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STEEL—Problems of a Great Industry

DO YOU KNOW—

What Pittsburgh Plus means?

Why steel prices include freight charges?

The steel companies' attitude toward labor?

How the NRA affected labor in the steel industry?

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NO. 15 1937

STEEL—Problems of a Great Industry*

THE Iron and Steel Industry ranked third among America's industries in the number of employees in 1929 and second in the value created by the manufacturing process. As it produces the essentials of our machine civilization, it may well be termed America's premier industry. Certainly there is no other which plays such an important rôle in American economic life. When steel is booming, America is prosperous; when it is in the doldrums, the whole country suffers.

It is only natural that an industry of this size should be extremely complex. It is marked both by a high degree of concentration and by a mixed group of small concerns. Over half of the steel-producing capacity of the country is owned by two large companies—the United States Steel Corporation and the Bethlehem Steel Corporation. Yet there were 283 establishments eligible for membership in the steel code drawn up by the National Recovery Administration, and several hundred other concerns might be included in a liberal definition of the industry.

The industry includes four distinct types of establishments: (1) companies which produce pig iron, steel ingots, and hot-rolled products; (2) concerns which make steel ingots and hot-rolled products; (3) firms, usually small, which produce hot-rolled products only; and (4) companies which produce only pig iron. All of the larger corporations belong to the first of these four categories. Twenty-two companies of this type possess more than 90 per cent of the

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* This pamphlet was prepared by Maxwell S. Stewart on the basis of a two-volume study of the steel industry, focused on the problems of the NRA Steel Code, conducted by the Bureau of Business Research, University of Pittsburgh, and published by the McGraw-Hill Book Company under the title: *The Economics of the Iron and Steel Industry,* by Carroll R. Daugherty, Melvin G. de Chazeau, and Samuel S. Stratton. The original study was financed jointly by the Maurice and Laura Falk Foundation, the University of Pittsburgh, and the Brookings Institution.

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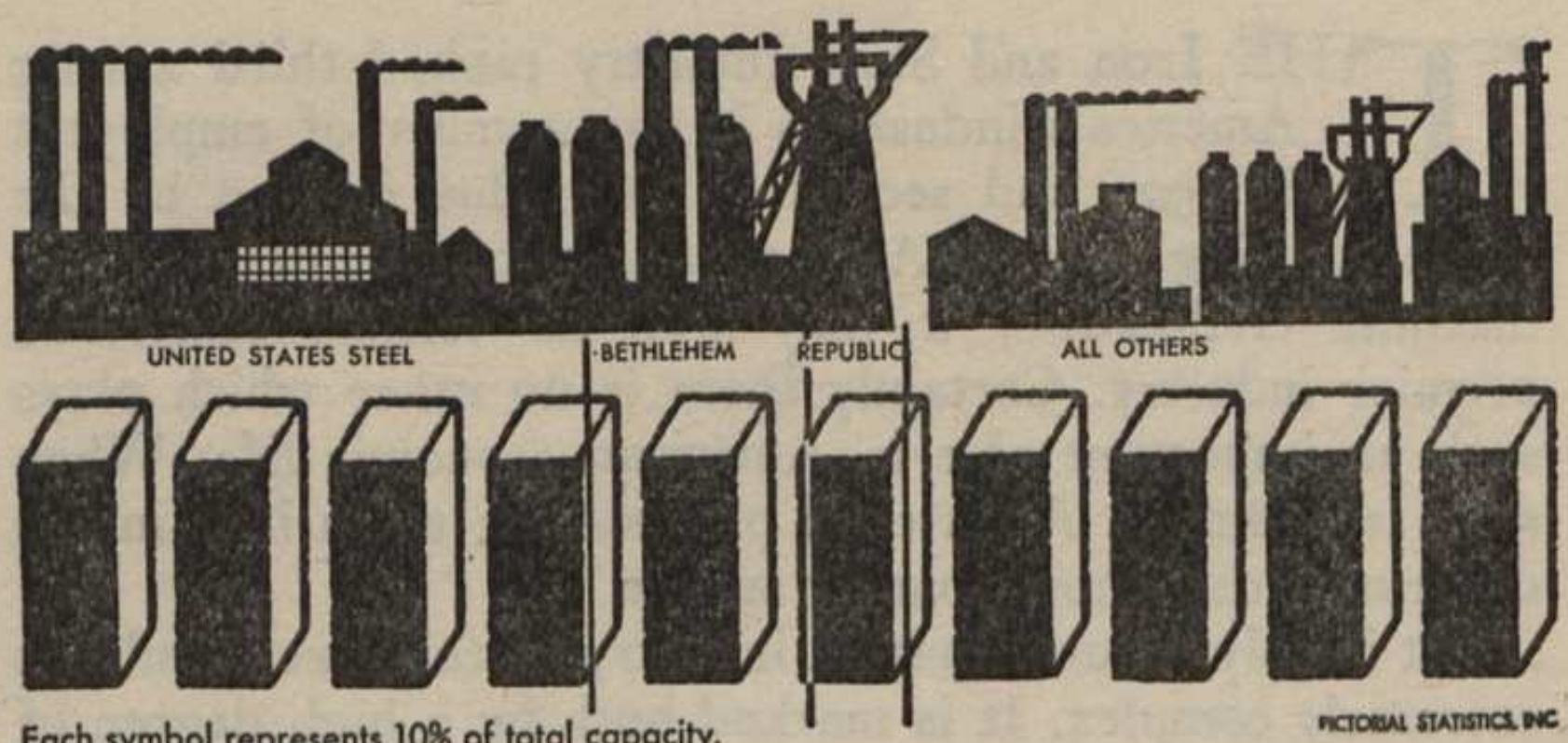
country's steel-making and 86 per cent of its pig iron capacity.

