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LABOR AND STEEL

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LABOR AND STEEL

by
HORACE B. DAVIS



**INTERNATIONAL PUBLISHERS
NEW YORK**

LABOR AND INDUSTRY SERIES

LABOR AND STEEL

By Horace B. Davis

LABOR AND TEXTILES

By Robert W. Dunn and Jack Hardy

LABOR AND COAL

By Anna Rochester

LABOR AND LUMBER

By Charlotte Todes

LABOR AND AUTOMOBILES

By Robert W. Dunn

LABOR AND SILK

By Grace Hutchins

Other volumes in this series are planned on *Transportation, Construction, Clothing, Shoes and Leather* and *Food*.

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This book is composed and printed by union labor.

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PREFACE TO LABOR AND INDUSTRY SERIES

THIS is one volume in a series of industrial studies being prepared by the Labor Research Association, an organization devoted to the gathering and interpretation of economic material for the labor movement.

The aim of this series is to present a picture of the development of the important American industries in relation to the workers employed in them. Other books dealing with American industries have been written from the viewpoint of the employer, the personnel manager, and the technical expert. But they have all been interested in perpetuating the present system of exploitation and in piling up more profits for powerful corporations.

The present series studies American industries from the worker's viewpoint. What is the trend of production in a given industry? What are the wages, hours, and conditions of employment, and how do these compare with those in other industries? What is the extent of unemployment and what are the prospects of keeping their jobs for those workers still employed? What profits are the companies making, and how are they often concealing them? What mergers are being carried through as the employing class attempts to tighten its control? How are the corporations associated to protect their interests and oppose those of labor? To what extent are the workers already organized in company unions, in the American Federation of Labor, in the new Left Wing unions? What are the prospects for effective unionization? What is the real purpose of the "welfare" and "industrial relations" propaganda of the employers? What can the

workers in the industries of the United States look forward to under the present economic system? These are some of the questions this series seeks to answer.

These books describe not only the hardships and grievances of the workers in a given industry. They analyze the class conflicts arising between those who uphold the capitalist system of production and distribution and the workers who are organizing for revolutionary change. Those who seek to put an end to the rule of the employing class will find in these volumes not only graphic pictures of living and working conditions, but an interpretation of economic struggle and suggested programs of action to meet the offensives of the corporations.

To the militant workers who, in the face of overwhelming obstacles, are carrying on the fight against the strongly organized forces of the capitalist class these books are dedicated.

LABOR RESEARCH ASSOCIATION.

INTRODUCTION

THE steel industry is not only a basic industry—it is the key industry of the nation. Dominated by a single firm which in turn is directly controlled by the leading financial interests in the country, steel expresses in industry the policy of the American financial oligarchy. This is why employers and business men look to see what steel is doing and adjust their policies accordingly. This is why the wage rate set by the United States Steel Corporation for its unskilled labor is the most important single wage rate in American industry.

Steel is also the key industry from another point of view. Steel is the basic material for the production of capital goods. The production of steel reflects the demand for capital goods, and is a barometer of industrial production generally. Again, steel is the basic war industry. Nations which wish to be self-sufficient from a military point of view must assure themselves an uninterrupted supply of steel.

The heavy iron and steel industry, and the light industries which are organically connected with it, employ directly hundreds of thousands of workers. Millions of workers' families are dependent directly on steel for their support. What of these workers? How has steel treated them in the past? What do they anticipate from steel under the capitalist system?

The temporary increase in production in the Spring of 1933 found the steel workers in a mood of profound disillusionment with capitalism and its institutions.

The three years of economic crisis which began in earnest about the middle of 1930 had left the workers in the steel industry virtually penniless. Nine out of every ten had

become destitute and had either fallen heavily in debt or slipped into dependency on others for their livelihood. Thousands of single steel workers had taken to the road in the vain hope of picking up a living in some other part of the country. Scores of thousands of family men had seen their wives and children decline in health and approach a state of semi-starvation while they themselves became so weakened by long privation that they half dreaded to go back to full-time employment since they would hardly be able to stand the intensified pace of work.

The steel employers, on the other hand, were evidently determined to follow out to the end the policies which had become known as characteristic of the industry, including those which had been specifically forbidden by law. Their "code of fair competition," presented in July, 1933, and still more the admissions made at the code hearings by the spokesmen for the industry, made it clear that the system of "delivered" price quotations which the Federal Trade Commission had specifically forbidden in 1924 as an "unfair method of competition" had remained in force ever since with comparatively slight modifications. The clause in the proposed code which provided, "Unless and until the Code shall have been amended . . . none of the members of the Code shall initiate the construction of any new blast furnace or open hearth or Bessemer steel capacity" (Article V, Section 2) constituted a reversion to the reactionary policy of "no inventions, no innovations" which the U. S. Steel Corp. had attempted to enforce for two decades after its formation.

The clauses in the code regarding the formation of company unions in the steel plants were so obviously at variance with the provisions of the National Recovery Act that the Recovery Administrator was obliged to demand their removal. Robert P. Lamont, former president of the American Iron and Steel Institute, speaking for the employers, acceded nominally, but announced in effect that the steel employers

would support company unions and fight legitimate unions anyway. The company unions which after the passage of the National Recovery Act had been set up on a uniform plan by all the important companies not already having company unions were not abolished forthwith. The companies would insist, it was evident, on a "Roman peace" in labor relations, with all power concentrated in their own hands.

The wages which they proposed, with a common-labor rate of 40 cents per hour in the Pittsburgh and Chicago districts, were actually lower in terms of purchasing power than the rates which had been in force from 1923 to 1931. The code provisions on hours were so broad and indefinite that no employer needed to feel himself obliged to change his schedule of hours at all, except on the unlikely supposition that production would suddenly increase nearly to full capacity.

The rule-or-ruin policy of the steel bosses was nothing new. Even before 1930 they had begun to bear down on labor. Certain concessions which had been considered customary in the industry, such as a relatively slow pace of work, had been briskly revoked; the seven-day week, which for a time had seemed on the road to extinction, was generally reintroduced in the period after 1923, and the policy of rigidly repressing organization moves on the part of the workers was if anything intensified, while the spy system reached a development never before surpassed.

The crisis with its reintroduction of the truck system (payment by credit at the company stores) merely aggravated certain problems which had been serious in the industry for some years before. Unemployment was no novelty to the steel workers in 1930. A gradually increasing pressure on labor all along the line had been discernible for some years preceding.

In many other respects subtle changes have put the steel industry in a new position. The technique of the industry has been overhauled; the market for steel products has

changed in nature and locality; the type of worker employed has changed. And most important of all, the industry has ceased to be an industry with expanding employment and has become an industry with contracting employment.

For all these reasons and others the investigations of the steel industry made by the Russell Sage Foundation in its Pittsburgh Survey just before the war, by the United States Commissioner of Labor about the same time, and by the Commission of Inquiry of the Interchurch World Movement in 1919, none of which was fully adequate as a description of the steel worker's conditions of existence, are now definitely out of date even for the ground they covered. The virtual passing of the 12-hour day has all but removed one outstanding grievance, or rather changed its form; but other problems are to-day fully as pressing as the 12-hour day ever was. The present study attempts to give a new perspective on the industry, from the steel worker's point of view. It outlines the steel worker's problems, and indicates some reasons for the growth of a spirit of revolt in the steel towns against oppression and exploitation.

For five out of the last ten years the writer has studied the problems of the workers in the steel industry. At first he worked as a laborer in the mills. After an industrial injury forced his retirement from this occupation, the granting of an Amherst Memorial Fellowship made it possible for him to visit the principal steel centers of England, France, Germany and the United States. Material collected during that period has been freely drawn on in the present study.

To thank all the individual workers who have contributed the information and impressions on which the present study is based would be impossible. Suffice it to say that the manuscript is built up largely on material collected by first-hand interviews; furthermore, it has been read and criticized by

workers from the industry. Every statement has been carefully checked so far as this was humanly possible.

Edward Ernst and Emil M. Hartl, who conducted an investigation of the industry in 1929, and Edwin Clark of Cleveland, who made a special study in 1932, have very kindly placed their work sheets at the writer's disposal. Officers and members of the Amalgamated Association of Iron, Steel & Tin Workers of North America and of the Steel & Metal Workers Industrial Union have given freely of their time. In the detailed work of assembling and compiling material invaluable help has been furnished by A. Shapiro, C. Rosenbloom, Vera Gruliow, Rose Rosenfeld and of course by members of the Labor Research Association.

The writer is indebted to Kalmun Hecht, accountant and member of the Pen and Hammer organization of New York, for his collaboration in preparing certain sections dealing with the business end of the industry, and to the Pen and Hammer for computations in connection with Chapter I. Prof. Charles Reitell of the University of Pittsburgh had already developed some of the ideas contained in Chapter I in an unpublished manuscript which the author was fortunate enough to peruse in 1924.

The manuscript has been read and criticized by members of the Labor Research Association and by Caroline Whitney and Constance A. Kiehel. Valuable criticism has also been received from members of the Faculty of Political Science at Columbia University, to whom the first seven chapters of *Labor and Steel* were submitted in partial fulfillment of the requirements for the degree of Doctor of Philosophy.

The author takes full responsibility for the opinions expressed and for the shortcomings of the book.

HORACE B. DAVIS.

September, 1933.



CHAPTER I

THE STEEL WORKERS

WHO are the workers who, under the operations of the profit system, alternate periods of feverish production of steel with periods of hideous idleness? How many of them are there, and where do they live? What proportion of them are laborers and skilled operatives respectively? What is their age, sex, color and nationality? How has their social composition been affected by the shift from increasing to declining employment? These are the questions which we shall attempt to answer briefly in this chapter.

Number and Location

The Census of 1930 lists 620,894 employees in the heavy iron and steel industry—that is, in blast furnaces, steel works and rolling mills.* Of these, some 519,500—515,000 males and 4,500 females—are wage-earners, or, as we shall call them, workers. They represent nearly a third of all the iron and steel workers in the world, whose number may be set, for a rough guess, at 1,650,000. Since the iron industry is nowadays of secondary importance to steel, we shall refer to all the workers at iron blast furnaces and puddling mills, in steel works, and in iron and steel rolling mills as “steel workers.” Besides the 519,500 steel workers, there are employed in the American iron and steel industry 30,500 foremen, officials and owners; 12,500 professional persons (draftsmen, chemists, engineers); and 58,000 clerical and allied workers, of whom 13,600 are women.

* The census classification is “blast furnaces and steel rolling mills.” This title is unduly compressed. “Blast furnaces and steel and rolling mills” would be more accurate.

Not all of the employees of the big steel firms are steel workers. Outside the steel mills, on the great coal and iron mining properties of these companies, at their coke ovens and limestone quarries, and on their transportation routes, were employed in 1930 probably 136,000 wage-earners and 7,000 salaried workers.

There are also a large number of employees, not less than 109,000 wage-earners and 13,400 salaried employees, who are attached to mills engaged in turning out products which are, or may be, manufactured in connection with iron and steel rolling mills (*i.e.*, in the same plant), and who are closely allied to the heavy industry. The 48,500 workers in the plants which work up rods and bars purchased from mills into wire and wire products, are bound to be affected by developments in the heavy industry, since wire products valued at more than half the total are produced in the wire departments of steel works and rolling mills. Other workers whose fortunes are closely bound up with those of the workers in the heavy industry are the 17,000 making bolts, nuts, washers, and rivets; 22,500 making iron and steel forgings; 2,000 in nail and spike plants; 6,500 in steel spring plants; and 12,500 engaged in the manufacture of wrought pipe.

Thus, in 1930, a total of some 822,000 wage-earners and 70,500 salaried workers, officers and executives (including unemployed) either were workers for the companies in the heavy iron and steel industry or were intimately affected by developments in that industry. Since inspection of the census returns for typical steel towns shows that there are, on the average, about 1.8 dependents per worker in iron and steel, it may be estimated that over two and one-half million persons are directly affected by the labor policies of the American steel companies. This is exclusive of the even more numerous group connected with the fabricating and finishing plants of the "light" iron and steel industry.

There are heavy iron and steel plants in nearly every state

of the union, but the bulk of the steel workers are concentrated in the states which have ready access to raw materials and markets. The six states through which one passes in going from New York to Chicago by way of Philadelphia contain more than three-quarters of the steel workers, and Pennsylvania alone has more than a third of the total number. The distribution is well indicated by the following table, which includes all gainful workers in the industry.

DISTRIBUTION OF ALL IRON AND STEEL EMPLOYEES, BY STATES, 1930

(Source: Fifteenth Census of the U. S., *Population Bulletin, Second Series*, pp. 57-60.)

<i>State</i>	<i>Gainful Workers</i>	<i>State</i>	<i>Gainful Workers</i>
Pennsylvania	211,682	Connecticut	5,552
Ohio	129,685	Kentucky	5,471
Illinois	52,775	Colorado	5,322
Indiana	45,563	Minnesota	4,105
New York.....	32,751	Washington	2,534
New Jersey.....	17,374	Texas	2,300
Alabama	16,442	Rhode Island	2,013
Maryland	15,863	Tennessee	1,980
West Virginia.....	14,006	Georgia	1,631
Massachusetts	12,261	Virginia	1,490
Michigan	12,243	Oklahoma	1,343
California	11,242	Delaware	1,159
Missouri	6,582	All other states....	7,474
Wisconsin	6,210		
		Total U. S.	627,053

In the several states, the iron and steel producing centers are relatively few and large, so that the steel workers are as closely bunched geographically, in all probability, as any group of workers of equal size in any industry. It is only necessary to mention the city of Pittsburgh, which includes only a fraction of the so-called Pittsburgh district, and which nevertheless has 23,000 steel workers.

Women

Women wage-earners are likely to be of increasing importance in the industry. For the present, they are not numerous; the 4,500 women and girls employed in the mills and at the furnaces are overshadowed in number by the 13,600 female office workers in the industry. All told, there are only 18,500 female employees in steel. But any great crisis would open the gates of the mills to thousands of women; the Great War found women in Great Britain pulling the levers at the rolls, and stacking plates, where only men had been seen before. Tradition alone prevents the entry of women to an increasing number of jobs, even in peace-time. In the Soviet Union, where women enjoy opportunities not open to them elsewhere, women may be found scattered throughout the heavy industry.

The tradition which reserves the bulk of the steel jobs to men was reasonable enough in its origin. Making steel has been hot and heavy work. Even to-day, nearly half of the jobs in the industry require great physical exertion,* and most of the remainder are filled by promotion from the arduous jobs. However, machines are taking over the heavy and hot work; and many of these machines can quite well be operated by women.

There is no better place than the open-hearth steel mill to get an impression of the tremendous force that is nowadays controlled with a minimum of muscle power. As one steps

* Employers of more than 650,000 workers in all industries of New York State were asked in 1930 to classify the jobs in their plants according to the amount of physical exertion required (*i.e.*, great, medium, or slight). For all industries, the proportion of jobs requiring "great physical exertion" was 8½%; for iron and steel, the proportion was 46%. Allowing for differences of definition among individual employers, iron and steel still stand out as an unusually arduous industry. (Data collected by Solomon Barkin for "The Older Worker in Industry," *N. Y. State Legislative Document, No. 66, 1933.*)

onto the charging floor he is bewildered by the absence of workers. In the semi-darkness he can see the great ladle of molten iron, tilting gradually to discharge its contents into one of the furnaces. Somewhere in the gloom above, is the little box where sits the operator of the overhead crane; he controls this tilting motion. Another furnace door slowly opens; the visitor has to be shown the door-boy, on the far side of the charging-floor, who has pulled the lever to make it open. The charging machine's arm fixes itself into the end of a buggy full of scrap iron, lifts up the buggy, pokes it into the furnace, and dumps it. Inside the machine, barely visible among the flashing switches, is the worker who controls the operation.

Tapping-time at another furnace! It tilts slowly over until the slag begins to run out of the hole in the far side. And when the steel has all run out, and it is time to line the bottom and the back wall of the furnace, the backwall machine will slide into place before the door of the furnace and spray dolomite against the slanting wall on the far side. The tilting and the spraying, like so many other processes on the open-hearth floor, are performed in a modern works by machinery which could quite well be operated by women. The same story could be told of practically any other department in a highly integrated plant.

