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OFFICE OF NATIONAL RECOVERY ADMINISTRATION

DIVISION OF REVIEW

CASE STUDIES IN PRODUCTION CONTROL

By

Louise E. S. Eisenlohr

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TRADE PRACTICE STUDIES SECTION

MARCH, 1936

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II.

SUMMARY

The three chapters which follow are brief, summary discussions of the economic conditions in three industries which led to production control, and of the nature and effects of this control measure. Lack of time, and often of materials, has made it impossible to do more than outline the important features.

The studies are not intended, however, to be exhaustive investigation of the industries with which they deal, but rather to indicate, at least in part, the scope of the general problem of production control. The industries dealt with have been selected partly because they illustrate a variety of economic conditions, leading to a variety of measures for effecting the control of production.

Chapter I: The Cotton Bundle Work Sock Branch of the Hosiery Industry was attempting to meet the comparatively simple emergency problem of low prices. The code reduction of labor hours, it feared, would lead to the general adoption of three shifts, increase production, and threaten to offset price restoration. The code prohibition of a third shift gave rise to another error, because those members of the industry who had little or no idle capacity to use in expanding the present two shift operations found themselves unable to meet demand, while those with excess capacity were able to absorb the orders thus lost by their competitors.

Chapter II: The Machine Waste Industry faced in addition to the depression, a long-time problem of reduced demand due to the competition of substitutes. It attempted to save itself by the direct method of allocating production, having had little success under the code with price fixing, standardization of grades, and a minimum mark-up on raw materials. The case of this industry illustrates the inequalities a production control provision of this type may impose upon different sectors of an industry when it is adopted to save the diminishing business of an industry which is shrinking.

Chapter III: The Carbon Black Industry had to deal with a chronic condition of instability, due to technical causes, which was badly aggravated by stock accumulations during the depression. There is no indication that the inventory and capacity control measures which were adopted under the code were more than moderately successful, but the issues involved are peculiarly interesting because the industry was apparently already closely controlled by a few concerns, which conceived these measures to be necessary to achieve a degree of stability which they had not been able, themselves, to attain.

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CHAPTER I

SHIFT LIMITATION IN THE COTTON BUNDLE SOCK BRANCH

OF THE HOSIERY INDUSTRY

The Code for the Hosiery Industry included in Article IV, Section 6, a provision for the limitation of machine hours to two shifts of 40 hours each per week, applicable to all sections of the Industry. The object of this study is to outline the effects of this provision upon the Cotton Bundle Sock Branch of the Industry.

A brief preliminary description of the Hosiery Industry as a whole will help to give this survey of a single problem in one of its branches its proper perspective.

The Hosiery Industry has two main divisions - the full-fashioned and the seamless. The first makes only women's silk, rayon and mixed hosiery, snags and seamed. The second is subdivided into several branches, among them ribbed hose, children's socks, work socks and golf hose.

The relative importance of the two chief divisions may be seen in the following statistics for the value and volume of production in 1934. The full-fashioned division produces a higher priced article than the seamless and has therefore a higher total value, but the latter has the larger volume.

	<u>Volume (doz. pairs)</u>	<u>Value</u>
Full-fashioned	30,549,000	\$187,105,000
Seamless	<u>73,332,000</u>	<u>103,611,000</u>
Total	103,881,000	\$286,714,000

(Source: Evidence Study No. 18 of the Hosiery Industry prepared by C. E. Henderson, Nov. 1933)

The two divisions are not entirely clear cut, since some mills are engaged in the manufacture of both full-fashioned and seamless hose. A grouping of all hosiery mills on the basis of their principal output shows them in the following ratio: (as of July, 1933)

Full-fashioned	- 388
Seamless	- 265
Total	- <u>653</u>

There is a concentration of the full-fashioned division in Pennsylvania, where nearly one-half of the mills, operating 38% of the total equipment, are located, mainly in Philadelphia and Reading. Other important districts are North Carolina, New York, New Jersey and Wisconsin. The seamless division of the industry is centered principally in two districts: North Carolina, where about one-fourth of the mills are located, and Pennsylvania which claims 23%. Half the mills are in

the southern states. (*)

The cotton bundle work section consists of eleven mills - or less than 3% of the total number in the seamless division. It produced, in 1934, roughly 7,400,000 dozen pairs of socks, or 4-1/2% of the total production of the seamless division. Five mills are located in the North (Illinois 2, New York 2, Pennsylvania 1), and six in the South (Georgia 4, North Carolina 1, South Carolina 1). There was a Code minimum wage differential of \$1.00 per week for knitters in this branch (\$13.00 North-\$12.00 South). Three of the eleven companies in this branch are notably smaller than the rest; two are notably larger. The following list shows the relative size of the mills producing cotton bundle work socks.

<u>Company</u>	<u>Total No. of Machines</u>	<u>% of total</u>
Nelson Knitting Co., Rockford, Ill.	587	16.8
Powell Knitting Co., Philadelphia, Pa. and Spartanburg, S. C.	(349 (601 also (available	10.3 17.8
(gross total)	1530	28.1
Balston-Stillwater Knitting Co., Balston, N. Y.	337	10.0
Durham Hosiery Mills, Durham, N. C.	285	8.4
Forest City Knitting Co., Rockford, Ill. (New Rockford (Old Rockford Total	169 100 269	4.8 3.0 7.8
Perkins Hosiery Mills, Columbus, Ga.	267	7.8
Fibb Mfg. Co., Macon, Ga.	246	7.3
Georgia Hosiery Co., Columbus, Ga.	218	6.4
Grantville Mills Co., Grantville, Ga.	122	3.6
Seneca Knitting Co., Seneca, New York	30	2.3
Birdsboro Hosiery Mills, Birdsboro, Pa.	40	1.15
Total	5577	100

The economic condition of the industry, as it is described in the statements made by its members, is - or was at the beginning of the code period - worse than the rather meagre data available in the records would appear to bear out. Studies based on Bureau of Census Statistics (See Research and Planning Report on the Code for the Hosiery Industry, 1933, and Dillingham's Preliminary Profit Report of the Hosiery Industry, Feb. 1935) state that the peak year for production was 1929 and that during the depression the greatest decline was only 12.3% below the figure for 1929. Prices fell considerably more than production. Early in 1933 they were 49% below the level prevailing in 1929; from that time until the code was approved (August 26, 1933) they rose to 75.7% of their 1929 level. In August, 1934, they had fallen again to 57.8%, and thereafter they rose only slightly.

There was general agreement throughout the industry of the belief that it was suffering from a combination of swollen inventories. It is (*) Research and Planning Division Report on the Code for the Hosiery Industry, 1933. WIA files.

true that a change in buying habits during the 1930's affected this industry as others necessitating the maintenance of larger inventories than were formerly kept by manufacturers; but statistics on hand do not show that the inventories existing at the time the collection reported were out of line with those of previous years. A regular seasonality has prevailed in the industry during the past decade, the high months for shipments being spring and autumn. Larger inventories are prepared in expectation of these peaks, but a cursory survey of month-end inventories over a period of years shows them at all times of the year capable of supplying the demand normally anticipated for the next 6 to 10 weeks. This general rule appears to hold good for both the seamless and the full-fashioned branches of the industry. The following table will indicate this situation.

Stocks on hand December 31, 1935, and December 31, 1934, compared with shipments January and February, 1935-1934.

(Data from Statistical Bulletin of the Hosiery Code Authority, Vol. I, #9, February, 1935)

	<u>Full Fashioned Hosiery Shipments (ooo's)</u>					
	<u>1930</u>	<u>1931</u>	<u>1932</u>	<u>1933</u>	<u>1934</u>	<u>1935</u>
January	1,016	1,117	1,278	1,371	1,394	1,376
February	1,111	1,164	1,270	1,263	1,239	1,400
2 Months						
Total	2,127	2,281	2,548	2,634	2,633	2,776

December 31st stocks (ooo's)

1935 - 4135) Approximately 3 months supply, by
1934 - 445) comparison with usual shipments

Seamless Hosiery Shipments (ooo's)

	<u>1930</u>	<u>1931</u>	<u>1932</u>	<u>1933</u>	<u>1934</u>	<u>1935</u>
January	6565	6768	6992	6811	4671	4982
February	6772	6472	6678	6760	6463	6940
2 Months						
Total	13,337	13,240	13,670	13,571	11,134	11,922

December 31st stocks (ooo's)

1935 - 11,860) Approximately 2 months supply, by
1934 - 17,480) comparison with usual shipments

Similar results are shown by comparing stocks on hand March, July and October, with shipments for the 3 following months. Stocks equal from 6 to 10 weeks supply.

In 1935 inventories increased during the early summer months in

expectation of some restriction upon production. Legislation did not follow in the manner expected, and a temporary glut resulted. To remedy this situation the Code Authority succeeded in obtaining a semi-administrative approval of a temporary amendment of Article IV, Section 6, limiting machine operations for a period of 3 years to 2 shifts of 25 hours each per week. (Administrative Order 16-7).

From the available records (*) it does not appear that there were any marked differences in the respective economic conditions of the two major divisions of the Hosiery Industry, although a major shift from seamless to full-fashioned leg operations occurred during the early '30's which might have been expected to produce extreme excess capacity in the seamless division. This was caused by the swing in demand from women's cotton to full-fashioned silk hosiery. However, by the time the code arose both divisions were agreed upon the need for curtailing the use of productive machinery. Indeed there appears to be more agitation over this question in the full-fashioned division than in the seamless, and the Code Authority spent much time in studying an adjustment between full-fashioned leg and footing machine operations which would bring the desired volume of production. (**)

Exact statistical data on the number of machines, potential capacity, per cent of idle capacity, and the incidence of these factors upon individual plants in the Industry as a whole do not appear in the record. The extent to which actual idle capacity was the cause for the general demand for restriction of production cannot therefore be determined. Statements made by the Code Authority and by members of the Industry do, however, bring out the difficulties which production control was designed to remedy. None of these statements concerns idle capacity. They center around two main points:

1. The price structure.
2. The balance of production and demand.

In analysis the producer Code at the Public Hearing on August 10, 1933, Mr. Earl Constantine, Managing Director of the National Association of Hosiery Manufacturers, said that available data indicated that the reduction in output from the pre-code average of 110 per week (2 shifts of 25 hours) to 80 (" shifts of 20 hours) would balance production against demand with only a reasonable protective margin.