CONTROL OF STEEL INGOT CAPACITY



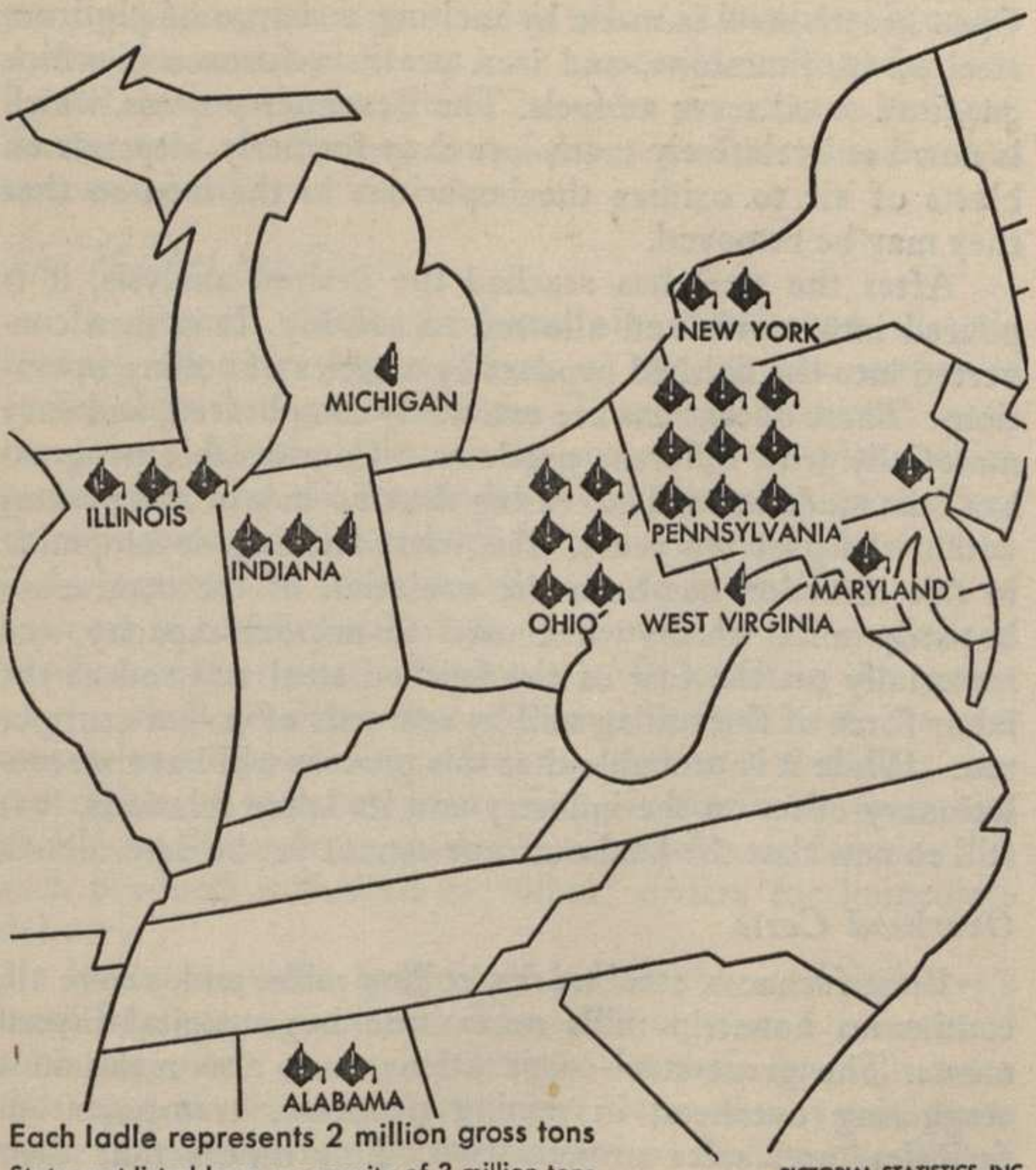
Location

Another striking characteristic of the steel industry is its concentration in a few well-defined regions. Considerably more than half of its plants and equipment are centralized in two states—Pennsylvania and Ohio. These states, together with four others—Indiana, Illinois, New York, and Alabama—contain nearly nine-tenths of the pig iron capacity of the entire country.

This concentration is prompted by the necessity of avoiding high transportation costs. Both coal and iron ore, the chief raw materials used in steel-making, are heavy in relation to their value, which means that mills located inconveniently with regard to the source of supply are under a serious competitive disadvantage. But since the finished product is also heavy, it is desirable to be as near the consuming market as possible. Pittsburgh, the chief steel center, is located in the midst of coal fields, while its ore is shipped by water from Minnesota and Michigan as far as Ashtabula, Conneaut, or Erie, and thence in a short haul by rail. The farthest East of any of the main steel centers, Pittsburgh has the advantage of nearness to the great consuming centers of the Atlantic seaboard and, through water transport, to the South and Southwest. Youngstown, Cleve-

land, Chicago, and Gary are closer to the source of ore, but are farther from coal deposits. Alabama is unique in having coal, iron ore, and limestone side by side. But the Birmingham area has the disadvantage of distance from the more important markets for steel.

PIG IRON CAPACITY



Each ladle represents 2 million gross tons
States not listed have a capacity of 3 million tons

PICTORIAL STATISTICS, INC.

Products and Processes

While it would be impossible in a short space to deal with all of the many products of the iron and steel indus-

try, there are certain main facts which are necessary to an understanding of the industry's problems. In the initial process, ore, coke, and limestone are smelted in a blast furnace to produce pig iron. Some of this pig iron is used for making cast- or rolled-iron products, but by far the greater part of it serves as the raw material for steel-making. In most instances the pig iron is delivered while still molten for use in the open hearth or Bessemer furnaces. Open hearth steel is made by melting a charge of pig iron, steel scrap, limestone, and iron ore in a furnace in which gas, tar, or oil serve as fuels. The Bessemer process, which is now used relatively much less than formerly, depends on blasts of air to oxidize the impurities in the iron so that they may be removed.

After the steel has reached the desired analysis, it is poured into molds and allowed to solidify. It is then converted into the finished product by a series of rolling operations. These operations are extremely complicated, and vary materially with different products. Considerable progress has been made toward increasing the efficiency of this process within the past ten years. The most striking development in this direction has been the evolution of the continuous hot-strip mill, which, when used to normal capacity, can materially cut the cost of the finished steel and reduce the labor force of the rolling mill by upwards of 90 per cent per ton. While it is probable that this process will have a revolutionary effect on the industry and its labor relations, it is still so new that the final outcome cannot yet be determined.

Overhead Costs

Blast furnaces, steel works, rolling mills, and, above all, continuous hot-strip mills necessitate huge capital investments. The great steel corporations must also maintain a staggering overhead in mining property, transportation facilities, and sales organization. This means that their overhead costs tend to be high as compared with most industries. Since many of these expenses are as great when equipment is idle as when it is being used to capacity, steel can be produced much more cheaply when the industry is operat-

ing at or near capacity. It is also important to maintain an uninterrupted, steady flow of products from the initial stages of the industry to the making of finished steel.

The difficulty of cutting down overhead costs has created a number of serious problems. Consumers are notoriously irregular in their demand for steel. Shifts occur also in the demand for the different kinds of steel which tend to unbalance the productive process. Although costs are the highest when production is low, a company is under such pressure to operate as near as possible to capacity that it will frequently cut prices in order to attract business. The process of adjusting costs, output, and prices to demand operates slowly and imperfectly.

The Market for Steel

In general, steel products are distributed directly through the sales organizations of the various companies rather than through middlemen. There are, however, many exceptions. Most pig iron is consumed by the plant which produces it, and the remainder is distributed to small foundries and iron working shops by jobbers and brokers. Similarly, agents and other middlemen do a small amount of business in highly finished steels in meeting the specialized requirements of small consumers, or in handling the output of the small producer. But with most rolled steel, the concentration of producing areas, together with a similar concentration of consumers, has made it inevitable that sales should be direct from the mill. The jobber's function for such products is limited to "fill-in" orders for immediate delivery.

Railroads were long regarded as the steel industry's most important customer. They not only used more steel than any other consuming group, but their demands were the most diversified. During the depression years, however, the automobile industry leaped to front rank, though its requirements were not so comprehensive. The building industry is normally steel's third best customer and ranks high in almost every type of product. Although these three customers took half of all the steel produced in 1929, some

steel was utilized by almost every industrial group in the country. Like the steel mills themselves, the great consuming industries tend to be concentrated in a relatively small number of states. Five states—New York, Pennsylvania, Ohio, Michigan, and Illinois—contain a remarkably large proportion of the consuming industries.

Earnings and Costs

Contrary to the popular impression, the steel industry has not enjoyed unusually high profits, even in good years. The average earnings of the larger companies between 1924 and 1929 were only 6.37 per cent on their capital, and were less for each year during this period than the average earnings of all manufacturing concerns on which information has been assembled. For the years 1931 to 1934, there was an average net loss of 1.82 per cent. This was also somewhat less favorable showing than that made by the average manufacturing concern.