Skilled Workers and Laborers

The mechanization of jobs formerly performed by manpower probably accounts for one of the most important of the recent tendencies in steel—the decreasing proportion of laborers, or, as some call them, the “unskilled.” Since there is no exact definition of an unskilled worker, we class as laborers those who receive the starting rate of pay for adults. A study of wages paid to steel workers at various times shows that there are not as many laborers in proportion to the total number of steel workers as there were in 1910.¹ This con-

clusion is all the more interesting because from 1890 to 1910 the tendency was all the other way; the U. S. Commissioner of Labor reported in 1911 that the tendency was to establish the general wage on the basis of "common, unskilled labor."²

The explanation may be that in earlier years inventors, intent on cutting down the cost of employing high-paid workers, concentrated on mechanizing the skilled jobs; whereas in more recent years, with the smashing of the union and the decline in the level of wages paid the skilled workers, the heavy lifting and carrying jobs, formerly done by laborers, have been taken over by machinery. However, the influence of the union must not be exaggerated.

The new jobs of operating new machines are different from the old jobs. They are more responsible than straight labor work, are frequently not under the direct control of a foreman, and are usually paid a little more than the common labor rate. Charles Reitell has given to the pulling of switches, the throwing of levers, the pushing of buttons, and the like, the name of "mental control" jobs, to distinguish them from "physical power" jobs.³ They are neither skilled, nor semi-skilled, nor unskilled jobs; neither are they repair jobs. They are repetitive only in a broad sense; they do not make the worker a part of the machine; rather he runs the machine and controls it. Yet the jobs are not supervisory jobs either, in the old sense. They are something new, corresponding to the newness of the modern technique.

At the present time (1933) perhaps 40% of all gainful workers in steel are laborers. In 1910 the proportion was more nearly 50%.⁴ The statistical technique which we have used to measure the bunching-up of wage rates shows that in 1931 the workers' wages were spread out more than in 1910, but were still far from having reattained the degree of spreading-out which obtained in 1890. The tendency for steel workers to drop into a common undifferentiated mass of un-

skilled, all receiving the same rate of pay, has been reversed; but it is still too early to speak of the "mental control" job as typical of the industry. The proportion of jobs requiring no training at all is probably twice as high in steel as in the average of all industries.⁵

Young Workers and Old Workers

"Physical power" jobs require youth and strength; "mental control" jobs may be filled by aging workers. The field is open for steel bosses to employ older workers in increasing numbers without serious loss of profit; and since 1910 the proportion of older workers in the typical steel plant has in fact increased more rapidly than the proportion of older men in the population at large. This tendency, like the tendency for the proportion of laborers to decrease, represents a sharp contrast with the conditions that prevailed before 1910. It is worth analyzing in some detail.

During the long period of expanding employment which preceded the war, steel was a young man's industry. Young workers, usually unmarried, came from the farms of America and Europe to work in the heavy industry for a while, but relatively few of those who came to the industry remained there. Many workers with a trade, such as molders, bricklayers, electricians, and machinists, could come to the steel mills when employment in their own lines was slack, then drift away again. Instead of containing a normal proportion of settled family men, the steel population was a youthful population with a high rate of turnover.

Old workers were unable to stand the pace of the steel mills, especially where the seven-day week was accompanied by the 12-hour day. "Too old at forty" was a common complaint. In 1910, only 13.6% of the laborers and 18% of the other workers in iron and steel were 45 years old or more, though 25% of all males aged 10 years and more fell in the age group "45 years and up."

The companies have discriminated and still do discriminate in favor of young workers in hiring. No less than 14 companies, including some of the largest, admitted in the summer of 1929 that they had a definite age limit of 45 years above which they would not hire.⁶ One of these was the Jones & Laughlin Steel Corp. which had denied in the previous year that it had any limit.⁷ The Carnegie Steel Co., subsidiary of the U. S. Steel Corp., had set a precedent in 1904, when a general order is reported to have been issued from headquarters to all mills directing the superintendents to accept no more men over 40 years of age in any department, and in some departments to hire only men of 35 and under.⁸ In 1928 this company denied that it had any hiring age limit; but in 1929 the employment superintendent at the company's Duquesne works admitted a hiring limit there of 45 years. Other companies in whose plants a hiring limit of 45 years was found in 1929 included Colorado Fuel & Iron Co., Bethlehem Steel Corp., Crucible Steel Co. of America, Page Steel & Wire Co., Weirton Steel Co. (subsidiary of National Steel Corp.), and Wisconsin Steel Co. (subsidiary of International Harvester Co.). Spokesmen for 12 more companies said that they had a hiring age limit of 50 years, six set the limit at 55 years, and three at 60. But steel workers well know that employment officers in hiring, discriminate against older workers, limit or no limit, and that they operate more by their own estimate of a man's age than by his statement.

The discrimination against older workers is probably more severe in iron and steel than in the average industry. In New York State, a special study carried out during a three-month period in 1930 showed that out of 212 male workers hired in iron and steel, only 30 or less than a seventh were 45 or over.⁹ The average for all industries was more nearly a sixth (16.5%). But even more important, only three of the 30 hired in steel were being taken on for the first time: the other 27 were being rehired. For the average of all industries,

nearly half of the workers over 45 who were taken on were newly hired. Thus the worker over 45 who gets hired by a steel plant must have worked there before in nine cases out of ten, while for the worker over 45 who gets a job in other industries, it is about an even chance whether he has worked in that plant before or not.

Pension plans and group insurance reinforce the tendency of the companies to hire younger workers when they hire at all. The American Steel & Wire Co., a subsidiary of U. S. Steel, even included a drastic hiring age limit as part of its pension plan.¹⁰

In spite of this discrimination in hiring, however, the proportion of older workers in the force has been increasing rapidly in recent years. Average age may best be expressed by the use of the median. One-half of the steel workers are older and one-half younger than the median. It is estimated that the median age of all iron and steel workers in the United States increased about three years between 1910 and 1930. It was roughly $33\frac{1}{2}$ years in 1910 and by 1930 had come close to $36\frac{1}{2}$.¹¹ Among the laborers, the proportion of workers over 45 nearly doubled from 1910, when they made up 13.6% of the total, to 1930, when they formed 26.8%. The increase has been almost equally striking among the highly skilled workers. In the large intermediate group also there has been a marked, if somewhat smaller, increase in the proportion of older workers. For the working force as a whole, it is perfectly evident that the proportion of older workers is much greater at the time of writing than it was a generation ago.

In explanation, we may note the decline in the proportion of iron and steel workers under 20, and the increasing proportion of older men in the country as a whole, at least since 1920. But these two factors taken together account for only a fraction of the change.

The increase in the number and proportion of older work-

ers has been made possible, as already noted, by a machine technique which has eliminated a large number of the most arduous jobs and introduced some easier ones. The introduction of automatic sheet rolling, for example, has had and will have a great effect in increasing the proportion of sheet-mill workers over 45.

Another factor in causing the increased average age of steel workers is the growth of legislation on old age pensions, and the companies' desire to avoid actions which would increase the pressure for such laws. In every large company there have been instances during the past decade of steel workers turned out on the streets without a pension, after they were too old to hope for employment elsewhere. But the companies have learned that such action raises a storm among the workers who remain, and increases the demand for a law that will give the workers more protection than any company pension plan. They find it safer and just as profitable to retain the old worker *at a laborer's pay*.

The big cause of the increasing average age of steel workers is the fact that employment has stopped expanding and has begun to contract. Among the immigrants of the pre-war period, there was a large proportion of workers under 30. The virtual stoppage of immigration during the war, the withdrawal of large numbers of young workers into the army, and the big war demand for steel forced the companies to relax their age limits and to hire more older workers. Since 1924, there has been comparatively little movement of workers into and out of the industry, and the decline of turnover has made for a higher average age.*

To-day, of course, the foreign-born workers are a relatively old element in the mills. Their median age is 42 or 43

*The decline in turnover indicates that jobs in other industries are scarce, not that jobs in steel are more attractive. A boom period would undoubtedly cause a big turnover. In 1923, out of 790 Mexicans brought to Bethlehem (Pa.) in May, only 29% were still on the payroll of the company that brought them at the end of the year.

years in the big categories of "laborers" and "operatives," and this compares with median age for native white laborers of 28 years, and for native white "operatives" of 31 years. Negroes have a higher median age than native whites in both categories, but especially in that of laborer, where their median age is 32 years, as compared with 28 for native whites. It will be shown below that Negroes have difficulty in getting promoted. In the group of "operatives," Negroes have a median age two years above that of the native whites, and this difference may also be accounted for by their failure to get promotion to the skilled group.

The increase in the proportion of older workers has been greatest in the districts with declining employment. For example, in New Jersey, where the total number of steel workers employed was 13,811 in 1919 and only 8,056 in 1929, 24.6% of the steel laborers were over 45 in 1920, and 32.2% in 1930. Since 1930 the proportion of workers 45 and over has probably passed a third of the total. A similar huge increase in the proportion of older workers in the New Jersey industry is shown for the other big class of steel workers, the "operatives," among whom 23.7% were over 45 in 1920, and 29.4% in 1930.

In the states with increasing or stationary employment, the proportion of older workers has increased also, but not so rapidly, in some states, as the increase of older workers in the population as a whole.

The southern and border states show a much smaller proportion of older workers than the eastern and midwestern states. In 1930 about 27% of all the iron and steel laborers in the country were 45 years of age and over; yet in Alabama the proportion was only 18.4% and in Maryland only 13.7%. The low proportion of older workers in Maryland, as compared with Alabama, is due to the fact that employment was expanding in Maryland, where the number of workers in the industry more than doubled during the decade, while the total

number of steel workers in Alabama actually decreased in the same period. The fact that both states have a relatively low proportion of old workers is due partly to the fact that the number of workers under 20 is relatively large, and partly to the smaller number of old people in the population as a whole. The tendency of experienced workers to seek out better-paying jobs in the North may also have had an influence.

There are differences in age between the different occupation groups. In the steel industry as a whole, the median age for all laborers is $36\frac{1}{2}$ years; for all "operatives," 34 years. The explanation of the higher average age of the laborers lies partly in the character of the work. The "operatives" group includes the heavy piece-working jobs, or many of them; and old workers who cannot handle this work are apt to be dropped back to the labor gang, where they can do light cleaning-up jobs around the yard.

Just as the proportion of older workers in the heavy industry is increasing, so the proportion of quite young workers in iron and steel is diminishing. In 1910 about one steel worker in eight was under 20 years; the proportion of such young workers is now (1933) about one in 20. But the young workers under 20 attached to the industry still number about 32,000, or more than the total of all workers employed at the peak by the Republic Steel Corp., third largest raw steel producer in the country.

Not all of the young workers have light jobs. Some of them practically do a man's work.

I am only 18 [writes a Bethlehem tube mill worker from Maryland] but I do not consider myself a youngster since I have been working at the Sparrows Point plant, for there they age one considerably, the worry of keeping a home on the poor wages paid and the rotten speed-up conditions.

On some jobs the older workers cannot keep up with the pace, so young workers are pressed into service in their place.

The Fabric Dept. is where the workers make reinforcements for concrete which is used on the highways and sidewalks. Here we have mostly young boys because the speed-up system is so terrible that *the older worker could not very well keep up with the machines. . . .* ("A Steel Worker" of Monessen, Pa., employed by Pittsburgh Steel Co., Sept. 1931. Emphasis not in original.)

Steel is still a young man's industry. As compared with other iron and steel states, Pennsylvania has an unusually large proportion of older workers in the industry; but even so, steel in that state has a much smaller proportion of old workers than the manufacturing and mechanical industries as a whole. The contrast is especially striking in the older age groups. If we eliminate from consideration the working boys of 17 and under, and examine the remaining gainfully occupied male population, we find that in manufacturing and mechanical industries generally, the workers 55 and over—the definitely aging workers—were in 1930 14½% of the total, while in all occupations in all industries they were 16% of the total. But among the iron and steel laborers, workers of 55 and over were 11% of the total, and among the iron and steel "operatives" (roughly the "semi-skilled"), the proportion was only 8½%, or about one-half the average proportion for all workers in all industries.

Negroes and Foreign-born

The steel workers who were born in Europe and who today form part of the aging, settled population of the steel towns have gone through a cycle that has been repeated in each succeeding generation in the iron and steel industry. Each time that the industry has entered on a period of especially rapid expansion, a wave of immigrants has poured into the steel towns from the rural districts of the United States, of Europe, or of Mexico. During the war labor shortage, it was even urged (by Capt. W. R. Hunt at the

November 1917 meeting of the American Iron and Steel Institute) that the government should import coolies from China, as the French government had already done.

In each succeeding generation, the bosses have played on differences of nationality, religion, and race in order to make the workers suspicious of each other and keep them from uniting for the advancement of their own interests.

What is to-day known as the "old" immigration consisted mainly of North Europeans, for the most part the Irish and Germans who came in such great numbers after 1848. About 1880, when this wave of "old" immigration had died down, there set in a series of waves from southern and eastern Europe—the "new" immigration. How well the bosses had learned the maxim of "divide and rule," even at this early date, is indicated by the following quotation from a letter written in 1875 by Capt. W. R. Jones, Carnegie's superintendent at the Edgar Thomson steel works in Braddock, to E. V. McCandless:

My experience has shown [wrote Jones] that Germans and Irish, Swedes and what I denominate "Buckwheats"—young American country boys, judiciously mixed, make the most effective *and tractable* force you can find. (Emphasis not in original.)¹²

In 1910 no less than 58.1% of the steel workers were foreign-born whites. The native whites made up 41.8%. The proportion of Negroes was negligible, about .003%. Negroes had been brought to the midwestern steel industry, up to that time, for the purpose of breaking a few strikes, but otherwise had reached the midwestern industry hardly at all.

With the shutting off of European immigration during the war all this changed. Many Negroes had their fares advanced by the companies to induce them to come North. After the depression of 1921 came a final wave of Negroes, followed shortly, in the Calumet district of Chicago, by a

wave of Mexicans, and after 1924 movement into the industry all but stopped.

We may assume that races and nationalities in iron and steel are distributed at the time of writing (1933) about as they were in 1930. From the Census we learn that 58.1% of the steel workers are native whites, 31.3% are foreign-born whites, and 8.7% are Negroes. The other 1.8% are mostly Mexicans. The proportion of native-born whites today is exactly the same as was the proportion of foreign-born whites in 1910.

NATIVITY AND COLOR OF MALE STEEL WORKERS, 1930

(Source: Fifteenth Census of the U. S., *Occupation Statistics, United States Summary*, pp. 28-33.)

Occupation	All	Per cent of total			
		Native White	Foreign-born White	Negro	Other
Laborers, iron and steel	100	39.8	39.9	16.5	3.9
Operatives, iron and steel	100	60.8	31.9	6.5	.8
Rollers and roll hands, metal	100	69.6	25.6	4.0	.8

Negroes nowadays make up about a sixth of the laborers in the steel mills. Native-born whites and foreign-born whites (not including Mexicans) each make up about 40% of the laborers. The above table gives a fair idea of the distribution in the so-called "productive" processes. However it does not present a complete picture of the industry. It covers only 378,864 men, and not all of the rollers and roll hands included in the table are in the steel industry. Of the 136,000 who are omitted in this table, the bulk are main-

tenance and repair men, craftsmen and their helpers. The table does show that in the "productive" processes the foreign-born have moved pretty well up, since a quarter of the rollers and roll hands ("skilled" workers) are foreign-born. The native whites are not subdivided into those with native parentage and those with foreign or mixed parentage since this distinction is no longer as significant as it was ten years ago.

