announcement that the company in cooperation with the Navy would conduct research work on new high heat-resistant alloys and on products fabricated from these new materials. In this connection, Ralph Haver, chief engineer of the Metal Products Division, points out that the biggest problem facing aircraft and engine designers is the development of metals capable of withstanding the elevated temperatures, exceeding 1600 degrees Fahrenheit, now encountered in both jet and the new, high-powered conventional engines.

The importance of proper design of exhaust systems for conventional engines was recently stressed by Douglas Aircraft Company in revealing that speed of their new

DC-6 airliner has been increased approximately 25 miles an hour by use of Ryan "ejector" exhaust stacks which provide a supplementary jet thrust, similar to that of a jet engine. This particular design was developed as a result of close engineering cooperation between Ryan and Douglas technical staffs. Replacing less modern equipment, Ryan exhaust systems for Army airplanes have also been ordered in substantial volume by the Air Materiel Command at Wright Field.

We have had an active interest in the helicopter type of aircraft for a number of years and, in recent months, a considerable amount of engineering and experimental work on rotors and mechanisms has been carried on. Some extremely interesting and worthwhile development work has been accomplished.

This type of aircraft has great possibilities, but a considerable amount of improvement and refinement of present type helicopters is necessary before they reach the stage of substantial practical utility, although that point may not be far away. We are planning to actively continue our present program of helicopter research and development.

Twenty pilot-officers from the Postgraduate School of the United States Naval Academy will visit the Ryan Aeronautical Company this fall for two days of concentrated practical instruction in aeronautical engineering and advanced design problems, as a result of arrangements we have completed with Capt. H. A. Spanagel, Head of the Postgraduate School at Annapolis. All of the officers are naval aviators, most of them with combat experience.

To supplement their classroom education in aeronautical engineering, Ben T. Salmon, Ryan's chief engineer, at the Navy's request, has arranged for a series of nine lectures by ranking authorities of the company's various technical divisions. This type of practical instruction in the field has been a feature of Naval Academy postgraduate training for some years, according to Capt. Spanagel, and is considered extremely valuable in preparing officers for technical assignments within the Naval organization.

Because of Ryan's pioneering work in developing the FR-1 Fireball fighter, first plane in the world to combine jet propulsion with thrust from a propeller, much of the lecture and discussion time will be concentrated on the engineering problems encountered in the design, development and manufacture of this unique combat Navy plane and its logical successors.

The opening lecture -- "Trend of Aircraft Research and Development" will be given by Mr. Salmon. Other papers will be presented by C. R. Tuttle, Senior Design Specialist; W. T. Immenschuh, Project Engineer on the Fireball; A. W. Conover, Flight Research Manager and Chief Test Pilot; Larry Martin, Experimental Department Manager; R. B. Johnston, Chief Aerodynamicist; Joel Whitney, Thermodynamicist; Harold Hasenbeck, Laboratory Supervisor; and H. R. Foottit, Chief of Structures. Each of the talks will be followed by a discussion and question period. The visitors will also tour manufacturing and experimental departments as part of their two-day practical instruction. All of the officers have completed two years of postgraduate instruction in aeronautical engineering, and after their field trip this fall will register at M.I.T. or Caltech for another year of training.

Captured German motion pictures disclosing latest developments of Nazi aeronautical research in the fields of jet propulsion, guided missiles and pilotless aircraft have been receiving the study of Ryan engineers. Films from the Army's Air Materiel Command were brought to San Diego for screening by Dr. Albert A. Arnheim, Editor-in-Chief of the Air Documents Division.



Dissemination of the technical data contained in these documents to industry technicians is being done as rapidly as possible. To provide adequate machinery for this activity, a library is being established in San Diego under the sponsorship of the four local aircraft manufacturers. In all, Dr. Arnheim's group at Wright Field has some 500,000 German documents, with twenty tons more of data on the way, which must be translated, indexed and put into the hands of the engineers charged with the maintenance of America's aerial supremacy.

Widening of the market for Ryan exhaust systems and other items designed and manufactured by our Metal Products Division is shown by new orders we have recently received from a number of firms the company has not previously served. Most important among the new contracts is that from Fairchild Aircraft for the exhaust manifold equipment for the Army's new C-82 twin-engine "Packet" cargo plane.

Jet engine equipment for a new secret development Menasco Manufacturing Company is undertaking for the Army Air Forces will be provided by our company under terms of a new contract we have just signed with the Los Angeles firm. AirResearch Manufacturing Company, also of Los Angeles, has given Ryan orders for special aircraft air conditioning units, a new field of production for the company's Metal Products Division.

The Allison Division of General Motors, scheduled to become the Army's largest supplier of conventional and jet engines, has also placed substantial orders within the past two weeks for exhaust manifold equipment. Additional orders from Boeing Aircraft Company, an old Ryan customer, have been placed for exhaust systems for the new four-engined B-50 Superfortress bombers and for C-97 Stratocruisers.

Secret wartime research facilities operated by the National Advisory Committee of Aeronautics at the Ames Aeronautical Laboratory were revealed for the first time to engineers of Ryan and other top-flight aviation industrial organizations who visited the Moffet Field, California, test center recently. Included in the Ryan group were Ben T. Salmon, chief engineer; Ed Rhodes, assistant chief engineer; C. R. Tuttle, senior design specialist; Robert Johnston, chief aerodynamicist and J. W. Borden, chief administrative engineer.

Due to the confidential nature of the projects carried on for the Army and Navy at the laboratory, which was built early in the war, it had not been open to representatives of industry until the recent First Annual Inspection. Outstanding among the facilities visited by Ryan engineers was the new low-turbulence, trans-sonic wind tunnel which is capable of providing a smooth flow of air at speeds up to that of sound (around 720 miles an hour). During the war, the Ames Laboratory was engaged in aiding aircraft manufacturers with design and production problems of current warplanes, but will now return to its normal operation of doing basic aeronautical research work.

The FR-1 Fireball was tested in the full-scale, 40 by 80-foot, wind tunnel at Ames, while a one-fifth scale model was tested in the 7 by 10-foot tunnel. A scale model of Ryan's new "Model 30" is currently being prepared for testing.

A race between Ryan and two other suppliers of Navy aircraft has developed to see which can be the first to fly a combat plane using a new jet engine recently developed. Production of this particular engine was held up for several months by a strike at an eastern engine factory, but now that production has been resumed, the race is on again. Workers in Ryan's experimental department who know of the keen competition between the three Navy contractors are bending every effort to see that Ryan gets into the air first.

Ryan's excellent reputation has contributed greatly in giving the company a growing importance in engineering and technical fields. Due to the cumulative experience of our key technical people, Ryan speaks with authority on the subjects of high speed aircraft, jet propulsion, high temperature metallurgy, exhaust system design and production, resistance and fusion welding, fabrication of stainless steel and many manufacturing techniques.

The high regard in which Ryan research is held is attested by the eagerness with which 45 aviation and technical magazines have published 60 Ryan technical stories in the past 20 months. Some of these articles have evoked many inquiries from other industries as well as from leaders in the aeronautical world. From the Ryan Engineering Laboratory have come revealing reports of scientific investigations which have been acclaimed by some of the nation's highly regarded authorities.

Using the most modern laboratory equipment, Ryan technicians have "tortured" molecules of metal to force them to give up their secrets. With the \$7000 Spectrograph, Keith Whitcomb "electrocutes" a few particles of stainless steel and takes a picture of the light given off from the burning. Wilson Hubbell, Metallurgist, peers into the high-powered Metallograph which makes grains of metal look several thousand times larger, and snaps a photograph of a bit of steel which has flown a million miles in the exhaust system of a Douglas C-54.

Electro-Chemist Whitcomb develops a new molten salt bath which "cooks" stainless steel white-hot in five minutes. Don Heyser, Test Engineer, pulls a steel strip apart with a 120,000 pound tug and carefully notes when the molecules let go. Bernard Floersch, Chemist, throws the switch on a miniature oven which transforms a sample of stainless steel from a solid into a gas in a matter of seconds, and indicates the exact amount of carbon present in the steel. With typical procedures such as these, the members of the Laboratory, under the direction of Harold Hasenbeck, collect the scientific facts which spearhead our progress.

Cordially.

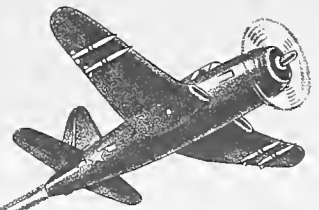
*J. Claude Ryan*





## RYAN AERONAUTICAL COMPANY

LINDBERGH FIELD, SAN DIEGO, CALIF.



# News Letter

September 30, 1946

Rear Admiral Harold B. Sallada, chief of the Navy's Bureau of Aeronautics, has just completed a survey trip of Ryan's engineering and production facilities. He inspected our current projects for the Navy, including the entirely new, larger and faster jet-pushed, propeller-pulled Fireball fighter we are building, and jet engine developments incorporating our special techniques in fabricating stainless steel.

Included in the Admiral's party were Capt. C. A. Nicholson, head of the piloted aircraft division; Lieut. Comdr. R. O. Deitzer, Bureau of Aeronautics representative at Ryan; and Lieut. J. J. Pace of the Procurement division. The close attention which Admiral Sallada personally gave to inspection of the workmanship of detailed parts of our new combat airplane should be a source of genuine satisfaction to all Ryan workers, and particularly those in the Experimental Department.

Development of a lightplane muffler which effectively eliminates objectionable engine noise has been completed by engineering and production technicians of our Metal Products Division. Volume production orders have already been received with national retail distribution arranged for through Air Associates, Inc., leading aircraft accessory supply house. Sales to lightplane manufacturers for installation of Ryan mufflers on new planes coming off assembly lines is being handled directly between our company and the various manufacturers of private planes.

The new Ryan muffler incorporates in its unique design four essential functions: (1) complete exhaust system, (2) a muffler which eliminates 90 percent of the engine noise, (3) provision for heating the carburetor during adverse-weather operation, and, (4) provision for delivering heat to the cabin for comfort of the occupants.

This muffler is the first C.A.A. approved lightplane exhaust to be manufactured of non-corrosive material, being fabricated of stainless steel. This is the same high heat-resistant steel alloy developed by Ryan metallurgists for use in the large, high-horsepower engines for military and commercial transport planes and provides an added advantage to lightplanes since it assures long, trouble-free muffler service life.

The extensive experience of one of America's top aeronautical engineers is being added to the technical know-how of the Ryan organization through the appointment of Harry A. Sutton to the position of Assistant to the President and Engineering Advisor. Mr. Sutton is well-known in Army, Navy and aircraft industry circles where he is recognized as an engineer and executive of outstanding ability. He is best known for his long affiliation with Consolidated-Vultee, which firm he formerly served as Director of Engineering for its twelve divisions.

A holder of the Distinguished Flying Cross and winner of the Mackay Trophy for his pioneering flight research into the problems of airplane spins, Mr. Sutton has been in aviation since 1917 when he learned to fly. Ten of his most productive years were spent with the Army as an engineering officer at McCook (now Wright) Field, the Army's aviation research center.

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Serving as senior engineering consultant to the management, Mr. Sutton's responsibilities include liaison with the Army and Navy on current aircraft contracts and on development work the company will shortly undertake for the military services. In company with Ben T. Salmon, our chief engineer, he is now in the east for conferences with the Bureau of Aeronautics (Navy) and Air Materiel Command (Army).

Officers and directors of your company are appreciative of the opportunity afforded by the stockholders meeting, held September 10th, to report in person concerning the company's operations during the fiscal year 1945, and the year 1946 to date, and to discuss informally the opportunities and problems which lie ahead.

The adjustment from war to peacetime operation, in the year since V-J Day, has been successfully made, and the company's current financial position is the most favorable in its history. We have been fortunate in adjusting our operations to a type of peacetime business combining design and manufacture of aircraft with the volume production of aeronautical accessories and commercial metal products which are adapted for good dollar volume and can be conducted economically with company-owned facilities at our Lindbergh Field plant.

Present business is proving profitable, and the company is now studying additional products which might add further to the volume of business.

Increasing peacetime orders for exhaust systems, jet engine components, other aircraft accessories and commercial stainless steel items in the company's Metal Products Division, as well as rapidly progressing work on the entirely new model of the Ryan Fireball jet-pushed, propeller-pulled type Navy fighter, has resulted in an increased hiring program which will bring the company's personnel to 2000 employees by the year end.

Manufacture of casket shells and research into helicopter mechanisms and rotor blades have been discussed at some length in past issues of the News-Letter. Questions on these and other projects were asked by stockholders at the recent meeting, giving the management an opportunity to informally explain these and other matters of concern to stockholders in considerable detail.

The confidence of stockholders in the company's management as expressed by their re-election of directors is genuinely appreciated. Your management deeply feels its obligation not only to stockholders but also to employees to guide the company's future on sound business principles and pledges its best effort to merit your continued confidence. Following the stockholders meeting, the Board of Directors met, and at that time re-named for the coming year the corporation's present officers.