The steel industry's comparatively poor record in the matter of earnings is not easy to explain. While it has been charged that the industry has tended to overvalue its assets, and thus give the appearance of a lower rate of profit than it has actually received, there is no conclusive evidence that this is the case. The value placed on such items as good will and patents has not been excessive. These items did not exceed 0.3 per cent of the industry's total assets in the period covered. Valuation of the ore and coal properties presents a somewhat more difficult problem. Under any circumstances the value which is set must be an arbitrary one since reserves of this type constitute a type of investment on which there can be no current income. In years of low operation, expenditures for taxes and maintenance of these properties are a severe drain on earnings. This is particularly true of the larger companies, since they own the greater part of the available reserves.

An analysis of costs in the industry shows that wages constitute a relatively small part of the total. This is particularly true in the earlier stages of iron and steel making. In 1929, a little more than one dollar out of twenty received

for the production of pig iron went for wages in the blast furnaces, while more than eleven dollars were expended for raw materials. Thus an increase of 1 per cent in the cost of raw materials would be equivalent, as far as costs are concerned, to a 10 per cent increase in the wage bill.

In the later stages of steel production, labor plays a more important rôle, and wage costs are relatively higher; but even here labor costs are much less than in most industries. In steel works and rolling mills, wages accounted, on the average, for 26 per cent of the total value of products in 1929. Raw materials and fuel accounted for 44 per cent, while overhead took a large part of the remaining 30 per cent. During the depression wages in the blast furnace industry tended to decline somewhat more than the tonnage or value of the output, but this tendency was reversed with the introduction of the NRA.

THE STEEL INDUSTRY UNDER THE NRA

IT was only natural that the economic cataclysm which followed the boom of 1929 should affect the steel industry much more seriously than most. People had to eat, dress, and travel even during the depression. But factories required practically no new equipment, and the need for replacements was kept at a minimum. During late 1932 and the early part of 1933, the steel mills of the country were operating at only about 15 per cent of capacity. In March, 1933, only 213,000 workers were carried on the rolls of the industry as compared with nearly 440,000 in the best months of 1929. And approximately four-fifths of those kept on the rolls were employed part-time under the industry's share-the-work arrangements. At the end of 1932, it was estimated that the companies were employing approximately two and a half men for every full-time job. Thus the average worker, including salaried employees, was on less than half time.

With the bulk of capacity unused, the forces operative in the depression began to threaten the price structure. Since overhead costs had to be met in any case, any new business

which covered the immediate out-of-the-pocket expenses seemed to be profitable. Although prices were maintained at relatively high levels, concessions of various types were granted in order to obtain orders. Extra charges were overlooked, rebates given, or arrangements made to absorb transportation charges. Mills accentuated their efforts to get business outside their immediate territory, paying the extra freight charges out of their own tills.

Passage of the National Recovery Act and the establishment of a code of fair competition for the iron and steel industry furnished the opportunity for the restriction of these practices. As finally drawn up, the code for the steel industry was essentially a compromise. With a view to promoting general economic recovery, the Government asked the industry to increase wages, spread employment through a reduction in hours, and to recognize the right of collective bargaining. Subject to its own interpretation of collective bargaining, the industry agreed on the condition that it be allowed to fix regulations which would eliminate secret price-cutting and create a system of stabilized prices.

*The Price Problem**

In order to understand the complicated system of prices prevalent in the steel industry it is necessary to go into a little history. Free competition, as it is ordinarily understood, has not existed in the industry for many years. Beginning in the 1880's a practice grew up known as the Pittsburgh Plus system. The basic price for most products was fixed by the larger Pittsburgh mills, and mills in other parts of the country tended to charge a price which was equal to the Pittsburgh price plus freight charges from that city. Thus a steel mill in New Jersey would charge a customer in New York for freight from Pittsburgh, even though the product was actually shipped only a few miles. The forma-

* Editor's Note: In a pamphlet of this size it is not possible to deal adequately with the pricing as well as the labor problem in the steel industry. The author has selected the latter for more comprehensive treatment and this discussion of prices is, therefore, necessarily over-simplified. The reader who would explore this subject further is referred to the *Economics of the Iron and Steel Industry*.

tion of the giant United States Steel Corporation in 1901, with its chief mills at Pittsburgh, gave further encouragement to this system. Gradually, the other steel companies came to accept the Pittsburgh Plus prices as established by the new corporation. While this arrangement did not apply to all iron and steel products, such as pig iron, it became generally accepted for most rolled products.

Several attempts were made by independent companies to get away from the Pittsburgh Plus system, but it was not until 1921 that the first permanent break actually occurred. Price cutting, precipitated by Midvale Steel and Ordnance Company in February of that year, led the United States Steel Corporation, in July, to abandon the system for certain products in the Chicago area. In 1924 the Pittsburgh Plus system was formally banned by action of the Federal Trade Commission, but it was replaced by a somewhat similar arrangement by which a number of centers, instead of Pittsburgh alone, became the basing-points for establishing prices. Under this new system the prices at the various bases tended to move together, but the difference between the prices no longer reflected the exact freight charges from Pittsburgh.

Since a basing-point system of prices permits a seller, without any change in his base price, to sell the same kind of steel to different customers at prices which are quite different as far as the company is concerned, it is inferentially discriminatory and therefore inconsistent with a freely competitive price. (Discrimination is defined as price variation which cannot be justified by cost.) Under free competition, prices would tend to be fixed by the costs of the least efficient seller whose product was necessary to meet the demand in that market, and it would be the same for all buyers. These conditions do not prevail in the steel industry. Overhead cost is not the only special factor which affects competition in the price of steel. Important also is the fewness of sellers, together with the fact that steel production is not concentrated at a single point and consumption is not equally distributed about the localities where steel is produced. These factors, in addition to large overhead costs, have a marked effect on pricing policy in the steel industry.

Efficiency in the steel industry depends on large-scale production and a concentration of capacity in relatively few establishments, the location of which is chiefly determined by other factors than the location of consumers. With large overhead costs, a mill will absorb deficits for a long time rather than close down and accept capital loss; and equipment cannot be shifted readily from one commodity to another or from one section of the country to another with shifts in demand. Since transportation costs are high in proportion to the value of most tonnage steels, each plant enjoys the privileges of monopoly in the vicinity of the mill, but it is seldom that this market is large enough to permit full use of its productive facilities. Added to this is a probable lack of elasticity in the demand for most tonnage steels. Since steel is a raw material for many industries, the demand for it is dependent largely on general business conditions. While a reduction in price may stimulate some increase in demand, *the increase is likely to be less than proportionate* to the change in price. Thus price competition would tend to be directed primarily to enlarging the share of the existing market served by the price-cutter. But such a reduction in price would be almost certain to bring retaliation—a price struggle in which the final issue would depend less on relative efficiency than on financial ability to absorb deficits. For these reasons, price competition, when it occurs in steel, is characteristically discriminatory—a matter of secret rebates, waiving of extras, etc. The economics of the production and distribution of steel is inconsistent with open price competition either at the mill or at the basing point.