The distribution of races and nationalities in the present-day steel towns is very uneven. Residents in Allegheny County, Pa., will very likely tell you that the typical steel laborer is a Negro and the semi-skilled steel worker a Slovak. In Cleveland, on the other hand, the man-in-the-street probably thinks of the steel worker as a Pole; it is recalled that Poles were first brought into the industry there in 1882, when the Newburgh Steel Mills imported a gang of them to break a strike of Scotch and Welsh workers.¹⁸ One hears of a colony of Greek steel workers at Weirton and of Finnish steel workers in Newcastle, while in Pueblo the steel laborers are mostly Mexicans, and in Birmingham they are nearly all Negroes.

In Allegheny County, Pa., the foreign-born (not including Mexicans, who are classified separately throughout) make up 28.6% of all the men, with the Italians the best represented nationality. In the county as a whole, the Poles are as numerous as the Czechoslovaks, but a study of particular steel towns shows that the Czechoslovaks frequently outnumber any other nationality. Over 7% of the men in the county are Negroes; the proportion in the steel plants is known to be larger.

The proportion of foreign-born in Mahoning County, Ohio, is only 18.6%, as compared with 28.6% in Allegheny County. The Italians are most prominently represented among the foreign-born in the county, though not necessarily in the steel mills, where the Czechoslovaks, second most nu-

merous nationality among the immigrants, show a tendency to congregate.

Typical of the midwestern steel towns in its racial composition is Bellaire, Ohio, with slightly more than a quarter of its men foreign-born, and about 4% of its men Negro. Bellaire is also characteristic of the steel towns in that Italians predominate among the foreign-born. But Poles are the leading foreign nationality in Lackawanna, N. Y., and Gary, Ind., and in the steel districts of Cleveland; Hungarians are most numerous among the immigrants in Bethlehem, Pa., and Ecorse, Mich., while the Jugoslavs lead in Steelton, Pa., Mansfield, Ohio, and Granite City, Ill. The Czechoslovaks are most numerous in Johnstown, Pa., and Middletown and Lorain, Ohio. The steel towns in the border state of Kentucky have an insignificant number of foreign-born, and in this they are characteristic of the southern states generally, where Negroes fill the unskilled jobs in the steel mills.

A few midwestern steel towns, such as Middletown, have less than 10% of foreign-born; while a few others, including Lackawanna, N. Y., and Aliquippa, Pa., have more than 50%. Negroes make up over 18% of the men in Ecorse and 22% of the men in Steelton, but have not reached Granite City, Ill., or Niles, Ohio, practically at all. Mexicans make up an important part of the working force in the steel mills of the Pacific Coast, Colorado and the Calumet district (Chicago and northern Indiana), but not elsewhere.

There is nothing in the record to prove that the members of any race or nationality are better workers in steel than those of any other. Negroes showed their "efficiency" at the iron forges and furnaces of the South before the Civil War. Although they were slaves, they worked as well for the profits of their masters as the "free-born" whites. In the supplemental *Report of the Richmond Commercial Convention* of 1838, the Committee on Manufactures wrote, "We have in our peculiar labor [*i.e.*, slave labor] the means of

7 conducting the manufacture of pig iron more efficiently.”¹⁴ Joseph R. Anderson, master of the famous Tredegar Iron Works of Richmond, Va., which were known as the largest southern iron works of the pre-Civil War era, said that it was the economy he made in employing slave labor for the worst jobs that enabled him to offer higher wages to skilled white men than they could receive in Pittsburgh. The slaves could be forced to work through the summer, when the whites refused to come to the furnaces.

The bosses, true to their policy of “divide and rule,” try to stir up national, religious and racial prejudices whenever the workers show a tendency to act together for their joint economic interests. As one defender of the employers, John B. Appleton of the University of Illinois, puts it,

Most of the men employed in the rolling mills [of the Calumet district] tend to be Poles, the furnace men are largely Austrians, the railroad men Italian, etc. This has a disadvantage from the administrative point of view [read “from the employer’s point of view”], in that *the individual members of these groups tend to support one another and make it difficult to trace the cause of minor troubles. Consequently, efforts are made to mix the nationalities as far as it is practicable.* (Emphasis not in original.)¹⁵

A steel mill executive in the Chicago district said in 1928, “The nationality reports are useful in times of labor trouble, and we try to keep the different nationalities scattered.” The purpose that lies back of the policy of getting in new races and nationalities came out very clearly in the following remark of the superintendent of a large steel products works,

I got the colored pastors to send colored men whom [*sic*] they could guarantee would not organize and were not bolsheviks. . . .¹⁶

The race prejudice against Negroes is used by the employers as a weapon to drive both whites and blacks still harder. The attitude of the steel employers is well illus-

trated by the remark of an employment manager, also in the Chicago district, who said,

We have Negroes and Mexicans in a sort of a competition with each other . . .

In the South the Negroes still remain a subject people. It is almost unheard-of for a Negro to give orders to a southern white man; so even when the colored "millwright's helper" is teaching the trade to a white man, the white man is the millwright, receives the pay of a millwright, and is addressed as "boss" by his instructor. The highest-paid jobs open to Negroes in the southern steel mills are certain piece-working jobs; and the Negroes hold these jobs only so long as there is no concerted move by the whites to oust them.

In the North it occasionally happens that a Negro directs a gang which contains some white men (usually foreign-born), and in a few isolated mills, most of the skilled jobs are held by Negroes. After the steel strike of 1919, there were for a time considerable numbers of Negro foremen. But such cases are exceptional. There are a few open-hearth steel mills where a Negro may rise as high as a first helper; in most open-hearth works, however, advancement beyond the grade of second helper is simply out of the question. ✓

The Mexicans are apparently moving up in the scale of jobs more rapidly than the Negroes, and may end by jumping right past them, leaving the Negroes in the worst-paid and least attractive jobs even though the Negroes were first in the mill. In two large steel plants of the Chicago area, the Mexicans, who arrived later than the Negroes, have already a larger proportion of their total number in the "semi-skilled" jobs than the Negroes have.¹⁷ At the time of writing, the Negroes still have more *skilled* jobs proportionately than the Mexicans, but it is a question how long they will hold their relative position.

Wages, hours, and conditions of work of the steel workers will be discussed in the next three chapters. In this field no topic is more hotly controverted nor more generally misunderstood than that of accidents and occupational diseases—the worker's hazards from the job. We shall therefore examine first of all the employers' claim to have changed steel from a dangerous to a safe industry.

CHAPTER II

ACCIDENTS AND OCCUPATIONAL DISEASES

"THIS MILL is too dangerous. We cannot allow women to visit," said the assistant safety manager at Jones and Laughlin's South Side plant in Pittsburgh. "Not even our nurses. We have two nurses and it would be a great help to them in treating accidents if they knew something of the processes at which the man had been injured, but we simply cannot let them in. You see, we have a lot of equipment that is out of date, lacks the new safety devices and is liable to break down at any time, causing serious accidents. It still yields a return on investment so the company cannot scrap it. Another thing. We are much too crowded here because we have expanded production without expanding the site area of the plant. The company has squeezed in new equipment beside the old until it is so thick it isn't even safe for the men who are working here. Those who have been with us a long time are used to it but new men are always getting into trouble. We have many more accidents than we would if there were a little more room. Of course it is cheaper to use the old plant as long as we can but we can't allow women to visit. Sorry." The assistant safety-manager smiled and turned to his desk.

Two hundred and forty-two iron and steel workers were killed through accidents in the iron and steel industry in 1930, 1,193 were permanently disabled, and 21,410 were temporarily disabled, making a total of 22,845 casualties.¹ For every thousand man-hours worked, 2.5 days were lost on account of accidental injuries. In frequency and severity, occupational diseases probably constitute an even greater menace to workers in the industry than accidents.

The life expectation of the industrial worker, aged 20, is seven years less than that of one who enters a white collar or professional job,² and among industrial workers, the steel worker is subject to unusual risks. How grave are these risks and of what nature? To what extent are they avoidable? What are the bosses doing to avoid them?

Mortality Rates

The figure which shows the steel workers' risk of death from all causes, from accidents and diseases both in the industry and outside it, is the mortality rate. In 1920 the mortality rate in iron and steel was nearly twice the rate in general manufacturing, according to the Prudential Insurance Co. of America. The *Joint Occupation Study*, prepared by experts for the insurance business in 1929, shows that the expectation of death is above average for all the principal occupations in iron and steel except machinists; for laborers—the most important occupation numerically—it is more than twice the average.*

These high mortality rates are of course reflected in high life insurance premiums. At present, talk of purchasing life insurance would be a bitter joke to unemployed or part time workers who have not the means to purchase bread, who cashed in their policies for what they would bring and ate up the proceeds. Only a few of the more skilled steel workers can get life insurance at ordinary rates. "Semi-skilled" workers must in general pay 30 to 50% above the ordinary rates; common laborers, 55 to 100% above. A few iron and steel occupations are rated Special Class B (mortality expected to run between 205% and 250% of the "standard"). One steel executive, always hopeful of deceiving the public, said in 1928, "The average [iron and steel] mill worker to-day can buy life insurance at the same rate of premium as the office worker or other preferred risk."³ When this statement

* Detailed figures in Appendix I.

was brought to the attention of W. N. Bagley, assistant actuary of The Travelers, Inc., he said simply, "It is not true."

The *Joint Occupation Study* already referred to shows that accidental deaths for iron and steel workers are far above normal—for mechanics, 396% of normal; for laborers, 334%; rollers and roll hands, 162%; and "semi-skilled" operatives generally, 144%. The figures of the Metropolitan Life Insurance Co. indicate that violent deaths are one-fifth more frequent, relative to other deaths, for iron and steel workers than for workers in the average of other industries. This high proportion of accidental and violent deaths is due to the industry and not to accidents outside of working hours, as the Metropolitan study shows.

Accident Severity Rates

Mortality rates are only a rough measure of risk, since they take no account of non-fatal disabilities. Such disabilities are of two main kinds—those due to accidents, and those due to sickness.

The best measure of the accident risk in industry is the *severity rate*. This figure gives the number of days lost from accidents per 1,000 hours' exposure. The "time lost" from a fatal or permanently disabling accident is set at a figure supposedly representing all the time the victim would have worked during the remainder of a normal life, if he had not been prevented by the accident.

From the companies themselves, which have every reason to minimize the hazards in iron and steel, comes statistical proof that the industry is unusually dangerous. The National Safety Council, a private organization which was set up largely at the instance of certain steel companies, gives figures extending through 1931 for 100 "units" of steel production and for 2,207 other industrial "units." These show that the severity rate for steel exceeded the average for

all classifications by 27% in 1929, by 22% in 1930, and by 24% in 1931.

The conclusion that steel making is more dangerous than most other industries, is corroborated by government figures. Out of 21 manufacturing industries, other than iron and steel, for which the U. S. Bureau of Labor Statistics has calculated severity rates, only nine have higher rates than iron and steel, and twelve have lower rates.⁴

The bureau has now decided to exclude from the record of the industry coke ovens operated in connection with steel works (which have an accident rate above the steel average) and also the erection of structural steel by steel manufacturing plants (one of the most dangerous jobs in all industry). At the same time, several new departments of the steel industry, all of which have lower accident rates than the average, have been included in the general figure beginning with 1930. The effect of these omissions and inclusions, at least some of which must appear arbitrary, will be to cause the steel rate to appear lower in future by comparison with other industries.⁵

Severity rates have been calculated for so few industries outside of iron and steel, and for so few plants in those industries, that we may well look further for a measure of the relative hazards in steel. We find it in the high premium that the industry pays for compensation insurance. This premium is proportional to the compensation actually paid in the years immediately preceding, and so to the accident risk. In data for Pennsylvania (which contains a third of the heavy industry), as in the national tables compiled by the National Council of Compensation Insurance, the iron and steel industry has an exceptionally high rate.*

* See Appendix II.

Accident Rates by Departments

The accident rate for the industry as a whole is indeed high, but the average for all departments gives little idea of the appalling risk in certain branches. In the open hearth department in 1929, the rate was 77% above the average for the whole industry. For the years 1925-1929, the rates for the several production departments were as shown in the following table.

ACCIDENT SEVERITY RATES IN THE IRON AND STEEL INDUSTRY BY DEPARTMENTS, 1925-1929

(Source: *Monthly Labor Review* of U. S. Bureau of Labor Statistics, April, 1931, p. 96.)

<i>Department</i>	<i>Severity rate (days lost per 1,000 hours' exposure)</i>
Open hearths	4.6
Blast furnaces	4.2
Bessemer converters	4.2
Foundries	3.0
<i>All departments</i>	<i>2.6</i>
Plate mills	2.6
Heavy rolling mills	2.1
Sheet mills	1.6

The high rate of accidents in the blast furnace department is due chiefly to cases where the furnaces break out and kill one or all of the crew by burning them to death. In 1926 a blast furnace of the plant of the Woodward Iron Co. in Alabama poured 400 tons of molten iron onto its crew, and 21 workers were killed. Such breaking out may be caused by unskillful operation on the part of the blow boss, or by the desire of the company to get the last bit of use out of the furnace before blowing it out and relining it.

In the yard department, where the workers are mostly laborers, the most frequent cause of accident is getting hit by a power vehicle, such as a dinkey engine. The writer was hit in the nose by a dinkey engine in a steel-works yard in 1924. A foreign-born steel worker once described the sensation of the victim of a railroad accident very well as follows:

"No choo choo! No ling ling! No God damn you get out of the way! Just run over!"⁶

Overhead cranes are used more or less in all departments, and many of the accidents due to falls and to falling objects are attributable to them.

Accidents caused by falling objects are relatively more frequent in the open-hearth department than in any other except fabricating. Machinery is a special hazard in the open hearth and fabricating departments, and the open-hearth workers are also exposed to burns, perhaps especially the pitmen who clean up after tapping.

A fairly common source of injury in the rolling mill departments results from hot metal jamming in one of a series of rolls. Under these circumstances the red or white hot metal, called a cobble, is likely to strike any worker within range.

Electrical workers have the hazards of live wires and of falls from poles. Handling tools and materials is a frequent cause of accident in most departments, and it is from this source that the relatively "safe" sheet mills may expect more accidents relatively than any other department. There is a special reason why the sheet mills, for example, should show a low accident rate. The work at the rolls and furnaces is so arduous that the workers have to spell each other off, and at any given time only one-half to two-thirds of these workers are actually handling the materials.

Publicity and the Accident Rate

A generation ago the steel companies showed such flagrant and criminal carelessness in the operation of their plants that

liberal writers exposed them. In the campaign which began in 1906 and resulted, after 1910, in the enactment of state compensation laws, the steel industry was featured. The U. S. Steel Corp. undertook to reduce the accidents in its plants and succeeded to an extent which it has taken great pains to advertise. Other companies followed suit.

ACCIDENT SEVERITY RATES IN THE IRON AND STEEL INDUSTRY

(Source: *Monthly Labor Review*, November, 1931, pp. 27, 31.)

<i>Year</i>	<i>Rate</i> (all departments)
1907	7.2
1907-1911	5.0
1912-1916	3.7
1917-1921	3.4
1922-1926	2.8
1927	2.3
1928	2.2
1929	2.6
1930	2.5

The rate for 1931 was calculated on a new base. It was slightly lower than that for 1930, the reduction amounting to eight-tenths of one per cent of the 1930 rate.⁷ The reduction in accident rates since 1907 is partly fictitious owing to the growth of the practice described below of forcing injured workers to come to the plant. Nevertheless there has been a marked reduction.

Company apologists often cite the reduction to show the humanitarian character of the U. S. Steel Corporation and its fellows. They would do better to keep the statistics as secret as possible. The fact that the companies could reduce the accident rate so sharply constitutes a terrible indictment of conditions prevailing in the earlier period. The worker who

had his arm wrenched off in the rolling mill, the widow whose man was buried in an overflow of molten metal, may read in these figures that the accidents which broke their lives might never have occurred if only the pressure of publicity and threat of compensation laws had been applied a little earlier. The union organizer may reflect upon the greater reductions which would have followed a mass movement of the workers.

Safety and Profits

From the safety campaign, which was started in 1906, the steel companies have realized certain concrete advantages.

Expenses have been reduced. Steel officials point out that accident prevention pays in dollars and cents.