(*) The records examined for this case study are those in the Central Files and the files of the Division of Research and Planning of U.S.A., but do not include files of Code Authority or those of other agencies of the U.S.A.

(**) For an account of this case see discussion on the "factor shift" problem, Hosiery Industry Files of the Division of Research and Planning, Folder 16-10 - Research Studies.

The expectation of such reduction was to reduce production by 27%.*

To insure this result a shift limitation was of course a necessary corollary. Without it an increase in shifts might have destroyed the results of hours' limitation - which, though primarily a labor measure, was also an expression of the industry's interest in reducing production.

Briefly, the code provisions for production control were these:

1. That productive equipment be operated not more than 2 shifts of 40 hours. Article IV, Section 6.
2. That in the full-fashioned branch footing operations be limited to one shift of 40 hours or two of 35 hours, according to the method in effect on July 24, 1933. (Amended February 1934 to provide 2 shifts of 36 hours) Article IV, Section 7.

In view of the fact that no excessive stocks appeared to exist, the desire to limit production may be partially explained by the price situation. This has already been touched upon. The Code Authority gave much of its time during the life-time of the Code to the study of the price structure and to the enforcement of the code provision against selling below individual costs. A Code Authority Bulletin of March 17, 1934, makes the following statement, which indicates the direct connection between the production control measures of the Code and the price situation:

"It was decided to set up a special committee to study inventory and other suggested methods of production control. This subject is fundamentally the most important one we have before us because proper solution of it will bring us the desired improvement in our price structure."

Later in a memorandum to Deputy Administrator King (May 24, 1934) Mr. Constantine made the following statement:

"The condition of over-production continues to give us keenest price competition of a character that makes ineffective that provision of our code which prohibits the sale of a product below the manufacturer's individual cost. Prices today are so low and unstable as to discourage rather than encourage buying."

To remedy this situation the Code Authority, acting apparently to enforce the code prohibition of selling below cost (Art. VIII, 4),

(*) Transcript of Hearing, ops. 5-6. NRA files.

had announced on April 23, 1934, a mandatory minimum price for full-fashioned hosiery. Sales below this price were to constitute selling below cost in violation of the Code. A similar measure for seamless hosiery was also to be announced. At the same meeting further restrictions upon production were considered.

Whether there was any definite intention on the part of the industry, or sections of it, to effect a re-allocation of production through the restrictive measures of the Code is not to be ascertained from the record. That this was a result of the operation of these measures, is, however, clear. In the above mentioned memorandum to Deputy Administrator King, this aspect of the matter is brought out. The memorandum quotes from Mr. Constantino's letter of March 15, 1934, to George Sloane, then Chairman of the Cotton Textile Institute, as follows:

"The reduction of weekly machine hours in our industry from an average of 110 to 80, equivalent to 37, has had the effect of spreading production into many plants where there was inadequate production prior to the Code.

"Another interesting development which was not foreseen by us has been that larger plants with good selling or merchandising facilities, when their production was sharply reduced, proceeded to enter arrangements with smaller mills by which such small mills manufacture exclusively for the larger mill, with one order automatically following another. The prices on such inter-mill orders do not, I confess, give the small mill much margin, but this is offset by the fact that the small mill is relieved of a selling problem, and by the further fact that in most of these contracts the buying mill supplies the commodity or yarn, so that the small mill merely lends its equipment facilities and applies its labor. It is my judgment that many a small mill has been saved by arrangements of this character."

The records of the Administration do not appear to contain the statistical data necessary to study the extent of this interesting development. (*)

(*) The Code Authority's files may contain a record of this development, but there was no opportunity in preparing this study, to go through them. For us it was possible to investigate the records of the National Industrial Recovery Review Board, for an account of its summons of the Hosiery Code Authority to appear before it on March 15, 1934, to answer charges of monopoly and the oppression of small enterprises.

Another indication that the machine hour limitations produced some reallocation is found in the further statement by Mr. Constantine in the same memorandum, that the desired result of restricting production had been partially defeated by (1) the purchase of additional equipment, and (2) the operation of a second shift where there was only one before the Code. (*) In other words, mills which before the Code had operated a single shift of 55 hours and now worked two shifts of 40 hours, tended in the 35 additional machine hours thus gained, to absorb the business which former 110-hour firms, now reduced to 80 hours, could no longer take care of, except by purchasing additional equipment. And this ability to purchase additional equipment was limited to the more prosperous firms.

Briefly, then, it would appear that shift limitation in the hosiery industry as a whole was instituted (a) to forestall a general adoption of three shifts as compensation for the reduction in man-hours, which might have caused an actual increase in production, (b) to insure a dependable foundation for the restoration and maintenance of prices.

There appears to be no reason to suppose, from the facts ascertainable in the record, that the cotton bundle work sock branch of the hosiery industry did not agree with the other sections in favoring shift limitation in its code; nor were special conditions or problems apparent which would explain its support of these measures on grounds other than those outlined above. The effects of the shift limitation provisions upon this particular branch were probably no greater than on the rest of the industry, but the constant protests and requests for exemption on the part of one firm - the Forest City Company of Rockford, Ill., centered attention upon the cotton bundle work sock group. (**)

The Administration had the case of the Forest City Company constantly before it, from before the date of the Code's approval until the end of the WPA. The question it had to decide was whether the 2-shift limitation would discriminate against the Forest City Company, or whether an exemption granted to this company would discriminate against its competitors. The Code Authority consistently agreed with the Forest City Company's ten competitors, urging the Administra-

(*) The Code Authority proposed in June, 1934, to restrict the installation of new machinery, but after a public hearing on July 9th was persuaded by the Administration to withdraw its proposal.

(**) The remainder of this report draws heavily for materials upon those gathered by Carlton W. Henderson for his Study of the Cotton Bundle Work Sock Branch of the Hosiery Industry, March 7, 1935, (confidential) prepared for the Division of Research and Planning.

tion that an injustice was done in granting Forest City a provision to which all of the industry was bound. The Labor Advisory Board opposed the third-shift on general labor policy grounds. (*) The Division of Research and Planning also at first opposed an exemption for the Forest City Company (**), although some months later it was reserving its opinion pending the outcome of its own investigation of the case.

The Forest City Company filed its first petition for exemption immediately after the public hearing on the code, on August 12, 1934. Apparently no action was taken, and on September 11, (the code having become effective on September 4) the petition was renewed. On the same date the Forest City company began to operate three shifts, in violation of the Code. This situation was apparently discovered only in December, when a statement to this effect was made to the Code Authority by the company's counsel and its president. The record discloses no action up to this time on the part of the Administration toward granting the exemption.

After Forest City's open admission of its violation, however, the Code Authority transmitted to Deputy Administrator Pearson Irwin (January 11, 1934) a complete record of the case. A hearing was thereupon arranged and held on February 13, 1934, and on April 30th the Administration, after long consideration, finally exempted the Forest City Company for a period of 90 days from the restrictions of Article IV, Section C of the Code. (Administrative Order No. 13-17).

When the company asked for an extension of the Order in July, 1934, the request was denied on the basis of the claims made during the period of the exemption by the Code Authority and the competitors of Forest City. After the expiration of the Order, therefore, the Forest City Company reduced its operations to two shifts, but continued to petition the Administration for exemption. The case was finally taken to the Industrial Appeals Board on October 7, 1934, where it was decided that the Division of Research and Planning should conduct an investigation to determine final disposition of the plea, which, pending the decision, should be granted. Deputy Administrator Oppenheimer, in a summary of the case for the National Industrial Recovery Board, strongly opposed the granting of a further exemption. This opposition was overruled, however, and from November 26, 1934, until the invalidation of NIRA the company was allowed to operate three shifts. The conclusions reached by Research and Planning that the entire cotton bundle work sock branch be permitted to operate three shifts came too late for official action.

Actually, it is very doubtful if the shift limitation provision

(*) See memorandum to Deputy James C. Wortly, November 22, 1934, Control files, Hodier: Wolfey, - Forest City Company.

(**) See memorandum to Assistant Deputy, Unnamed, in same folder.

produced any effect in the cotton bundle work sock branch, except perhaps to bring some idle machinery back into use. All of the firms except one were already geared to a two-shift program, and this single three-shift firm, the Forest City Company, continued to operate three shifts under the Code. (*)

The pre-code situation was thus altered only by the reduction in labor hours. This change did not necessarily entail decreased production, since the branch as a whole, and each of the firms except one, was producing considerably less than its potential capacity. (See Table III).

The Forest City case is, nevertheless, a valuable illustration of one type of problem which may arise under a shift limitation provision. It is that of the plant which, already operating near capacity, must choose between increasing its capital investment in order to maintain its volume of three shifts on a two-shift basis, or relinquish a portion of its business to its competitors. Moreover, there were special factors which made the first alternative almost as undesirable, from the point of view of the Forest City Company, as the second.

The situation confronting Forest City was briefly this: Since 1908 it had been operating all of its machines on a three-shift basis. There were two main reasons for this: (1) To meet demand; and (2) to eliminate the large amount of waste which is produced during the first half-hour of operation. This factor of the waste involved in starting was so great as to cause an increase in waste expense of 14, i. e., from 24 to 38 per dozen, when two shifts instead of three were operated. Other cost increases resulting from the operation of two shifts instead of three, raised the total costs by 10 cents per dozen. (See Table I). Forest City's costs on a three-shift basis were already higher than those of any of its two-shift competitors, except the Powell Company, and to have met the problem by the installation of additional machinery, sufficient to maintain its usual volume of production, would have increased this disadvantage.

The difficulties of getting additional equipment, moreover, were great. The New Rockford machine was the sole property of this company, and had been developed gradually in the factory. No patterns existed and no machine manufacturer had ever produced one. An estimate which the company received for the construction of additional machines quoted a price of from \$750 to \$1000 per unit, and estimated the time necessary for producing the 100 units needed to operate on a two-shift

(*) Three shifts were operated by this company except during the period July 20 - October 22, 1934. From the inception of the Code until April 1934, when an exemption was first granted it, the Forest City Company operated three shifts in violation of the Code.

basis as from a year to eighteen months. The company's existing capitalization was then \$100,000, so that the addition of 100 machines would approximately have doubled its investment. This was nevertheless the course chosen by the Forest City Company, and in the last months of the WPA it placed an order for the manufacture of 100 additional new Rockford machines. The alternative of allowing other work sock producers to take over the business which it would have lost by operating two instead of three shifts was apparently less acceptable.