In view of these stubborn economic facts, the elimination of price discrimination through the establishment of an f.o.b. mill system of pricing, such as is used in the automobile industry, is not necessarily in the public interest. There is no assurance that it would stimulate desirable competition or that it would lower the average cost of steel. With fixed capacity beyond the ability of the near-by market to absorb at uniform prices, price discrimination permits fuller utilization and reduced costs which may permit even lower prices for consumers in the vicinity of the mill than could exist if

there were uniform prices for all. An analysis of the characteristics of a desirable price for steel, from the point of view of producers, consumers, and the general public, indicates that some form of basing-point system is preferable to an f.o.b. system of pricing. This conclusion, however, does not justify the discriminations in the existing basing-point system. It merely emphasizes that the problem is not to eliminate price discrimination but to restrict it within limits clearly in the public interest.

Prices under the NRA

The steel code gave the industry power to combat price-cutting practices. This was achieved by recognizing the basing-point system of prices, and by imposing a fine of $10 a ton on all products sold below the published price, unless the concessions were specifically approved by the Code Authority (The Board of Directors of the American Iron and Steel Institute). In theory, competition was maintained, since each company could set whatever price it liked for its products at the basing-point nearest its plants. Actually, the price filed by the larger companies was usually adopted by the smaller concerns. Thus the authority of the Government was, in effect, thrown behind the efforts of the industry to raise and stabilize prices, perhaps to the point of eliminating much that is commonly regarded as legitimate price competition.

It has proved impossible to obtain definite information showing whether or not the price increases under the code were justified by higher operating expenses. Neither the NRA nor the industry furnished statistics from which the reasonableness of the code prices could be appraised. Analysis of code prices suggested that competition was less significant than price leadership in the determination of prices at the various basing-points. It does not matter much from a practical standpoint, however, whether they were fixed by agreement, as some persons allege, or whether the smaller companies merely followed the leadership of the great corporations. Under the economic conditions which characterize the production and distribution of tonnage

steel, price uniformity at a basing-point and the maintenance of a relatively constant price differential between basing-points are consistent with the absence of any sellers' agreement or any form of collusion. The task is not the simple one of breaking up agreements inconsistent with independent competitive action but the more difficult one of affording consumers and the public the greatest possible protection against evils associated with monopolistic practices, *even in the absence of sellers' agreements.*

Administration of the Code

The administration of the steel code was placed in the hands of the industry itself. The Board of Directors of the American Iron and Steel Institute, to which all of the larger steel companies belonged, was designated as the Code Authority. This body had extensive powers. In addition to gathering statistics and checking certain records of the member companies, it could fix damages for code violations, interpret and construe code provisions, determine the classification of products, define and regulate sales to jobbers, and allow deductions below the base price. It could also establish rates of interest to be charged on overdue accounts, set uniform extras and deductions, and define new unfair practices which became proscribed as soon as notice had been given to the members of the industry and the President. Production control, except as specified in the code, was barred without the express approval of the President.

As in the case of all NRA codes, the President had the power to cancel or modify any order. This power, however, was never exercised. The Administrator had adequate powers of supervision but lacked effective means of enforcement. For practical purposes, therefore, the industry possessed full authority over its members, an authority which was only qualified by certain stated obligations towards its workers and a veto power in the hands of the President should he choose to use it.

There can be no question but that the Board of Directors of the American Iron and Steel Institute was reasonably representative of the industry. Of the thirty-one vot-

ing members of the Code Authority in June, 1934, twenty-three were officers in seventeen of the largest companies. The nine largest steel companies controlled 52 per cent of the vote of the Authority. This was slightly less than the proportion of domestic sales—64 per cent—enjoyed by these same concerns.

Achievements of the Code

The steel code may be said to have achieved its main goals—the improvement of the condition of labor and the elimination of "destructive" competition. But the experience with the code does not suggest that this technique would be satisfactory as a permanent arrangement. Products were brought under the rigid price mechanism of the code which had never before been priced under a basing-point system. This highly controversial system was adopted without a critical analysis of its values and shortcomings, and without any real effort to remove the discriminations which existed in everyday practice. Even more serious was the tremendous power which the code granted to the industry to regulate its own affairs. There is little evidence that this power was used to increase efficiency or to eliminate unjust practices. Instead, it appears to have been utilized almost exclusively to eradicate trade practices which tended toward price-cutting. Little, if anything, was done in the way of broad economic planning which had the interests of society, as well as the industry, in mind.

While it is generally agreed that the members of the Code Authority discharged their obligations faithfully, it must be remembered that they were primarily representatives of the industry and only indirectly representatives of the public at large. The checks placed on the Authority were very clearly inadequate. It is true that the Deputy Administrator was a governmental appointee, but he had neither the power nor the staff to obtain active supervision in the public interest. The experience of the steel industry has shown rather conclusively that an industry which has been given power to regulate its own affairs cannot be expected to protect the interests of industrial minorities, con-

suming groups, or the general public. Our whole democratic system is based on the contrary assumption—that full justice is possible only when all groups are adequately represented.

LABOR CONDITIONS IN THE STEEL INDUSTRY

AT the peak of prosperity in 1929, the Iron and Steel Industry employed approximately 440,000 persons. Of those employed in 1933, about 9 per cent were in offices; of the plant force a little less than half were unskilled workers —the remainder being almost equally divided between semi-skilled and skilled workers. In contrast with the dominant trend throughout the country, iron and steel has remained almost entirely a man's industry. Less than 1 per cent of the industry's plant workers were women, and of the 2,400 so employed, only 100 were on mechanical and maintenance jobs.

Wages

The predominance of men must be taken into account in comparing wages with those of other industries. In 1929, the average wage for unskilled workers was approximately 40 cents an hour. Wage cuts in 1931 and 1932 reduced this average to 30½ cents an hour during the months immediately preceding the adoption of the NRA code. The steel industry ranked sixth among the thirteen industries for which common labor entrance rates were listed by the Bureau of Labor Statistics. There was, however, a gap of approximately 35 per cent between the wage rates paid for common labor by the highest-standard Northern companies and those paid by some of the concerns in the South. Common labor wage rates in union or union-recognizing shops tended to be about 10 per cent higher than in the non-union shops.

Taking skilled and unskilled workers together, the average hourly wage in June, 1933, was 48½ cents an hour as compared with 63½ cents an hour in 1929. While this was somewhat above the average for American industries, there were nine industries that were comparable in labor requirements which paid higher wages.

Annual Income and Living Standards

The average annual wage of employees in the steel industry in 1929 is estimated to have been approximately $1,620. This was exceeded, among the major industrial groups, only by the chemical industry. In the months immediately preceding the adoption of the code, the low point of the depression, the average annual earnings dropped to $560—less than $50 a month. This average was considerably lower than that of other industries roughly comparable to iron and steel in mechanization and skilled labor requirements.

Estimates differ somewhat as to the wage that is necessary to maintain an American family in a minimum of health and decency. One of the most reliable estimates sets the amount necessary to maintain a family of two persons "at a minimum of health and decency" at $1,090 in 1929 and $770 in 1933. For a family of five $2,000 was required in 1929 and $1,420 in 1933. The "comfort" standard necessitates about 50 per cent more. On this basis, the average steel worker's wage did not provide a miniumum of health and decency, except for families of two and three, even in 1929. In the depths of the depression, prior to the adoption of the code, the average annual wage was less than half the amount required to maintain such a standard for a family of four.