We are grateful to the many stockholders who had the special interest and took the necessary time to write us personally in connection with the signing of proxies for the annual meeting. Typical of the letters received is the following from Mr. Joseph L. Sargeant of Montpelier, Vermont:

"Just a few words to thank you for the News-Letter of August 16th and prior letters. They are most helpful and interesting to a stockholder. I also wish to compliment you on the attractive appearance of the Annual Report and the results therein recorded. In my judgment the choice of metal casket shells to diversify and stabilize the company's operations is sound, for offhand I can think of nothing less cyclical than the mortality rate, at least in this country. Best wishes to you and your live-wire organization for continued success."

First Admiral to fly the Ryan Fireball, so far as we know, is Rear Admiral Dixwell Ketcham, Commanding Carrier Division 17, based aboard the Aircraft Carrier "Badoeng

Strait." Now stationed at San Diego's Naval Air Station, North Island, Admiral Ketcham recently decided to investigate for himself the performance characteristics of the FR-1 Navy fighter. Visiting Lt. Comdr. William Elliott, acting commanding officer of VF-41, first squadron to fly the Fireballs, Admiral Ketcham was assigned one of the squadron's FR-1s and went up for a half-hour flight. Later he flew a second hop, operating some minutes on jet alone.

The Admiral's opinion of performance of the jet-plus-propeller plane holds real weight because of his own wartime record. An active pilot since 1922, the Admiral has flown more than 4500 hours in all types of Navy combat aircraft, having had service as a fighter squadron skipper and air group commander. He assumed command of the Aircraft Carrier "Chenango" early in the war, later Commanding Fleet Air Wing One at Okinawa and Carrier Division 27. Five other members of Admiral Ketcham's staff also checked out in the Fireballs, the Navy's first airplane to use jet propulsion.

American business is a constant stream of new men and new ideas; and that should be especially reassuring to younger men and women who are concerned about the country's future and their own future. What will they be doing 27 years from now? — The 143 top men who manage 50 of the nation's largest businesses can help answer that one. Twenty-seven years ago, most of them came back from a war, too.

All of them began their business careers at the bottom. Twelve of them started work for less than \$5 a week; 43 others for less than \$10 a week. Eighty-one received between \$10 and \$25 a week; and only eight received more than \$25. The average wage of all 143 was \$13.40 a week! This story is also typical in the vast number of smaller successful businesses that help make this country the greatest nation on earth. These men have gone through the mill; they understand what the job is all about. When you think of the head of a big business, think of a young man who once drew an envelope at the end of the week with \$13.40 in it.

Exactly the same kind of men will manage the nation's largest businesses in 1973. Then, as now, they will be the leaders with courage, ambition and initiative to come up the business ladder, rung by rung.

All of the basic engineering drawings and information necessary for manufacture of Ryan's new "Model 30" Navy combat plane have been released one week ahead of schedule to the factory, where tooling and production of assemblies for the entirely new, bigger, faster jet-plus-propeller Fireball type fighter is under way. Some of the information was not scheduled for release to the plant for several weeks, but all of the various groups have now completed their basic engineering. Data from the Power Plant and Electrical and Radio groups was scheduled for little more than 50% completion at this time, but this information, too, has been finished and is now in the shop.

Latest public demonstration of the Ryan Fireball staged by members of VF-41 fighter group, the Navy's first jet-plane squadron, was at the recent Southern California Air Show at Long Beach in which nine FR-1s participated. At the recent National Air Races, Cleveland, the Navy also made demonstration flights with the Ryan jet-pushed, propeller-pulled fighter.

Appreciation for the special lectures and inspection of Ryan facilities arranged for visiting aeronautical engineering officers of the U. S. Naval Academy was expressed by the twenty members of the Postgraduate School who were our guests in mid-September. Nine of Ryan's top engineers presented highly technical papers based on engineering experience in designing and building the Ryan FR-1 Fireball Navy fighter. The two days of concentrated practical instruction in advance design problems were planned at the Navy's request in order to give the officers practical field experience as well as classroom studies.

Supplementing the technical papers, Al Conover, chief test pilot, put on a special demonstration flight in the Fireball for the Naval engineering officers. Much credit goes to all Ryan personnel who aided in the excellent arrangements for the officers visit. Bound copies of lecture material were provided all members of the Navy group as permanent references which will be of value to them as they assume important technical assignments in the Bureau of Aeronautics upon completion of their training at Caltech and M.I.T.

Recognition of the Ryan company's active part in aircraft industry affairs has come through selection of your president as Chairman of the Western Region Executive Committee of the Aircraft Industries Association, top trade organization. Retiring chairman of the aircraft manufacturers council is LaMotte T. Cohu of Northrop. Other members of the executive committee are Donald Douglas of Douglas Aircraft, William M. Allen of Boeing, Harry Woodhead of Consolidated-Vultee, Robert E. Gross of Lockheed and J. H. Kindelberger of North American Aviation.

What has happened to military aircraft manufacturing - a year ago the world's largest industry - in the 12 months since V-J Day? Briefly, and tragically, military production has slowed to a trickle. The world's largest industry in 1944 is now the 16th in rank of manufacturing employment. From a wartime peak of 9117 planes in March, 1944, output dropped to 62 in June and 67 in July this year. Three bombers were delivered in July! This is not to say that this company or the aircraft industry is advocating excessive and unnecessary production of military planes.

But, there is a minimum level of military plane production that should be maintained in the interest of national security. A level of 3000 planes a year is advocated by the official Air Coordinating Committee, and this production rate, the committee says, "approximates the absolute minimum, we believe, from which it would be possible to plan for mobilization in a future emergency."

While output of military aircraft has slackened, technological developments in the field of military aviation have created demands for greatly expanded research programs. The urgency of research is pointed up by the development of guided missiles, rockets, pilotless aircraft and helicopters - all fields in which the Ryan Aeronautical Company is concerned. Discoveries in rocket and jet propulsion have so emphasized the need of research into supersonic speeds that government proposals for extensive testing facilities are being prepared for presentation to Congress.

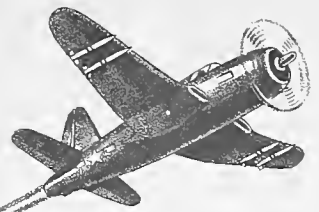
Cordially,

*J. Claude Ryan*



RYAN AERONAUTICAL COMPANY

LINDBERGH FIELD, SAN DIEGO, CALIF.



## News Letter

November 8, 1946

The thirteenth firing of a captured German V-2 rocket has just been witnessed by a group of us from Ryan who were guests of the Army at the famous White Sands Proving Ground in New Mexico. Our representatives were among those of industrial organizations concerned with research and development of guided missiles for the Army. From the test firing and inspection of equipment and control mechanisms, our technicians were able to gain knowledge of pre-flight inspection, loading, launching, tracking and instrumentation.

From 200 yards we saw the giant plume of flame flare out 100 feet or more from the tail of the rocket as it slowly rose vertically into the air from the launching platform. Once the rocket had reached about 100 feet altitude, its acceleration was amazing. With the naked eye we were able to follow the bright flame and vapor trail in the upper atmosphere for the minute it took to rise 40 or 50 miles straight overhead. Then we lost it for a few minutes until from a distance of perhaps 20 miles above us vapor trails reappeared as the rocket plunged earthward to land some miles from the launching site.

Current rocket firings are in a series of tests started in May to evaluate performance of the 3600 mile-an-hour, 14-ton V-2 projectiles; to develop tracking and telemetering techniques; to obtain data on physics of the upper atmosphere, and to train personnel in launching large rockets. Instruments necessary to obtain technical data are contained in the inert warheads of the V-2s.

For security reasons, a fuller report of the amazing demonstration we saw cannot be given at this time. Besides your president, others in the Ryan technical party were Harry Sutton, advisor and assistant to the president on engineering matters; Ben T. Salmon, chief engineer, and Will Vandermeer, design specialist. Navy Secretary Forrestal and members of General Eisenhower's staff also witnessed the firing.

A modernization program involving new type armament installations and other modification of the Ryan Fireball fighters is being carried on under a \$200,000 contract Ryan has just signed with the Bureau of Aeronautics preliminary to assignment of the Navy's first jet-propelled planes to extensive sea duty aboard aircraft carriers.

Our huge final assembly building, little used for manufacturing operations since Navy contracts for volume production of warplanes were cancelled after V-J Day, is humming again with the clatter of rivet guns as a result of the new contracts. Ryan production men are carrying on the service work and incorporation of armament equipment, including the extensive changes necessary for installation of aircraft rocket launchers, on a production-line basis.

In the new field of jet engine exhaust systems, tail pipes, and other stainless steel accessories for gas turbine and jet propulsion power plants, Ryan's Metal

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Products Division holds a unique and very advantageous position. Unlike any other manufacturer of similar jet equipment, only Ryan is also a manufacturer of jet-powered airplanes. As a result, our designing and manufacturing know-how is supplemented by extensive flight testing experience in actual operation of jet engine equipment.

Hundreds of hours of flight test work on jet engine installations has been conducted under direction of our flight research staff. This operational experience has been in addition to routine and specialized ground run-in tests on new jet engines and accessories. Test stand research, however, is being further expanded as the result of completion of a new jet test cell as described in a recent News-Letter.

Something New at Ryan! That was the headline on the story quoted below from the October 15th issue of American Aviation, leading trade industry publication, published at Washington, D. C.

"It keeps industry observers busy these days keeping tabs on some of the new developments being carried forward quietly by most of the major manufacturers. For instance, advertising copy scheduled for current release by the Metal Products Division of Ryan Aeronautical Co., casually refers to Ryan as a leading manufacturer of ram jet engines and after burners. This is the first public intimation that Ryan had such developments in the works." We hope to be able to give you more information on these projects soon.

The regular quarterly dividend payment of 10 cents per share has been declared by the board of directors, payable December 10th to stockholders of record November 22.

Continued expansion of exhaust manifold manufacturing activities is reflected in the announcement made last week that \$500,000 in new business had been contracted for in the past 30 days. Although current orders are being filled at a substantial rate, new business is being booked in considerably heavier volume than deliveries are being made to customers.

Ryan's backlog of orders for exhaust systems now stands at a peacetime record of \$2,750,000. This is, of course, exclusive of the company's substantial unfilled orders for Navy airplanes and aircraft engineering, and for commercial metal products. The new manifold contracts represent a net gain of \$450,000 in unfilled orders over the \$2,300,000 backlog reported in mid-August.

Douglas, Boeing, Consolidated-Vultee and Lockheed, leading manufacturers of the new twin and four-engined commercial airliners, placed the bulk of the half million dollars in new manifold orders. Latest order from Boeing is for the exhaust manifold requirements for the 417 "regional" twin-engine high-wing transport being developed for feeder-line operation. Douglas has contracted for over \$200,000 worth of additional manifolds for the C-54 Skymaster transport, and Convair has substantially increased its order for Ryan exhaust manifolds for the new twin-engine 240 airliner, soon to have its first flight.

A new peacetime assignment in China for Ryan's wartime military trainers has just come to our attention through Pan American Airways, whose Asiatic affiliate is using them to train Chinese as airline transport pilots for China National Aviation Corp.

First hint of the new job for the trainers came months ago when Pan American ordered six engines and engine accessories as replacements for Army PT-22 planes. We were frankly puzzled by the orders to send the equipment to San Francisco for trans-ship-



ment across the Pacific since Pan American to our knowledge had none of the trainers. Our assumption was that C.N.A.C., jointly operated by Pan American Airways and the Chinese government, must have acquired the planes from the Chinese Air Force.

More than 100 Ryan trainers have been sent to China during recent years. Early in the war, a large shipment of Ryan STM military trainers was purchased by the Chinese government for use in their air force training school; still later, under Lend-Lease, many of the Ryan PT-22 trainers went to China "over the hump" via India. Confirming the information we already had, we have just received a letter from China National Aviation Corp. enclosing a photo showing a PT-22 with the Chinese airline insignia painted on the fuselage and giving the information that six of the planes are being used for airline pilot training.

Stories such as these help to fill in many spots which are otherwise void in the accurate historical record we have been endeavoring to keep of the service record of Ryan planes. We have found it particularly difficult to get complete and accurate information, and photographs, of the planes we have exported throughout the world. So, we're pleased to have this additional bit of authentic information to add to the record of company activities.

A proud partnership, begun back in 1939, has emerged stronger than ever after an adventurous wartime career. Parties to the combination are the Douglas "Skymaster" transport plane, the Pratt and Whitney "Twin Wasp" engine and the Ryan Exhaust Systems. Known to millions of servicemen as the Army's C-54 and the Navy's R5D transport, the Skymaster, under a DC-4 commercial airline designation, is now going into scheduled service throughout the world. They have been chosen for operation on 85 airline routes here and abroad.

An admirable fidelity marks the relationship between these airplanes, engine and exhaust systems. The Twin Wasp engine has powered no production airplane other than the Skymaster. Production Skymasters have never used any power plants other than the Pratt and Whitney twin-row 1350 horsepower engine. And, only Ryan manifolds have been standard equipment on Douglas Skymaster production airplanes. Our manifolds have been installed on more than 10,500 of the Twin Wasp engines used on the DC-4s which Douglas has built.