To-day accident prevention is just as much a business proposition as production [says the vice-president of a U. S. Steel Corporation subsidiary]. Absence of workers, due to injuries, causes changes in personnel requiring the hiring and training of new men. The bare cost of hiring a new man will run from \$30 to \$80. Such accidents disrupt the morale of an organization. . . . Every accident prevented means a saving of just so much in compensation and necessary medical care and attention. . . . A large steel works employing 5,000 men cut compensation costs from \$24,378.89 in 1926 to \$10,407.45 in 1927, showing a saving of \$13,971.44. These figures do not include savings due to decrease of medical and hospital services. . . . It is said that the U. S. Steel Corporation spent \$9,763,063 in safety work in 10 years and showed an actual saving of \$14,609,920.⁸

The American Rolling Mill Co. reminds its foremen, "Every accident causes a loss of production." An accident may cause injury not only to life and limb, but to expensive equipment.

Blaming the Workers

The safety movement has made it easier for the companies to blame the workers for every accident that occurs.

Shifting the blame for accidents has always been part of

the companies' policy. A safety technician once charged openly in a meeting of the National Safety Congress that the Illinois Steel Co. (U. S. Steel subsidiary) used to employ a photographer for this particular purpose. It was the photographer's job to visit the scene of each accident and fix up a picture which would show that the company had not been to blame.⁹ Or take a more recent example:

At 11 o'clock at night in the steel mill we suddenly heard a terrible cry, after a crash (a 40,000 lb. load had fallen down). Dust covered up the place like a thick fog, and we could not see anything. For a few seconds we heard the heart-rending cry and then all lapsed into a deep silence.

We all trembled and stood speechless for a few minutes, around the bloody mass of flesh and bones. The worker's blood sprinkled the whole place. The sharp corner of the load had torn open his stomach and the internal organs were ripped out.

They immediately began to discuss whose fault it was. First the bosses blamed it on the man who was killed, then on other workers. . . . (From a letter written by a sheet steel worker of Niles, Ohio, an employee in the Thomas mill, August, 1929.)

The new technique of accident prevention includes the appointment from among the workers of "safety committees," whose identity is sometimes kept secret from the other workers. The men selected are "safe" in every sense. They can usually be counted on to "coöperate" with the company, and incidentally to pass on information about what is happening among the other workers with reference to union organization and the like. These men are filled with the company point of view on accidents. They are shown how hard the company works to prevent accidents, and how careless the workers are. This point of view they are expected to spread abroad in the mill, as the foremen and other bosses also continually do.

The safety work thus offers one more opportunity for the bosses to try to split the ranks of the workers and set them against each other. No company ever carried this policy

farther, in all probability, than the Newport Rolling Mill Co. of Newport, Kentucky (now a part of the American Rolling Mill Co.), which formerly had a safety "court" in which the workers were tried, and fellow employees acted as prosecuting attorneys.¹⁰ The jury system, however, has not shown any tendency to spread. Jones & Laughlin once had a somewhat similar system and abolished it. A jury of workers might some time find the company guilty of criminal negligence, and that would never do. It is more prudent for the company to leave the reporting of accidents to "loyal workers" who will take the company's viewpoint as their own.

Even committeemen admit that some of the rules the company makes cannot be enforced. A worker at the Ensley plant of the Tennessee Coal, Iron and Railroad Co., who had been a safety committeeman for years, once told the writer that if all the safety rules were observed, production would be greatly slowed up. He himself commonly disregarded certain rules. Then why have the rules? Unenforceable safety rules can have only one use—to shift the blame from the company which makes the rules to the worker who is charged with disregarding them. It often happens that a boss directly orders a worker to do something which is contrary to a safety rule. This leaves the worker a simple choice—to break the rule or to be fired.

Company statisticians have compiled tables attempting to show that most accidents are due to the recklessness of the workers themselves. Acting on the same theory, the Jones & Laughlin Steel Corp. (for example) holds some one individual responsible for every accident that occurs, and that individual is disciplined, usually by being laid off for a time. If it is the injured worker himself who is "responsible," then he is disciplined. The exception is if the worker happens to get killed. Then his buddy, or the one who was nearest at the time, is apt to be selected for layoff. For example, in 1929 two laborers were working at night on the dock at

Aliquippa. One of them fell into the river and was drowned. His companion, who could not swim, ran for help. Later the companion was disciplined for the accident. This case, and others like it, were too much even for the safety director, who handed in his resignation.

Sometimes the majority of the workers on a given job are disciplined in succession for an accident that keeps recurring. Obviously that is a clear case of mismanagement, for which the workers are being made to suffer. The workers in the open-hearth department of the Bethlehem plant at Sparrows Point report an instance where 80% of the first helpers were penalized within a year by being demoted or laid off for a week or two, the reason being that the steel had broken out. But, said the workers, the reason the furnaces broke out was that the company was trying to save money by using, for bottoms and walls, raw dolomite—the cheapest material available.

For the company, it is a good policy to shift the blame onto the workers. It is much easier to deal with the state factory inspectors when they can be shown that the company is not to blame. The following incident was related to the writer by a certain Jack H——, a craneman in the Cambria plant of the Bethlehem Steel Corp. at Johnstown:

In my old crane, I had to look out the side to get a clear view of the floor and avoid obstructions. The safety committee visited the crane and one member remarked, "Gee, we can't hold Jack responsible if anything happens; you can't see a thing up here." (The safety committees have power to make recommendations, but not to enforce them.—H. B. D.) Next week I bumped a pile of rods off the top of a shed, and knocked them onto a couple of laborers, cutting off the legs of one. In the investigation before the factory inspector, the super stood right by me and stepped on my foot, whispering, "Don't say too much before this fellow." I said I was going to talk because I was in the right, and I told my story.

Jack H——, a skilled man, was not fired. But many workers are afraid to talk freely in the presence of the bosses. It is the settled policy in all companies, so far as is known, to avoid the situation where a worker confronts his boss and blames him directly for an accident.

Apologists for the companies either pass over this feature of the safety program (which varies little from company to company) or lie about it. Arundel Cotter writes in *United States Steel: A Corporation with a Soul* (!!) :

The Steel Corporation . . . compensates for [accidents] *without a question as to where the blame lies*. (Emphasis not in original.)¹¹

A cooler example of misrepresentation would be difficult to find.

The companies' "safety education," which is carried on by a variety of means, from pamphlets to pep meetings on the men's own time, is based on the theory that the workers are careless. The companies try to give the impression that their safety campaigns have been mainly responsible for the big drop in accidents. But their safety "education" is largely a waste of time, according to former N. Y. State Industrial Commissioner Frances Perkins.¹² A friend who has been attached to the industry for some years and who has talked to hundreds of workers in the principal midwestern centers, goes much farther. He writes:

The "safety" meetings are almost universally used to speed up production. The men are openly threatened at these meetings with "hurry up or get out." They are also given more talks on loyalty to the company than on accident prevention.

Safety and the Machine

New processes bring hazards against which the workers are often in no position to guard themselves. Early in 1926 the Illinois Steel Co. finished installing a quarter of a million

dollars' worth of new equipment in its by-products plant at Gary, Ind. On June 14 occurred an explosion in this plant which killed 15 workers and injured 60. The company immediately posted guards at the plant and excluded all reporters except from the *Gary Post-Tribune*, whose attitude was known to be "sympathetic" to the management. The cause of the explosion was never definitely determined, or even adequately investigated.

Nevertheless, experts believe that most of the credit for accident reduction should go to new machinery. This conclusion will surprise the layman who looks on the machine as constituting a danger to life and limb. In certain cases of course the new machine is more dangerous than the old process. But in iron and steel, the greater the improvement in machinery and the more automatic the process of production becomes, the farther removed is the individual worker from contact with the hot metal, poisonous gases, and moving rolls. For example, one of the most dangerous jobs in connection with the old-style blast furnace was that of the top-filler (the worker who took the wheelbarrows of ore, coke, and limestone from the top of the elevator and dumped them into the top of the furnace). When the charge inside the furnace slipped, as it sometimes did, the furnace top would vomit forth clouds of gas and flame and red-hot coke, often killing the fillers who were nearby. Or the slow leakage of carbon monoxide gas might result in the filler being overcome before he realized it. Even to-day, oilers go to the top of the furnace only in pairs. Mechanical charging eliminated the job of top filler. There are to-day only two or three hand-charged furnaces in the United States, and the accident rate on blast furnaces has dropped accordingly.

Speed-up versus Safety

However in spite of mechanical improvements the reduction in the accident rate is slowing up and may have stopped.

A study of the table given on a previous page shows that there has been no great change in severity rates since 1925 (the rate in that year was as it happens the same as in 1930, 2.5). For this lack of advance there are two main reasons, both of which will tend to persist as long as capitalism lasts.

Speed-up is the first and great obstacle to accident reduction. Indeed, speed-up is the very opposite of safety work. In the little plants especially, accident rates have tended to rise, both absolutely and relatively to the big plants, because of speed-up. The smaller plants do not have the possibilities of installing automatic equipment that are open to the ten-million-dollar corporation. But in the big companies too, the "drive system" causes accidents. A few illustrations follow:

Some of the speed-up in National Tube Co. [U. S. Steel subsidiary] in McKeesport: A worker was doing two jobs while at work. He was working the levers on a machine. While working on the levers he had to leave the levers and run over to the crane and hook a cart. While he tried to get over there in a hurry the levers caught his clothes and spun him around and threw him in a hole 80 feet deep.

The workers couldn't get him through the same hole but had to go through a sewer to get him. The company doctor says that if he pulls through he will be insane.

The daily newspaper of McKeesport tried to get the news and the doctor told the reporter that there was no accident—wanted it to be kept secret. ("National Tube Worker," in *Labor Unity*, April 11, 1931.)

On February 3, a worker was electrocuted. He was in the power house doing carpenter work, putting doors on a new switch board. The boss yelled to him to leave his job because he had another hurry-up job for him to do. The worker opened one of the doors in the switch board to put away some screws he had in his hand before rushing to the other job. In his hurry he opened the wrong switch board—one which had the power on. He touched a 6500 volt wire and was killed. If the worker had not been rushed off his job into another one, he would not have been

killed. If the switch board had had a safety lock on it, the worker would not have been able to open the door. (From *Tube Worker*, shop paper issued by the Communist Party nucleus of the Youngstown Sheet & Tube Co., March 1930.)

"Whenever I raise a load," a crane man told me, "I always pray that no one will get hurt, because I do not have time to lift the load slowly as it will take three times as long and the boss fires us if we take time, and do things the safe way." ("L. N.," from Niles, Ohio, mill of Thomas Sheet Steel Co., subsidiary of Empire Steel Corp., August 1931.)

The other big obstacle to 100% safe operation is that the companies admittedly do "safety" work because it pays, and slow down and stop if and when they are convinced that it no longer pays. The workers know this; and they also know that the company will abolish unsafe practices only when and if it sees fit. Some bosses even resent having the workers make suggestions about safety. For this reason, workers usually find it more prudent to keep silent.

There is of course a way of getting around this difficulty in part even under capitalism. In some European countries the unions virtually control the appointments of government factory inspectors, or have done so at times. A strong union with some control over inspection can do much to protect the worker who makes suggestions. Full collaboration of the workers in safety work will presumably not be secured until the workers exercise full control.

Doctors and Compensation

Workers have many grievances against the company doctors, whose services in some states they are compelled to accept. The service is apt to be of inferior quality and brutally administered. Steel workers of Indiana Harbor still speak with deep disgust of Major Hamilton, recruiting officer for the Indiana National Guard, who used his position as company doctor for the Inland Steel Co. to get workers into

the National Guard. That company doctors are liable to abuse their position is recognized in some state laws which give the injured worker his choice of doctors. But this freedom of choice is for most steel workers either non-existent through failure to provide it in the law, or purely nominal. When injured workers are forced under threat of discharge (as they often are) to come to the plant and "draw their time" so as to give the company a good accident record, one of the main purposes of the compensation laws is defeated. In one part of one plant (Jones & Laughlin South Side plant, Pittsburgh) no less than six accident victims were observed during a single shift, who were able to walk but not to work and who were evidently under instructions to come to the plant every day until well. Some workers are browbeaten into accepting lump sum payments, forced back to work ahead of time, or denied compensation altogether. When a big company decides, in any particular case, that it is not going to pay compensation, it is able to employ the best legal talent to uphold its position. The unorganized steel worker generally is forced to accept the company's decision on whether he has compensation coming or not. The worker who takes his claim to the state referee may expect to be fired and never reemployed.

Most of the big companies are self-insurers, and handle the beating down of claims themselves, but the situation is no better for the worker when the compensation risk is insured with a commercial insurance company. These concerns are of course experts at beating down claims, and they furnish inferior medical service as a rule; indeed, some of them have made compensation practice into a kind of racket. Among the important steel states the only ones which definitely exclude the possibility of insuring the compensation risk in commercial companies are Ohio (with an exclusive state fund) and West Virginia.

Occupational Diseases

The sickness risk in steel is bigger than the accident risk. Excess deaths from pneumonia alone were nearly as numerous in the industry in 1929 as all deaths from accidents; and the severity rate for non-fatal cases of sickness has been higher than the severity rate for non-fatal accidents in the only steel plant which is known to compile sickness severity rates, Middletown plant of the American Rolling Mill Co.¹³

There is no indication that the hazards from sickness are declining. New jobs bring their own hazards to health. Since alloy and tool steels are coming into increasing use, the following quotation from the *Iron Age* is of special interest:

Quenching temperatures for alloy and tool steels have been steadily rising during the past ten years. . . .

Higher temperatures . . . put a greater strain upon the heat treaters themselves; but *it almost seems that they have been the last factor to receive consideration*. One would imagine, on entering some heat treating departments, that the management must think these skilled members of the organization are birds like the fabled phenix, which flew out of the altar fire with never a tail feather singed. Else why would any one install *heat-treating equipment operating at somewhere up to 2500° F., blowing off white-hot furnace gases into a work room already superheated by a blazing summer sun?* We find such operations in plants where it is evident from the variety of equipment, labor-saving devices and quality of work done, that much thought has been given to this important operation. Yet the men all have "sun burned" noses and cheek-bones. (Emphasis not in original.)¹⁴

The *Iron Age* goes on to point out that these conditions are really not defensible on any ground, since means have been discovered, and are actually in use at some plants, to exhaust the gas by means of a hood and suction fan.

Nearly every department has its special dangers to health, many of them hard to locate. There is the risk of conjunctivitis (inflammation of the eye), due to heat, sand and dust;

of heart disease, from which men may drop dead at work;¹⁵ of "hammer-man's paralysis" of arms, due to use of heavy sledges; of "striker's arthritis" (rheumatism) of wrists and elbows, due also to hammering, or to holding vibrating tools; of "boilermaker's deafness," and of ferro-silicon poisoning. All of these diseases are listed by Hayhurst as occupational diseases of iron and steel.¹⁶

The list compiled by Hayhurst, although the best available, is far from complete. Workers continually report ailments which, though well recognized among persons in the industry to be connected with the occupation, have not yet found their way into official reports. There are convulsions of the arms and feet among men doing excessively hot work; boils and pimples, occurring on the bodies of oilers who get greasy and wet at the same time; "kidney trouble," said to affect most of the young workers in a particular department of the Sparrows Point plant; and many others. These instances, reported by untrained workers, cannot be waved aside; untrained workers long ago detected and complained of the danger from diseases, such as pneumonia, which are now definitely classed as occupational.

Three types of disease, peculiarly associated with iron and steel production, include most of the serious cases. These are carbon monoxide poisoning, ailments traceable to heat exposure, especially "hot-mill cramps," and pneumonia.

Carbon monoxide poisoning is dangerous chiefly because it creeps on the workers unawares. The gas is difficult to detect and workers usually do not notice it. "Gassing" produces chronic symptoms such as headaches, dizziness, vomiting, coated tongue, anemia, palpitation, insomnia, general debility and mental dullness; chronic gassing may cause depressive insanity. An excessive dose will cause the subject to fall unconscious, and he will soon die unless rescued.