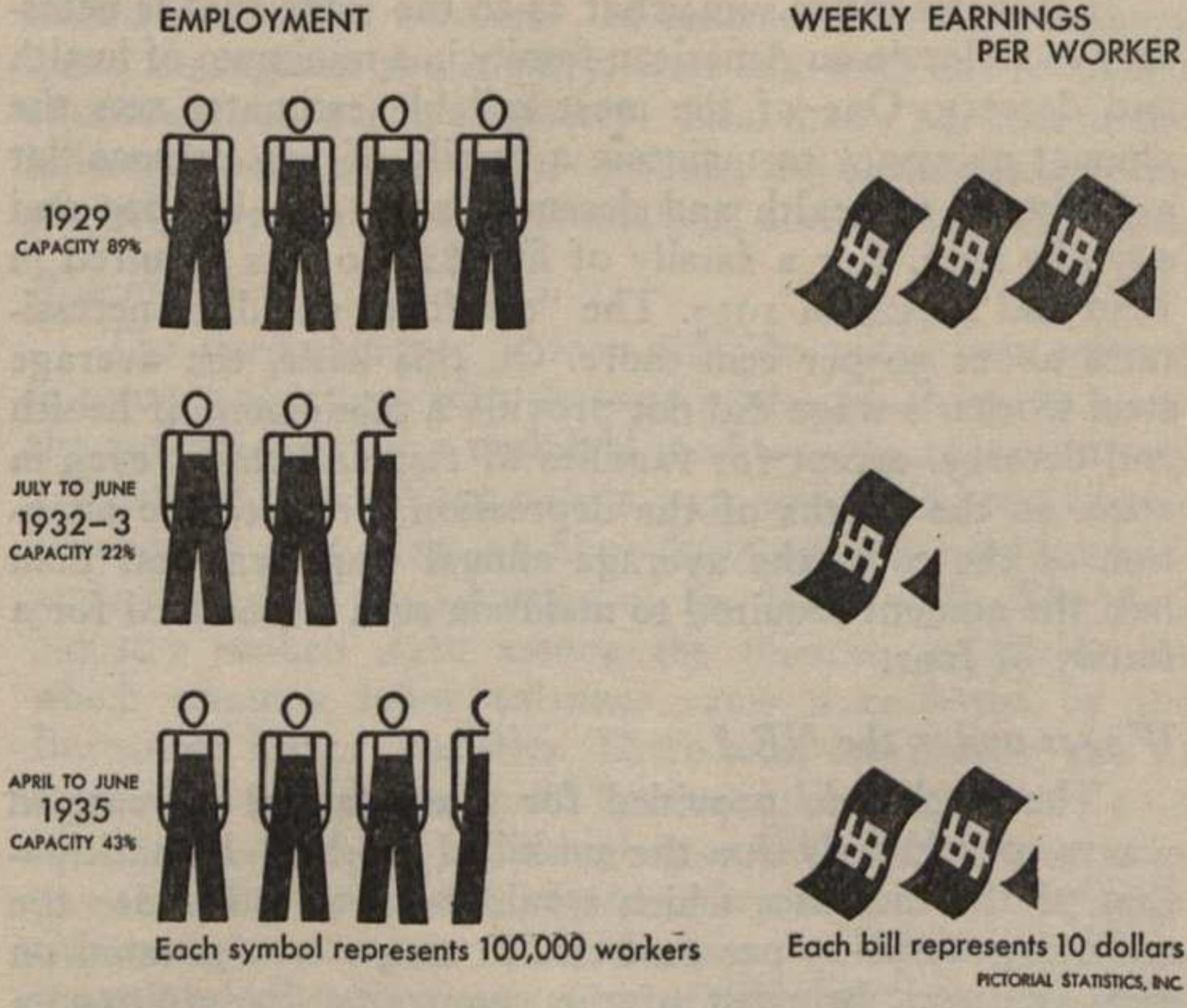
Wages under the NRA

The steel code provided for a substantial increase in wages, particularly for the unskilled worker. In anticipation of the increases which would be required under the code, a general 15 per cent rise in wages was granted on July 15, 1933, by most of the companies. In addition, a majority of the companies granted further increases in September in order to compensate for the reduction in daily hours to eight. While some workers received raises of as high as 25 per cent in September, depending on the hours previously worked, the average increase in wages for all workers was approximately 4 per cent. One more general increase was put into effect under the code—a 10 per cent

rise in April 1, 1934—which brought wage rates almost, if not entirely, to the 1929 level. There was no general change in the wage rates in the industry after the invalidation of the code in the middle of 1935 until late in 1936.

As far as can be determined, the great majority of companies complied with the steel code in the matter of wages. Skilled labor did not, however, in every case receive as large

EMPLOYMENT AND EARNINGS IN THE IRON AND STEEL INDUSTRY



a relative increase as common labor. While this may be considered a denial of the spirit of the Recovery Act, it was not in any sense a violation of the code. In the case of hourly earnings, the increase under the code was striking. In 1929, the average steel employee earned 63½ cents an hour; by the second half of 1932 his wage had declined to 48 cents an hour. The introduction of the code was accom-

panied by an immediate jump to 53 cents, and by the beginning of 1935 the average hourly earning was 66 cents—nearly 5 per cent above the 1929 level. Although most of this increase in hourly earnings may be attributed to the Recovery Act, outside union activity may have been a factor.

If instead of hourly earnings we consider the amount actually to be found in the worker's weekly pay envelope, the comparison with 1929 is not so satisfactory. Weekly wages of plant workers, which averaged $32.60 in 1929, dropped to $11.50 in the third quarter of 1932. By the second quarter of 1935 they had recovered to $22.40, but this was still more than 30 per cent below the level of 1929.

Sectional Differences

The code narrowed somewhat but crystallized rather than eliminated sectional differences in wages, which are rather marked in the steel industry. It established a 40 cent an hour minimum for common labor in the Pittsburgh, Youngstown, Cleveland, Detroit, and Chicago areas. Buffalo was assigned a 38 cent an hour minimum; Johnstown, Canton, the South Ohio Valley, and Indiana-Illinois were permitted to pay as low as 37 cents an hour; while the Eastern area had a 35 cent minimum. In the South the minimum was as low as 25 cents an hour. Similar, but somewhat less significant, sectional differences existed in the earnings of skilled workers and salaried employees.

Hours of Labor

Partly because of the nature of steel-making and partly by tradition, the steel industry always maintained exceptionally long hours for its workers. Blast furnaces require continuous operation, and in most cases the Bessemer and open hearth furnaces were also operated continuously, except when shut down for repairs. Until after the World War this continuous operation was achieved by working two shifts of twelve hours a day, seven days a week. Often there was a day shift of ten or eleven hours, and a night shift of thirteen to fourteen hours, the men working one week on the day shift and the next week on the night shift.

During the latter part of the 20's, most of the steel com-

panies reduced the number of men who were required to work the 12-hour shifts, but there was little change with respect to the seven-day week. More than one-fourth of the steel workers were still working seven days a week in 1929, and an additional 14 per cent had such a schedule once every two or three weeks. Although the average work-week was 55 hours in 1929, one man out of twenty regularly worked 72 or more hours a week.

The Short-Week

The striking decline in working hours which occurred during the depression was the result of the reduced rate of operation rather than a change in policy. With comparatively little work available, most companies made a practice of putting most of their employees on a part-time basis so as to keep as many men as possible on the payrolls. By the end of 1932 the average work-week for plant workers was only about 25 hours, and a large proportion of the employees were working only one or two days a week. There were still a few, however, who were kept on full-time.