The DC-4s have been proved by over three hundred million flight miles. This means that Ryan manifolds on this one model alone (four for each DC-4) have been proved by one billion, two hundred million flight miles.

This country, as everyone must acknowledge, is in an economic muddle. The principal difference of opinion is merely in the degree of maladjustment and the proper steps to take to cure present troubles. So, it behooves all of us to try and get a proper perspective on current conditions; to get our thinking in clear focus, as it were.

What too few of us seem to understand is that stable conditions and real postwar prosperity, such as we can have and enjoy, will come only when we've been jolted out of our futile scramble for goods that aren't available, and get down to the sober job of making the goods we want.

We hear a lot about "enormous dammed up purchasing power," and how that alone is expected to solve our problems. But we forget that all the money savings in the nation wouldn't keep factories running and workers on the payrolls more than a few weeks. The only real purchasing power is in what a man produces, and can then trade for what other men produce. Money savings merely represent what some worker has already

produced and not yet traded. What we need now is to produce more goods; not to compete at high prices in scarce markets for what has already been made. We need to encourage production by a minimum of control, not discourage it by unnecessary and unworkable regulations. And speaking of high prices -

This raising of wages and prices is like a ball game. First the people in the front row stand up so they can see better. Then the second row stands up, then the next row and so on. Soon everybody is standing and nobody can see better. Perhaps what we need, economically, is a loud "Down in front" from the general public in the grandstand who all too often are forgotten while competing interests toss the economic ball back and forth on the field. It's time we quit "playing ball" and began to produce goods as we can in this country - in large volume at low cost, so there's plenty for all. That's the only way in the world to lick the danger of inflation, and to maintain America's high standard of living.

But let's not make the mistake of confusing high wages and high prices with a high standard of living. High living standards come from having things; not from making money - and that's particularly true when that money won't buy the goods we want. They can come only from production.

No cake was cut, no candles were burned, but oldtimers here at Ryan looked back with pride and satisfaction last month to the Twentieth Anniversary of commercial airline transportation on the Pacific Coast. We were reminded of this significant milestone in air travel by a United Air Lines anniversary folder featuring the Ryan M-1 monoplane which was the original equipment on the Pacific Coast run.

Aware of the need for a high-performance plane superior to the World War I surplus biplanes used on the government-operated airmail line, those of us who were responsible for the company's entrance into aircraft manufacture decided to design and build a plane particularly suited to the needs of the private companies then taking over the operation of airmail routes. For this service we manufactured, in 1926, 23 single-engine, 100-mile-an-hour, open-cockpit planes, the first monoplane built in any volume in the United States. These were the forerunners of the thousands of Ryan monoplanes which have followed.

Prior to the start of scheduled airmail service, I had the pleasure of piloting an M-1 on the survey flights between Los Angeles and Seattle. This line, then known as Pacific Air Transport, was later absorbed by United Air Lines and is one of the oldest as well as most-traveled air routes in the world.

Recognition from other companies in the aircraft industry for the work being accomplished here at Ryan comes frequently, but generally very quietly. And all too often it doesn't come to the attention of those responsible for our leadership in so many manufacturing techniques. Recently one of the country's largest and most famous plane builders sent technicians here to study two phases of our work (1) how we obtain the satin-smooth finish on our airplane exterior surfaces, and (2) how we are accomplishing our wing spar bending, using 75 ST material which is the latest high-strength aluminum alloy. The News-Letter affords an opportunity to give recognition to those responsible for the high quality of workmanship on these jobs.

Cordially,

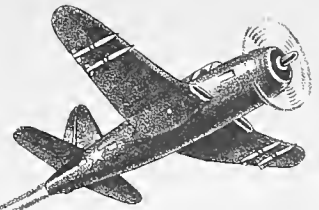
*J. Claude Ryan*





**RYAN AERONAUTICAL COMPANY**

LINDBERGH FIELD, SAN DIEGO, CALIF.



## *News Letter*

December 31, 1946

Two new combat-type Ryan airplanes are now engaged in important flight research studies, having made their first test flights in recent weeks. Most employees are familiar with the general purpose of the airplane projects under way, and the important development work now well along on our entirely new, larger and faster jet-plus-propeller Navy fighter. However, until proper clearances are received from official sources in Washington, the details of the new planes now flying, and others under development, cannot be printed.

It violates no confidence of military security, however, to inform News-Letter readers that one of the new planes is engaged in flight research work at the famous Muroc Lake test center in an isolated desert section of Southern California where most new high-speed planes now receive their first testing. Here are now located many new military airplanes of the most advanced type ever designed, among them the Army's XS-1, first piloted plane designed for super-sonic rocket flight; the B-35 flying wing bomber; P-80 Shooting Stars; and the Navy's new XFJ-1 and XF6U jet fighters.

A vast increase in thrust power of jet propulsion engines is expected from a new development of pioneering research being conducted by our engineers. An additional contract covering this new activity has just been signed with the government agency concerned. The project shows every indication, from preliminary engineering data, of offering great advantages in increased power, and tests conducted so far have substantiated the estimates of Ryan engineers.

Ryan's research on this new feature for jet propulsion engines has wide application to Army and Navy combat aircraft and, for secrecy reasons, the nature of the work cannot yet be fully described. However, we anticipate that it will be of future importance to the company in both its airplane development projects and in activities of the Metal Products Division, which specializes in design and manufacture of conventional engine exhaust equipment and jet engine and gas turbine parts of high temperature heat-resistant alloys.

Ryan's position of leadership in exhaust systems design and manufacture is the subject of our current advertisement in aviation trade magazines. Because it so graphically tells the story of our dominance in this field, reprints have been inserted in this News-Letter so you will have a better picture of this important phase of activity in Ryan's Metal Products Division.

A new, more liberal group insurance plan worked out by the Ryan company for its employees went into effect December 1st. Under the more inclusive employee protection program, Ryan personnel so covered are entitled to benefits covering (1) disability from non-occupational accident and sickness (2) life insurance, and, (3) for the first time, payments for hospital and surgical expenses. In most instances total deductions for the three types of insurance coverage are less than was formerly paid by employees

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when the protection was much less extensive. (The company now pays the entire cost of California Unemployment Insurance, the funds formerly collected for this purpose by a 1% wage tax being used to provide the non-occupational disability insurance.)

Immediate and almost unanimous acceptance of the company plan, indicative of employees appreciation for the benefits obtained by the management for them in excess of those under the so-called California State Plan, was evidenced by the fact that far more than the necessary 75% participation was signed for within the first three days after the offering.

Ryan's new lightplane muffler attracted the attention of private plane manufacturers, hundreds of airplane dealers and literally thousands of owners and operators, when it was exhibited last month at the National Aircraft Show, Cleveland. The muffler has also received wide publicity in aviation trade publications, resulting in numerous inquiries which are being channeled back to Air Associates, Inc., leading aircraft accessory firm, which is our national retail outlet. Purchase of mufflers by lightplane manufacturers for installation at the factory on new planes coming from the production lines is handled direct with these aircraft companies by our own Sales Department.

No other muffler has so completely met the problem of elimination of objectionable engine noise, which within the past two years has become one of the principal deterrents to expansion of airports and private flying. Typical of interest shown in the muffler is the appeal we recently received by telegram from a prominent eastern air service operator asking for immediate delivery of a Ryan muffler so that he could demonstrate the improved operation to city officials who had threatened closing of the airport.

Besides eliminating 90 percent of engine noise, the muffler is a complete exhaust system incorporating provision for heating the carburetor during adverse weather operation and delivering heat to the cabin for comfort of the occupants. Precision tools on which the mufflers are being built has been completed, and volume production has been started.

Britain's top Naval aircraft officer, Rear Admiral Matthew S. Slattery, Royal Navy, with members of his staff has been a recent visitor, making an inspection trip of Ryan facilities and flight activities. By good fortune, the British Admiralty Delegation were here the day the second of Ryan's two new flight research planes made its first flight. The following day, when the transport plane bearing the British Naval Aviation experts landed at Muroc, the other Ryan test plane was already on the runway and took off almost immediately for another demonstration.

Top U. S. Navy representative accompanying Admiral Slattery, and also witnessing the demonstration of two new Ryan airplanes in as many days, was Commander A. B. Metsger, head of fighter aircraft development for the Bureau of Aeronautics at Washington. Commander (E) C. F. Kemp, Royal Navy; Lt. Comdr. R. O. Deitzer, Bureau of Aeronautics representative at our plant; and Lieut. (E) S. J. Miller, Royal Canadian Navy, were also in the inspecting party. Admiral Slattery, whose official title is Vice Controller (Air) of the Royal Navy, occupies a position in the British Admiralty and Ministry of Supply analogous to the Chief of the Bureau of Aeronautics of the U. S. Navy.

The visitors were particularly interested in all phases of engineering development in the jet-propelled aircraft field. Here they discussed Naval aviation projects with Ryan management and engineering personnel in relation to similar work being done in England. In addition to seeing the new Ryan planes, Admiral Slattery inspected

the advanced equipment for jet engines which is being developed by our Metal Products Division.

Travelers abroad sometimes get a clearer picture of domestic problems and a broader viewpoint of fundamental principles than those here at home with less opportunity for travel. This thought came to our attention in a recent article in American Aviation Magazine by Wayne W. Parrish, its editor.

"I was in Europe and Africa," he writes, "during the TWA pilot's strike and was not personally inconvenienced in the slightest by the strike. But as one roams over the world, from country to country and continent to continent, and observes the lack of opportunities, low wage scales, the restrictions, the absence of freedom and the lack of resources with which the bulk of the peoples of the world struggle, one is faced with quite an inadequate number of words to express the shock at seeing American pilots walk off their jobs.

"There is so much impatience in this short-tempered adjustment period following a world war. If the coffee isn't just piping hot, then blow up the restaurant or put the restaurant out of business! There are lots of things wrong, lots of things to be adjusted. But we Americans have it awfully, awfully good without appreciating what we have.

"In a country with the greatest freedom in the world, it is perplexing to understand why so many free citizens sign over their birthrights and destinies to someone else."

A skeleton-like combination autogiro and kite, towed behind a surfaced submarine to give German undersea crews an elevated observation post, has been received at our plant for study and testing. On loan from the technical intelligence branch of the Army Air Forces' Materiel Command at Wright Field, the motorless submarine rotor-kite has been reassembled for evaluation and studies to be conducted by us in the near future.

The project is one of many being carried out under coordinated programs between military and industrial organizations in evaluating captured technical equipment developed by enemy countries during the war. Known officially as the Focke Achgelis FA-330, the autogiro-kite depends on the forward speed of the ship or other vehicle from which it is towed at the end of a cable to turn the 25-foot rotor blades and provide lifting power to carry the observer aloft. A forward speed of 17 miles an hour is required to keep the kite and pilot aloft with the submarine under way.

A slight breeze or push with the hand, with the submarine under way, was sufficient to start the rotor turning. When sufficient rotor speed was reached, the autogiro-kite rose slowly, making its take-off with a slight backward tilt. Will Vandermeer, who has been on Ryan's engineering staff for the past 14 years, heads up the company's rotary wing research program.

The role of Air Power in maintaining peace and as insurance for this country against possible future dangers was stressed recently by the Commanding General of the Army Air Forces, General Carl Spaatz. Here are some of the highlights of his speech:

"We need a program of continuous research and development. The Germans were ahead of us in jet propulsion and guided missiles. Fortunately for us they were too late. We must have an expandable aviation industry that applies the advance of science to production. That takes time. Five years elapsed from the beginning of development of the B-29 Superfortress in 1939 to its first flight over Japan. We must design machine tools and develop manufacturing techniques to produce new types of aircraft.

We must maintain a working pool of skilled labor. All these must be expandable in an emergency.

"Industry is not now being kept up to the capacity demanded by national security. Meanwhile, the country's defenses are reduced in three categories -- modern aircraft on hand; manufacturing capacity; and skilled aviation labor. In an emergency that would count against us."

We at Ryan have an active part in this challenging work. Vast expenditures for military aircraft development will be necessary in the years to come, but this country cannot fail to pay this "Premium" on its security "insurance."

An interesting and entirely new application of Ryan's exhaust systems know-how results from a contract recently signed with one of the country's leading engine manufacturers to develop the exhaust manifold for a new combat tank now being engineered. Beyond this basic information, no further details are available at this time, but the item is of such interest that we wanted to pass it along to employees and stockholders.

\$500,000 in new manifold business during the first fifteen days of December! That's the excellent record set by our Sales Department in lining up continuing business for our important Metal Products Division. Among the large new contracts obtained are those from North American Aviation, Fairchild, Douglas and Northrop. Substantial additional orders have also been received from the Army's Air Materiel Command at Wright Field.