"*Hot-mill cramps*" is the disease most feared in the steel mills by workers on hot jobs. It is not the only disease that

is caused by exposure to excessive heat, but it is the worst.

Scientists say that men can work safely in the mills as long as the effective temperature is not higher than about 80° Fahrenheit. With an effective temperature higher than 85°, the body loses its heat equilibrium and physiologic reactions continue to increase with length of exposure. *Yet some steelworkers are repeatedly exposed to temperatures as high as 220° F.* In tinsplate rolling mills the rollerman and "behinder" usually stand in temperatures of from 100° to 120° F. working laboriously in the face of radiant heat from the furnaces and plates.

It is especially in the sheet and tinsplate rolling mills that hot-mill cramps are likely to develop. The ailment may be local, affecting only one part of the body, or it may be so general and intense as to cause death. It is so painful that in severe cases doctors sometimes inject cocaine, with corresponding danger to men having weak hearts. Workers who have had the cramps several times are often incapacitated for further work in the hot-mill. Under the present menace of unemployment workers cannot risk their jobs by laying off when they feel the cramps coming. During one hot spell in late July and early August of 1933, the *Associated Press* reported from Charleroi, Pa., that 127 workers there were overcome in a single shift; while a worker wrote in from Sparrows Point that in the Bethlehem Steel Corp. plant there six steel workers had died in a single week.

All week [added this worker] men had been passing out from heat-cramps. Nearly 250 of them walked or were carried to the dispensary, and when the dispensary beds were full, the sick workers were laid out like cattle on the grass. (*Daily Worker*, August 5, 1933.)

The new patented continuous and semi-continuous sheet and strip mills have involved some workers in increased risk from hot-mill cramps. Rests between heats have been abol-

ished, in some mills, especially those on 6-hour shifts, and men who work around the furnaces say that they get the dreaded cramps more frequently than before. In some plants, they are fired if they go home with the cramps. The result is that they work until they drop, and even then there is no guarantee that they will be carried out.

At the Weirton Steel Mills, in West Virginia, we are not allowed to quit no matter how sick, until we fall down. The result is that in the last two days no less than 45 men have been carried out of the mill on stretchers. From the tin mill alone 25 were carried out within 15 hours. (From a worker employed by the Weirton Steel Co., subsidiary of the National Steel Corp., July, 1931.)

Over 3,000 tons of sheet iron has to be produced every week at the Sheet Mill Dept. Most of the workers sweat over fire and gases in the hot mill. Three workers were so fatigued they fell down and they were brought to the hospital. One of them in particular, a doubler on No. 2 *had been unconscious for several hours before anybody noticed him.* ("Metal Slave," employed by Bethlehem Steel Corp. at Sparrows Point, May, 1931. Emphasis not in original.)

So tired do the workers sometimes become that they fall asleep in the line waiting for their pay.¹⁷ Their resistance to disease is decreased by fatigue.

Workers who escape the cramps are liable to have their health slowly undermined by excessively hot work. They become "susceptible to disease and invariably suffer from anemia and muscular and joint pains which eventually induce premature old age."¹⁸ Heat may also cause apoplexy (heat stroke), heat exhaustion, or heat diarrhoea, and those exposed to white heated metals are subject to cataracts (an eye injury which requires an operation to remove the lens). Exposure to heated metals also causes "sun burn" of arms, hands and face; further, small hemorrhages may develop under the skin of the face. Callouses develop in the feet of men who walk

over hot iron plates, and hands may also become severely calloused.

Pneumonia

Pneumonia is the worst scourge of the steel workers.¹⁹ Industrial workers get pneumonia on the average, at the rate of 25 or 30 per year per ten thousand workers. Among steel workers one may expect 44 cases per year per ten thousand. It may be calculated that the *excess* pneumonia deaths in the industry, above the normal expectancy for occupied males, amounted in the year 1929 alone to more than 200.²⁰ This compares with a total number of deaths from industrial accidents in the industry of 304 in 1929 and 229 in 1928. Discussing the pneumonia hazard, the U. S. Public Health Service states that "only a few problems in industrial hygiene merit more urgent attention."

Steel towns generally have high mortality rates from pneumonia. Such typical steel towns as East Youngstown, Ohio, and Braddock, Pa., have rates more than three times as high as the rate for all cities in the registration area. Pittsburgh has for years reported one of the worst death rates from pneumonia among the large cities of America. Other steel towns reporting rates at least half again as high as the average for cities are Carnegie and Johnstown (Pa.), Gary (Ind.), Pueblo (Col.), and Duquesne (Pa.).

The high average rate in steel towns is due, in the opinion of experts, not to chance but to the steel industry. The U. S. Public Health Service has carried out a detailed study in a certain Pennsylvania town where steel is manufactured, using records of the sick and death benefit association of a large steel company. The investigators tried to account for the high rate of pneumonia among steel workers by reference to such factors as seasonal variations in frequency of the disease, influenza epidemics, economic status, age of the men, their nationality, extent of addiction to alcoholic stimulants,

and prevalence of pneumonia in the community. All these factors together were insufficient to account for the steel workers' susceptibility to pneumonia. It was found that women in the community had a higher pneumonia rate than women in cities generally, indicating a community as well as an occupational risk; but the rate for the men was about twice that for women.

Hot jobs carry an exceptional risk from pneumonia. Profuse sweating followed by sudden cooling is characteristic of the work of men in several departments. The hot jobs are: cast-house keepers and helpers in the blast-furnace departments (this group caught pneumonia 13 times as often as the general run of workers not subjected to any exceptional exposure); the oven heater and some laborers at the coke ovens; the melters and their helpers in the open-hearth, and also the bricklayers and mechanical repair men, who must go into a furnace before it is cool to repair and rebuild it; and in the rolling mills, bottom makers in the soaking pit section and heating furnace workers, rollers, shearmen, helpers and hookers. The plant studied apparently had no sheet mill, so the hottest jobs of all those in the steel industry were not studied.

Previous English studies had shown that workers with hot jobs are especially subject to rheumatism and pneumonia, and apparently also to other respiratory diseases.²¹ It was a surprise, however, to find that in the American plant studied, the workers who had to work outdoors in all kinds of weather, not on hot jobs, were even more subject to pneumonia than the workers on the hot jobs already mentioned. Most of these workers were employed in the general labor department, which accordingly had a high pneumonia rate. Work involving exceptionally strenuous labor, and exposure to dust, gases and smoke, was shown to be work on which pneumonia occurred more often than normally, but not as often as on hot or outdoor work.

FREQUENCY OF PNEUMONIA ACCORDING TO NATURE OF EXPOSURE IN A PENNSYLVANIA STEEL PLANT, 1924-1928^a

(Source: U. S. Public Health Service, *Bulletin* 202.)

<i>Industrial exposure^b to—</i>	<i>Annual number of cases of pneumonia per 10,000 workers</i>
One or more conditions ^c	121
None of these conditions ^c	39
Inclement weather only	136
Heat with wide changes in temperature (no other hazard)	126
Other conditions ^d	106

^a Employees of the mines omitted as well as those in departments in which no observations were made.

^b Includes slight or occasional as well as heavy exposure.

^c Conditions are: outdoor work in all kinds of weather, exposure to heat with wide changes in temperature, strenuous labor, dust, gases and smoke.

^d Exposure to one or more of the conditions named in footnote c, but exclusive of exposure only to inclement weather, and only to heat with wide changes in temperature.

The number of men included in the study was sufficiently large to make the results statistically significant. In the case of the workers who had to work outdoors in all kinds of weather, it was calculated that the odds were several millions to one against the possibility of such a high pneumonia rate occurring as the result merely of chance.

Other respiratory diseases are of no more frequent occurrence among American iron and steel workers than among other groups of occupied males, except in certain localities.²² But the *mortality* from all respiratory diseases, not only pneumonia, is much heavier among iron and steel workers than among all occupied males.²³ A possible explanation is that when steel workers get a respiratory disease, they get it bad—a conclusion which is supported by the very fact that pneu-

monia is so much more characteristic of the industry than the milder respiratory diseases such as bronchitis. Another possible explanation is that steel workers, being an unusually strong and healthy group as a whole, do not contract respiratory diseases as often as the average occupied male, except when they are in peculiarly exposed occupations. Both factors probably have an influence.

The experts of the Public Health Service remarked that "men perspiring freely after a bout of heavy work in front of the open-hearth furnaces were observed changing clothes while standing in a direct draft; others went home without changing their clothes though they had become wet from perspiration." The responsibility for the excess pneumonia deaths in the steel industry rests squarely on the steel companies which have failed to provide change houses, shelters, and hot and cold showers.

Since occupational diseases are compensated under the workmen's compensation laws only in a few states, *and pneumonia not in any of these*, we would not expect to find that the steel companies had taken active steps to combat pneumonia.

In fact, the employers' indifference to the occupational disease problem is quite as striking in its way as the intense excitement shown by the big companies concerning the safety movement. If they had to pay state health insurance premiums, as well as workmen's compensation, the attitude of the companies would be different. As it is, precautions against the probable effects of hot or exposed work are rare. Forced air blasts blowing fresh cold air over the heads of furnace workers have been introduced by only a few companies, and there apparently with a view to increasing the men's production. Yet in England, already before the war it was the rule in the tinplate trade for fresh air blown by fans to be delivered at the hot working places near the rolls and furnaces. The rank and file of the unions in the tin-houses had com-

plained about the heat, fumes and dust, and had forced action from their officials, who sought and obtained a conference with the employers and factory inspectors at which certain improvements were agreed upon.

The next question we shall examine is that of wages. What has been the wage rate and what the actual earnings? How has the living standard of the steel workers compared with that of the workers in other industries?

CHAPTER III

WAGES AND LIVING STANDARDS

IT IS a persistent boast of the big steel employers that steel wages have been high. This statement has been given so much publicity from the platform and in the business-controlled press, that many people who ought to know better have come to believe it. In this chapter we shall apply tests to the steel wage by a number of different methods, and see how the claim stands up. Of course, it is unnecessary to state that the steel companies have at no time paid any higher wages than they thought they had to.

The common-labor wage rate of the U. S. Steel Corp. is the most important single wage rate in American industry. When the U. S. Steel Corporation directors decided to cut wages 10% as of October 1, 1931, they were decreeing a reduction of about this amount for perhaps two million wage-earners, not more than half of whom were in the light and heavy steel industry combined. Only a short time after U. S. Steel's announcement in September, 1931, the *Journal of Commerce* estimated that 1,700,000 workers had already been affected by similar cuts. Of such importance was the directors' decision that President Hoover was reported to have been in constant touch with the doings of the board for some months before the decision was made.

A Test of Steel Wage Rates

If wage rates in iron and steel had been high, compared with other industries, this fact would not be surprising, since steel workers have had not only irregular work, but also work which required extra expenses met with in few other indus-

tries. The shift system with its constant changes has added considerably to the cost of keeping house. Also, the men on hot work have had a big bill for clothing. In the old crucible steel plants—now fortunately being superseded by electric steel plants—the men on the floor were “on fire half the time.” Hardly a week goes by that some one at the blast-furnace front does not find that his clothes have caught fire; and the same applies to dozens of other jobs throughout the industry. Workers who have to walk on hot steel or hot cinder soon learn that they must expect to purchase their own shoe-repairing equipment, since commercial repair shops do not even have material to put on soles which would enable them to withstand the heat. Work gloves or hand leather are another big item of expense for very many workers.

“Workers have to buy their own hand leather,” writes a steel worker from Canton, Ohio. “We have to spend \$5 every two weeks for clothes worn out in the mill.”

But have steel wage rates been high? The bricklayers, carpenters, plumbers and machinists in the repair and maintenance departments of the steel mills, the structural steel workers in the new erection, the locomotive engineers and firemen in the yards and on the company railroads, and the laborers engaged in construction work have all testified unani- mously that their rate was below the outside rate on work requiring the same degree of skill and training.

Statistics are available to support this statement, so far as the common laborers are concerned. The U. S. Bureau of Labor Statistics collects periodically from a number of industries, including iron and steel, the entrance wage rates paid to adult unskilled male labor. The steel rate has been not far from the average for all manufacturing industries and consistently below the average for all industries including contracting, as the table on page 62 shows. It will be observed that the difference between the steel rate and the average rate was much greater in 1932 (when the steel

rate was only 84% of the average) than it was in preceding years, indicating that the common labor rate in steel fell with exceptional rapidity in the crisis. This difference cannot all be explained away by citing the well-known fact that in some other industries, such as building construction, the quoted rate is often far above the actual rate in times of depression and crisis.

HOURLY ENTRANCE WAGE RATES FOR ADULT
UNSKILLED MALE LABOR: STEEL AND ALL
INDUSTRIES, 1926-1932

(Source: *Monthly Labor Review*, Sept., 1926, pp. 528-30; Oct., 1928, pp. 751-4; Nov., 1930, pp. 1230-33; Oct., 1932, p. 919.)

	<i>Iron and Steel</i>	<i>Weighted Average of all Industries, Contracting Included</i>
<i>July 1</i>		
1926	\$.427	\$.428
1928 .....	.425	.449
1930 .....	.421	.431
1932 .....	.318	.381

But, it may be said, what is true of the laborers and workers in the trades is not necessarily true of the other workers in the industry. What of the rollers who got actual earnings all the way up to \$450 a month as recently as 1929? Are not average earnings in steel high?

The arithmetic average of steel workers' wages as compiled by the U. S. Bureau of Labor Statistics or the National Industrial Conference Board is an incorrect and misleading figure. In the first place, partly for historical reasons, this average is made to include some minor bosses earning quite high wages, such as rollers, heaters, shearmen, blowers and open-hearth melters.¹ In the second place, as the U. S. Commissioner of Labor pointed out in 1911, when

the average earnings are \$700 per year one employee at \$2,500 and over has about 18 times as much effect on the average as one employee at \$600 and about six times as much effect on the average as one employee at \$400.² For these reasons we prefer to use the median.*

The median wage rate in steel is a few cents an hour above the common labor rate. Median "full-time" weekly earnings in the highest-paid plants were not far from \$25 a week in the spring of 1931, and had dropped below \$19 a week by the summer of 1932.³ As of August, 1933, the median in these plants was around \$21 a week.

In most industries, including probably steel, money wages and real wages are lower in England than in the United States. However, it may be shown that in several occupations in the steel industry money wages are actually higher in England than in some parts of the United States, and in a very few the English national average is above the national average for the United States.

The writer visited a plant at Cardiff, Wales, in June, 1927, where the larry-men were getting \$33.40 for a full week's work. This compared with \$23.80 for the southern states of the U. S., and \$31.90 for the average of the United States. At the same period, second helpers in the English open-hearth plants were earning \$38.96 per week on Talbot and tilting furnaces, and \$42.27 on stationary furnaces. The average for all open-hearth furnaces in the southern states was \$38.22, and for the United States \$45.49. It may be calculated from figures published in the official *Monthly Labor Review* of the U. S. Bureau of Labor Statistics that on October 1, 1931, the full-time rate for British first and second helpers on the open-hearth was above the average for the United States, while blast-furnace keepers and skip operators on mechanically charged furnaces were earning more in England than

* See above, p. 23, for definition of the median.

in southern United States.⁴ The iron and steel industry of England is unionized.

Deductions from Wages

The above calculations assume that if the steel worker actually worked a full week, he would receive the amount stated. However, what the companies are supposed to pay and what the steel workers actually get are two different things. Since the very earliest days fines have been collected from certain classes of workers, who have found themselves docked at pay day according to a scale set by the company. Furthermore, the boss often chooses to clip something off wages for a contribution to the Community Chest, a periodic payment to the group insurance (which is seldom voluntary in fact though it sometimes is in name), or payment into some company "welfare" fund.