The steel code established a maximum working-week of 48 hours, but stipulated that over a six-month period the working-week should not average more than 40 hours. Thus the 5-day week and the 8-hour shift became standard in the industry. In 1929, only about 3 per cent of all of the steel employees worked 40 hours or less a week. Under the code, between 85 and 90 per cent of the workers were employed less than 40 hours, and 99 per cent worked less than 48 hours per week. The 7-day week and the 12-hour day were all but abandoned. Later the code was amended so as to make 8 hours the maximum working day.

In general, the industry's record for compliance with the hours' provision of the code was inferior to its compliance with the wage regulations. This was due partly to the technical difficulty of placing an industry which was accustomed to long shifts on a short-shift basis. It was also due in part to the fact that the pressure of organized labor was primarily directed toward raising the inadequate wage scale and only secondarily toward maintaining the 40-hour week.

The record as a whole, however, was good. Most companies appear to have been somewhat sympathetic with the hours provisions, and the number of flagrant or unjustifiable violations of the code, though substantial, was not staggering.

While a number of workers undoubtedly suffered a reduction in weekly income as a result of the code hour provisions, the majority of the workers were probably not much affected since they were already working many fewer hours than specified by the code. There can be no doubt, however, that the code served to spread such work as was available among a larger number of men than would otherwise have been employed. During the period when the code was in operation there were more jobs than there had been in pre-code periods when the industry's rate of operation was about the same. Yet, despite the fears of the employers, the shorter hours do not seem to have caused a serious shortage in skilled labor. In certain localities shortages in highly specialized types of employees did occasionally occur, but they never seriously interfered with production for the industry as a whole. Undoubtedly the shorter hours, together with the increased wage rates, tended to increase costs of production. This helped to stimulate executives to look for and introduce labor-saving machines and other means of cutting down labor costs.

UNEMPLOYMENT AND LIVING CONDITIONS

WE have seen that during the worst part of the depression only about half of the workers employed in 1929 were retained on the payrolls of the steel companies, and that the majority of these were working extremely short hours. During the two code years, 50 per cent more were employed on the average than in the last pre-code year, and there was a 75 per cent gain from the lowest point of the depression to the best quarter under the code. The average was still, however, more than 15 per cent under the 1929 level. Probably the most important factor in this improvement of employment was the general increase in activity of the mills. Production, on the average, was almost

exactly double the last pre-code year. But the compulsory shortening of the work-week was also an important factor.

Security of the Average Worker

From the standpoint of the worker, the steel industry has long been one of the least secure of American industries. Since the demand for iron and steel is subject to wide fluctuations in prosperity and depression, employment has never been stable for a large proportion of the industry's employees. To complicate matters further, the industry has been subject to sustained periods of brisk operation, followed by relative inactivity. There are also weekly ups and downs in production and employment that can only be explained by the buying policies of customers and traditions within the industry. Nor have hiring, firing, and promotion practices always been of the type that create a feeling of security among the workers. While the larger companies have maintained central employment bureaus, many of the smaller ones made a practice of allowing individual foremen to choose their own men—thus encouraging favoritism and petty graft. There is also abundant evidence that union men were discriminated against in pre-code days, both in hiring and promotion. Many companies further contributed to the average worker's feeling of insecurity by a system of industrial espionage which had for its primary aim the discouragement of union activity.

Apart from the increase in employment and wages, relatively little seems to have been accomplished under the code toward giving the average worker the security which he desires. There was, it is true, a tendency to improve hiring methods by the establishment of centralized offices in plants which had previously relied entirely on the choice of individual foremen. But this was counterbalanced by a certain amount of discrimination against workers who were connected with union activities. Most of the companies showed an open preference for native white or the type of foreign-born workers who were least susceptible to labor agitation. The Negro, particularly, seems to have suffered from a change in attitude. Prior to the depression, large numbers

of Negroes had been employed as unskilled laborers, in part because it was believed that they would be difficult to organize into unions. During the recovery, however, most companies favored white workers on the ground that the Negro workers had become demoralized by long years of unemployment and part-time work. In the South, the establishment of equal wages for white and Negro workers under the code led employers to show a distinct preference for white labor.

Open discrimination against union sympathizers was undoubtedly hampered by section 7a of the Recovery Act. But it is alleged that union men were first to be discharged upon the introduction of labor-saving methods and that they suffered discrimination in physical examinations and in the apportionment of relief. Whether these charges are true or not cannot easily be verified, but from the standpoint of the psychology of the average worker it makes comparatively little difference whether they are accurate or not. The fact that they are believed indicates an atmosphere of insecurity detrimental to the best interests of the industry.

Working Conditions

Such changes as occurred in working conditions during the NRA were mostly for the better. Although workers frequently complained, with some reason, that they were expected to do as much in an eight-hour day as they previously had done in nine or ten hours, the shorter work-week seems definitely to have lessened fatigue. The formation of employee-representation plans made a very real contribution toward the elimination of hazardous and unhealthful working conditions. Thousands of complaints were called to the attention of the management through these newly created channels regarding conditions which had been ignored or unnoticed by executives in pre-NRA days. The great majority of these complaints—probably as many as 75 per cent—were ultimately settled in favor of the employees. Yet despite increased attention to safety measures, there was an increase in the frequency and severity of accidents during the code years. This appears to have been due

to a number of factors. The mills were much busier and employed a much larger number of men than in the depth of the depression. A large number of the new workers were either inexperienced or had grown careless as a result of months of idleness. The speeding up of operations probably accounted for some of the increased severity of accidents as compared with previous busy periods.

Living Conditions

The standard of living of steel workers varies considerably, depending not only on income but on the locality in which they live. Broadly speaking, steel workers may be found in four different types of communities. A comparatively large proportion live in large cities, such as Chicago, Cleveland, and Pittsburgh, where they are practically independent of the company for housing and recreation. Others dwell in smaller cities like Youngstown which are not dominated by a single company but where a considerable number of workers live in houses owned by the company. A third type of community is the small town which is dominated by a single industrial concern. In such localities company houses are usual and there are frequently company stores. Finally, there are communities in which one steel company is practically the only employer of labor. In such towns the company frequently controls almost every phase of the community life.

Reference to "company houses" calls up a picture of long rows of unpainted, dilapidated houses amidst squalid surroundings. This has never been wholly the case. Prior to the depression, some of the company houses were of substantial brick construction, with appropriate sanitary facilities and landscaping. At the other end of the scale, some companies did maintain frame houses which were in wretched condition. But most of the houses were between these two extremes, and were as good or better than the workers could have obtained outside for the same rent. The skilled men, in general, were fairly comfortably housed, while the unskilled—whether in company houses or not—usually lived under decidedly substandard conditions.

In addition to furnishing houses, many of the companies maintained stores at which practically all of the commodities used by the workers could be obtained. In the North, the prices in these stores tended to be much the same as in outside shops, but in the South, where the company store was frequently the only one available, prices ran, on the average, somewhat higher than on the outside. The companies also maintained a number of other welfare activities, which, although capable of being put to harsh uses, were in the main calculated to win the loyalty and goodwill of the workers. About a third of the companies operated cafeterias or restaurants; about 60 per cent furnished fuel and certain other supplies at or near cost; while a large number furnished athletic, recreational, and social facilities. Four out of five maintained some form of medical and hospital services, and half had mutual benefit or sickness relief associations. Group life insurance was offered by 55 per cent of the companies; but formal pension plans were maintained by only 6 per cent of the companies—including some of the largest—and none had an unemployment benefit plan.