Much of the success of our flight test program at Muroc has been due to the keen interest and hard work of the technical ground crews on temporary assignment at the desert flight research base. Headed by Ed Sly and Bruce Falconer, this group of skilled Ryan workers has been an invaluable aid to Al Conover, test pilot; Bill Imenschuh, project engineer; and Navy personnel assigned to the program.

This week we start a New Year - a year which can be a banner year of peace, happiness and progress if the basic virtues of honest, unselfishness, good sense and hard work prevail in our own organization and throughout our country. Or, this great opportunity can be thrown away and lost for everyone if these qualities are compromised.

1947 will be much more than just another year for it marks the 25th Year of the Ryan Organization - A Quarter Century which has coincided with the most dramatic and fast-moving period in history. Looking back with pride to our past accomplishments as an organization, we all look forward, I know, with eager anticipation to the challenging and productive years ahead.

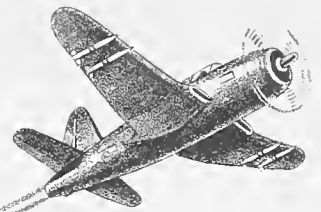
Cordially,

*J. Claude Ryan*



## RYAN AERONAUTICAL COMPANY

LINDBERGH FIELD, SAN DIEGO, CALIF.



### *News Letter*

SILVER ANNIVERSARY YEAR

February 10, 1947

A \$700,000 increase in our contracts with the Army Air Forces, for development of a new, highly advanced-type aircraft of the company's own design, has just been signed. This additional contract is an extension of an order, not previously revealed, which Ryan received some months ago from the Air Materiel Command, Wright Field.

Expansion of our already extensive research program to service the new Army order and other contracts has resulted in the recent appointment of Lieut. Colonel Lloyd F. Ryan, former Air Forces research physicist, as Supervisor of Engineering Laboratories. Colonel Ryan spent four years at the Air Materiel Command, Wright Field, and one and one-half years in Europe as an Intelligence Officer under personal orders of General Arnold on special investigations of enemy technical developments. Recently, too, Harold W. Hasenbeck, former Ryan laboratory chief, was named to head an entirely new and very significant project as Supervisor of Electronics and Control Systems research and head of the special military projects laboratory.

It is in many ways unfortunate that we cannot tell the full story of what your company is doing in the general field of supersonic flight. There are many interesting and favorable developments taking place, but because the utmost security is required at this time, details of our program must wait for many months, perhaps years, to be made public.

We can only repeat, then, that our interest encompasses the whole field of sonic and super-sonic flight, including piloted and pilotless aircraft, and research work on guided missiles, jet propulsion and rockets. It is a challenging field, but one in which the company's experience, facilities and personnel naturally fit, and we look for continuing activity in this work for an extended period of time.

After many months of secret development, the Navy has finally taken the wraps off the newest Ryan combat plane, the XF2R-1 gas turbine-jet fighter, which has been flying for the past two months at the government's Muroc Dry Lake test base and at our factory here in San Diego.

Far more formidable than the FR-1, the new shark-nosed fighter has much greater speed and climb than the original Fireball model. It is the first Navy combat plane and the second of any type in this country, to be powered with a gas turbine engine turning a propeller. Though actual performance of the new bullet-like XF2R-1 cannot be released, we are able to report that the Navy rates it in the 500-mile-an-hour class. Likewise, details of the plane's armament cannot be revealed at this time.

We can take a great deal of pride in the success of our present test programs. Not only is the XF2R-1 performing more satisfactorily than any other plane using a "prop-jet" (gas turbine driving a propeller), but at the same time our flight re-

**1922** A Quarter Century of Leadership in Aviation **1947**

search people are running evaluation tests on yet another fighter type. Details of this latter plane, however, will not be available for release for several months.

Pioneering the "prop-jet" engine field for the Bureau of Aeronautics, the XF2R-1 is serving as a flying laboratory to obtain operational experience with this new type power plant, its propeller and other engine accessories. Our new plane became the first in this country powered by a "prop-jet" engine to make a cross-country flight when test pilot Al Conover recently flew from Muroc to the factory at San Diego, where it is now based for further tests.

Like the basic FR-1 Fireball Navy fighter, the new Ryan XF2R-1 uses a two-engine power plant combination, with the front engine turning a propeller. The XF2R-1, however, is an all-jet airplane in that power for the propeller is supplied by a General Electric TG-100 gas turbine "prop-jet" engine. In the original FR-1 design, the propeller was driven by a conventional reciprocating engine. As in the FR-1 model, the XF2R-1 has a separate thermal jet engine installed in the aft fuselage section to supplement power of the propeller in giving peak performance for terrific bursts of speed and phenomenal climb.

The propeller-plus-jet engine combination, as first used in the Ryan FR-1 Fireball, has been demonstrated as highly effective in giving peak performance over a wide range of speeds and altitudes. The propeller-pulled, jet-pushed combination power arrangement of both Ryan models provides higher thrust than any other arrangement for the extreme acceleration rate needed for quick take-offs and maximum rate of climb. The short take-off characteristic is particularly important, of course, in aircraft carrier operation.

This type of composite power has resulted in an excellent combination of desirable fighter plane characteristics, including high speed over a wide range of altitudes, making both Fireballs "all-altitude", rather than just "critical altitude" high speed craft. In addition, the Ryan composite-powered planes have an extremely high sustained rate of climb at all altitude, short take-off, extreme maneuverability, slow landing speed, good combat radius and heavy firepower — each with its relative degree of importance to the others.

The forward engine in the new "dark shark" Fireball research plane is a General Electric TG-100 "prop-jet" which provides a two-way harnessing of gas turbine power to drive a propeller and at the same time boost with jet thrust. About three-fourths of the available power is absorbed by the propeller, the remaining one-fourth being supplied by thrust of the jet exhaust stream which nozzles into troughs on either side of the fuselage, just below the cockpit.

The engine in the aft fuselage of the XF2R-1 is a General Electric I-16, and is the same thermal jet unit as installed in the earlier FR-1 model. Total power of the two jet engines of the XF2R-1 is considerably in excess of that of the conventional and jet engine combination of the FR-1. This increase in available power is obtained with a proportionately small increase in gross weight.

Someday the vicious spiral of higher wages and higher prices must come to an end; or we're in for a "bust" in the country's economy. Wages and prices are inseparably tied together. Every time wages and prices spiral upward we all stand to lose, unless the higher wages have been earned by increased production; or the higher prices justified by better quality or greater utility.

Let's take a look at what has happened. To get out war production, higher and higher wages were offered. Longer work weeks were adopted and large premiums in



overtime were paid. A life and death struggle for the very existence of our country was in progress, so such measures were sponsored by the government.

Production for war rose to tremendous levels, but when the war was over a major re-adjustment to the production of civilian goods had to be made. But before there was time to get the output of consumer goods flowing, the nation's industry was hit by a series of long and serious work stoppages. Production was resumed only when large increases in wage rates were made.

Because wages represent the major cost in practically all products, these higher wage costs per hour of work increased the unit cost of what the workers made, and prices joined wages in the upward spiral. Actually, the only way an increased wage rate could have been paid without increasing prices was by proportionate gains in production, but in most cases output barely was maintained at previous levels and in some cases actually decreased. Thus, adversely affected by work stoppages and high wages, production of civilian goods sufficient to absorb and then exceed demand was serious delayed, and basic manufacturing costs, and prices to the consumer, were forced still higher.

To pay the increased costs which this first group of workers had caused, employees in other plants asked for more money. But they, too, did not increase production to pay for the higher wages they won, and so the price of what they made also rose. Now the first group of workers is back again and the dizzy whirl goes on.

Today, we are at the point where it must be decided whether it is best for the country to do the same thing all over again with everyone losing. The start of a cycle identical to the one of a year ago is now threatened, but it can be prevented. If work stoppages and unjustified increases in manufacturing costs are eliminated, production can overwhelm the market with goods. Then the working of the old reliable law of supply and demand will do what we all want; that is, increase "real wages" - the purchasing power of a day's work - by bringing prices down.

If any concerns in industry raise prices more than necessary to assure a reasonable and necessary profit, they will be knocked into line so quickly by competitive business which can supply the demand at fair prices, that it will make their heads swim. That is the only way possible to keep prices in line; no government regulations ever have done so nor can they. The only way to stop inflation is to stop increasing costs and to increase the volume of goods. It will work! It always has! The law of supply and demand is a natural law like the law of gravity; it is not an experiment or social theory.

We can all clearly see what has happened in the spiral we've experienced to date. Wage rate increases have been cancelled out within a short time by price increases. Therefore real wages - the purchasing power of a day's work - soon lost all they had gained. And some further serious things took place. The life savings, bonds, life insurance policies and fixed investments owned by everyone shrunk in real value. Thousands of people who depend on fixed income from savings, pension, annuities and insurance benefits find they have already shrunk to a fraction of their intended purchasing power.

Basically, the worker's pay check represents his proportionate share of what he and his fellow employees have produced; and in a wider sense it represents his share in what has been made by all industry throughout the country. He converts this check into "real wages" when he trades it for his share of the actual products which the whole country has made. The more things there are produced, the more there is to be shared by all who had a part in making them. That's the only way each of us can

better our position and increase our standard of living. American business and labor must work together in harmony toward that objective or face seeing the dollars which we are paid approach step by step the point where they are of virtually no value in purchasing power.

Manufacturers of "After Burners". That is one of the phrases we are using in our advertising program to identify the scope of present development and production work in our Metal Products Division. This new field of activity was recently referred to in American Aviation Magazine and an excerpt from that authoritative journal was reprinted in the News-Letter of November 8th.

Though security regulations do not permit a technical discussion at this time of Ryan's special developments in this field, we are now able to clarify the work somewhat. A recent article in Aeronautical Engineering Review discussing jet engines with particular reference to "The Afterburning Combustor," has this to say: "The use of an auxiliary combustor between the turbine and exhaust nozzle of a turbojet engine results in gains of thrust of up to 50 per cent under static conditions and 80 per cent at 600 m.p.h.

"This represents a substantial gain, and although it is accompanied by a large increase in specific fuel consumption, afterburning would normally only be used for short bursts where high power is needed.....The principal development problems associated with the afterburning combustor arise from the high temperature involved." This then outlines in general terms the new work our research engineers have undertaken; an assignment which is particularly appropriate for our company because of our unique role as builders of jet planes and fabricators of heat-resistant metals.

The fame of Ryan's lightplane muffler is spreading! Most recent, yet most unlikely place we expected to hear of the muffler being discussed was the British House of Commons. A member of Parliament asked the Minister of Supply if he would investigate reports which had reached England "of the development by the Ryan Aeronautical Company of a light-weight stainless steel muffler to eliminate 90 percent of the noise of 65-85 horsepower aircraft engines." Apparently the problem of undue noise in the vicinity of airports is as of much concern in England as it is here.

Cordially,

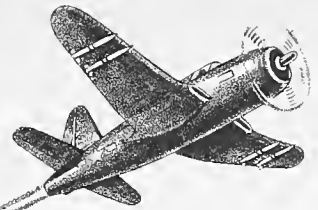
*J. Claude Ryan*





RYAN AERONAUTICAL COMPANY

LINDBERGH FIELD, SAN DIEGO, CALIF.



## *News Letter*

SILVER ANNIVERSARY YEAR  
April 15, 1947

With completion of modification of FR-1 Fireballs here at the plant, including installation of aircraft rocket launchers and other items to place the planes in full operational condition, the Navy's squadron of these jet-plus-propeller fighters is ready for sea duty. The Fireballs comprise the fighter squadron of Air Group One and operate aboard the escort carrier "Badoeng Strait", formerly flagship of Rear Admiral Dixwell Ketcham and now the flagship of Rear Admiral John M. Hoskins, Commander of Carrier Division 17. As reported to News-Letter readers in the issue of September 30th, Admiral Ketcham was the first officer of that rank to fly the Fireball.

The first mechanized production line in the metallic casket manufacturing industry is now operating in the Ryan plant, and from it is flowing an ever-increasing volume of the highest quality chrome-nickel casket shells ever available to the funeral service industry. A great deal of preparation has been necessary, and much time and effort has been expended in setting up the manufacturing processes on an efficient, line-assembly basis. The difficult period of getting the casket shells through the development stage has now been passed and indications are that this operation will prove to be as important and profitable as planned.

An immediate increase in production schedules by adding a second shift to double the delivery rate of casket shells was announced to stockholders at the corporation's annual meeting, March 18th. The volume of casket production was approaching the capacity of manufacturing equipment available when used on the one-shift basis which had been in effect.

Such comparatively high utilization of plant facilities in this post-war readjustment period makes possible overhead costs that are not excessive. The addition of a full second shift will have the favorable effect of lowering overhead rates and increasing efficiency still further.

Casket manufacturers who have had an opportunity to see the Ryan casket shells being built on the production line have stated that it is the first time methods of such precision and efficiency have been adopted in the building of fine caskets. Discussing Ryan production after visiting the plant with Earl T. Newcomer, our national distributor, Joe Flynn, General Manager of the Oregon Casket Company, declared that "nothing like this has ever been done before. The product you are building, to my way of thinking, is as beautiful as any styling ever introduced to the industry."