From the point of view of certain consumers, it is alleged, the effects of limitation of New Rockford sock production might have been the forced use of undesired substitutes. The New Rockford sock differs from other work socks in that it has no seams, either in the foot or in the leg. All other brands apparently have at least one seam. Buyers of new Rockford socks, it is claimed by the Forest City Company, are not satisfied with other brands; regular unsolicited orders are placed year after year, and the company has not found it necessary to employ more than one part-time salesman. Competing companies deny the superiority of the New Rockford sock, and claim that all work socks are sufficiently comparable to be entirely competitive.

The probable effects of two-shift operations on the Forest City Company from 1931 through 1934 were these. The company maintained a steady and conservative year-end inventory comparable with that of the industry as a whole, although larger (as a percent of annual shipments) than those of some of its competitors. It was, moreover, selling more than it could have produced on a two-shift basis. (See Tables II, IV and V). It appears further that if the company had been limited to two shifts during 1934 it would have lost orders for 56,140 dozen pairs of new Rockford socks, worth \$59,053. (*) Based on an average of sales taken over the last four years their loss would have been 102,808 dozen pairs, with a value of \$107,948. Based on an eight year average the loss to the company would have been 114,840 dozen, or \$120,580.

It is probable that most of this loss of an entirely normal volume of orders would have been the gain of the Nelson Company, also situated in Rockford, Illinois, and one of Forest City's largest competitors, or of the Powell Company, which had a large amount of idle capacity and claimed to produce a product indistinguishable from the New Rockford sock. The amount of idle capacity in the hands of the competitors of Forest City indicates that in this respect the latter was normally in a comparatively favorable position. (See Table III). The Powell Company in particular reported 601 machines, out of a total of 950, retired, although apparently available. The complaints of the companies competing with Forest City did not, however, involve the capacity situation. They centered rather on the large volume of goods which the Forest City Company could, and, they claimed, did,

(*) See C. E. Henderson's Report, p. 27.

produce by operating three shifts as compared with their two, and the upsetting of the market which resulted. A survey of the figures for shipments in 1934, however, shows that Forest City shared in the general decline of the entire branch, while three other companies, one large - Ballston-Stillwater - and two smaller - Seneca and Perkins - (which previously had been producing chiefly woolen work socks), made shipments larger than in 1933. Moreover, there was a general increase in shipments throughout the branch in 1933, (over 1932), in which Forest City shared practically not at all.

The precise objects of shift limitation in this branch of the industry were nowhere specifically declared. It can probably be assumed that the cotton work sock group simply shared the general desire of the industry to consolidate its price structure and prevent over-production. The elimination of the third shift in the case of the Forest City Company could not, of course, be met by calling into use retired machinery. (*) It meant, definitely, an increase in productive equipment. But the general question of the desirability of a third shift, as a point of labor policy, was not discussed by the industry, although the labor advisors in the Administration consistently, at public hearings and in briefs, protested the "grave yard shift". The only point which was made an issue in the complaints against the Forest City Company was that of the unequal advantage gained by this company in operating three shifts. A survey of the available evidence, however, indicates that Forest City's three-shift operations produced no undesirable effects upon its competitors, which were in any way peculiar to the abnormal depression period, or not a part of the normal competitive situation in the industry, and that, on the contrary, the Forest City Company would have suffered losses through restriction of its operations to two shifts. These losses would have been, briefly:

- (1) To deprive the company of a portion of its normal business.
- (2) To allocate this business to its competitors.
- (3) To deprive consumers of a particular type of product.
- (4) To force an increase in capacity on the Forest City Company.

(*) The company had some old Rockford machines not in use, but these do not make the same type of sock as the New Rockford machine.

CHAPTER II

PRODUCTION CONTROL

IN THE

MACHINED WASTE INDUSTRY

SUMMARY OF CODE STUDY

A. GENERAL STATEMENT OF THE INDUSTRY'S PROBLEM:

The dilemma of the Machined Waste Manufacturing Industry consists principally in the permanent displacement of its product by technical improvements in lubrication processes, particularly in railway cars. This has meant a drastic decline in demand and a succession of attempts to prevent market demoralization, culminating in an effort by the leading manufacturers to impose allocation of production upon the entire industry.

B. DESCRIPTION OF THE INDUSTRY

The manufacture of machined waste consists in the simple processes of sorting the thread waste bought in bales from textile plants, and mixing the various types of thread to form the particular kind of waste wanted for a specific use or to suit the requirements of a specific customer. The mixing is done with very simple machines and resembles carding. When the waste is to be used for railway journal box packing a little oil is added. The product is then ready for the market.

The raw material is the waste or by-product of the textile industries. Cotton and wool are both largely used, and rayon also has some demand. The bales are bought "blind", that is, regardless of the kind or quality of thread they contain. The two essential qualities in the finished product are resiliency and absorbtivity, the degree of each depending upon the use. Journal box packing must primarily be resilient, while the waste used for cleaning must be principally absorbant. The quality of the finished product is very variable, and although every manufacturer makes many different mixtures, and sells them for their peculiar qualities, it is actually extremely difficult to judge the composition of the finished product, so that even experienced buyers cannot be sure if their specifications are met.

The railways are the largest single customer of the industry, with the Government second in importance. Together they consume 70% to 80% of the industry's product. The railways use machined waste both for journal box packing and for cleaning and lubricating. The Government's uses are for the railways in the insular possessions and in Panama, for warships, for army and navy equipment, and for cleaning purposes in its public buildings. The third outlet is to various industrial consumers, for use in cleaning and oiling mechanical equipment.

C. ECONOMIC CONDITIONS IN THE INDUSTRY

The Machined Waste Industry has always been unorganized. Even under the code it was impossible to achieve cooperation, although attempts to that end have been made for 30 years. There are reported to be forty-one individual concerns in the industry. Of these the Administration Member of the Code Authority (in an interview with the writer) reported some six or seven to be large units, twelve to fifteen of medium size, and the rest very small. Statistics which would show definitely the relative importance of individual firms are entirely lacking, although it is possible that they may exist in the files of the firm of Stevenson, Jordan and Harrison, which was called into manage the industry under the code.

When the code was presented to the Administration it was accompanied by estimated figures of production and capacity. Shortly thereafter Stevenson, Jordan and Harrison made a survey of the industry and produced the following data: (*) Since 1923 no new members had entered the industry. Since 1926 no new capacity had been installed. There were, in 1933, 136 machines (among the 30 members reporting), each machine having an average capacity of 1,200,000 pounds per year of 300 days on an eight-hour day operating schedule. The total capacity of these plant, on a one-shift basis, was thus 163,200,000 pounds. A graphic picture of the decline of the industry since 1926 was shown in the following figures:

SHIPMENTS OF MACHINED WASTE INDUSTRY (30 COMPANIES ONLY)

<u>Year</u>	<u>Pounds</u>	<u>Gross Sales Value</u>
1926	91,698,611	\$ 11,030,465
1927	84,115,598	8,992,067
1928	76,982,471	8,030,430
1929	79,642,640	8,131,235
1930	66,241,286	6,166,141
1931	47,523,630	3,705,367
1932	32,884,691	1,894,590
1933 (1st 6 Mos.)	18,872,510	1,028,489

1932 shipments dropped to 36% of the 1926 figures, while the gross value of the shipments dropped to 17%. Average prices fell in the same time from 12 cents to 5 cents per pound.

The causes for this decline, which set in before the general depression, are of two kinds; a shrinking market due to the development

(*) The figures are for 30 companies, but 9 of these are based on estimates.

of better lubricating methods, the development of the process of reclaiming used waste and the competition of cheap rags imported from Japan. No new uses have been developed to offset these losses. (*) The Industry has claimed that the reclamation of used waste, a practice which the railways have begun, is uneconomic. An attempt was made to discover through the Interstate Commerce Commission the exact extent of this practice and its effect upon the Machined Waste Industry, but no adequate figures could be found. (**) In describing the process of reclamation, the Administration Member of the Code Authority (in an interview with the writer) said that approximately 30% of new waste had to be added to the amount reclaimed to make up the portion worn away in use. Seventy per cent of the waste reclaimed, therefore, represents the loss in tonnage to the industry from this displacement of its products. It is estimated that the amount reclaimed runs into millions of pounds annually.

D. COMPETITIVE SITUATION WITHIN THE INDUSTRY

The decline of the industry to its 1933 level intensified competition for the remaining markets. Out of the forty-one firms in the industry it was reported by the Administration Member of the Code Authority that any six, or the three largest, could supply the entire demand. The Administration Member appears to believe that the spirit of fair play in the industry has prevented the elimination of the weaker members by the few large concerns. While this may be true, it would nevertheless be difficult for the larger manufacturers, even if they wanted to, to gain complete control over the industry because of the cheap and plentiful supplies of raw materials available. While the large manufacturers do gain an advantage over the smaller ones in being able to buy on a contract basis the entire waste output of large textile mills, they could scarcely command the total supply throughout the country. Nor is the market assured to the large manufacturer, for the following reason: The principal purchasers, the railways, prefer to buy from the mill farthest removed from the shops for which the machined waste is destined, so as to collect the largest possible freight charges from the shipper. Even when the waste is not shipped over the road of the purchasing company, the latter is able by agreement to obtain a part of the freight charged by his competitor. (***)

The possibility of monopoly is further reduced by the fact that individual consumers need, or have been persuaded to believe that they need, particular mixtures of waste which only a certain company can furnish. Practically all companies have their own "secret" mixtures.

The greatest advantage of the large manufacturers is obtained indirectly by the fact that all of them are principally in other lines of business and manufacture machined waste only as a side line. The large

(*) Letter from Administration Member Lionel Bailey to the Deputy Administrator, May 18, 1935. Files of the Deputy Administrator, Folder: Administration Member.

(**) Deputy's Files, Folder: Code Authority - General, contains correspondence from the Interstate Commerce Commission giving fragmentary information on waste reclamation.