Effect of the Code

Living conditions as they are affected by company welfare activities do not seem to have changed much as a result of the code. Some improvement in housing conditions was noted in a few communities, and in a few instances company houses were abandoned altogether. But no concentrated effort seems to have been made to provide satisfactory housing for the poorer workers. Similarly, there was no marked change in the company store system. Several companies issued a formal notice to their employees that they were not required to trade at the company store, but there was no important change in the extent of the system or the methods which it utilized. It is the usual practice of these stores to advance credit to the company employees in the form of metal tokens, scrip, coupon books, or book credit, and to deduct these advances from the workers' pay envelope. This system has certain obvious ad-

vantages for the company. It ties the worker to his job and thus cuts down the labor turnover. It also tends to curtail gambling and drinking, and saves the company difficulties with wage attachments brought by outside storekeepers. It also probably aids ignorant or spendthrift employees in spending their money to the best advantage. But the system is also capable of great abuse. At best, it seriously limits the worker's freedom of choice and tends to standardize his consumption habits. At worst, it can be operated to keep the worker continually in debt and thus force him almost into a state of peonage. The company's gain in reduced labor turnover is the worker's loss in economic freedom.

LABOR UNIONS AND COLLECTIVE BARGAINING

SUCH references as have been made to labor unions have suggested that the steel industry as a whole has been traditionally opposed to organized labor. While this has generally been the case, there have been a few companies which recognized or tolerated "outside" unions. At the time of the adoption of the code, three independent labor organizations claimed jurisdiction within the industry. The largest and oldest of these was the Amalgamated Association of Iron, Steel and Tin Workers of North America which was open to all but the blast furnace workers. Second was the International Union of Mine, Mill, and Smelter Workers which functioned only among the blast furnace workers. Both of these unions were affiliated with the American Federation of Labor. The third organization was the Steel and Metal Workers' Industrial Union which was a part of the Trade Union Unity League. The combined membership of the three organizations was less than 2 per cent of the steel workers of the country.

A number of reasons have been suggested for the relative weakness of organized labor in the steel industry. Many of the workers, particularly among the skilled and higher paid, were not conscious of unity between their interests and those of unskilled workers. The fact that the indus-

try possesses such a large number of foreign workers with dissimilar languages and backgrounds made organization extremely difficult. Important also have been the many defeats which labor has suffered in efforts to organize the industry. Many workers who might be normally favorable to labor unions have felt that it would be suicidal to challenge the power of the industry. There can be no doubt, moreover, that the companies' employment, welfare, and labor-control policies have been extremely effective in eliminating so-called "agitators" from the industry and instilling fear into the hearts of many workers. To all these factors must be added the shortcomings of the unions which operated in the industry. The iron and steel industry, because of its size, complexity, and concentration, is particularly suited to industrial unionism. Yet the Amalgamated, after a few ineffective efforts to bring unskilled workers in, settled down as a relatively complacent organization of highly-skilled, well-paid puddlers and roll hands. Its leaders were old, often ineffectual, and in many instances had left the official family for outside positions with the steel companies. However, the union was no better and no worse than the labor movement of which it was a part. The 1919 strike, which represented the most important effort to organize the industry prior to 1937, was defeated largely because of friction and lost efficiency between the 20 different unions which attempted to carry out that undertaking.

Collective Bargaining under the Code

The NRA brought about a striking change in the labor policies of the steel companies. For the first time in the history of the industry, the employer was compelled by law to accept the principle of collective bargaining. Interpretation of section 7a of the Recovery Act varied considerably, however, with different companies. A relatively small number of firms—sixteen in all—had agreements with the Amalgamated Association of Iron, Steel and Tin Workers. A few concerns extended informal recognition to local units of existing unions. But the great majority, including all of the large corporations, established employee-representation

plans, or company unions, which they held to conform with the spirit as well as the letter of the Recovery Act.

Company Unions

In 1932, there were only seven formal employee-representation plans in the industry. About ten additional companies had informal arrangements whereby grievances could be presented through safety committees or mutual benefit associations. By the end of 1934, there were at least 93 formal plans in existence, most of which were copied from the earlier schemes.

The usual method of establishing a company union was for one of the executives to ask the foremen and superintendents to select a group of some 15 or 30 key workers known to be sympathetic with the management. These men would then be summoned to a meeting at which the purpose and nature of the employee-representation plan would be explained. They would then be asked to form temporary committees to "sell" the idea to their fellow employees. Various methods were used to popularize the plan with the majority of the workers, including talks by executives and key workers, social gatherings, departmental mass meetings, the distribution of printed literature, provision of transportation to workers at home so that they could participate in plant elections, and, occasionally, physical coercion or threats of such action. In most cases the workers were given no clear-cut choice of accepting or rejecting the plans, although in several instances this was done.

To the average person the term "company union" implies that the employee-representation plans were entirely under the thumb of the employers. This was often but not always the case. While it cannot be denied that the management played a dominant rôle in setting up these organizations and that it exercised considerable influence over them, there were many instances where the organizations or their elected representatives showed considerable independence in their demands on the companies. And whatever their limitations, there can be no question that they served a useful purpose in making the management conscious of complaints

that were never drawn to its attention under the system of employee-employer relations that had hitherto prevailed in the steel industry. As we have already noted, the majority of these complaints were adjusted in favor of the workers, although they mostly covered small, individual grievances rather than basic issues of wages and hours.

Anti-Union Activities

Employers readily admit that the NRA seriously hampered them in their opposition to "outside" unions. Yet some companies continued to use drastic, and even illegal, measures to curb the growth of trade unionism in the industry. Of these devices, the sponsorship and encouragement of company unions was the mildest, if the most effective. Despite the specific language of Section 7a of the Recovery Act, at least four companies, including two of the largest, discharged large numbers of workers for union activity, while several others dismissed key men. Discrimination against union men in rehiring, promotion, layoffs, and physical violence by company or community police was verified in a few instances. And these were just a small proportion of the many measures adopted by members of the industry in their struggle against unions.

A number of concerns admitted the use of some form of labor spying in order to keep acquainted with "agitation" within their plants. The methods used by the large companies were fairly uniform. Employment managers, chiefs of company police, or operating executives were usually in charge of these activities. In some instances ex-police chiefs or ex-Department of Justice men were brought in to set up the espionage service. Operatives were obtained from among former detectives, policemen, or workers who had some special reason to be "loyal." Sometimes these men succeeded in joining unions and reporting on their activities, and often they made a practice of circulating among the workers' families and picking up such gossip as was available. Although the workers were usually aware that spying was going on, they were rarely acquainted with the method by

which it was carried out. Knowledge of its existence, however, cannot be said to have improved morale.

Civil Liberties

Such information as is available indicates that civil liberties were more generally respected under the code than in former periods of union activity. It must be remembered, however, that there was no general strike situation and no tension comparable to that which existed in 1919 or in 1937. Moreover, there was a general feeling, among both the men and the companies, that unions had the blessing of the Federal Government.