The companies' custom of holding back one or two weeks' wages results in loss to the workers. When a worker is obliged for personal reasons to leave town suddenly, or for any reason cannot appear in person on pay day, he often experiences difficulty in collecting. The writer was once paid in December for a day's work done in August in a steel mill in West Virginia. When a company decides, for any reason or no reason, not to pay a steel worker's wages, he is practically helpless unless mass pressure is used in his behalf.⁵

For holding their jobs and especially for getting into better ones the workers must expect to shell out whenever the boss takes a fancy to collect. E. K. Griffiths, foreman of the Aliquippa tube mill of the Jones & Laughlin Steel Corp., admitted having extorted at least \$10,000 over a period of ten years, from workers whom he had threatened with loss of their jobs. He was arrested in 1929. The justice said the amount Griffiths had collected was probably more nearly \$30,000.⁶ Melvin Calhoun, foreman in the Colorado Fuel & Iron Co. plant at Pueblo, until he was murdered in July,

1930, is stated by workers to have been a grafter of the same sort as Griffiths.

Irregular Earnings

Even to calculate "full-time" earnings will seem to most steel workers to-day like an insult. As early as 1929 there was no such thing as full time for more than a few weeks at a stretch in whole sections of the industry, including, for example, a great part of the industry in Allegheny County, Pennsylvania.

The greatest grievance of the steel worker has been the irregularity of his earnings, reported the U. S. Commissioner of Labor as long ago as 1912.⁷ The best measure of fluctuations in earnings is contained in a U. S. Census monograph by Paul F. Brissenden, where year-by-year changes in real per capita earnings are calculated for 12 major industries, including steel works and rolling mills as one.⁸ The steel workers' earnings vary more from one year to the next than those of the worker in any of the 11 other industries.

Brissenden gives for each year the percentage change from the year preceding. Per capita purchasing power in steel decreased one-quarter from 1900 to 1901, then increased 12% from 1903 to 1904 and 18% from 1904 to 1905. A 20% drop between 1907 and 1908 was more than made up in the following year, when an increase of over 29% took place. Per capita real earnings then fell off somewhat until the war, when the big year 1916 showed a 36.7% gain over the preceding year. Then for three years—the war years, which were so profitable to the companies—real earnings per capita remained stationary in spite of rising wage rates. An 11% gain in 1920 was wiped out by a 45% drop in 1921, then increases of 29 and 44% respectively were recorded in two successive years.

Brissenden's analysis ends with 1927; but if it were continued into 1933 it would show fluctuations more violent

than ever. From the figures of the U. S. Bureau of Labor Statistics, it may be calculated that average per capita real earnings in steel dropped 40% from July, 1931 to July, 1932.⁹

Even these figures give no idea of how low earnings have actually fallen under the stagger plan. A research worker (Edwin Clark) who interviewed 94 employed steel workers selected at random in Ohio and the Pittsburgh district in June, 1932, reported median weekly earnings of about five dollars!

All of these figures on per capita earnings disregard the totally unemployed. The U. S. Bureau of Labor Statistics now publishes figures on payrolls. The monthly payroll in July, 1932, was less than a fifth the average monthly payroll in 1926.

Prof. Abraham Berglund believes that the irregularity of employment has been increased by the policy of price stabilization.¹⁰ However that may be, it is certain that the stability of workers' earnings has not been increasing but has been decreasing with the years, as the swings of the business cycle have become greater.

The steel workers' chances of supplementing income by jobs in other industries have been becoming more and more limited. Manufacturing industry as a whole employed fewer men in 1929 than in 1919 though the country's population increased. For the steel worker to find jobs to "fill in" during periods of temporary layoff is all but impossible in most steel towns since the only other major industry in the neighborhood is in very many cases the coal industry, which is notoriously overmanned. The steel workers, especially the older ones, know that if they do not hang on to their half of the staggered job they may have no job at all for months or years thereafter.

Wage Rates and Wage Cuts

The irregularity of earnings, due in large part to causes originating outside the heavy industry itself, has been accentuated and increased by the policy of cutting wages in depression.

In the first 32 years of the U. S. Steel Corporation's history there have been three periods of drastic wage reduction—in 1904, 1921, and 1931-32. In each of these periods the common labor rate was reduced. The rates of skilled workers were cut in each of these three periods and also in 1907-08.

WAGES PAID TO COMMON LABOR FOR A TEN-HOUR DAY BY THE U. S. STEEL CORPORATION IN THE PITTSBURGH AND CHICAGO DISTRICTS

1901-1933

(Source: C. A. Gulick: "Labor Policy of the United States Steel Corporation," p. 58; *Iron Age*, May 12, 1932; and miscellaneous.)

<i>Effective on—</i>	<i>Rate</i>	<i>Effective on—</i>	<i>Rate</i>
April 1, 1901	\$1.50	April 16, 1918	\$3.80
June 1, 1902	1.60	August 1, 1918	4.20
January 1, 1904	1.45	October 1, 1918	4.62
April 1, 1905	1.55	February 1, 1920	5.08
January 1, 1907	1.65	May 16, 1921	4.05
May 1, 1910	1.75	July 16, 1921	3.70
February 1, 1913	2.00	August 29, 1921	3.00
February 1, 1916	2.20	September 1, 1922	3.60
May 1, 1916	2.50	April 6, 1923	4.00
December 16, 1916	2.75	August 16, 1923	4.40
May 1, 1917	3.00	October 1, 1931	3.90
October 1, 1917	3.30	May 16, 1932	3.30
		July 15, 1933	4.00

NOTE.—The rate from October 1, 1918, to July 15, 1921, was calculated on the basis of time-and-a-half for all time over 8 hours. The 9-hour day was partially introduced in 1931-1932.

Professors Commons and Leiserson gave wide publicity to the statement that "the policy of the [United States] Steel

Corporation has been to standardize pay for unskilled labor and hold to it in good times and bad, laying off men, and working the mills part time, but not cutting the day labor rate."¹¹ This statement was not true as a general proposition even at the time it was made (1911). The table shows the actual change in the rate for 10-hour labor in the two main producing districts.* The larger "independents" in these centers have not always paid exactly the same rate as U. S. Steel, but they have made wage changes at about the same time and of about the same amount.

The history of the most recent period of wage cuts shows that the United States Steel Corporation was not driven by competition to make the cuts. Reductions in steel wage rates in 1930 were unimportant. The *Iron Age* has calculated from figures of the United States Bureau of Labor Statistics that in the first seven months of 1931, 8,224 workers in iron and steel had their wages cut an average of 7.2%.¹² This would make the average wage reduction for the whole of the heavy industry up to the end of July, 1931, only 0.3%.

The United States Steel Corporation, through its subsidiary the American Sheet & Tin Plate Co., was among the first of the companies in the heavy iron and steel industry to make important reductions in wage rates during the crisis. Cuts were reported in August, 1931, in United States Steel plants at Monessen, Pa., Bridgeport, Ohio, and Gary, Indiana. These cuts were probably intended as trials. The company evidently was pleased with the results, and announced a general cut of 10% in all wages, effective October 1. All the other steel firms followed suit. Cuts had already been announced by the Blaw-Knox Steel Co., Corrigan-McKinney Steel Co., Weirton Steel Co. (subsidiary of the National Steel Corp.) and the Wheeling Steel Corp.

In addition, Bethlehem, Youngstown Sheet & Tube, and Republic had been nibbling at piece rates department by de-

* For differentials between different districts see Appendix III.

partment. Some of the cuts were indirect. Skilled piece workers were fired and then rehired at a lower rate. This method of cutting wages, which has been much used in the automobile industry, was apparently employed for the first time on a large scale in iron and steel during the current crisis.¹³

Percival Roberts, a director of U. S. Steel, later upheld the 10% cut on the ground that "lowered [wage] rates do not necessarily mean lessened earnings but very possibly the reverse."¹⁴ He failed to explain how the earnings of labor could be increased by the cut, inasmuch as the corporation did not reduce the prices of its products when it cut wages, and so had no reason to expect increased sales or increased business from the wage cut.

United States Steel lopped another 15% off wages on May 15, 1932, and this cut also promptly spread throughout the industry. A third and much more drastic wage cut was rumored for March, 1933, but it was postponed, according to the *Wall Street Journal*, because in February some thousands of auto workers struck in Detroit against wage cuts. The steel financiers had no doubt also heard of the strike at Buffalo of the workers for the Lackawanna Steel Construction Co., who went out in January when their wages were cut to 16 cents an hour.¹⁵ On July 15 wages were increased 15%, but increased living costs left real wage rates something below the 1929 level.

The Sliding Scale

The collective agreements of the Amalgamated Association of Iron, Steel and Tin Workers have always provided that the scale of wages should vary with the selling price of the product. This principle of the sliding scale of wages is older than unionism in the iron and steel industry. It was reduced to a system when the Sons of Vulcan won their first collective agreement in 1865. The plan then adopted has

remained in force ever since.¹⁶ But since the Amalgamated Association controls only a small part of the industry, the sliding scale applies to-day only in sheet and tin mills and hand-puddled iron mills.

Under this plan a base rate is set annually by representatives of union and employers in joint conference. Wage rates are adjusted every two months by a joint committee, which has access to the companies' books in order to determine the selling prices actually realized. When prices have risen or fallen, the wage rate is raised or lowered according to a scale agreed upon at the yearly conferences. The work of the scale committee, in determining prices each two months, is routine. Everything depends on the ability of the union to secure favorable annual terms for determining and varying the base rate.

The sliding scale is used even by companies which do not sign any union agreement. The *Iron Age* reported in April, 1927 (p. 1239), that the bi-monthly wage settlements, carried out by representatives of the Amalgamated Association and of the employers, governed the wage scales of about 75% of the sheet and tin plate capacity of the country, although manufacturers who actually signed the scale represented less than 25% of the sheet-making capacity and less than 20% of the tin plate mills. If the *Iron Age* was correct, then some mills of U. S. Steel subsidiaries were following the changes in the scale, and have continued to do so since. Earnings in mills of U. S. Steel are at least 15% lower than those in union mills, according to report. The difference is due less to the difference in wage rates than to the fact that U. S. Steel mills have no agreement and hence no protective rules.

Standards of Living

The standard of living which the steel worker is able to maintain for his wife and family is lower than one would expect from the amount of money that he actually receives.

Middle-class visitors to the United States have frequently been horrified at the poverty observed in the steel towns. The explanation of the low standard is partly in the wage rates, but especially in the ebb and flow of employment, which first tempts the worker to a scale beyond his ability to maintain, and then sweeps away his savings and throws him into the clutches of the loan shark. Property that the worker has attempted to purchase, it may be on the installment plan, is twisted out of his possession, and his savings disappear in the vain fight—a fight partly against high interest rates and dishonest merchants, but especially against the effects of part-time work and unemployment.

Housing conditions illustrate the situations caused by fluctuating jobs. When war orders swelled employment in the Pittsburgh district, the steel suburb of Rankin was crowded to capacity, and beyond. In one block, 28 small houses held in 1920, 256 persons, of whom 116 were children. The four rooms of one house held 34 persons. A man, wife and two children and twelve boarders occupied four rooms near by.¹⁷

Twelve years later, the families in Rankin and in steel towns throughout the country were piled one on top of the other, but for an opposite reason. They had become unable to pay rent for separate houses, and relatives went to live with relatives, and even strangers with strangers, as landlords forced evictions and the steel mills remained closed or worked one or two days a week.

“Because of poverty due to unemployment, people are again occupying dwellings of a kind that were being vacated,” reported John Ihlder, director of the Pittsburgh Housing Association, in 1932. “This relapse to a lower standard of living threatens to have serious consequences in its effect upon the health and morale of the population.” Ten families were living in a house of 13 rooms, one cellar room was housing a family of eight, families were being broken up and the children distributed, not from any shortage of

houses, but because the steel industry was not supporting its workers.¹⁸

The steel boom town almost never builds houses fast enough to accommodate the workers who must man the mills. So cities like Gary grow up as chronically overcrowded places. "Housing shortage severe enough to hamper the passage and enforcement of regulations governing building and sanitation has existed in Gary practically from the beginning," reported the U. S. Children's Bureau in 1922.¹⁹

The steel town is not a healthy place to live in. One of the best ways to judge the healthfulness of a town is to look at its infant mortality rate. The steel towns having an infant mortality rate above the average outnumber the steel towns below the average by two to one. Especially pestilential are Steubenville, Ohio, with a rate of 110.8 deaths under one year of age per 1,000 live births. Ashland, Ky., with a rate of 109.6, and Steelton (near Harrisburg), Pa., with a rate of 103.6, compared with a general average for all cities of 65.5.²⁰

An investigation of wage-earners in different industries by the U. S. Public Health Service showed that "there were twice as many cases of typhoid and malaria per 1,000 men in the iron and steel industry as in the other industries as a whole, and 21 times as many cases of smallpox."²¹ These diseases were obviously due to the conditions in the communities, not to conditions on the job.

Housing conditions are worse and infant mortality rates higher for colored than for white workers in the steel towns, owing first of all to the fact that the Negro worker has the worst-paid jobs (infant mortality is always greater in the poorer sections) and secondly to the practice of segregation. The Negro in the midwestern steel towns gets shunted off into sections where transportation is bad, or where business houses are growing up or factories taking hold. The chronic overcrowding that is characteristic of Negro neighborhoods,

owing to the scarcity and high price of houses available for Negroes, may continue for all that the bosses care. The committee on Negro housing of the President's Conference on Home Building and Home Ownership admitted:

All that can be expected are further decline and deterioration in these [Negro Jim-Crow] areas until they are taken over by business and the Negro population pushed into another cycle of the same character.²²

In the following two chapters we shall try to show how far the companies' policy is to blame for the persistent scourge of the steel employee's working life,—long hours and speed-up followed by layoff, exhaustion followed by idleness, in a word, too much and too little work.

CHAPTER IV

TOO MUCH WORK:

LONG HOURS AND SPEED-UP

THE IRON AND STEEL INDUSTRY has been notorious for its long hours. It entered the crisis with an average working week for all departments combined, of more than 52 hours, with a majority of the laborers in most departments working 10 hours a day, and with probably over a thousand jobs on a basis of 12 hours a day, seven days a week. The two departments of the industry where the 8-hour day is general (puddling, and sheet and tin plate mills) are the departments with the strongest tradition of unionism.¹

It is true that there has been a sharp reduction of average hours worked per day in the last 10 years—a reduction which still continues. The number of men in iron and steel who were working 12 hours a day in 1922 was authoritatively estimated at 150,000, out of about 425,000 workers in the industry.² At this time a few of the larger “independents”—Wisconsin Steel Co., American Rolling Mill Co., Colorado Fuel & Iron Co., McKinney Steel Co.—and a number of smaller steel companies had already introduced three shifts on at least some of their continuous work. Then in 1923, just as the American Federation of Labor was going through the motions of starting a unionization campaign in steel, the U. S. Steel Corporation abolished the two-shift system in all its plants and was promptly followed by all the large and most of the small “independents” in the North and East.

The action of U. S. Steel was forced by the pressure of labor and public opinion, which had become irresistible partly because of the success of organized labor in abolishing the

two shifts over the length and breadth of the European iron and steel industry and especially because the great steel strike of 1919 had centered attention on conditions in the industry and showed that the workers could be brought out on strike. The United States was the last major country, with the exception of Japan, to do away with the long day for the mass of its steel workers.* Elbert H. Gary, chief executive officer of the U. S. Steel Corporation, defended the 12-hour day to the last, and as late as May 25, 1923, the American Iron and Steel Institute decided after "investigation" that "abolishment of the 12-hour day in the iron and steel industry is not possible or feasible at this time."

Contrary to a common impression, the U. S. Steel Corporation did not introduce a general 8-hour day for all its workers in 1923. Probably a majority of all its workers have continued on a 10-hour schedule.

Even after 1923, several important companies continued the two-shift system. The southern "independents"—of which the Gulf States Steel Co., Woodward Iron Co., Sloss-Sheffield Steel & Iron Co., and Republic Steel Corp. (southern plants) are the largest—still continue to operate the continuous processes on two shifts. The following important "independents" in the North and East were also in the summer of 1929 forcing a substantial part of their workers to put in days of 12 hours or more, on penalty of losing their jobs: Wheeling Steel Corp., Allegheny Steel Co., A. M. Byers Co., Crucible Steel Co. of America, Edgewater Steel Co., Page Steel & Wire Co., Pittsburgh Steel Co., Universal Steel Co., Washington Tin Plate Co., Witherow Steel Corp. and Central Alloy Steel Corp. (both now part of Republic Steel Corp.), Empire Steel Corp., Midland Steel Co., Newton Steel Co., Otis Steel Co., Superior Steel Corp., Weirton Steel

* The two leading Canadian steel companies kept the two-shift system until 1930 and 1931 respectively. Germany reintroduced the two shifts for a few years beginning 1924.