(***) Information developed by Administration Member of the Code Authority, in interviews with members of the industry, and furnished to the writer.

amount of traffic which they can offer the railroads through the shipment of their principal products is the bait used to secure purchase of their machined waste, the sale of which, in turn, helps to defray freight bills. The Administration Member of the Code Authority has said to the writer that some of the largest firms manufacturing machined waste entered into this business solely for the freight advantage involved, although their main business was entirely unconnected with it. The Miller Waste Mills, Inc., of Winona, Minnesota, for instance, is a large manufacturer of machined waste whose principal business is the wholesale grocery trade. Other large manufacturers are primarily dealers in other products with a textile base such as wet and dry mops, candle wicks, and burlap bags, the raw materials for which come, like thread waste, from the textile mills. The largest company is the Royal, of Rahway, N. J., which is an importing, exporting, and jobbing concern dealing in mops and allied textile products. There appears to be a distinct line between these large concerns and the smaller ones which are engaged only in machining waste. The textile mills which furnish the raw material for the machined waste industry curiously do not machine any themselves. The reason appears to be that the manufacture of waste requires both cotton and woolen thread, so that no single mill can supply the total raw material necessary, and the effort and expense of buying any missing portion is not worth while when the thread waste on hand can be sold readily at a clear profit.

While a superior position is thus held by the larger concerns in that they can buy raw materials in large quantities on a favorable basis and can fulfill the requirements of the largest consumers of the finished products, in some measure even commanding their custom, the small members of the industry are left with a fairly free field among the other industrial users of machined waste. The easy availability of raw material, the cheapness of machinery and the ability to satisfy individual specifications give the small manufacturer a safe position in his own field. The industry, as well as the market, is thus divided into two distinct sections.

E. THE INDUSTRY UNDER THE CODE

The Code contained two provisions for controlling production. The first, Article III, 2, was a limitation of machine hours to a single shift of forty hours per week. There is nothing in the records to indicate whether any members of the industry had been working more than one shift before the Code was enacted, but the decline in the market of the previous years makes this unlikely. The industry, however, had been working on a forty-eight and fifty-hour week basis, so that with the reduction to forty hours, and the shift limitation, a reduction in total operating hours must have resulted. There are no figures in the records to show the actual effect of this provision on the industry. Its expressed object was to spread employment, and the report to the President, which accompanied the Code, stated that the increase in employment would be in exact proportion to the decrease in hours of operation. But the nature of the machining process is such that while the decrease in hours would automatically result in a proportionate increase in the number of machines operated, provided volume remained stable, the anticipated amount of re-employment could be avoided by a stretch-out. What the actual results were is not a matter of Administration record, but it is important to note at this point the supreme importance to the industry of renewing the use of as much retired capacity as possible.

The over-capacity problem was undoubtedly most acute among those firms in the industry which supplied the dwindling railway market, but the specific effects of this provision on individual members of the industry or on sections of the industry, can only be found in the capacity and production statistics of individual concerns. The industry's management firm, Stevenson, Jordan and Harrison, is reported (*) to have such information in its files, but none exists in the records of the Administration.

Article VI, 2, (a) (1) of the Code provided that the Code Authority might recommend to the Administration the registration of productive capacity and the requirement of certificates permitting the installation of new capacity, except for replacement. It might be noted that, as in the case of the one-shift limitation, the effects of this provision would have been favorable, first, to the owners of the greatest amount of idle capacity, who were presumably those supplying the railways. By a resolution of April 5-6, 1934, the Code Authority did recommend to the Administration to restrict installation of new machinery, but the Administration refused its approval. (**) It should be noted that when the Code was adopted there had been no increase in capacity since 1926.

One year's experience convinced the industry that the code did not serve its interests. The main effort to regulate competition through the Code was by price fixing, but this article proved entirely ineffective as a means of stabilizing price. The great variety of brands, the absence of standards, and the extreme variability of costs destroyed any basis for stable prices. The result was that when the first price filings came in, 721 prices were filed on cotton and wool waste and journal box packing, in addition to 136 quantity discounts, and 53 other charges for small-quantity orders. Cost accounting was provided for in the Code but was never set up. A minimum mark-up on raw material cost was proposed late in the history of the Code, but did not receive administrative approval. A committee to establish standards of grade and quality was appointed, but the findings were not accepted by the industry.

Allocation of production, proposed by the industry at one stage of the code's formation, but not accepted by the Administration, was considered by the industry to be the best solution of its problem. The plan proposed was a typical Stevenson, Jordan and Harrison management plan and was probably proposed by them to the industry whose agents they were. (***)

In March, 1934, the representative of Stevenson, Jordan and Harrison presented a complete plan of allocation to the industry, recommending its adoption. This plan was apparently never formally presented to the Administration, although it may have been discussed by the Assistant Deputy Administrator and the representative of Stevenson, Jordan and Harrison at a conference on June 19. (****)

(*) By the Administration Member, in an interview with the writer.

(**) Deputy files, folder: Meetings, and Code History, p. 39.

(***) Volume A. NRA files.

(****) A copy of the plan is in the files of the Trade Practice Studies section of NRA.

The plan was based on the following principles:

The determination of the total production of the industry from 1926 to 1933.

The determination of each member's percentage share in the total, the first seven years and the last year being calculated separately, and a final average being determined by giving 50% weight to each period.

Appeal to the Code Authority for a re-assignment of percentages.

Submission of a monthly record of shipments to the Executive Officer of the Code Authority.

The adjustment of shipments so that the average will not be exceeded over a period of months, though it may do so in any single month.

The adjustment of orders in excess of assigned percentages by transfer to companies not in excess of their monthly allowance.

The industry's attempt to solve its problems by this means was interpreted by the Code Authority's Administration Member (in an interview with the writer) as an evidence of the spirit of live and let live in a declining industry. This might have been true had the entire industry been in competition for a single market. In this case, however, there was a fairly distinct division of the market into large consumers - principally the railways - and the smaller industrial consumers. The manufacturers supplying to large consumers shared among themselves a field of competition more or less apart from that shared by the other units in the industry. Aside from individual competition, there was thus a group competitive interest as well. When the demand for journal box packing began to decline, it was, therefore, a distinct part of the market that was affected, and with it a distinct sector of the industry. It is true that a general decline in the use of machined waste has occurred, due (a) to the importation of cheap substitutes and (b) to the closing of many industrial plants during the depression, which has undoubtedly affected the entire industry; but the largest decline by far has occurred in the journal box packing market. To introduce allocation of production at this point, therefore, would be, not to divide equitably the industry's common loss, but to force all of its members to share the distress of one group, and to allow the latter to share the relatively favorable position of the other concerns.

The detailed data necessary to show how allocation would work out would have to include figures on individual and total production, and figures on sales of individual firms to types of customers. There is no definite record of the existence of this information, but the Administration Member has said to the writer that individual statistics on sales to classes of customers were compiled by the management of the Code Authority.

The idea of allocation of production has apparently taken firm root in the industry. A new association formed in 1934 is described by the Administration Member in the following terms:

"In the Fall of 1933, the Code Authority finding that Administrative approval was not forthcoming on certain amendments and proposals to control production, leading Machiners in the Industry met to discuss the situation and decided to form another Association entirely apart from the Waste Manufacturers' Association. After three or four such meetings, the Thread Waste Institute was formed, the organizing membership being about twelve firms. This new Association has not become active since the objects of the Institute cannot be attained until the membership represents at least 85% of the industry by volume.

"The members of the Institute have apparently been pledged to secrecy concerning the purposes of the Association, but from the meager information obtainable to date, it appears that the Institute is to supervise an allocation system, whereby all members of the industry will regulate their production as dictated by the Institute.

"All members of the Institute are bonded to provide for liquidated damages or fines in event they violate the instructions given.

"It is felt that in this way prices will return to a level where a profit may be realized on every order, and sales below cost ended.

"It is believed that plans of the organizers will soon be realized and the Institute begin to function, since a club in the form of high prices for raw materials is being waved over the heads of hesitating members. Non-Institute members will be required to pay half again or double the price that Institute Members pay for their raw materials, which would make the price of their finished product so high that Institute members could underbid them at will.

"As stated above, these plans have not as yet been put into action. The Administration Member has found that members of the Industry will discuss any topic with him but that of the Institute. Who the officers are, the governing body, or where Institute Office is, at this time is unknown."

To sum up, it would appear that the industry has gone through a logical sequence of developments, consisting in (a) depression and declining markets, particularly for one important sector of the industry; (b) complete demoralization of the industry through cut-throat competition all along the line, but particularly through price-cutting without regard to costs; (c) attempts under the Code to raise prices to a profitable level by establishing standard grades, open price filing, uniform cost accounting and a minimum mark-up on raw materials, and (d) a final attempt to achieve a profitable level and the even distribution of business through allocation of production.

CHAPTER III

THE CARBON BLACK MANUFACTURING INDUSTRY *

The Carbon Black Industry had a double problem to meet during the code period. First, the depression had caused a serious decline in the normal demand of the chief industrial consumers of carbon black, principally the tire industry. Stocks, which had been excessively large since 1929, were dragging down the price level. Second, a new and large supply of gas, the raw material of carbon black, was made available in Texas in 1933, threatening increased production and the aggravation of the inventory and price situations brought on by the depression. Some instability in the raw material supply is a normal condition in the carbon black industry, and is a determining factor in the volume of production. The Texas situation was more than usually disturbing, however, due both to the volume of the new supplies and to the special circumstances of the depression.

Before discussing the economic conditions of the industry and the measures adopted to deal with them it might be of some value to examine briefly the technical background of carbon black manufacture.

Carbon Black is a jet-black, fluffy, extremely finely divided material made by burning natural gas in a deficiency of oxygen.

There are two methods of production - the "contact" method, in which the black is deposited when the gas flame impinges on a relatively cold surface, and the "furnace" or "retort" method in which the gas is pre-heated and then burned with insufficient oxygen under pressure in a tower containing refractory material. (**).

The Natural Gas Products Association (***) which presented the Code for the Carbon Black Manufacturing Industry to the NRA recognizes only the product of the contact method as a true carbon black and the contact product only is covered by the code, which defines it as follows:

The term 'carbon black' includes any black pigments produced in whole or in part from natural gas, casing-head gas, or residue gas by the impinging of a flame upon a channel, disk, or plate. (****)

(*) This Chapter has been prepared from material gathered by Mr. A. L. Cox.

(**) Mineral Resources of the United States, 1929 - Part II

(***) The Code for the Carbon Black Manufacturing Industry was sponsored by the National Gas Products Association, established in 1920, the office of which is located at 500 Fifth Avenue, New York City. The Association claimed to represent eleven of the seventeen members of the Industry and 93% of the total production. Three of the six members not represented were inactive.

(****) Approved Code No. 269, Article II, Section 1.