This does not mean that interference with civil liberties was abruptly terminated. In certain smaller communities—such as Fairfield, Alabama, and Aliquippa, Duquesne, Homestead, and Vandergrift, Pennsylvania—difficulties were experienced by the Amalgamated, chiefly in the early code months, in renting private halls for meetings and in obtaining permission to use school buildings or parks for public assemblies. Left-wing unions fared even worse, and found it difficult to secure meeting places everywhere except in the larger cities. Deputies, sworn in for strike duty by local sheriffs, were used against the workers in practically all of the violent strikes which occurred during the code period. In one case, a local judge issued a sweeping injunction against strike activities irrespective of the explicit provisions of the Norris-LaGuardia Anti-Injunction Act. Under pressure, this injunction was later modified to conform with the Act.

The S.W.O.C.

In the Spring of 1936 the Steel Workers Organizing Committee was formed as an affiliate of the newly-established Committee for Industrial Organization. Aided by funds from the other industrial unions, the C.I.O. announced a campaign for organizing the steel industry in accordance with its unionization program. Comparatively little was achieved in 1936, but the campaign was beginning to get well under way early in 1937 when, to the surprise of the general

public, the United States Steel Corporation and several smaller companies announced the recognition of the S.W.O.C. as a bargaining agency for their employees. This example was not followed, however, by the other large companies with the result that in May and June the S.W.O.C. called strikes against the Republic Steel Company, the Bethlehem Steel Corporation, and other companies which had clung to the traditional labor policy of the industry. Although these strikes, like the earlier ones in the industry, were finally defeated, the unions retained substantial membership in the affected plants.*

Can Labor Democracy Be Attained in Steel?

Despite the obstacles mentioned above, none will deny that the steel workers made substantial strides toward labor democracy as the result of the NRA and the subsequent enactment of the Wagner Labor Relations Act. Whether this trend may be expected to continue until the employees of the steel industry secure full freedom of collective bargaining rests upon a number of factors. Much depends, for example, on the kind of administration that the Wagner Act gets from the National Labor Relations Board. It is difficult to conceive of anything but the growth of independent unionism resulting from impartial administration in the spirit of the Act. But under an unfriendly Government, the Act might be interpreted against independent unionism or allowed to become a dead letter. The type of leadership available for the unions is also of considerable importance. Experience has shown that a leadership which is dominated by the dogmas of craft unionism has little to contribute to the organization of mass-production industries like steel.

Upon the attitude of the large steel companies toward "outside unionism" will depend the speed and nature of the steps toward true collective bargaining. This study indicates that up to a certain point the companies were willing

* Editor's Note: As the study on which this pamphlet is based was published early in 1937, it does not contain either an analysis of the organizing activities of S.W.O.C., or discusson of the employers' anti-union activities during this period.

to make minor concessions, and accept a limited, rather stunted, form of labor democracy. On basic matters of union recognition, however, they showed little or no change in attitude until the spectacular action of the United States Steel Corporation in recognizing the Steel Workers Organizing Committee in the spring of 1937. That the Government alone, acting in a neutral rôle, would be able to get the steel industry to accord full recognition to outside unions, or to get the unions to accept anything less, is still to be questioned. Even if that were achieved, there would still be a possibility that genuine labor democracy would be blocked, either through company control over the labor unions or a lack of democracy within the unions. Both evils have frequently existed within the union movement.

INFERENCES CONCERNING PUBLIC POLICY

STUDY of the steel industry has raised more problems than it has solved. It is impossible, for example, on the basis of the knowledge which has been assembled, to suggest a ready solution for the problem of prices. It cannot be denied that present pricing methods tend toward a rigidity at levels that may impose arbitrary restrictions on output or prevent the expansion of the most efficient units. But this does not mean that the recommendation of the Federal Trade Commission that prices be put on a f.o.b. plant basis, with uniform prices at the mill for all consumers, would solve the problem. The logic of the Trade Commission's attitude is either (1) that pure competition can be attained in the industry under its present organization if collusion is prevented by law or (2) that it can be attained by the dissolution of existing corporate entities. There would seem to be no economic justification for either of these contentions. Any standard of fair price based on equal charges at the factory ignores the realities of the economic organization of the steel industry. Thus it would seem that some form of basing-point system, which involves the right of a mill to absorb transportation costs in order to meet competition, is necessary and even desirable for most tonnage steel products.

If it could be assumed that a non-discriminatory price for steel were always in the public interest, public policy would require no more than a knowledge that a basing point price system does and an f.o.b. mill price does not involve discrimination. But if no such assumption can be made, the formulation of a definite public policy toward the steel industry is far more difficult. One must know the actual, and not merely the nominal, prices charged for steel, and one must be able to determine the amount of discrimination involved in any given basing point system of pricing. Lacking full information regarding these and related problems, it is impossible to reach a definite conclusion. It is not, however, at all certain that the present system of unfettered private initiative in the industry is in the best interest of the nation as a whole. But neither is it clear which, if any, of the alternatives to private enterprise—Government control, Government competition, or Government ownership—would provide the most satisfactory solution to the problems of the industry. The authors of the study upon which this pamphlet is based recommend that a Federal, impartial, and non-political fact-finding commission be established, staffed by men qualified by economic, statistical, accounting, and engineering training and versed in the complexities of the industry; that it be vested with authority to collect the type of information required; and that it be charged with the responsibility of preparing a report to Congress with detailed recommendations concerning an effective public policy toward the steel industry.

Only in this way can we expect to make a lasting settlement of a problem that has for decades vexed both government and industry, a problem that lies at the center of the whole complex of problems concerned with the mutual adjustment of our legal theory and the economic practices of concentrated, large-scale industry.

Meanwhile, the industry might well consider the public policy implicit in industrial relations. Liberty of self-expression is precious and freedom to associate one's self with one's fellows for the purpose of serving mutual interests is so elemental in a democracy that it can scarcely be debated.

An industry which must, in effect, ask the Government to tolerate a pricing system which is contrary to the long-settled legal policies of the country is in no position to deny to its workers the elemental liberties of self-expression and self-organization. Sooner or later the steel industry will need friends at court, and provision for a measure of labor democracy among its workers would seem to be the part of industrial statesmanship.

It was not the function of the study to outline ways and means of organizing steel workers or to indicate under whose auspices they should be organized, but some general principles were stated. These may be summarized as follows:

First, it is only reasonable that steel workers should be organized. Effective administration of personnel relations in plants employing thousands of workers is dependent on organization that extends to the lower ranks. And only through organization can the workers protect their interests. Second, the nature of the industry's operation is such that industrial rather than craft organization is called for. Integrated operations extending from blast furnace to the finished rolled product constitute the economic unit, and a form of organization that would encourage jurisdictional disputes would be socially inefficient. Management is organized on an industrial basis, and any approach to equality of bargaining power would require a similar organization of the workers. Third, collective bargaining should be on a national and not on a plant basis. The plant is little more than a cell in the iron and steel industry, and the economic factors bearing on wage rates and hours proceed from and in turn affect the national market. In short, management will bring to a wage discussion a national point of view backed usually by the industry's united front, formed on the advice of both "inside" and "outside" experts. Should not the workers do likewise? Fourth, organization of steel workers should be in accord with the principles of industrial democracy. Anything short of these principles, whether the result of employer coercion or by autocratic union methods and leadership, would be contrary to the ideals attainable in a democratic society.

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