38,000 pounds of polished, high-precision steel dies are required to produce the 150 separate parts which go into this original design. Many innovations in metal forming, incorporated for the first time in metal caskets, are used in fabricating the Ryan casket shell.

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Because the new type of gas turbine power plant around which Ryan's "Model 30" jet-plus-propeller combat plane was designed will not be available, the Navy's Bureau of Aeronautics has cancelled the remaining portion of that contract which had about four more months to run. We regret that the project is not to be carried through to completion, and that employees working on the new plane had to be terminated, but, as the Navy pointed out, the cancellation came about through no fault of the company. Of the workers involved in the layoffs, a considerable number with seniority are being placed in other production departments.

Other Army and Navy contracts under which Ryan is doing advanced development work on high-speed aircraft and jet engine accessories remain in force and are unaffected by the one contract which was terminated. In cancelling the contract, the Bureau of Aeronautics advised us the action in no way reflected upon Ryan's performance of its contractual responsibilities, but, to the contrary, that they were well satisfied with the production work and technical data which had been completed up to the time of termination.

We have been host to several hundred Navy airmen and crews in recent weeks, who have visited the Ryan plant for study of design, manufacturing, testing and service problems of Navy combat aircraft. Preceding the hour-long plant tours which have been personally conducted by Ryan technical experts, the pilots listened to a series of lectures on jet propulsion, aircraft design and construction, and on flying jet aircraft. Because of their status as Naval airmen, the visiting groups had an opportunity to inspect confidential projects on which we are working for the Bureau of Aeronautics. High point of the plant tours was a visit to the steel-reinforced concrete test cell where a new type jet engine was being "run in." Participating in the tours were Carrier Air Group 21, Medium Sea Squadron Two and Air Control Squadron One, all based with Naval units in San Diego.

It was a source of satisfaction to report to the company's owners -- its stockholders -- at the Annual Meeting and in our Annual Report recently issued, that operations for the fiscal year ended October 31, 1946, resulted in a substantial profit. While earnings were somewhat less than for the previous year, it was felt that the results were satisfactory for the first full year of peacetime business during which it was necessary to make the difficult readjustment from abnormally high production for war to more normal operations.

Unfortunately, too few workers have a clear picture of "profits." Profits are what is left, if anything, for the company's owners after everyone else has been paid. Of the gross sales dollar taken in by this company last year, the workers received 42½ cents. Suppliers of the materials which employees process got another 45 cents. The tax collector came in for 4 cents and all other expenses of doing business took still another 6 cents. That left just 2½ cents for the owners. (Incidentally, only about half of the corporations in America earn any net profit in any one year).

But these are merely "book profits," and only the part represented by cash dividends reaches the owners of the business since, ordinarily, about half of the "profit" is all that is paid to stockholders in cash. The balance is

"plowed back" into the business to provide a reserve for buying new equipment needed to keep the business going and growing. This past year, for example, Ryan stockholders received payments in dividend checks averaging \$103 per stockholder. However, an average of \$209 was provided by each stockholder to buy new machinery and equipment to make possible continuing jobs for Ryan workers and to maintain the company in a position where it can compete successfully with other manufacturers for business.

Profits are necessary if a business is to survive and provide employment. As a great labor leader once stated the case, "The worst crime against working people is a company which fails to operate at a profit." He knew that unless a company can make money it will be forced out of business. An idle factory supplies no jobs; a prosperous factory can supply more and more jobs at better and better pay as production is increased and manufacturing costs are lowered. How can any company stay in business, and so provide jobs, unless it can make a reasonable profit out of which to keep its equipment modern and meet competition?

No one guarantees profits. But unless fair profits are forthcoming sooner or later, the business will slowly dry up. Investors will look elsewhere and the best kind of management and workers will depart. Sound business principles are the mutual concern, and to the distinct advantage, of owners and workers alike. It is only by solid business management that the security of employees and stockholders can be protected and improved.

Ryan S-T type trainers built many years ago continue in operation in all parts of the world. Our commercial airplane service department tries to keep accurate records on the ownership and location of all S-Ts but the task is difficult because such changes are not always reported back to the factory by the new owners. Letters requesting service information and technical data keep us in touch with many of the owners, and on other occasions pilots flying the Ryan trainers for the first time are thoughtful enough to write us about their experiences. B. H. Thallard of Victoria, Australia, took the time to write us not long ago. His letter explains why it is such a task to keep an eye on all Ryan planes in service --

"Recently I encountered my first S-T-M which had been flown in the Netherlands East Indies and was evacuated from there to Australia (before the Japs landed) for use by the Royal Australian Air Force for training. Since then it was acquired by a commercial company here in Australia from government surplus, and now, under registration VR-HOK is on its way to China." What Mr. Thallard perhaps doesn't know is that the S-T-M will be quite at home in China, for well over a hundred of them were used there during the war for military pilot training by the Chinese Air Force.

Jet fighters and bombers, fast as they already are, are going to have an extra kick in the tail pipe when emergency power is needed. That's what is being reported in the newspapers about work now being done on super-power arrangements known as "jet augmentation." Under contracts from the military service our company is engaged in such work, but details of design and operation remain restricted. However, to summarize these newspaper accounts for News-Letter readers, here in substance is what they report is being done.

"Jet augmentation" will be used during brief periods such as for take-off, pulling up from a "wave-off" in an attempted carrier landing or in getting away from an enemy attack. One form of jet augmentation is tail pipe burning (or "after burning"), on which our technicians are at work. In this type, extra fuel is injected into the stream of hot gases (about 1600 degrees Fahrenheit) after they have passed through the turbine wheel and are headed for the ejection nozzle. The gases consist of burned fuel and unused air. The extra fuel sprayed into the tail pipe is burned with the unused air, and increases thrust.

Because about five times as much air as is used for combustion is taken into a jet engine, the objective of jet augmentation is to use as much as possible of the excess air to burn fuel so that maximum thrust can be obtained. Much of the extra air, however, is needed to keep temperatures within the limits of the metal alloys used in the engine.

There are other methods of obtaining jet augmentation, but they are considered less advantageous than "after burning" which is less expensive in weight, while having attractive possibilities for use of all the air forced into the engine.

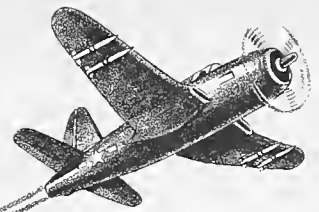
Cordially,

*J. Claude Ryan*



## RYAN AERONAUTICAL COMPANY

LINDBERGH FIELD, SAN DIEGO, CALIF.



# News Letter

SILVER ANNIVERSARY YEAR

May 22, 1947

More information concerning the change in the company's dividend policy will no doubt be of interest to stockholders. In line, then, with our policy of keeping shareholders fully informed as to current facts pertaining to the company, we trust the following frank information will be of value in answering the natural questions which may have arisen.

The principal reasons influencing the Board of Directors to change the company dividend policy at this time were, first, the rate of earnings so far this year is much lower than for last year and for the past several years, and, second, the capital needs of the company in connection with development, production and marketing of new products will increase.

The question has been asked, "What about the earned surplus of the company; why cannot it be drawn against for dividend payments?" The answer is that earned surplus represents that portion of earnings for many years past which was plowed back into the business. Used as additional capital for the growth of the company, it is invested in building, equipment, working capital, etc.

The entire growth of the company for the past seven years, in fact, has been made possible by this utilization of that portion of earnings re-invested in the business, rather than by the sale of additional stock which would have resulted in dilution of each shareholder's proportionate interest in the company ownership. Earned surplus is today invested in tangible assets of the business which are necessary for its operation and further progress, and is not in the form of cash.

These are some of the reasons why it was the soundest plan, in the considered judgment of the Board of Directors, for this company to change its current dividend policy to one which considers dividends at or near the close of the fiscal year when financial results can be determined with reasonable accuracy.

A new Navy contract for engineering studies has been signed by the company with the Bureau of Aeronautics as the result of proposals presented by Harry Sutton, Ryan's Director of Engineering, during several recent conferences in Washington. While the scope of the new contract covers only engineering studies at this time, the problem which our engineers and research people are undertaking during the next few months is so advanced in concept that a practical solution would probably result in authorizations for experimental manufacture and eventually for production.

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Conferences now under way in the east between top Army and Navy air policy makers and representatives of the aircraft industry are being attended by Mr. Sutton, following which he will be at the Bureau of Aeronautics for several days in connection with Ryan combat plane contracts.

Ryan FR-1 Fireball fighters of the Navy squadron aboard the aircraft carrier "Badoeng Strait" have just reported one of the most successful operational cruises since the jet-plus-propeller planes first went into service. Returning last week from naval tactical exercises, including problems in connection with anti-submarine warfare, pilots of the Fireball squadron reported perfect function of the planes in the air, and in take-offs and landings from the pitching deck of the small escort-type carriers.

Entirely new tactical advantages which the Ryan Fireballs give Navy pilots have been discussed by the squadron with Ryan engineers, but for obvious reasons, cannot be related in detail in this News-Letter.

Eddie Molloy, veteran Ryan production executive, has been reappointed Works Manager, resuming the position he previously held. Due to ill health he was relieved of his heavy assignment at that time, and during the interval the duties of Works Manager were carried on by G. E. Barton. Since resuming his position as Works Manager, Mr. Molloy has appointed Mr. Barton as Production Planning Manager, and Robert Clark as Production Manager.

Ryan jet planes are scheduled to participate in the joint Army-Navy demonstration of latest combat aircraft to be given June 5th for a hundred of the nation's top aviation editors. The planes are to be flown in special demonstrations for members of the Aviation Writers Association at the famous Muroc desert test center during their national convention in Los Angeles.

Newsreels of a demonstration flight of Ryan's XF2R-1 "Dark Shark" were made recently here at Lindbergh Field, San Diego, when Al Conover, chief test pilot, put the plane through its paces for the camera - including several 500-mile-an-hour dashes across the field. The "Dark Shark" is a research plane, and is conducting for the Navy its first flight tests on a gasoline turbine engine driving a propeller.

Ryan's other current research plane will be publicly announced early next month. In addition, it is expected that within a matter of weeks we will also have clearance from security officers of the Navy to release some details of the Ryan jet engine thrust augments or after burner, about which some mention has been made in previous News-Letters.

Contracts exceeding \$300,000 for Ryan exhaust manifold systems have been signed during the past month with Douglas Aircraft Company. The exhaust systems, to be produced by our Metal Products Division, are about equally divided in dollar value between manifold equipment for the Douglas DC-6 and C-54 airliners. The DC-6 is Douglas' newest, largest, fastest transport. Ryan ejector-type exhaust stacks, standard on the DC-6, give the plane a more than 20 mile-an-hour boost by the jet propulsive thrust of the gases nozzled out the exhaust system.

Production of Ryan Grecian Urn casket shells has reached a new peak in efficiency, and simultaneously the company has supplemented the sales activities of the Earl T. Newcomer organization, national distributors, by sending some of our own men into the field to further strengthen distribution. Ryan has been well represented by sales personnel and by display of our caskets at several important meetings recently held by the funeral service industry.

An ample inventory of chrome nickel Grecian Urn caskets has now been built up, permitting production to start on the same basic styling in other metals. First production runs are now being started in the factory on caskets fabricated of bronze. Later, copper caskets will be manufactured with essentially the same production equipment. While production is getting started on the new line of metals, shipments of the chrome nickel models can continue to be made to the funeral service industry from the inventory which has been built up for this purpose.

Cordially,

*J. Claude Ryan*

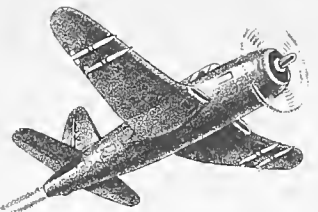






RYAN AERONAUTICAL COMPANY

LINDBERGH FIELD, SAN DIEGO, CALIF.



## News Letter

SILVER ANNIVERSARY YEAR

June 23, 1947

The curtain of secrecy surrounding Ryan's development of an "After Burner" to boost the propulsive thrust of jet engines has at last been partially lifted by the Navy, for which the thrust augmentation devices are being built. Details of the design and operation of the After Burner were released by the Bureau of Aeronautics to more than 100 of the country's foremost aviation writers at their recent convention in Los Angeles.

At the flick of a control, pilots flying combat planes equipped with the After Burner will soon be able to add tremendous supplementary speed and power to the already cyclonic force of the searing gases blasting from the tailpipe nozzle of jet propulsion engines. The announcement also stated that the Ryan thrust-augmentation device is the first specifically designed for regular use in flight.

With jet planes already flying at more than 600 miles an hour, the added thrust of Ryan After Burners will be invaluable in breaking through the compressibility barrier as planes approach the speed of sound. In addition, they will be used to give added power for take-off, during combat conditions and on all occasions where extra thrust and speed are required.