Some of the qualities of contact blacks are absent in the retort product, although the yield of the latter per thousand cubic feet of gas is much greater.

The contact method may be further classified as channel, disk, plate and roller processes. (*) The name indicates the type of surface on which the black is deposited. The channel process accounts for about 80 per cent of total production. A plant consists of a group of burner buildings, sometimes one hundred or more in number, built of sheet iron and steel. In each building, a multitude of gas flames impinge upon slowly oscillating channels, disks, plates, or rollers. The black is deposited on the surfaces from which it is scraped by automatic scrapers; falls upon screw conveyers, by which it is carried to the packing houses and is there mechanically sifted, bolted and compressed and packed in 10¹ pound bags. The process is largely automatic (**) and is continuous as intermittent operation interferes with the quality of the product. No person can safely enter the burner building while the process is going on.

The above described process has been in use for many years and few technological advances have been made, except in preparation for shipping. Carbon Black can now be compressed into hard, slippery pellets about the size of number 7 or 8 shot. These pellets can be shipped in bulk thus eliminating the necessity for compressing the black and packing in bags. It is understood that this process has been patented and that its use is being licensed to other members of the industry.

Carbon black as a coloring pigment began to compete with lamp black after 1860, but because of its more intense color and greater tinting strength its use in inks and paints gained rapidly in importance. Although the present consumption of carbon black in printing ink is not large, relative to other uses, it is perhaps the most important use for no other product will duplicate its spreading properties for ink. One pound of carbon black mixed with eight pounds of oil gives enough ink to cover nearly an acre of surface. No other coloring material can approach this "covering power." (***).

As measured by volume, the most important use of carbon black is as an ingredient in the manufacture of rubber. This use was first tried in 1915 and since then has steadily increased. As recently as fifteen years ago most of the automobile tires were red or white and were good for only about five thousand miles. Now, due to the use of carbon black which adds materially to the toughness of the product, tires are practically all black and are good for about fifteen thousand miles. In 1929 about two pounds of carbon black were used in each tire or casing. (****).

(*) Mineral Resources of the United States - 1929, Part II.

(**) Transcript of Hearing November 16, 1933, page 8.

(***) Mineral Resources of the United States - 1929, Part II.

(****) Mineral Resources of the United States - 1929, Part II.

The third important use of carbon black is as a coloring agent in paints, varnishes, and lacquers. It is also a valuable ingredient in the manufacture of such products as shoe and stove polishes, phonograph records, artificial stones, crayons, carbon paper and typewriter ribbons. (*).

The following table shows the percentage of total domestic deliveries consumed by each of the above uses for the years 1928-1934. (**).

	1928	1929	1930	1931	1932	1933	1934
Rubber	70%	70%	77%	83%	81%	86%	86%
Printing Ink	13%	14%	11%	10%	11%	8%	8%
Paint, Varnish and Lacquer	10%	9%	7%	4%	5%	3%	3%
Miscellaneous	7%	5%	5%	3%	3%	3%	3%

The United States has a virtual monopoly on the production of carbon black although one plant is believed to have been recently constructed in Rumania and one in Japan. Our exports of the product steadily increased up to 1934 as shown by the following table of total sales and per cent exported. (***)

	1928	1929	1930	1931	1932	1933	1934
Total Sales (millions of lbs.)	281	284	252	258	262	375	313
Percent Exported	28%	32%	33%	37%	38%	41%	39%

Carbon black meets some slight competition from such products as zinc oxide, bone black, and lamp black. For example, carbon black has largely displaced zinc oxide in the rubber industry because it is better adapted as a filler and because it produces a tougher product. Furthermore the prices of competing products have generally been higher; in 1931, the price of bone black was 3.9 cents per pound, lamp black 9.4 cents, and zinc oxide 6.2 cents, compared with a price of 3.07 for carbon black. (****). (The November 11, 1935, issue of the Oil, Paint, and Drug Reporter, reports the following prices per pound for carload lots: bone black 8 cents, freight allowed; lamp black 8 cents, f.o.b. New York; zinc oxide 5 cents, delivered; carbon black, to Gulf States 4.45 cents delivered, - to Ohio, Michigan, etc. 5.05 cents delivered.)

It should be noted here that carbon black as defined by the code has some competition from thermatomic, or retort, carbon black. The

(*) Mineral Resources of the United States - 1929 Part II

(**) Bureau of Mines Bulletins

(***) Bureau of Mines Bulletins.

(****) Bureau of Mines Bulletin - 1931, page 34.

Bureau of Mines Bulletin (*) states that there is considerable competition between retort black and channel black in the Rubber Industry. One is led to believe that "considerable competition" is an exaggerated statement, however, in view of the fact that channel black represented 91% of total production in 1931 and 93% in 1932. (**). Further, "channel" black is only one of the "contact" blacks; the roller process is responsible for nearly all the black used for printing ink. This further reduces the percentages produced by the retort or thermotomic method. It appears, therefore, that the retort method is still in its infancy and was not sufficiently competitive in 1933 to warrant any great effort to bring its users under the Code. Further the contact black producers claim that thermotomic or retort black is not a true carbon black.

Natural gas, the raw material of the Carbon Black Manufacturing Industry, is of two types, - gas which is found alone with no other matter present, generally designated as "natural" gas, and gas which is present in oil wells and which is obtained as a by-product of the recovery of crude oil, generally known as "casinghead" gas. (The two terms are used herein in contradistinction to each other.)

It has already been indicated that much of the instability of the carbon black industry is the result of fluctuations in its raw material supplies. This is due not only to new discoveries and depletion of resources, but also to restrictive state legislation, which makes the amount of gas available dependent largely upon the activities of pipe line and gasoline concerns. Gas conservation programs require that the consumption of a potentially valuable fuel be placed under control and most of the gas producing states have, by statute, either entirely prohibited the use of natural gas for the manufacture of carbon black, (***) or prohibited its use except when the heat therein contained is fully utilized for other manufacturing or domestic purposes, (****) or prohibited its use except where the gasoline content of the natural gas is first extracted, (*****) with certain conditions such as the obtaining of permits, limitation on amount of gas to be so used, the absence of present or possible future markets wherein the natural gas would be more fully utilized by domestic or industrial users.

The statutes prohibiting the use of natural gas for the production of carbon black when there is a present or possible future domestic or

(*) Bureau of Mines Bulletin - 1931, page 54.

(**) Bureau of Mines Bulletin, - 1932-1933, p. 546.

(***) State of Arkansas - Act 350 of 1925.

(****) State of South Dakota, Act of March 6, 1929, Chapter 202 and State of Wyoming, Act of February 24, 1919, Chapter 125.

(*****) State of Louisiana - Act 91 of 1922 and Act 252 of 1924
 State of New Mexico - Bulletin 1B, New Mexico State Land Office
 1931 State of Texas - Article 6006, SB #92 Chapter 100, 1933.

industrial outlet for the gas, are of course intended to conserve a valuable natural resource for its most beneficial use. The use of gas for the extraction of carbon black is an extremely wasteful process. The average price of natural gas used in the domestic market is much higher than that of gas sold to carbon black plants. To which consumer it is sold depends on the location of the wells in relation to pipe lines or thickly populated communities. Consequently, the carbon black plants are located near gas wells or gasoline refineries in remote and sparsely settled areas. When pipe lines are brought into such areas, the gas is consigned to them and the carbon black plants move on to new and relatively undeveloped areas from which there is not outlet to a domestic market (*1) Casinghead gas has a relatively high gasoline content. What remains after the gasoline content is extracted is known as "residue" gas. Pipe line companies have refused to buy this gas because it contains hydrogen sulphide which gives off an obnoxious odor. (**). Consequently, the residue gas must either be blown into the air or used for the production of carbon black. (In some cases there is another alternative of returning the gas into the ground to repressure the oil well. This will probably be more important in the future than it has been in the past.) The gasoline refiner of course prefers to sell his residue gas for whatever he can get rather than waste it, and that circumstance has served to drive the price of residue gas to an extremely low level, as shown by the following prices in Texas per thousand cubic feet of gas: 1927, 3.14; 1928, 2.54; 1929, 1.77; 1930, 1.06; 1931, 1.74; 1932, 1.34; 1933, 1.74; (***) This low price naturally encouraged the establishment of new carbon black plants with consequent increase in production. In addition, this condition created a temptation for gasoline refiners to construct carbon black plants when they were unable to find a market for their residue gas in established carbon black plants. At the present time, however, there seems to be only one oil company, the Magnolia Petroleum Company, which engages in the production of carbon black.

The use of natural gas has resulted in even greater pressure towards increased production than has the use of casinghead gas. As stated above the gasoline content of the latter is relatively high, the average in the Texas Panhandle being from one to two gallons per thousand cubic feet of gas, while the average for natural gas is only about .3 of a gallon of gasoline per thousand cubic feet gas. (****) Many owners and leaseholders of large natural gas reserves, having no adequate markets, find it is entirely profitable to produce gas and extract the

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- (*) Carbon Black - Its Manufacture, Properties & Uses - Bureau of Mines, 1921.
- (1) While the whole industry seldom employed over 1300 men, it must often build houses or supply water etc. for its limited labor force in such large or less remote places.
- (**) Vol. 4, Report of Research and Planning Division, pp. 15-16. NRA files.
- (***) Bureau of Mines Bulletin on Natural Gas.
- (****) Volume A, p. 39. Letter from Association. NRA files.

asoline content thereof. The profitability or even the feasibility of this course, however, often depends on the ability of the gasoline extractor plant to gain some income from the residue gas. It is not necessary always that a market be found for the entire residue, but if the revenue of the gasoline plant can be supplemented by the sale of a part of the residue gas, its operations can be put on a profitable basis. (*) The ability to market a part of the residue gas for carbon black purposes may therefore determine whether or not a plant of this type is built at all.

It can be seen from the above, that a tremendous outside pressure to produce is continuously being exerted on the carbon black manufacturing industry. In 1933, this pressure was augmented by a change in the conservation policy of the State of Texas. Previous to that year, carbon black production had been limited to the use of residue oil and gas but by a statute (**) passed in 1933 they were allowed to use residue natural, or dry, gas as well. This may have been a factor in the increase in production which occurred in 1934 and 1935.