Co. (now a subsidiary of the National Steel Corp.), She-nango Furnace Co., Reading Iron Co., Eastern Rolling Mill Co., Central Iron & Steel Co., Logan Iron & Steel Co., Lukens Steel Co., and Midvale Co.³ This list would be doubled if the smaller mills having some 12-hour work were included. The U. S. Bureau of Labor Statistics found in the spring of 1929 that the proportion of workers in the industry as a whole who were on a schedule of 72 hours a week or more (*i. e.*, 12 hours a day for at least six days a week) was "only" 5%!⁴ This proportion has since been reduced, at least temporarily.

Twenty-four-hour turns at the change of shift were being worked in 1929 by a number of mills, including that of the Central Alloy Steel Corp. at Massillon, that of the Thomas Sheet Steel Co. (subsidiary of the Empire Steel Corp.) at Niles, and several southern mills.

"Full-time hours" is a convenient category which enables the steel companies to cover up the number of hours they actually work their men at a stretch. In a plant which usually works 10 hours a day, it is common for the men to keep at work anywhere from one to three hours extra at straight time, in order to finish an order, even if they are laid off immediately after. In such circumstances the 15-hour day is not at all unusual. Yet these companies undoubtedly report their "full-time hours" as eight or ten per day.

The workers have no guarantee that such reductions in hours as have been introduced by the companies will be permanent. The five-hour day established in some parts of the American Bridge Co. plant at Ambridge, Pa., and the six-hour day now (1933) being worked in a number of sheet mills, are simply a modified stagger or short-time system. A worker reports that the 110-inch plate mill in the Sparrows Point plant of Bethlehem had been working on two shifts

of ten hours each. Late in 1930 it got a rush of orders and began to operate three shifts of eight hours each. With a decline of orders it reverted back to the ten hours. In other mills, just the reverse process has taken place. Mills that reduce hours when work is slack increase them again when work is plentiful. The Republic Iron & Steel Co. changed some of its workers at Youngstown from three to two shifts during a busy period in 1929. In either case, the limits set for the companies by the pressure of labor and public opinion are very wide ones. Only where the workers have a militant union organization do they have any real assurance that reductions of hours will be retained.*

Why the Twelve-Hour Day Persisted

In the early stages of an industry there comes usually a time when, with advancing technique, the output is less than the amount that can be produced and sold at a profit. Then new capital is obtained, and the plants tend to operate right up to the limit of human endurance and beyond. In the iron and steel industry, the two-shift system, with the 24-hour turn at the change of shifts, was of long standing, and so there could be no question of lengthening hours on the continuous processes. On the contrary, as the unions gained in power, the iron and steel mills early seemed ripe for the next stage in the matter of hours—that of reduction. The policy of “driving” the blast furnaces, introduced in the Edgar Thomson plant of the Carnegie steel interests shortly before 1880, made it seem that the two-shift system would have to give way to the three-shift system, even at that early date. Capt. William Jones, superintendent of the plant, said in 1881:

*Under the code of fair competition adopted August, 1933, for the steel industry, the daily and weekly maximum of hours is to apply “in so far as practicable”! Steel workers do not need to be told that this limitation is no limitation at all.

In increasing the output of these works, I soon discovered that it was entirely out of the question to expect human flesh and blood to labor incessantly for twelve hours, and therefore it was decided to put on three turns, reducing the hours of labor to eight. This has proved to be of immense advantage to both the company and the workmen, the latter now earning more in eight hours than they formerly could in twelve hours, while the men can work harder constantly for eight hours, having sixteen hours for rest.⁵

The Edgar Thomson and a number of other mills, both union and non-union, went onto the eight-hour day during the eighteen-eighties because of the intense speed-up and vigorous union activity. One company—Moorhead, McCleane & Co., of Pittsburgh—took advantage of the situation and put the leading union in a false position. It proposed to introduce the eight-hour day without a corresponding increase in wage rates; and the Amalgamated Association of Iron and Steel Workers, not being strong enough to force the higher rates, refused. The union heads branded the offer as an example of the “encroachments of aggressive and designing capital.”⁶

Ever since, the employers have tried to throw the blame for the continuance of the 12-hour day on the workers. But there was never really any doubt as to where the workers stood, in spite of the fact that the union at first adopted wrong tactics. In April, 1886, a year of great union activity all over the country, the Carnegie interests were forced to abandon their attempt to restore the two shifts at the Edgar Thomson plant. Even after 1892, when the union was driven out of the steel mills, and the two-shift system was once more generally introduced (except in puddling, sheet and tin mills), the workers kept on circulating petitions for the eight-hour day from time to time, even offering to forego an increase in hourly wage rates.⁷ It is not simply accident that only in the unionized sections of the industry did the eight-hour day persist.

How did it happen that what "flesh and blood could not stand" in 1879, it was able to stand in 1892? The answer is, machinery. Improved machinery and processes, eliminating the toughest jobs along with many others, made it possible for the companies to go back to the 12-hour day when they were already well on the road to eight hours. It was machinery, introduced with extreme rapidity year after year, that did away with many skilled men and thereby weakened the union, the greatest protection of the workers. It was machinery, the latest improved type, that piled up profits for the leading company—the one headed by Carnegie—and gave it a war-chest to fight the union. It was machinery, millions of dollars' worth, that made competition suicidal and led the companies to maintain prices. It was machinery, potentially labor's greatest benefactor, which in the hands of "aggressive and designing capital" became, for the time being, labor's greatest apparent enemy.

The pressure to lengthen hours is still felt when a new process gives opportunity temporarily for extra profitable operation. We cite the two outstanding new processes introduced in the last five years—the Aston mechanical puddler and the continuous sheet mill. As soon as the A. M. Byers Co. had perfected the Aston process, it is stated to have broken relations with the Amalgamated Association and switched its plants over from a three-shift to a two-shift basis. The American Rolling Mill Co. introduced the continuous sheet-mill process at its Middletown plant in 1927. It broke off relations with the Amalgamated Association in 1929. The work in the sheet mills under the Armco and similar newly patented processes is still so strenuous that even a capitalist company could not possibly introduce the 12-hour day. But the changes in wages show what the effect on skill and bargaining power have been. At the Youngstown plant of the Youngstown Sheet & Tube Co., it is reported that a whole crew operating in 1932 under one of the

50
19)

new continuous processes was getting only as much money as a single roller received before the change.

The workers in steel, like the workers in every other industry, value shorter hours. It may be assumed that they favor shortening hours per day not merely to eight but to seven and even six as a permanent proposition, provided, of course, that there is no reduction in the weekly wage. Some sheet mills in the Soviet Union are already on a permanent six-hour day.

Seven-Shift Week

The seven-day week, or rather the seven-shift week, was the rule throughout the industry in 1929—the last year of active production—in those departments and operations which operated continuously. Over a quarter of the iron and steel workers investigated by Ernst and Hartl in the summer of 1929 were working seven shifts a week.⁸ The Pennsylvania blue laws prohibiting Sunday work do not affect the steel mills.

The seven-shift week has increased greatly since 1912. Whenever the companies working their men only six days or less get a surplus of orders, they are likely to go onto a schedule of seven shifts a week. The U. S. Steel Corporation is an outstanding example. Just before the war it practically abolished the seven-shift week in the plants of all its subsidiaries; then, during the war, it reintroduced the seven-shift week quite generally.⁹ When forced to substitute three shifts per day for two, it extended the seven-shift week still further. From 1926 to 1929 the percentage of workers on seven shifts in the industry as a whole increased strikingly, especially in the open-hearth department (from 52% to 66% of the total), blooming mills (20 to 31%), and rail mills (6 to 20%). In the blooming mills in 1929, 31% of the employees were working seven shifts a week; in the blast furnaces 54%

of the workers were on seven shifts while 18% more worked six, seven and seven shifts on successive weeks.¹⁰

The steel employers, especially the U. S. Steel Corporation, have done their best to conceal the extent of their seven-shift operation in recent years. The blast furnaces of U. S. Steel in the Pittsburgh and Chicago districts have operated on the so-called "one day off in 19" system. Each worker gets 32 consecutive hours of free time every 19th day, but each 7th and 13th day he works 16 hours out of 24. There is no relief turn. This is 7-shift operation.¹¹ But vice-president Burnett of the Carnegie Steel Co. tried to mislead Ernst and Hartl into thinking that the seven-shift week had been abolished in his company's plants—a conclusion which they could not accept as true.*

Speed-up

Side by side with the persistence of the long working day and the continuous working week in steel must be noted the introduction, now in one place and now in another, of speed-up systems, designed to get the last ounce of energy out of the employed workers and cut down the labor cost of the companies.

Workers use the term "speed-up" in two senses: (1) to denote an increase in productivity and (2) to denote an increase in the energy exerted by the individual worker. We are concerned here only with the second kind.**

Frederick W. Taylor, the father of "scientific" speed-up, was a contribution of the iron and steel industry to the world. Taylor did not think of calling his system "scientific" management until he had been practicing it for over a decade. H. L.

* For a time, U. S. Steel had what it called a "voluntary" six-day week. Workers who stayed home the seventh day were treated like absentees and soon resumed a seven-day schedule "voluntarily."

** Productivity is discussed in Ch. VI.

Gantt, an "efficiency" expert who was trained by Taylor, described Taylor's system in 1910 as the "*drive system*."

Taylor had a deep contempt for the unskilled laborer. "One of the very first requirements for a man who is fit to handle pig iron as a regular occupation is that he shall be so stupid and so phlegmatic that he more nearly resembles in his mental make-up the ox than any other type," wrote Taylor in 1911.¹² He was an uncompromising foe of trade unionism to the end of his life.

Taylor learned how to use sly methods in his war for greater output. When the unjustness of his fines caused the men to sabotage their work, he started a mutual benefit association, to which the workers as well as the company contributed. "All the fines," he explained, "can then be turned over each week to this association, and so find their way directly back to the men."¹³

Taylor's famous experiments in job analysis, and his task-and-bonus systems of wage payment, arose directly out of a desire to make his employees work faster. Employers in other industries welcomed enthusiastically Taylor's achievements for Midvale, and later for Bethlehem. Many attributed to his speed-up policies certain results in output that were due to Taylor's really solid contributions to science in the fields of accounting and the development of the alloys technically known as "high-speed steel."¹⁴

Taylor's most famous "experiment" was probably that by which he got a gang of laborers to load four times as many pigs of iron in a day as formerly. The worker originally selected for experiment was building himself a house in his off hours. By increasing his output 300% he earned a pay raise of 60%. He presumably also paid some one else to build him the house. Taylor believed that a rate of pay more than 60% above the market rate tended to make the workers irregular and "more or less shiftless, extravagant, and dissipated."¹⁵ Only one man in eight could stand the new pace;

but Taylor "had not the slightest difficulty in getting all the men who were needed." The surrounding country provided a reservoir of labor.

But the system of slide-rules and stop-watches which Taylor developed made much more rapid headway in the machine shop than in the yard. The heavy industry as a whole remained for many years cold to Taylor's ideas. Taylor was fired from his job at Bethlehem in 1901, and Charles M. Schwab, who succeeded to the ownership of Bethlehem just afterwards, did not recall him. Until the last decade the heavy branch of iron and steel could not, as a whole, be described as a badly speeded industry, though individual plants and departments had gone over to some form of Taylorism.

No doubt the fundamental reason for the heavy industry's attitude toward speed-up was the fact that wage payments were a smaller part of the employer's budget, compared with interest on investment and other overhead, than in other industries. The custom of meeting rush orders by working overtime, rather than by increasing production within a given span, may also have had an influence.

Since the war, and especially since the beginning of the crisis, Taylorism and other forms of speed-up have been introduced much more widely, so that steel's tradition as a slow-paced industry may change altogether. Speed-up has become one of the outstanding grievances in the industry.

The workers say that they have been speeded in a number of different ways, each of which will be illustrated by one or more quotations from individuals. If the workers' names are not given, the reason will be obvious. Never before has it been so necessary for them to retain the piece-of-a-job which they still possess.

Workers report that speed-up has been achieved by

(1) *More bullyragging on the part of the lesser bosses.* This is the easiest method and also the commonest.

Big boss come over and say "Hurry up! You so slow you make me sick." (Carnegie Steel Co., Clairton plant, June, 1932.)

In tin mill boss pushes and kicks me. (Weirton, W. Va., plant of Weirton Steel Co., subsidiary of National Steel Corp., August, 1932.)

If you don't put out more work, they will get some one else who will. (Warren, Ohio, plant of Republic Steel Corp., August, 1932.)

The men can't slow down on the job. They will be fired if they do. (South Chicago plant of Illinois Steel Co., subsidiary of U. S. Steel Corp., August, 1932.)

Women and girls are subject to this kind of abuse no less than men.

Girls that can't keep up with the speed-up get hell from the floor-lady. She tells them: "You are getting old; you worked here too long. You ought to quit working." That's the answer we girls get for slaving 15 to 20 years in the mill. Many are forced to quit their jobs. Many can't finish their turn. Those that don't have fear from the bosses or for their jobs go home sick and stay a few days, then back to the slave house they go. (McKeesport Tin Plate Co., December, 1930.)

(2) *Introduction of some form of bonus system.* The Lukens Steel Co. with a huge plate mill at Coatesville, Pa., introduced the Bedaux system at the end of 1931, the first time, so far as is known, that this system has been used in the heavy iron and steel industry. About the same time the Sharon Steel Hoop Co. introduced at Farrell, Pa., a "norm" system, akin to the Bedaux system. It allots a certain time to each job and puts a "pusher" at the head of each group of workers to see that they attain the "norm." Stop-watch experts have made their appearance at the Minnequa plant of the Colorado Fuel & Iron Co. at Pueblo, Col., at the Toronto, Ohio, plant of Follansbee Bros., and also in many plants of

the Bethlehem Steel Corp. These experts try to keep their mission a secret. They hide behind pillars with hands in pockets, or enter the works as common laborers to find out the shortest possible time in which a job can be performed.

Sometimes a bonus is paid to the super or foreman, who then drives the workers (the U. S. Steel Corp. plan of 1903 was of this type);¹⁶ sometimes to the skilled men, who are expected to drive the unskilled (Illinois Steel, Gary works; galvanizing department of Youngstown plant of Republic Steel Corp.); sometimes to the gang as a whole, which must then exercise pressure on the slower members or miss the extra payment (Youngstown Sheet & Tube Co., Indiana Harbor plant, extending over the decade to August, 1932; and many others).

While some of those bonus plans are of long standing, many others have lasted only a short time. They are introduced, modified, and abolished before the workers have grasped what it was all about. Such plans are a source of continuous irritation and annoyance to everybody. The workers fully realize that the sole purpose of the bonus is to speed them up at the least possible cost. The boss, for his part, sometimes tries to use the bonus system to set the workers fighting with each other, as the following letter, taken from the official organ of the Metal Workers Industrial League, well shows:

Pittsburgh, August 27, 1930.

Editor *Metal Worker*:

I am working in the Crucible Steel Mill in Pittsburgh as a chipper. We used to work for 44 cents an hour and bonus which was given to us in order to get us speeded up more. Prior to September 1st the boss called us all and told us that from now on no more day wages but only by tonnage. He didn't say how much they would pay on the tonnage. *The boss tells all the workers to watch for one another so that none fools around on the job. . . . The bosses are thus trying to create ill feeling among the men. Speed and more speed is the cry of the boss. . . .*

(From *The Metal Worker*,* Pittsburgh, organ of Metal Workers' Industrial League, October, 1930, p. 2. Emphasis not in original.)

Some workers are afraid to ask for the bonus.