In ground tests, the stainless steel pipe of the unit becomes a roaring, thundering blast furnace which can be heard blocks away and from which the colorless, searing jet stream, revealed only by heat waves, spurts at over 1,000 miles an hour.

In basic conception the Ryan After Burner is a ram-jet engine installed downstream from the turbine of a conventional jet engine to add more than one-third to the power plant's normal propulsive thrust. This is accomplished by spraying fuel into the tailpipe where its burning adds mass and velocity to the speeding gases of the jet stream. The problem of burning the fuel and maintaining combustion within the After Burner's short length is a critical one, for it is like trying to build a bonfire in a whirlwind.

Special techniques Ryan has developed for the use and fabrication of heat- and corrosion-resistant stainless steels, such as are used in the After Burner tailpipe, have played an important part in the success of the new thrust-augmentation device.

As the world's largest user of stainless steels for aircraft, Ryan has had the invaluable background of producing over a hundred thousand exhaust systems to carry away the volcanic heat and gases of the huge reciprocating engines which power America's most formidable bombers and transports. In

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addition, in development of the After Burner, engineers have been able to draw upon the company's extensive research work in operation of the jet engines and gas turbines which power the Ryan Fireball series of Navy fighter planes.

All tests of After Burners to date have been made in fixed engine stands on the ground, and under these static conditions have shown substantial power gains. However, engineers point out that in actual flight, as speeds rise, the power boost from the Ryan device will show still greater increases over the normal jet engine thrust output. Because it has been developed from the outset as a practical flight power booster, the Ryan After Burner will undoubtedly be the first auxiliary power plant of this type to be flight tested.

All of the experience gained during the past year from our research on the After Burner is applicable to the ram-jet when that engine becomes a major power plant for supersonic speeds. We feel confident that the company's interest in the field of jet power and its leadership in the design and fabrication of stainless steel products for aircraft use, will provide a continuing and expanding source of business.

The Navy has also just issued an official press release describing some of the research work we have conducted for them on the operation of the turbo-prop engine, which spins a propeller and at the same time boosts with jet propulsion. Our XF2R-1 "Dark Shark" Fireball which has served as the flying laboratory in this work is the first Navy plane to use a turbo-prop engine. The official Navy announcement follows:

"What is believed to be the highest altitude reached by a turbo-prop powered airplane was attained on 2 May, 1947, during a routine test flight of the Navy's new XF2R-1, Ryan built fighter, when Al Conover, the contractor's test pilot, topped 39,000 feet while determining performance and climb characteristics of the new fighter.

"The performance highlights the early experimental and developmental stage of this type of power plant, upon which Navy Bureau of Aeronautics engineers are pinning high hopes for future applications in transport and carrier types.

"Although beset by many critical structural and operational problems, the gas turbine type of power plant conceivably holds more promise of spectacular improvement than any other power plant project. Whereas it now appears that the conventional reciprocating engine will have a ceiling of from 3 to 5 thousand horsepower imposed upon it by very critical overheating and vibration difficulties, turbo-props of 6, 8 and 10 thousand horsepower do not present the same major engineering difficulties.

"Moreover, predictions are that the turbo-prop type will evolve from its present experimental growth with a specific weight of one-half to one-third that of the conventional engine now in use. With weight horsepower ratios that low, the value of the turbo-prop to designers of heavy cargo-transport airplanes, as well as to the lighter, high horsepower, carrier type, is obvious.

"The Navy XF2R-1, known as the Dark Shark Fireball because of its long, slender nose, is the first Navy application of the turbo-prop. The engine is the TG-100, developed by General Electric.

"Like its predecessor, the XF2R-1 is a prop-plus-jet powered aircraft. Installed in the tail is a pure jet engine, the General Electric I-16, which provides approximately 2300 pounds of thrust. On the 2 May climb to service ceiling, the "Dark Shark" used both engines continuously.

"The maximum altitude of 39,160 feet was reached in less than 25 minutes. The actual flight test closely approximates test cell operation of the TG-100, which has been carried out at a simulated altitude of 45,000 feet.

"Test pilot Conover reported that on other occasions he had flown the XF2R-1 to 10,000 feet in approximately 2 minutes, thus closely approximating the record for climb to that altitude, held by a Navy Bearcat carrier fighter. On the high altitude attempt, no effort was made to establish maximum, low altitude climb, he said."

Development of another of our Navy experimental interceptor fighters, the Ryan XFR-4, has also been announced by the Bureau of Aeronautics. Like other Ryan fighters it used a jet-plus-propeller power combination to give it sensational climbing ability and speed in the 500-mile-an-hour class.

While actual performance figures have not been released for either plane, the XFR-4 is superior in both high speed and rate of climb to the XF2R-1 "Dark Shark" Fireball. The added performance of the Ryan XFR-4 is attained by installation of a new jet engine in the aft fuselage section. This new turbo-jet engine is a Westinghouse 24-C axial flow design and develops far more power than the I-16 model used in the FR-1 and XF2R-1 models.

One of the principal purposes of the XFR-4 flying laboratory project is a study of new type flush-entry ducts which channel the air to the jet engine. Preliminary to development of this research plane, a conventional Fireball carrier-based fighter was converted at the Ames Aeronautical Laboratory to test the first flush-entry duct in a full-scale airplane in the NACA's wind tunnel.

Flight tests we have conducted with the XFR-4 are providing operational experience and jet engine ducting data which will be applicable to new combat planes under development for the Navy.

With government appropriations for naval and military airplanes reduced drastically in recent months, Ryan's present aircraft assignments for the military services are confined largely to experimental manufacture, research and development work, and engineering and design studies. As discussed in detail in a recent News-Letter, contracts for our "Model 30" Navy fighter were cancelled because the jet engine power plant around which it was designed is not being continued in production.

Meanwhile, excellent progress is being made in the guided missile and pilotless aircraft field, but this work probably cannot be discussed in any con-

siderable detail for many months to come. The same applies to certain engineering studies we have under way for the Bureau of Aeronautics.

The first Grecian Urn casket shells to be built of bronze are now coming from our assembly line, and initial shipments to funeral directors who have already placed orders will be made within the next ten days.

Seven Ryan Fireball fighters flying along at 300 miles an hour, with their propellers stopped and feathered, provided one of the high points of the recent Aviation Writers Association convention. Witnessing the unusual demonstration were 80 writers aboard two Navy four-engined transports, for which the Fireballs provided an official aerial escort on the flight from San Francisco to Los Angeles.

Without previous announcement to the writers, Fireballs of the Navy's VF-1E squadron, under Commander Guy Anderson, joined up with the Naval Air Transport planes in an escort formation, then one by one the front engines and propellers stopped -- but instead of having to make forced landings, as many writers hurriedly concluded, the Ryan fighters continued to hold the formation by flying on their concealed jet engines. Many of the writers had never before seen the Fireballs and were quick to admit that the unusual demonstration was one of the most interesting they had ever witnessed.

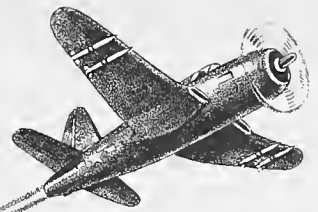
Cordially,

*J. Claude Ryan*



## RYAN AERONAUTICAL COMPANY

LINDBERGH FIELD, SAN DIEGO, CALIF.



# News Letter

SILVER ANNIVERSARY YEAR

August 4, 1947

With the purchase of the design and manufacturing rights to the Navion personal and executive type airplane from North American Aviation, Inc., Ryan is back again in the commercial airplane field in a substantial way with a proven product. As developer of the popular four-place ship, North American has spared nothing in making the Navion the leading airplane in its class.

Deliveries from production lines now being set up in our plant are scheduled to begin in about 90 days. While production will be carefully geared to proven customer demand for the Navion, the manufacturing facilities we are providing will have a capacity of up to 10 planes per day. North American has done the finest and most complete job of production tooling ever made available for manufacture of a personal type aircraft.

In acquiring the Navion, we have a plane we feel is the finest design, and the most satisfactory in day-to-day operation, of any in its field. It represents the best balance of desirable qualities including rugged construction, slow landing and quick take-off, large payload and high cruising speed, and safe handling with comfortable stability under all flight conditions.

In addition to design and manufacturing rights, Ryan takes over the production tooling used for all manufacturing operations, all work-in-process and all spare parts. Deliveries of spare parts to dealers and owners are now being handled by Ryan.

One of Southern California's biggest trucking jobs since the war is now in progress as the transfer of material and tools gets into full swing. Some idea of the magnitude of the equipment and parts involved in the move is the estimate that it will require around 500 twelve-ton truck loads, and will not be completed for about 60 days.

We have been continuously analyzing the personal plane field for the past two years, in considering re-entry into commercial manufacture at the right time after the temporary pent-up demand had ended and a more accurate estimate of the true market volume could be determined. That time is now at hand; and the Navion is the ideal airplane for the company's resumption of production.

Private and commercial pilots have long expressed their preference for a four-place airplane of metal construction. More than any other plane, the Navion meets the requirements of today's and tomorrow's markets. Though we have great confidence in the plane itself, and in the future of private and executive flying, we are realistic about the size of the market for the next few years and plan to schedule our production very closely to actual sales volume.

1922 A Quarter Century of Leadership in Aviation 1947

Three sources of sales - domestic, export and military - will be aggressively worked. While we inherited an established dealer organization from North American, plans for strengthening and expanding distribution are being studied and extensive surveys of airplane merchandising are being made.

The newest market for the Navion, which was tapped just prior to Ryan's purchase, is the military. Under the designation L-17, the Army Ground Forces and National Guard chose the Navion over other four-place planes in a flight competition for liaison, reconnaissance, personnel and cargo carrying, courier service and general communications work. The initial orders were for a total of 83 planes.

Coupling the Ryan company's 25 years' experience in the aircraft business, much of which has been related to the manufacture and sales of personal and commercial planes, with the outstanding quality of the Navion plane and the enthusiasm of Ryan executives and workers for the new program, the opportunity open to the organization is a very real and challenging one.

The company's post-war program is well rounded out by purchase of the Navion. Our airplane manufacturing will now be represented by both commercial and military types. Too, manufacture of exhaust manifold equipment, jet engine components, and suitable commercial items in our Metal Products Division will be continued on a substantial scale.

The policy of Ryan management for re-hiring its former employees, and the preference of those former workers for employment at Ryan, has been strikingly shown by recent personnel records. A survey of our past four months employment shows that 93% of those who have been accepted by the personnel department are former employees we have called back for either re-hire or re-instatement.

Where both management and employee know the record of the other, there is mutual understanding. And, because the resumption of the worker-company relationship has been actively sought by both, as in the employment record of recent months, it is the best sort of evidence of the healthy industrial relations which exist at Ryan.

Jet-propelled Navy planes made their first appearance in Pacific Fleet war games recently when Ryan Fireballs rose from the deck of the escort carrier "Badoeng Strait" to defend a surface force from shore-based attack planes. The 30-ship fleet, enroute from San Diego to San Francisco, was under constant simulated attack, during which the Ryan planes were on a constant alert. The Fireball is the first carrier craft to use jet power, and the world's first plane to combine a conventional propeller-driving engine with jet propulsion.

The largest stainless steel jet engine components ever built were completed in the Ryan factory several months ago and delivered to the engine manufacturer. Although no detailed information will be released for several months, some general hints regarding the significance and size of the gas turbine engine have been published.

The largest turbine-type aircraft engines known to be under practical development anywhere in the world are now being tested in a new laboratory of the Wright Aeronautical Corp. It is for these engines that Ryan's Metal Products Division has just built the huge stainless steel exhaust and ducting systems. So large is one of the new jet engines that Wright engineers expect the single gas turbine to approach the combined power output of the four conventional type engines of the Superfortress bombers.

More for the money is better any day than merely more money! That's why we'd all be better off if everybody were trying to get prices down instead of trying to get wages up.

A price drop is a raise for everybody. A raise is a raise for only those who get it. Price drops mean that more people can afford to buy the products being made in American factories and shops. They mean a surer, steadier, longer-lasting market, which means surer, steadier, longer-lasting jobs.

It doesn't do the country as a whole much good if 15 million workers get raises and the other 45 million employed do not. But, when prices are cut, everybody benefits!

Ryan exhaust manifold equipment figures prominently in the success of two giant four-engined planes flown for the first time during the past month. Latest addition to the Army Air Forces' post-war aerial fleet is the Boeing B-50 Superfortress, successor to the famous B-29, which was also equipped with Ryan exhaust systems. First test flight of the new long-range heavy bomber was made late last month.

Each of the four manifolds on the B-50 must handle the volcanic exhaust gases of the 28-cylinder 3500 horsepower reciprocating engines, largest conventional power plants flying today. The products of engine combustion perform useful chores on the B-50. Heat is conducted to the wing leading edge to prevent formation of ice. Speeding exhaust gases, too, are channeled from the manifold to spin the turbo-supercharger which maintains engine power at high altitudes and reduces fuel consumption.

Ryan manifolds will be standard equipment on the 133 B-50 Superfortress bombers the Army has ordered.