The following figures for production were furnished by the Bureau of Mines (***):

Year	Production (Million lbs.)	No. of Plants	Sales (Million lbs.)	Stocks (as of Dec. 31) (Million lbs.)	Prices (per lb.)
1928	249	65	281	50	\$.05 (Av. 1925-1929)
1929	336	71	364	139	
1930	330	69	352	259	.039
1931	331	58	258	230	.030
1932	243	50	262	253	.027
1933	269	50	375	152	.037
1934	329	50	515	172	.035

It appears that the industry's low period was during the years 1928 through 1930. Production was in excess of sales, stocks were increasing, and prices were declining. During this period a general migration from Louisiana to Texas was occurring, which may account for this expansion in our State. Louisiana was the leading carbon black producing state through 1928, but in 1929 Texas took the lead, production in the State increasing from 31,300,000 lbs. in 1928 to 139,100,000 lbs. in 1929 and in the rest of the state from 100,300,000 lbs. in 1928 to 228,100,000 lbs. in 1929. (****)

(*) Volume A, p. 79 - Letter Prod. Association. WRA files.

(**) State of Texas, Art. 300, S., §21, Chapter 100.

(***) Bureau of Mines Bulletin - Carbon Black.

(****) Vol. II, Report of Research and Planning Division. WRA files

After 1931 production seems to have slowed down, and increased sales reduced the accumulated stocks. Prices continued to fall however, and the number of plants was reduced slightly. Only after the code was in operation, was there a change. Production rose in 1934, and although sales declined and stocks again began to mount, prices rose to their highest level in four years.

There appear to have been two chief reasons for the Industry's desire in 1932 for control of capacity and production: one was the threat to prices from the heavy stocks (*) built up during the depression and the other was the change in 1932 in the conservation policy of the State of Texas, which was expected to encourage the expansion of the industry there.

The approved Code contained a provision (**) for the control of inventories to the effect that each member, without infringing obligations existing on November 26, 1933, for the purchase of gas, should regulate his production so that it should not exceed current deliveries. It further provided that if any member should find, at the end of any period of six calendar months, that his stocks of carbon black had increased (except through purchase of black or unavoidable purchase of gas) he should take measures to reduce his stocks by the same amount during the next six calendar months; but if any member increased his inventories by fulfilling existing obligations for the purchase of gas the other members should not be required to restrict their inventories below a percentage or increase equal to that of such member. The Article as originally proposed by the Industry did not include this proviso, but one member, the Imperial Oil and Gas Products Company, protested this (***) and was successful in having the Article in question thus amended. The chief basis of this company's protest was that the larger companies had contracts for the purchase of gas, while most of the small members did not. The restriction against increases in stocks would thus affect only the small members while the large ones could build up huge stocks to their considerable advantage.

Little information concerning the administration of this provision was available within the Administration, but upon request the former secretary of the Code Authority wrote the following letter, dated November, 19, 1935 to H. E. Drury, outlining the activities of the Code Authority in that regard:

(*) See figures cited immediately above from Bureau of Mines Bulletins.

(**) Approved Code No. 269, Article IV, Section 1.

(***) Volume I, page 29, MRA files.

"The belief which seems to have come to me from your letter of October 30th, that the provisions of the Code for the Carbon Black Manufacturing Industry governing the control of inventory and the control of capacity laid down rigid specifications to be literally observed, is a mistaken one. The Code Authority viewed them rather as industry principles accepted and self-imposed by all producers and relied on each member of the industry to use them as a guide to his operations. This reliance was not misplaced and it was, therefore, never necessary during the time the Code was in force to officially enforce the provisions.

"In this industry no other interpretation of the phrase 'In case at the end of any period of six calendar months...' could have stood up than that the six months period was a moving one. The statistical position at any given date is important in this industry as it relates to trends over extended periods. The Code Authority therefore regarded the inventory provision from the standpoint of tendencies. Since the individual members of the industry on their own initiative took care to see that large accumulations did not take place, being aided in doing so by a relatively free movement of goods, the Code Authority never found it necessary to take action on the inventory provisions. On one occasion it seemed to me personally that a tendency of accumulation was beginning, and I took it upon myself, simply in an advisory capacity as Secretary of the Code Authority, to focus the attention of all members of the industry thereon. Any action was unnecessary, for within a short time the tendency reversed itself from natural causes.

"As to whether or not the presence of the new capacity provision in the Code had a deterrent effect on capacity increases which might otherwise have been made, only an inconclusive answer can be given. All the members of our industry were conscientiously cooperative and each regarded the Code as the expression of his own individual will, as well as the credo of the industry. That attitude doubtless persuaded each member to self-regulation and placed a check on individual ambitions, thus saving the Code Authority the necessity of invoking the capacity provision. There were two or three rumors that strangers to the industry were considering or even contemplating entering into the field and erecting new capacity. In each case I mailed a copy of the Code to the interested part and called attention to the capacity provision. In no case did I have any reply, and in no case was the capacity built. Whether or not the Code provision deterred the prospective entrant into the carbon black business is indeterminate. It is just as likely that the rumor of intention to build was not well founded.

"As to prices in the industry today, they seem to remain on the whole as they were thru 1934. The enclosed statistical

report will give you the position of production, sales and stocks as of October 31st.

"I regret that I am unable to answer the questions posed in your letter of October 30th any more definitely than I have done above. You will understand, I am sure, that this is not due to my unwillingness to do so. It arises out of the fact that the Carbon Black Industry is a small one, which favored its achieving that happy state of cooperation which made control and regulation through an imposed authority practically unnecessary".

A further article of the code (*) provided that the capacity of the Industry should not be increased except with the approval of the Code Authority and the Administrator. According to the files of the Deputy Administrator, no cases or applications arose under this provision although several inquiries concerning it were received. The former Administration Member of the Code Authority, however, has advised that one case did come before the Code Authority. In that instance it appears that the J. M. Huber Company had closed down its plant in Louisiana and was purchasing its requirements of black from the United Carbon Company. The latter company refused to renew the contract upon its termination and the J. M. Huber Company stated that unless some other company would supply its requirements, it would remove the Louisiana plant to Texas and start production. The Code Authority claimed that such action would constitute an increase in capacity and that, therefore, its permission and approval of the Administrator was required. The question was referred for settlement to the Administration Member, who ruled that the relocation of the Louisiana plant would not constitute a capacity increase. Unfortunately, it is not known whether the plant was moved or whether some other company agreed to fill the requirements of the J. M. Huber Company. In view of the lack of pressure for new capacity there is ground for question of the industry's expressed fear of large new buildings in Texas.

There appears to have been more success under the code, - judging by the summary statistics above - in bringing prices up than in keeping production and stocks down. While the complete data necessary to establish the story behind this development is lacking, one or two points on special conditions in the Industry which have not yet been brought up may at least serve as clues to be followed in any further investigation.

It appears, for instance, that for practical purposes, a unified control has existed for some time. The Cabot Companies, the Columbian Carbon Company, and the United Carbon Company, with their subsidiaries, account for over 75% of the total production of the Industry, and it is the opinion of the former Administration Member that the Cabot concern is a large stockholder in the two last mentioned firms. It should be noted that the Code Authority was unusually democratic, and included a

(*) Approved Code No. 269, Article IV, Section 2.

representative of every firm in the industry.

It is also interesting to note in this connection the statement of the Administration Member that under the price filing provision of the Code (*), the stated prices were filed by all members of the Industry.

Further, the basing point system under which the Industry operates, and about which there appears to be little precise information, might well repay more careful investigation.

Another interesting development, which may affect the control of capacity, is the possibility of patent control. It is said that the development by the Godfrey L. Cabot Company of the method of reducing carbon black to pellets for bulk shipment will greatly reduce costs. It is possible, therefore, that a restrictive licensing of the use of this development will set up a virtual monopoly in the Carbon Black Manufacturing Industry, somewhat similar to that claimed to exist in the Glass Container Industry, in which the Owens-Illinois Glass Corporation is said to hold the great majority of necessary patents.

An important body of information might be developed by an investigation of the activities of the export association of the Industry. Carbon Black Exports, Inc., is a corporation formed by the Industry under the Webb-Pomerene Act. Information on this corporation is in the files of the Federal Trade Commission but is confidential and access thereto could not be had. It is possible that this information would shed additional light on the general condition of the Industry by showing the type of allocation practiced with regard to foreign shipments.

Again, the large increase in capitalization which has occurred in the Industry might be investigated. Invested capital in the Industry jumped from \$24,586,000 in 1926 to \$41,400,000 in 1929 and to \$37,378,000 in 1930. From 1930 to 1935 this figure increased steadily to \$50,257,000. (**). It is possible that this increase was due merely to a general recapitalization within the Industry. Another explanation may have been the acquisition of ownership in long term leases in gas properties, although it is thought that the great majority of producers do not control their gas supplies except through contracts with the gasoline extraction plants. Investigation might show, of course, that the Texas expansion alone explained the capitalization situation.

(*) Approved Code No. 1935. Article V

(**) Volume II, Application for Code, FEA files

Finally the entire cost-price relationship should be investigated. One of the causes of instability in the industry appears to have been the difference in prices between the two principal gas producing areas, Louisiana and Texas.

Price of Natural Gas

(Cents per thousand cubic feet)

<u>Year</u>	<u>Louisiana</u>	<u>Texas</u>
1927	2.4	3.1
1928	2.4	2.5
1929	2.3	1.7
1930	2.8	2.0
1931	2.8	1.7
1932	2.6	1.3
1933	2.6	1.7
1934	2.5	1.4

Prices for carbon black, however, are the same in these two states, and it seems evident therefore that either production costs other than that of gas, or profits, in Louisiana and Texas, must differ widely. (*) No detailed cost information appears to be available. The following statement (**) published in 1933, contained the only information on costs which the writer could discover:

"The cost of operation not including cost of gas, varies from 23¢ to 26.00 per hundred pounds of carbon black produced. This takes into account labor, sucking and re-sucking, depreciation, supplies and repairs. The labor costs are notably low because most of the work is performed automatically by machinery.

"The cost of gas ranges from 1.5¢ to 6.5¢ per thousand cubic feet of gas, and is the largest expense and the most uncertain factor in the carbon black industry. Most of the companies charge 10¢ per year to depreciation although one company charges off 12.8%. This figure assumes to cover the hazard in the supply of gas. Depreciation of machinery is surprisingly small."

While the above throws some light on the subject, it is not of a sufficiently recent date nor in such form as to be of any great value. According to a statement of the Bureau of Mines in 1932, however, a price of three cents (5¢) per pound is below the cost of production. (***)

(*) Under this Code this differential in gas prices was at least partly counteracted for by providing a minimum wage for common labor in Louisiana of 40 cents per hour as compared with minimum wages in other sections of the country which were set at 50 and 55 cents per hour.

(**) Carbon Black - Its Manufacture, Properties and Uses. Bureau of Mines-1922.

(***) Vol. II, Report of Research and Planning Division. MRA files.

While that statement might be true as regards some producers, it appears equally certain that other operators might be able to realize a profit at that price. The general statement can probably be made, however, that a price of 3¢ per pound approaches the average cost. It might be noted that since carbon black is not a large element in the finished products of which it is a part, small variations in its price have little effect on the ultimate consumer.

To sum up, the Carbon Black Industry appears to be subject to a more or less chronic instability, which was accentuated by the effects of the depression. Whatever informal control the three dominant firms in the industry may have exercised and whatever prerogatives the industry may have enjoyed under the Webb-Pomeroy Act, additional control was apparently thought necessary under the Code. The fact that the stock situation did not improve in 1934, and that the production figure for that year was very much increased, seems to indicate that the Code was not as effective with respect to production control as it might have been. It is, nevertheless, interesting to note the attempt to relate production to demand through stock control, and to divorce it from the unstable and disrupting raw material situation. The acceptability of existing demand as a guide for production cannot of course be fully determined until some analysis of the cost-price situation indicated above can be made.

TABLE I
COTTON BUNDLE YORK SHEETS

Data on Costs - 7 Companies

Company	(Per dozen)						
	Factory Expense	Waste Expense	Mfg. Cost	Selling Expense	Adminis- trative Expense	Mfg. & Selling Cost	Selling Price
Forest City - New Rockford 18 gauge - 3 shifts	\$0.1353	\$0.0200	\$1.0103	\$0.0298	\$0.0350	\$1.1162	1.25
2 shifts	0.1975	0.0300	1.0301	0.0447	0.0525	1.2178	1.25
12 gauge - 3 shifts	0.1563	0.0200	0.9375	0.0298	0.0350	1.0728	1.20
2 shifts	0.1575	0.0300	1.0557	0.0447	0.0525	1.1744	1.20
Old Rockford	0.1975	0.0300	0.7360	0.0447	0.0525	0.8937	.95
Nelson	0.1100	0.0222	0.5673	0.0659	0.0273	1.0389	1.20
Powell	0.2291	0.0579	1.1110	0.0700	-	1.1455	1.25
Grantville	0.1500	0.0640	1.0740	-	-	1.0740	1.15
Georgia	0.1575	0.0551	1.0059	-	-	1.0163	1.10
Ballston-Stillwater	0.2500	-	1.02375	0.0416	-	1.0237	1.20
Perkins (2 styles)	0.08	0.01	0.5176	0.0593	0.0100	1.0094	1.00
	0.08	0.01	0.5225	0.0658	0.0100	0.9709	.85

SOURCE: From Summary York Sheets by C. J. Henderson.

TABLE II

COTTON KUMBLE WORK SOCKS

End of Year Inventories - Eleven Companies

	1931	¢	1932	¢	1933	¢	1934	¢
Forest City	101,115	26.0	61,716	18.6	135,361	27.9	130,211	26.5
Nelson	92,360	23.3	88,872	25.5	109,405	22.5	135,710	22.0
Powell	54,597	14.0	4,797	1.4	14,002	2.9	20,170	3.3
Durham	27,291	7.0	22,350	9.0	59,206	12.2	48,240	7.8
Grantville	75,055	19.5	45,432	14.0	55,054	11.3	70,327	11.4
Georgia	56,312	2.5	55,359	16.9	5,351	1.2	11,194	1.8
Ballston	---	---	---	---	11,545	2.3	116,724	18.9
Seneca	80	.02	8,207	2.6	20,523	4.2	3,623	.59
Perkins	---	---	---	---	---	---	5,773	.94
Bibb	---	---	36,160	10.9	72,321	14.9	37,227	6.1
Birdsboro	---	---	---	---	709	.15	2,709	.44
Totals	333,060	100	330,276	100	494,259	100	616,073	100

Source: Work Sheets by C. W. Henderson

TABLE III.
COTTON SPINNING MACHINES

Approximate per cent of Capacity at Which Eleven Mills
Operated, 1931 - 1934.

	<u>1931</u>	<u>1932</u>	<u>1933</u>	<u>1934</u>
Forest City				
New Rockfords	73%	84%	100%	89%
Old Rockfords	80%	74%	75%	85%
Total	73%	84%	100%	93%
Nelson	65%	65%	65%	60%
*Powell - net	67%	45%	75%	55% (G.M.)
gross	15%	10%	17%	13%
Durham	45%	55%	50%	42%
Grantville	97%	96%	94%	75%
Georgia	16%	10%	11%	14%
Ballston-Stillwater	9%	16%	24%	23%
Seneca	6%	23%	50%	80%
Perkins	3%	30%	5%	10%
Bibb	-	35%	20%	37%
Birdsboro	-	53%	49%	37%

* This company had 601 machines retired. "Gross" capacity includes these.
Calculation made from figures in C. W. Henderson's work sheets.

TABLE IV

COTTON-SPINNING MACHINERY STOCKS

Annual Production - 11 companies 1931 - 1934

(in dozen pairs)

COMPANY	1931	1932	1933	1934
Forest City (New Rockfords)	354,746	417,877	525,235	430,867
(Old Rockfords)	151,452	154,265	152,179	177,694
(Total)	506,198	572,143	684,014	608,561
Nelson	75,215	781,497	775,126	693,462
Powell	257,571	194,493	325,625	243,172
Duchan	433,750	529,509	460,363	414,900
Grantville	267,550	312,154	305,765	229,616
Georgia	120,238	80,541	95,142	119,612
Ballston-Stillwater	122,505	211,719	314,332	513,565
Seneca	12,705	70,455	140,102	220,903
Perkins	1,205	29,200	56,412	102,512
Dobb	1,205	350,165	370,535	212,392
Birdsboro	-	39,387	56,721	46,489
TOTALS	2,553,777	3,171,263	3,296,202	3,494,584
	100.0	100.0	100.0	100.0

SOURCE: Textile Sheets by C. W. Henderson

TABLE V

COTTON BUNDLE SOCK SOCKS

Annual Shipments - 11 companies 1931 - 1934

CITY	1931	%	1932	%	1933	%	1934	%
Forest City	560,529	21.5	613,845	18.9	615,327	17.3	576,830	17.3
Edison	771,677	29.8	752,715	24.5	752,326	21.3	653,173	19.6
Powell	232,532	10.9	244,266	7.5	326,401	9.4	236,784	7.1
Durham	45,214	17.7	52,157	16.1	477,530	12.5	426,066	12.8
Greenville	257,239	9.3	341,757	10.5	227,141	6.5	214,345	6.4
Georgia	112,814	4.5	64,502	1.9	146,569	4.2	115,773	3.4
Dalston	123,405	4.7	211,719	6.5	302,737	8.7	468,356	14.1
Seneca	13,623	.53	61,728	1.9	128,386	3.7	237,798	7.1
Perkins	7,285	.28	29,200	.90	56,412	1.6	96,539	2.9
Libo	-	-	311,005	9.7	334,374	9.6	246,826	7.4
Litlesboro	-	-	139,387	4.2	58,018	1.6	44,849	1.3
TOTALS	2,588,413	100.	3,233,352	100.	3,451,631	100.	3,317,067	100.

SOURCE: York Sheets by C. W. Henderson

THE DIVISION OF REVIEW

THE WORK OF THE DIVISION OF REVIEW

Executive Order No. 7075, dated June 15, 1935, established the Division of Review of the National Recovery Administration. The pertinent part of the Executive Order reads thus:

The Division of Review shall assemble, analyze, and report upon the statistical information and records of experience of the operations of the various trades and industries heretofore subject to codes of fair competition, shall study the effects of such codes upon trade, industrial and labor conditions in general, and other related matters, shall make available for the protection and promotion of the public interest an adequate review of the effects of the Administration of Title I of the National Industrial Recovery Act, and the principles and policies put into effect thereunder, and shall otherwise aid the President in carrying out his functions under the said Title. I hereby appoint Leon C. Marshall, Director of the Division of Review.

The study sections set up in the Division of Review covered these areas: industry studies, foreign trade studies, labor studies, trade practice studies, statistical studies, legal studies, administration studies, miscellaneous studies, and the writing of code histories. The materials which were produced by these sections are indicated below.

Except for the Code Histories, all items mentioned below are scheduled to be in mimeographed form by April 1, 1936.

THE CODE HISTORIES

The Code Histories are documented accounts of the formation and administration of the codes. They contain the definition of the industry and the principal products thereof; the classes of members in the industry; the history of code formation including an account of the sponsoring organizations, the conferences, negotiations and hearings which were held, and the activities in connection with obtaining approval of the code; the history of the administration of the code, covering the organization and operation of the code authority, the difficulties encountered in administration, the extent of compliance or non-compliance, and the general success or lack of success of the code; and an analysis of the operation of code provisions dealing with wages, hours, trade practices, and other provisions. These and other matters are canvassed not only in terms of the materials to be found in the files, but also in terms of the experiences of the deputies and others concerned with code formation and administration.

The Code Histories, (including histories of certain NRA units or agencies) are not mimeographed. They are to be turned over to the Department of Commerce in typewritten form. All told, approximately eight hundred and fifty (850) histories will be completed. This number includes all of the approved codes and some of the unapproved codes. (In Work Materials No. 18, Contents of Code Histories, will be found the outline which governed the preparation of Code Histories.)

(In the case of all approved codes and also in the case of some codes not carried to final approval, there are in NRA files further materials on industries. Particularly worthy of mention are the Volumes I, II and III which constitute the material officially submitted to the President in support of the recommendation for approval of each code. These volumes 9768--1.

set forth the origination of the codes, the sponsoring group, the evidence advanced to support the proposal, the report of the Division of Research and Planning on the industry, the recommendations of the various Advisory Boards, certain types of official correspondence, the transcript of the formal hearing, and other pertinent matter. There is also much official information relating to amendments, interpretations, exemptions, and other rulings. The materials mentioned in this paragraph were of course not a part of the work of the Division of Review.)

THE WORK MATERIALS SERIES

In the work of the Division of Review a considerable number of studies and compilations of data (other than those noted below in the Evidence Studies Series and the Statistical Material Series) have been made. These are listed below, grouped according to the character of the material. (In Work Materials No. 17, Tentative Outlines and Summaries of Studies in Process, the materials are fully described).