Many people are often confused by what they believe to be the conservative and (they think) anti-liberal attitude of American industry. What they don't understand is that industry has perhaps more frequently than other groups found out that bureaucracy is often very far from democracy. This was perhaps best stated by the thoughtful analyst who wrote -

"Confused liberals.....who owe muddled allegiance to the idea that government should be omnipotently responsible for the lives of its citizens even to the point of benevolence, seldom realize that this benevolence usually ends up by being merely despotic!" History has provided plenty of examples.

Even while we prepare to re-enter the personal plane field, word continues to reach the factory of Ryan sport and training planes of former years still in active operation all over the world. Latest report comes in from Australia, where Brown and Dureau, leading representative of American aircraft firms "down under," tell us of the final disposition of the military trainers originally sold to the Netherlands East Indies government.

"We purchased all Ryan STM trainers, which were held by the Royal Australian Air Force (who took them over from the Dutch Indies at the start of the war in the Pacific). These we reconditioned for further sale, and thus when ready for our customers are almost as good as new.

"The majority of the Ryans have already been sold and were most enthusiastically received by their new owners. There is little doubt that these owners will agree with you in your own opinion of the STM. It might be of interest to note that we are exporting three Ryans to Hong Kong to be used for flying training.

"There is no aircraft in Australia of comparable class to the Ryan. The only competition in this field is that provided by Tiger Moths and Wackett Trainers. There is little need for me to say that the Ryan is far superior to these aircraft both in design and performance."

Cordially,

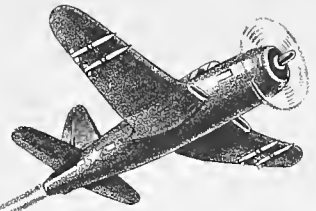
*J. Claude Ryan*





RYAN AERONAUTICAL COMPANY

LINDBERGH FIELD, SAN DIEGO, CALIF.



## News Letter

SILVER ANNIVERSARY YEAR

September 29, 1947

The date of this letter to Ryan employees and stockholders is significant. It marks the 25th Anniversary of the Ryan organization, started on this same date in 1922 when there was not enough aviation activity in the entire country to justify referring to it as the "aircraft industry."

During this quarter-century, your company has played a pioneering part in many diverse phases of aviation - manufacture of commercial and military planes and aircraft parts; operation of charter and airline services; training of pilots, mechanics and engineers; operation of wartime pilot schools for the Army; and research programs throughout the years which have contributed markedly to the high reputation of Ryan products throughout the world.

Now, as we enter our second quarter-century, the company is starting a new and important phase of its history. After an absence from the personal aircraft manufacturing field for seven years, due very largely to the requirements of war production, we are re-entering the market with the introduction of the New 1948 Model Ryan Navion four-place all-metal personal and business plane.

In the new Navion, we are applying our 25 years of personal plane know-how to the airplane designed and developed by North American Aviation, from whom we recently acquired all rights to this outstanding ship. Numerous refinements are being incorporated in the new Ryan Navion to further improve its already recognized leadership as the finest plane in its class.

The first 1948 Ryan-built Navion has already been flown and will be delivered within a few days to one of the country's outstanding aviation distributing organizations, which will use it for sales demonstration work. Other planes are already on the assembly line. Deliveries will be stepped up gradually during the winter months so that by early spring, when the heavy aircraft selling season begins, Navions will be coming off the Ryan assembly line in sufficiently large quantities to meet the indicated increasing demand for these planes.

Other important developments are taking place particularly in guided missile research, but the necessity of continued military security in this new and challenging aircraft field has thus far made it impossible to furnish you detailed information. Additional contracts have been received recently and an announcement concerning them, but without reference to technical matters, will probably be permitted in time for the next News-Letter.

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A contract was consummated last month for the sale of the design rights, inventory and production tooling for our metal casket shells to the Boyertown Burial Casket Company of Pennsylvania. We have found it advantageous to discontinue our only non-aeronautical activity, and to concentrate our program on commercial and military aircraft, and on metal products for the aircraft industry.

When Ryan acquired design and manufacturing rights to the Navion from North American Aviation, negotiations were begun for the sale of the casket manufacturing program to a company already established in that field. These negotiations have now been successfully completed. Boyertown, one of the oldest and best firms in the field, has already started to take delivery of tools and completed casket shells and is preparing to continue production of this superior type casket shell developed by Ryan.

The Navy has finally permitted the disclosure of some of the results of the research program Ryan conducted for the Bureau of Aeronautics on our XF2R-1 "Dark Shark" Fireball fighter. This plane was the Navy's first to use a turbo-prop engine -- that is a gas turbine engine which drives a propeller as well as provides thrust by jet propulsion.

Perhaps the most interesting technical development on this plane, which may now be published, is the use of a reversible pitch propeller. This permits a new system of "braking" the speed of the plane in the air by flattening the pitch of the propeller during the final landing approach. This increases the "drag" so much that the plane has a steeper gliding angle and a much shorter landing roll.

So effective was the drag-creating feature of the reversing propeller that Ryan's test pilot expressed the belief that normal runway landings could be made in a distance no greater than the length of large aircraft carriers of the Midway class.

With three months of close association with the Navion project, we find that the enthusiasm and confidence everyone has in the plane continues to grow with each passing day. This has been particularly emphasized in our contacts with the distributors and dealers who sold Navions under the North American set-up.

Without exception, these men and their organizations, who are the ones who must make the actual sales to customers, tell us they have found the Navion to be basically by far the finest airplane which has ever been developed in its class. Certain minor refinements in appointments and maintenance features have been suggested by these men on the basis of their long experience in selling the plane, and these in many cases are being incorporated in the first Ryan-built plane to come off our production line.

Over and over again, however, these distributors stress their conviction that the Navion is superior to all other available planes because it represents the finest balance of the aircraft qualities sought by both experienced and novice pilots. Such expressions as "The Navion has an unbelievable balance of good design" and "There is no comparable ship on the market" keep cropping up in their conversation.

Probably the clearest picture you can get of the high regard in which the Navion is held is to let you read the following letter one of our distributors recently received. The writer is Richard D. Grant, public relations counsellor, of Boston, Massachusetts.

"I was very glad to learn that Ryan Aeronautical Company had acquired the manufacturing rights to the Navion airplane and will continue production of this superior personal aircraft. I find it easy to agree with T. Claude Ryan's published statement that no major engineering changes will be necessary in the Navion for some time to come because of the advanced design and performance of the present model.

"My own confidence in the Navion was expressed by the purchase of one of the last of these planes produced by North American Aviation at a time when it was by no means certain that they would continue to be built for the market.

"My preference for this aircraft is not confined to features usually emphasized in the sales of airplanes to private owners, although it has them all, namely; speed, rate-of-climb, load carrying capacity, and durability. What I like best about my Navion is that so little effort is required to fly it that I can make long cross-country trips without suffering a trace of fatigue. It used to be said of pilots lacking skill and flying sense that, instead of flying the airplane, the airplane flew them. This, however, is literally true of the Navion. Its built-in safety characteristics are such that one almost has to be deliberately careless to get into trouble.

"My Navion is a business investment. Frequently I have occasion to take clients with me as passengers. Most of them are people who never before have touched the controls of an airplane. With a few simple instructions they have all been able to handle the plane in the air so well that I am sure that some eventually will be converts to personal flying. Several have told me they have a greater sense of security in my Navion than when using a regular airline transportation. All of this adds up, of course, to a feeling of confidence and friendly contact which helps to maintain business relationships which could be achieved in no other way.

"I recently took a two-and-half day business trip in my airplane, which, even including overnight stops as travel time, could not have been duplicated in a week of continuous surface transportation. I couldn't have made it by airline at all because they make only big town stops. On most of the route I encountered conditions of poor visibility but this did not bother me since I have installed ADF in my Navion and the plane will fly "hands off" in all but the most turbulent air. The ADF, or radio compass, is, of course, extra equipment but I know of no other light personal aircraft capable of carrying such extra weight without sacrificing a good part of its payload.

"The Navion surely is, as the advertisements proclaim, 'The Airplane That Means Business', but it is also a great deal more. It is the most ruggedly constructed, comfortable, safe, and -- in its weight class -- the most economical operating airplane I have seen. Furthermore, it is the most talked about plane to be built since the war. Everywhere I go people gather around my Navion to admire its smooth lines and to ask questions. A few weeks ago, Collier Magazine referred to the Navion as 'Grandma's airplane' and I am sure, from my own experience, that a flying grandmother wouldn't have too much trouble being checked out."

Two questions we're frequently asked about the Navion are where did we get the name, and how should it be pronounced? "Navion" is a contraction of the initials "N. A." (for North American) and the French word "avion," meaning airplane. The name is so well established by advertising and by the thousand planes being flown that we felt continuation of the Navion identification name represented an extremely valuable asset we should not give up.

Navion is pronounced "NAVY-ONN" with a hard A (the first part as in U. S. "Navy" and the ending rhyming with the name "Don").

We know you'd like to see a picture of the Navion and to have some additional information about the plane. The enclosed reprint of the first advertisement featuring the New Navion by Ryan may serve this purpose.

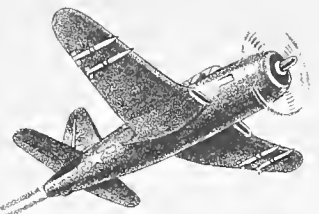
Cordially,

*J. Claude Ryan*



RYAN AERONAUTICAL COMPANY

LINDBERGH FIELD, SAN DIEGO, CALIF.



## News Letter

SILVER ANNIVERSARY YEAR

January 16, 1948

Another report to stockholders and employees on current Ryan activities, by means of these periodic News-Letters, is somewhat overdue only because the press of business in connection with our re-entry into the personal plane field, through purchase last summer of the Navion program, has been so heavy these past few months.

Practically the full-time effort of a substantial portion of our key personnel since my last report to you has been devoted to the task of getting the Navion production and sales program off to a good start. But before bringing you up to date on our Navion program, here are some interesting reports on our other activities.

Emergence of the Ryan Aeronautical Company as a leader in the new field of guided missile research is indicated by the recent announcement that the U. S. Air Force has increased by \$1,070,000 its already substantial commitments with the company for development and manufacture of a new type controlled weapon we have designed.

Since starting its research program on guided missiles and pilotless aircraft more than a year ago, Ryan has concentrated on development work in a specialized phase of this broad and important field. As a result, the Air Force has three times increased its contract, each time authorizing additional and more extensive work.

Though details of the guided missile are not releaseable as to its design or specific military mission, Ryan engineers describe it as one of the most compact weapons of its type ever designed. We have been permitted to reveal that it has, in effect, a built-in brain capable of "doing its own thinking" once it has been launched.

The missiles are being developed at our research laboratory and fabricated in the Ryan plant, but actual flight testing is being done at the Alamogordo Air Base in New Mexico, center of Air Force guided missile testing.

With an ever increasing emphasis being given the Navion personal and business plane manufacturing program, your management felt it wise to dispose of the design rights and production tooling for its metal casket shells. Accordingly, the entire "Grecian Urn" casket shell project was sold to the Boyertown Burial Casket Company of Pennsylvania.

1922 A Quarter Century of Leadership in Aviation 1947

Business in our Metal Products Division continues to be a major factor in the company's manufacturing program. For some ten years now, Ryan has been one of the world's great producers of exhaust systems for aircraft engines, and continues to hold its dominant position. In addition, similar equipment of stainless steel for jet engine tail pipes and other critical gas turbine parts contributes effectively to our metal products manufacturing program.

More than \$1,350,000 in new business has been received in this division in the past 90 days. Practically every important aircraft manufacturer is represented in the list of those purchasing new exhaust systems and other metal equipment items. Substantial orders were placed by Boeing, Consolidated, Douglas, Fairchild, Lockheed, North American and Northrop to list only major manufacturers. In addition, such specialized manufacturers as Airesearch and Aerojet contracted for exhaust heaters and rocket motor assemblies. On Boeing four-engined planes alone, Ryan manifolds are specified for the three principal types now in production -- the new B-50 Superfortress, the military C-97 Stratofreighter and the commercial Stratocruiser.

Orders for Ryan After-Burners, a thrust augmentation device developed by our research engineers, have also been received during this period. Through the injection of fuel into this device, located aft of the conventional jet engine, additional burning takes place which expands and further speeds up the propulsive thrust of the exhaust gases, thereby substantially increasing the forward thrust of the plane in which it is installed.

Another new project calls for the fabrication of metal fuel tanks used by one of the leading transport plane manufacturers to provide the additional gas capacity required for overseas delivery of aircraft.

First supervisory employee to be retired at 65 years of age and to receive benefits of the Ryan Retirement Trust is Frank Walsh, assistant foreman in the Manifold Small Parts department. Walsh has been with the Ryan company eight years and in a supervisory capacity for the past five-and-a-half years. Although the plan has been in operation only since 1944, Walsh receives approximately \$2300 as his share of benefits under the Retirement Trust, which is financed entirely through payments made by the company.