Industry Studies

Automobile Industry, An Economic Survey of
Bituminous Coal Industry under Free Competition and Code Regulation, Economic Survey of
Electrical Manufacturing Industry, The
Fertilizer Industry, The
Fishery Industry and the Fishery Codes
Fishermen and Fishing Craft, Earnings of
Foreign Trade under the National Industrial Recovery Act
Part A - Competitive Position of the United States in International Trade 1927-29 through 1934.
Part B - Section 3 (e) of NIRA and its administration.
Part C - Imports and Importing under NRA Codes.
Part D - Exports and Exporting under NRA Codes.
Forest Products Industries, Foreign Trade Study of the
Iron and Steel Industry, The
Knitting Industries, The
Leather and Shoe Industries, The
Lumber and Timber Products Industry, Economic Problems of the
Men's Clothing Industry, The
Millinery Industry, The
Motion Picture Industry, The
Migration of Industry, The: The Shift of Twenty-Five Needle Trades From New York State, 1926 to 1934
National Labor Income by Months, 1929-35
Paper Industry, The
Production, Prices, Employment and Payrolls in Industry, Agriculture and Railway Transportation, January 1923, to date
Retail Trades Study, The
Rubber Industry Study, The
Textile Industry in the United Kingdom, France, Germany, Italy, and Japan
Textile Yarns and Fabrics
Tobacco Industry, The
Wholesale Trades Study, The
Women's Neckwear and Scarf Industry, Financial and Labor Data on
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Women's Apparel Industry, Some Aspects of the

Trade Practice Studies

Commodities, Information Concerning: A Study of NRA and Related Experiences in Control Distribution, Manufacturers' Control of: Trade Practice Provisions in Selected NRA Codes
Distributive Relations in the Asbestos Industry
Design Piracy: The Problem and Its Treatment Under NRA Codes
Electrical Mfg. Industry: Price Filing Study
Fertilizer Industry: Price Filing Study
Geographical Price Relations Under Codes of Fair Competition, Control of Minimum Price Regulation Under Codes of Fair Competition
Multiple Basing Point System in the Lime Industry: Operation of the
Price Control in the Coffee Industry
Price Filing Under NRA Codes
Production Control in the Ice Industry
Production Control, Case Studies in
Resale Price Maintenance Legislation in the United States
Retail Price Cutting, Restriction of, with special Emphasis on The Drug Industry.
Trade Practice Rules of The Federal Trade Commission (1914-1936): A classification for comparison with Trade Practice Provisions of NRA Codes.

Labor Studies

Cap and Cloth Hat Industry, Commission Report on Wage Differentials in Earnings in Selected Manufacturing Industries, by States, 1933-35
Employment, Payrolls, Hours, and Wages in 115 Selected Code Industries 1933-35
Fur Manufacturing, Commission Report on Wages and Hours in
Hours and Wages in American Industry
Labor Program Under the National Industrial Recovery Act, The
Part A. Introduction
Part B. Control of Hours and Reemployment
Part C. Control of Wages
Part D. Control of Other Conditions of Employment
Part E. Section 7(a) of the Recovery Act
Materials in the Field of Industrial Relations
PRA Census of Employment, June, October, 1933
Puerto Rico Needlework, Homeworkers Survey

Administrative Studies

Administrative and Legal Aspects of Stays, Exemptions and Exceptions, Code Amendments, Conditional Orders of Approval
Administrative Interpretations of NRA Codes
Administrative Law and Procedure under the NIRA
Agreements Under Sections 4(a) and 7(b) of the NIRA
Approved Codes in Industry Groups, Classification of
Basic Code, the -- (Administrative Order X-61)
Code Authorities and Their part in the Administration of the NIRA
Part A. Introduction
Part B. Nature, Composition and Organization of Code Authorities
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Part C. Activities of the Code Authorities
Part D. Code Authority Finances
Part E. Summary and Evaluation
Code Compliance Activities of the NRA
Code Making Program of the NRA in the Territories, The
Code Provisions and Related Subjects, Policy Statements Concerning
Content of NIRA Administrative Legislation
Part A. Executive and Administrative Orders
Part B. Labor Provisions in the Codes
Part C. Trade Practice Provisions in the Codes
Part D. Administrative Provisions in the Codes
Part E. Agreements under Sections 4(a) and 7(b)
Part F. A Type Case: The Cotton Textile Code
Labels Under NRA, A Study of
Model Code and Model Provisions for Codes, Development of
National Recovery Administration, The: A Review of its Organization and Activities
NRA Insignia
President's Reemployment Agreement, The
President's Reemployment Agreement, Substitutions in Connection with the
Prison Labor Problem under NRA and the Prison Compact, The
Problems of Administration in the Overlapping of Code Definitions of Industries and Trades,
Multiple Code Coverage, Classifying Individual Members of Industries and Trades
Relationship of NRA to Government Contracts and Contracts Involving the Use of Government
Funds
Relationship of NRA with States and Municipalities
Sheltered Workshops Under NRA
Uncodified Industries: A Study of Factors Limiting the Code Making Program

Legal Studies

Anti-Trust Laws and Unfair Competition
Collective Bargaining Agreements, the Right of Individual Employees to Enforce
Commerce Clause, Federal Regulation of the Employer-Employee Relationship Under the
Delegation of Power, Certain Phases of the Principle of, with Reference to Federal Industrial
Regulatory Legislation
Enforcement, Extra-Judicial Methods of
Federal Regulation through the Joint Employment of the Power of Taxation and the Spending
Power
Government Contract Provisions as a Means of Establishing Proper Economic Standards, Legal
Memorandum on Possibility of
Industrial Relations in Australia, Regulation of
Intrastate Activities Which so Affect Interstate Commerce as to Bring them Under the Com-
merce Clause, Cases on
Legislative Possibilities of the State Constitutions
Post Office and Post Road Power -- Can it be Used as a Means of Federal Industrial Regula-
tion?
State Recovery Legislation in Aid of Federal Recovery Legislation History and Analysis
Tariff Rates to Secure Proper Standards of Wages and Hours, the Possibility of Variation in
Trade Practices and the Anti-Trust Laws
Treaty Making Power of the United States
War Power, Can it be Used as a Means of Federal Regulation of Child Labor?
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THE EVIDENCE STUDIES SERIES

The Evidence Studies were originally undertaken to gather material for pending court cases. After the Schechter decision the project was continued in order to assemble data for use in connection with the studies of the Division of Review. The data are particularly concerned with the nature, size and operations of the industry; and with the relation of the industry to interstate commerce. The industries covered by the Evidence Studies account for more than one-half of the total number of workers under codes. The list of those studies follows:

Automobile Manufacturing Industry	Leather Industry
Automotive Parts and Equipment Industry	Lumber and Timber Products Industry
Baking Industry	Mason Contractors Industry
Boot and Shoe Manufacturing Industry	Men's Clothing Industry
Bottled Soft Drink Industry	Motion Picture Industry
Builders' Supplies Industry	Motor Vehicle Retailing Trade
Canning Industry	Needlework Industry of Puerto Rico
Chemical Manufacturing Industry	Painting and Paperhanging Industry
Cigar Manufacturing Industry	Photo Engraving Industry
Coat and Suit Industry	Plumbing Contracting Industry
Construction Industry	Retail Lumber Industry
Cotton Garment Industry	Retail Trade Industry
Dress Manufacturing Industry	Retail Tire and Battery Trade Industry
Electrical Contracting Industry	Rubber Manufacturing Industry
Electrical Manufacturing Industry	Rubber Tire Manufacturing Industry
Fabricated Metal Products Mfg. and Metal Fin- ishing and Metal Coating Industry	Shipbuilding Industry
Fishery Industry	Silk Textile Industry
Furniture Manufacturing Industry	Structural Clay Products Industry
General Contractors Industry	Throwing Industry
Graphic Arts Industry	Trucking Industry
Gray Iron Foundry Industry	Waste Materials Industry
Hosiery Industry	Wholesale and Retail Food Industry
Infant's and Children's Wear Industry	Wholesale Fresh Fruit and Vegetable Indus- try
Iron and Steel Industry	Wool Textile Industry

THE STATISTICAL MATERIALS SERIES

This series is supplementary to the Evidence Studies Series. The reports include data on establishments, firms, employment, payrolls, wages, hours, production capacities, shipments, sales, consumption, stocks, prices, material costs, failures, exports and imports. They also include notes on the principal qualifications that should be observed in using the data, the technical methods employed, and the applicability of the material to the study of the industries concerned. The following numbers appear in the series:
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Asphalt Shingle and Roofing Industry	Fertilizer Industry
Business Furniture	General Supply Industry
Candy Manufacturing Industry	Glass Container Industry
Carpet and Rug Industry	Ice Manufacturing Industry
Cement Industry	Knitted Outerwear Industry
Cleaning and Dyeing Trade	Paint, Varnish, and Lacquer, Mfg. Industry
Coffee Industry	Plumbing Fixtures Industry
Copper and Brass Mill Products Industry	Rayon and Synthetic Yarn Producing Industry
Cotton Textile Industry	Salt Producing Industry
Electrical Manufacturing Industry	

THE COVERAGE

The original, and approved, plan of the Division of Review contemplated resources sufficient (a) to prepare some 1200 histories of codes and NRA units or agencies, (b) to consolidate and index the NRA files containing some 40,000,000 pieces, (c) to engage in extensive field work, (d) to secure much aid from established statistical agencies of government, (e) to assemble a considerable number of experts in various fields, (f) to conduct approximately 25% more studies than are listed above, and (g) to prepare a comprehensive summary report.

Because of reductions made in personnel and in use of outside experts, limitation of access to field work and research agencies, and lack of jurisdiction over files, the projected plan was necessarily curtailed. The most serious curtailments were the omission of the comprehensive summary report; the dropping of certain studies and the reduction in the coverage of other studies; and the abandonment of the consolidation and indexing of the files. Fortunately, there is reason to hope that the files may yet be cared for under other auspices.

Notwithstanding these limitations, if the files are ultimately consolidated and indexed the exploration of the NRA materials will have been sufficient to make them accessible and highly useful. They constitute the largest and richest single body of information concerning the problems and operations of industry ever assembled in any nation.

L. C. Marshall,
Director, Division of Review.