Deliveries of 1948 model Ryan Navion four-place all-metal personal and business planes are now hitting their stride after the months of preparation we have made for setting up an effective manufacturing and sales program. During the spring months, the production rate will be steadily increased to meet the substantial backlog of orders now on hand.

An effective nation-wide, as well as foreign, distributing organization has been established. In this country, we have granted distributor contracts to those aircraft sales outlets, formerly serving as Navion representatives, which were able to meet the high sales and service standards on which this company insists. Further strengthening our sales organization, some of the country's most highly regarded and successful aircraft distributors have recently signed new contracts for Ryan Navion sales territories.

In Texas, second most important aircraft sales area in the entire country, for example, we have been fortunate in signing as Ryan Navion distributor an organization headed by Les Bowman - General Aeronautics, Inc. Bowman, who for many years was the largest single sales outlet for Stinson and Piper, has given up representation of these planes to devote his selling efforts exclusively to the Ryan Navion.

Similarly, in Florida and Georgia, Carl Wootten of Wootten Aircraft Industries has switched from representation of Beech Aircraft to take on the Ryan Navion program. Former sales manager of Beech, Wootten was closely identified with that company for six years, but has found that the new Ryan Navions, and this company's sales and business policies, make it far more attractive to represent the Navion in the important Florida-Georgia area. In the Pacific Northwest, too, Ryan has obtained top representation through Washington Aircraft and Transport Corp., headed by the widely-known engineering test-pilot Elliott Merrill, and Rankin Aviation Industries based at Portland.

Many refinements designed to give increased owner satisfaction have been incorporated in the 1948 model Ryan Navions as the result of extensive surveys by our engineers and sales executives, based on information obtained from the more than 1000 owners of North American-built Navions. The 1948 model is completely painted in a durable, high-gloss enamel finish; the interior styling has been greatly improved; sound-proofing and better ventilation have been provided; cruising range has been extended by the addition of extra fuel tanks; and mechanical refinements in the fuel system and propeller have been made. Both the owners and the Navion sales organization have expressed their satisfaction with the Ryan organization's "know-how" in the personal plane field as expressed by the refinements being made in the planes now being delivered.

Our policy is one of conservatism as to the volume of production and sales scheduled for the Navion. As News-Letter readers know, Ryan was reluctant to re-enter the market until such time as demand was stabilized at a volume more normal than the artificially large backlog which had built up at war's end. Orders currently on hand exceed our production schedules for the first four months of 1948 but as we get into full production, we expect to gear the delivery rate very closely to market demand, which appears to be excellent for a plane of the Navion's proven utility.

Only by intimate contact with Navion owners does one become fully aware of the place the personal plane is assuming in America's everyday business life. Let me cite three outstanding examples of the Navion's utility as they came to my attention through correspondence with the owners -

Lee M. Cauble, of Jackson, Mississippi, is a dealer in heavy road-building equipment. Here's a dramatic example of how his Navion is used in business. "Leaving Jackson at 7 a.m., I had lunch at a plant in Dubuque, Iowa, where after touring the plant I closed an important deal. That evening I had dinner with plant executives in Kansas City, and signed a contract there the following morning, arriving back at my office in Jackson at noon. The trip covered 1700 miles, two contracts were signed, and I was away from the office only 30 hours.

Three distinctly different business activities - in Minnesota, Texas and Nevada - require constant travel by Chester Weseman, contractor, of Austin, Minnesota, whose Navion is piloted by Glenn Hovland. When at Weseman's citrus ranch near McAllen, Texas, Hovland recently got word to fly to Austin, pick up one of Weseman's partners in a gold mine venture and get to the mine at Sulphur, Nevada, as soon as possible to obtain repair parts for machinery which had broken down. Flying from McAllen to Austin during the day, Hovland left with his passenger the following morning at 6 a.m., had one breakfast in North Platte, Nebraska, and another at Cheyenne, Wyoming, and landing that evening on a salt flat near the mine. Next morning a 500-pound pump was flown in the Navion to Reno for repair and the following day the mine was back in operation!

In the wide open space of Montana and Wyoming, the airplane really comes into its own as emergency transportation. Dick Reed operates two Navions in a personalized air charter service from Billings and Casper. Here's a typical day's work for him - "Left Billings at 6 a.m. and picked up a patient at Buffalo, Wyoming, flying him to the hospital at Rochester, Minnesota, with only one stop. On the return flight, I stopped at a ranch in western South Dakota in which I have an interest, to discuss business matters. Arriving back in Billings at 9 p.m., I received an urgent call to fly a man to Denver to see his son who had been critically injured. In less than commercial airline time, I delivered my passenger at Denver, then flew back to Casper, our other operations base, to handle business matters until 2 a.m., arriving back in Billings at 5 a.m. I had completed 3000 miles for hire, and at the same time handled important personal business in widely separated localities, all in less than 24 hours!"

It's no wonder that with such enthusiastic Navion owners, we here at Ryan, too, are enthusiastic about the important part the Navion will continue to play in the country's personal-business aircraft field and in our own business.

Cordially,

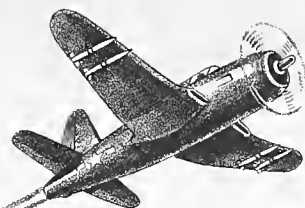
*J. Claude Ryan*





## RYAN AERONAUTICAL COMPANY

LINDBERGH FIELD, SAN DIEGO, CALIF.



# News Letter

SILVER ANNIVERSARY YEAR

September, 1948

With activity again at a high pace following the settlement of the six-weeks' strike which had resulted in decreased production, it may be helpful to summarize the company's present activities in order to bring stockholders and employees fully up-to-date on developments here at the Ryan Aeronautical Company.

Our two basic product lines - those of the Airplane Division and of the Metal Products Division - each represent approximately half of the current business volume. Though each will later be discussed in detail, in brief outline here are the principal projects in each division:

### AIRPLANE DIVISION

Ryan Navion Business Planes  
Ryan Navion Military Planes  
Guided Missile Development  
Jet Target Plane Development  
Confidential Navy Project

### METAL PRODUCTS DIVISION

Exhaust Manifold Systems  
Jet and Rocket Engine Components  
Aircraft Components Manufacture

### RYAN NAVION PERSONAL-BUSINESS PLANES

Since taking over the four-place all-metal Navion plane project last year from North American Aviation, the position of this outstanding personal-business plane in the commercial aircraft field has been further fortified. With the refinements in design and appointments which Ryan has added as the result of more than a quarter-century experience in this field, the demand for the 1948 model Ryan Navion continues very strong and has consistently exceeded production schedules. This is an unusual and extremely healthy condition for any manufacturer of personal aircraft.

An already strong and effective sales organization for both domestic and export distribution is being further strengthened at this time. Current production is four Ryan Navions per working day. More than 350 Ryan Navions have been built and sold since production was undertaken early this year, and 540 are scheduled for completion by the end of October.

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### RYAN NAVION MILITARY PLANES

A \$2,500,000 contract with the U. S. Air Force for 158 military Ryan Navion model L-17B liaison planes, plus spare parts equivalent in dollar value to approximately another 60 airplanes, has just been received.

The Ryan Navion military L-17Bs are to be used by the Army Field Forces and the National Guard. Approximately one-third of the new planes will be assigned to occupation forces abroad, another third to Army Field Forces in this country, and the remaining third to National Guard units.

Deliveries of the L-17B planes will begin within the next two months and will continue until early spring. These will be built on the same production lines as the commercial Ryan Navions. The Army order comes at the most favorable time because it will permit an even flow of production through the winter months, when commercial plane schedules are normally reduced because of decreased seasonal demand.

The Army will use the planes for personnel and cargo carrying, general communications assignments and light transport operations. Because of their unusual ability to operate efficiently from small, rough fields, plus their rugged construction and proven ease and safety of operation, the Ryan Navions are ideal for this type of military service.

### GUIDED MISSILE DEVELOPMENT

Due to military security regulations little information can yet be released regarding Ryan's work in the field of guided missile design and manufacture, though the Ryan "Firebird" project has been under way for well over a year, and is scheduled for continued development. Total orders for this work have been approximately \$2,000,000. Research and fabrication is done at the Ryan plant, with actual flight testing by Army and Ryan technicians being conducted at the Alamogordo Air Base in New Mexico.

### JET TARGET PLANE DEVELOPMENT

The company is proud to have recently been selected over 17 competitors for a new joint Air Force-Navy project for the design and production of a service test quantity of high speed, jet-powered aircraft to be used as target planes.

There was unusually stiff competition between the country's major aircraft manufacturers for this particular project because of its outstanding future possibilities. Eighteen aircraft companies and several other contractors were invited to make proposals and 14 actual designs and bids were submitted for the XQ-2 target plane order. Our company's design was given the highest evaluation by the Air Force and was awarded the contract.

This new pilotless Ryan jet plane is less than half the size of standard fighter aircraft, and will be used as a target plane for anti-aircraft gunnery, combat plane gunnery and interception problems. No technical details can be released at this time. The project is ideally adapted to the company's engineering experience and physical facilities.

#### CONFIDENTIAL NAVY PROJECT

Meantime, important progress continues to be made on separate aircraft design and engineering research work of very advanced nature which Ryan is making for the Navy. This study has been under way for many months and will be continued. An extension and increase of this contract is now being negotiated. Due to the restricted nature of this work, no details are releasable.

#### EXHAUST MANIFOLD SYSTEMS

Because of its extensive experience in the field of design and fabrication of heat- and corrosion-resistant stainless steel products for aircraft use, Ryan continues to hold its important position of leadership as one of the largest sources of exhaust manifold systems.

For many years Ryan has produced manifolds under contract to practically every major aircraft manufacturer in the United States for the country's most modern military, passenger and transport aircraft. These exhaust systems are for installation on the huge conventional internal combustion aircraft engines which drive the propellers of many multi-engined and single-engined type planes.

Boeing .. Consolidated Vultee .. Douglas .. Fairchild .. Grumman .. Lockheed .. Martin .. North American .. Northrop .. Republic .. These and other famous names are the firms for which Ryan has long and consistently designed and built exhaust manifold systems.

#### JET AND ROCKET ENGINE COMPONENTS

With its vast knowledge of stainless steel fabrication, it was natural with the advent of the jet and rocket engines that Ryan should be called upon to also manufacture heat-resistant parts for those new and powerful engines. Tail pipes, combustion chambers and shrouds are typical of the items Ryan now builds not only for the basic type of turbo-jet engines but also for other gas turbine power plant types including ram and pulse jet engines, turbo-prop engines as well as rocket power plants.

A new large contract, which is expected to assure a minimum of three years continuous production on major assemblies of one well-known jet engine, is now being negotiated and may be announced within a matter of weeks.

Because the jet engine is relatively new, Ryan has participated in the preliminary engineering and initial stages of manufacture of many new research and experimental power plants. Many of these projects may be expected to later reach the stage of volume production, while others of the new power plants being developed by the various engine manufacturers will of necessity not be carried beyond the experimental stage. The important consideration at this time is that Ryan has been in on the "ground floor" since the jet and rocket engines first came into use, and may be expected to maintain an important position in this field in the future.

Two typical projects in which Ryan has had a part may be of interest. One is Wright Aeronautical Corporation's new "Typhoon" gas turbine engine which both drives a propeller and provides jet propulsive thrust. For this most powerful of aircraft engines, rumored by the press to be capable of approximately 10,000 horsepower, Ryan built the stainless steel ducting and exhaust system. These are the largest units of this type ever built.

Another interesting project, one for which Ryan's Metal Products Division is building the major portion of the complete assembly, including the rocket body, is the Navy's "Aerobee" sounding rocket. This work is done under direct order from the Aerojet Engineering Corp., which holds the prime contract for this rocket from the Navy.

The "Aerobee" is a new liquid-fueled Navy rocket designed primarily for upper atmosphere research. It attains an altitude of 78 miles and estimated speed of 3000 miles an hour. In addition to being a vehicle for upper atmosphere research, it is expected to produce data on rocket flight which may be applicable to other guided missile projects.

#### AIRCRAFT COMPONENTS MANUFACTURE

With the 70-group Air Force Program now getting under way, Ryan plans to expand production of major aircraft components which it builds under contract for other airframe manufacturers.

Typical of the expanding market which this type of work represents is the order Ryan recently obtained from Boeing Aircraft Company of Seattle, totaling approximately \$1,325,000. Under this new contract Ryan will build the rear fuselage sections for the huge Boeing Stratocruiser passenger airliners and for the Army's C-97 military cargo Stratofreighter. Both are four-engined transports. Work on the new order has been started in our Final Assembly building and will represent an expanding manpower requirement in the months ahead.

Employment at Ryan is now nearly 2000; compared with our post-war low of 850 reached last October. Modest, but steady increases in the work force are expected in the months ahead. Our present backlog of military orders, including items being built for other companies as well as Ryan's direct contracts with the Air Forces and Navy, total approximately \$9,000,000.

Cordially,

*J. Claude Ryan*