Workers that are to get a bonus are afraid to ask for it because the bosses will give them the worst jobs. That's why they don't ask for it. (National Tube Mill Worker, McKeesport, Pa., in *Labor Unity*, February 8, 1931.)

Others find the bonus system either too complicated or else dishonest. Two examples may be taken from the pre-crisis period.

In the Tube Mill the men work 12½ hours, on the night shift, and are also supposed to get a bonus. But we never know how much we are getting. They give us as much as they please. Sometimes 25c and sometimes more.

This bonus system is very profitable for the bosses. We work like hell to make out a little more, and in the end we are even cheated out of what is coming to us. If any one protests against the long hours and this cheating, the company "investigates" not whether we are actually cheated, but to find out the leaders of those who are protesting, and fire them. Then they say that the men quit. (From *The Red Ingot*, shop paper issued by the Communist Party nucleus in the Republic Iron & Steel Co. plant, Youngstown, Ohio, September, 1929.)

The company has two reasons for using the "bonus" system. First, because the "bonus" system enables the company to carry its "speedup" policy to the extreme by squeezing the very life out of us; and secondly, by switching from one job to another it is impossible for us to keep a full account of our production with the result that at the end we are cheated out by the company of the extra few cents which we are supposed to get in the form of "bonus." (From *The American Bridge Worker*, shop paper issued by the Communist Shop Group in the Ambridge, Pa., plant

* This paper has now become *The Steel and Metal Worker*, organ of the Steel and Metal Workers Industrial Union. See Ch. XI.

of the American Bridge Co., subsidiary of the U. S. Steel Corp., summer of 1928.)

(3) *Cutting piece rates.* This expedient sometimes has the effect of making the workers slave so hard that they earn as much under the new piece rate as under the old. In the McKeesport Tin Plate Co. plant, where piece rates have frequently been cut, reports received by the Metal Workers' Industrial League indicated that the company had put men on piece rate basis next to those who got paid by the hour, "which means that those who are not on piece work will have to step on it in order to keep pace with those who work on piece work."¹⁷ It was reported in June, 1931, that pieceworkers in the employ of the Blaw-Knox Steel Co., of Blawnox, Pa., who had been screwed up to a maximum possible speed and had been earning as much as \$9 a day by hustling, were suddenly switched to time-work at 50c per hour, and were told that they must maintain their former rate of production or lose their jobs.¹⁸

Piece rates are sometimes cut indirectly by raising standards of work.

A reckoner used to be able to make a living a few years ago, but the boss now demands that every box be weighed where before they weighed one box out of ten. ("Tin Mill Worker" in Sparrows Point plant of Bethlehem Steel Corp., December, 1931.)

The superintendent tells the roller he must keep the rolls cool and tells the heaters that unless they keep their furnaces down low they will lose their jobs, no matter how long they have slaved for the company. The result is that the steel comes out of the furnaces too cold to roll well and this, coupled with the fact that the rolls are cold, makes it necessary to give it as many as eight or ten passes through the rolls instead of four or five as usual. All pay is on the tonnage basis. (From Indiana Harbor Plant of Youngstown Sheet & Tube Co., May, 1931.)

(4) *Changing supervisory foremen into working foremen.* "Boss works too now so there is nobody to spell a worker as there used to be," reported a worker in the Clairton works of the Carnegie Steel Co. in June, 1932.

(5) *Eliminating rest periods.* Workers on shifts of six, eight, ten and even more hours report that they have to eat with one hand and work with the other, since there is no rest period. A less extreme variation cuts out the breakfast period.

The boss in the pickler room forces the workers so that they cannot go to the toilet. (Worker in "Canton Tin Plate Mill," Canton, Ohio, October, 1931.)

Eight hours straight without a minute off even to eat. That's the way they force the matchers to work. A man can't even take his time to reach in his pocket for a chew of tobacco on this job. (From *Red Standard*, shop paper issued by the Communist Party nucleus in the Aetna Standard Works, Bridgeport, Ohio, of American Sheet and Tin Plate Co., U. S. Steel subsidiary, August, 1929.)

The workers used to get a few minutes to eat at 9 A.M., but now must wait till dinner time. ("National Tube Worker," Versailles, Pa.; see *Labor Unity*, August 22, 1931, p. 4.)

At 6 A.M. I was on the job as usual, and I slaved until 5 P.M. When I was hungry I ate my sandwich with my left hand and did all the work with my right one. At 5 P.M. I had an hour and a half to rest and then went back to work again and continued till 6 A.M. (From Thomas Sheet Steel mill of Empire Steel Corp., Niles, Ohio, August 27, 1929.)

Workers in a number of mills report that they are timed when they go to the toilet, or even when they have to visit the doctor's office. (Tin mill of American Sheet & Tin Plate Co. at Gary, Indiana, September, 1930.) There are also a number of plants where workers say it is impossible for them to go for a drink of water.

(6) *Cutting down on number of men without change in technique.* It is expected that a new machine will be operated by fewer men than an old one, but it has been common, especially since the beginning of the crisis, for workers to be fired without any change, and the work divided among the men remaining, or simply omitted. The number of men in the pickling department of the Newton Steel Company's sheet mill at Monroe, Mich., is reported to have been reduced in 1932 from 16 to 10, without any change in technique. Certain companies have fired the workers who used to keep the lavatories clean.

(7) *Cutting down on number of hours worked by each individual.* Some forms of the stagger plan result in a hotter pace for all. This is especially true where two crews of men are kept on the job throughout the shift, and spell each other off, each crew then receiving pay for only half the shift.

We are forced to do eight hours work in five, which is a slave-driving, brutal way of treating any worker. ("J. R.," employee in American Bridge Co. works, Ambridge, Pa., April, 1931.)

(8) *Speeding up the machinery.* In the fall of 1929 it was reported from the Youngstown district that workers stacking steel plates in the plant of the Sharon Steel Hoop Co. had had the electric belt speeded up on them so that they had to pile twice as many plates as previously. Many were said to have been carried out during the summer heat.¹⁹

Against the driving tactics of the bosses the workers can put up a certain defense. In particular cases they have sometimes managed to hold down the output to an established schedule by tacit agreement. But changed technique has made the establishment of anything like a customary standard in most departments of the industry very difficult if not impossible. And in the economic crisis, when the boss is in a position to play off one gang of men against the gang that has

the other half of the job, informal and unorganized restriction is not likely to be effective.

The boss, however, knows that the workers resent speed-up methods, and sometimes takes precautions against resistance, as in a case reported by John Meldon, secretary of the Steel & Metal Workers' Industrial Union.

The Republic Steel Corp. at its Youngstown plant introduced time study in the blacksmith shop. It was put forward as a means for the men to make more money, and for a time after they accepted it by a formal vote, some did make as much as 50% more. Then by a gradual process of weeding out old men and introducing new ones, at lower rates, the earnings were cut to pretty much the former level, while output stayed up. (Interview, February 12, 1932.)

A very similar story is told by workers at Pueblo, Col., employed by the Colorado Fuel & Iron Co.

Speed-up is an essential part of the bosses' drive to reduce costs, which has accompanied the slowing up of production increase and the narrowing of markets since the war. Although it is not peculiar to steel, it is far more serious in steel than in most industries because of the dangers to health which are involved. Hot and exposed work are dangerous enough when the pace is slow. To speed up such jobs to the pace attained in industries with less unfavorable conditions is a refined form of murder.

CHAPTER V

TOO LITTLE WORK:

UNEMPLOYMENT AND PART-TIME EMPLOYMENT

EVEN more terrible than speed-up, in its effects on the worker, is unemployment, with its companion menace, under-employment.

Unemployment and under-employment had become chronic for iron and steel workers long before the crisis. Pennsylvania has a third of the industry. In that state, employment in 1929 was at 76.5% of the 1923 level in steel works and rolling mills, and only at 39.7% of the 1923 level in blast furnaces.¹ The figures of the Census of Manufactures indicate that in this state a net total of more than 27,000 iron and steel workers were dropped from employment between 1923 and 1929. Thousands of these did not leave town at once but remained to swell the reserve army of labor.

Since production in April, 1930, was about as active as in the average of all post-war years, the proportion of unemployment in that month—the month of the decennial census—is typical of what has been considered “normal” unemployment. We calculate that about 12.3% of the male steel workers were completely unemployed at the time of the 1930 census; that is, one steel worker in eight has been totally unemployed in “normal” times.* This calculation is conservative, since it takes no account of any of the 1,100,000 casual workers listed by the census as not attached to any industry. Some of these were undoubtedly former steel workers. The

* See Appendix V for method and details. In this calculation we have omitted the unemployed whom the census missed, although these were undoubtedly numerous.

proportion of unemployment in this undistributed group was unusually high.

Under-employment was almost a more serious menace than unemployment. We have no exact measure of the extent of part-time employment in steel, either before or during the crisis.* We do know, however, the extent of part-time operation, measured as a percentage of capacity. These figures show that for the five years from 1926 through 1930 over 23% of the capacity of the steel mills was unutilized, on the average, all the time. In this connection we should remind the reader that the companies follow the policy of keeping on call all the time, so far as possible, enough workers to man the plant at capacity. The percentage of idle capacity is practically always higher in the rolling mills and blast furnaces than in the steel mills. It is not unreasonable to suppose that part-time employment accounted for as much joblessness in April, 1930, as complete unemployment and that a quarter of the steel workers were actually idle at the date of the 1930 census. Not one steel worker in eight but one steel worker in four was out of work on the average at any given date in the post-war period, even before the worst of the crisis.

RELATION OF PRODUCTION TO THEORETICAL CAPACITY IN THE IRON AND STEEL INDUSTRY, 1926-1930

(Source: Computed from *Annual Statistical Reports of American Iron and Steel Institute.*)

Product	Percentage of capacity which was unused in—					Average of 5 years
	1926	1927	1928	1929	1930	
Pig iron and ferro-alloys	24	29	25	27	39	28.8
Steel ingots and castings	18	26	23	12	39	23.6

It is very exceptional for a steel plant to operate full time at full capacity for more than a short period. If the reports

* The Census Bureau has some unpublished material that was collected in April, 1930, and January, 1931.

to the Federal Bureau of Labor Statistics for the years 1925, 1926 and 1928 are studied, it will be found that only during four months in the three years (none of which years was a year of depression) did the proportion of plants in the industry operating full time exceed 80%, and in no month was the proportion above 83%. In a typical month of 1925 less than 60% of the plants were operating full time; in typical months of 1926 and 1928, less than 73%. Even when the plants did operate full time, only a minority operated at full capacity. About one in three plants operated at full capacity in a typical month of 1925 and 1926; in a typical month of 1928, the proportion was only one in four.

Soon after the 1930 census was taken, employment took the biggest dip in the history of the industry. Already in January, 1931, there were more than three times as many iron and steel workers unemployed as in the previous April.² Instead of one in eight, one in three was totally without work. Utilizing figures of the U. S. Bureau of Labor Statistics, corrected by the figures of the Census of Manufactures, we find that the number of workers employed, whole time or part time, in iron and steel had decreased by April 1, 1933, to 51.7% of the level at the date of the decennial census.* The totally unemployed at the beginning of April, 1933, numbered about 280,000, as compared with some 223,000 still on the payrolls.** About 56% of the steel workers were totally unemployed. The U. S. Steel Corp. stated in the spring of 1933 that it had no full-time workers at all on its payrolls. The industry was operating at about 14% of capacity, as compared with 19.41% for the whole of 1932.

* See Appendix V.

** Charles M. Schwab told the American Iron and Steel Institute on May 25, 1933, that the steel industry had been able to carry on its payrolls 200,000 more employees than would have been needed if those who were retained had been worked on a full-time basis. It would be interesting to know how this figure was arrived at.

Some Causes of Unemployment

Booms and depressions, or in the language of the economist, cyclical fluctuations, are the great overshadowing menace to the steel worker's job. Operations have been less steady since the formation of the U. S. Steel Corp. than they were before. The causes of unemployment are not quite the same for the several branches of the heavy industry. Nearly all of the unemployment and under-employment in the steel mills proper (open-hearth furnaces and Bessemer converters) may be traced to the ups and downs of business. Most of the joblessness in the production of pig iron and rolled products is due to the same cause; but in these two departments there is also some unemployment which is directly due to overcapacity.* There is still some seasonal unemployment in blast furnace operation, but little or none in the later stages of the industry.

Economists point out that the maintenance of iron and steel prices in the crisis has been a major factor increasing the duration of the crisis. The prices of certain raw materials at the end of 1932 were inordinately high compared with other factors in manufacturers' costs, and these prices had to come down before producers could produce profitably. Iron and steel, electric power, paint and cement were the offending commodities. The selling price of these four classes of goods dropped only 15 to 25% from 1929 to the end of 1932, while prices of other raw materials fell an average of 35%.³

Fluctuations have been due to policies of the employers. In 1912 the U. S. Commissioner of Labor wrote, "It is a fixed and characteristic policy of the iron and steel industry to operate each producing unit to its fullest capacity and for the maximum number of working hours during a period of active demand and as soon as there is a decline in the market to shut down completely."⁴ As recently as March, 1932,

* See Appendix VI.

the *Iron Age* was complaining that buyers of steel goods were insisting on delivery within a very short time, so that men were working overtime when there was only a single order on the books.

It has been the regular custom to run blast furnaces steadily, Sundays included, from the time they were blown in until they were forced to shut down for lack of orders, or until they had to be relined. This custom must be put down to the management's lack of inventiveness, not to any technical necessity. As long ago as 1849 a blast furnaceman discovered how to bank down a blast furnace over the week end, but the practice died out and the mill managements did not revive it until after 1930.

Another habit of the industry has been to make a drive for record production in March, and sometimes also in October, except in years of deep depression. The writer participated in one of these March drives, which took place on a declining market and was followed immediately by staggered employment, layoffs and an inactive summer.

Like the blast furnaces and steel mills where they work, the steel workers stand idle when orders decline. The steel worker has a relatively small chance of dovetailing his occupation with some other. The steel community is typically isolated from other types of industries, sometimes as the result of a deliberate policy of the company, so that the worker will have considerable ground to cover before getting to an alternative place of employment. But more important, employment fluctuates in the average producing industry in almost exact synchronization with employment in iron and steel. Thus the steel worker who is the victim of cyclical decline in steel may as well whistle for a job in any other industry. Just at the time he joins the reserve army of labor the flow into that army from other directions is on the increase.

Who Are the Unemployed?

Does unemployment hit the young or the old hardest? Is it worse for Negroes and foreign-born than for the native whites? Is it greater among the laborers than among the skilled and semi-skilled?

We must distinguish the period since 1930 from the nine-year period preceding. The census of 1930 gives us a picture of what has been considered "normal" unemployment.

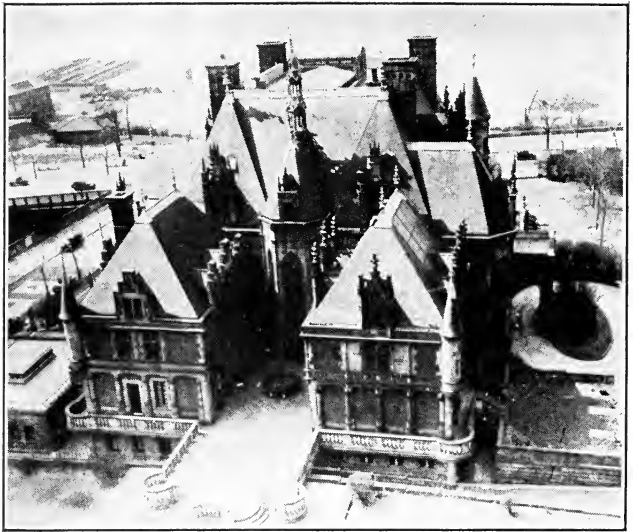
In "normal" times, the employer has valued workers for their strength and experience. The best combination from his point of view has apparently been reached when the workers were in their early thirties. Unemployment has been least among workers 30 to 34 years old. The proportion of unemployed has risen slowly as one approached the upper age levels, and rapidly as one approached the lower age levels. Workers 25 to 29 have shown about the same proportion of unemployment as workers 40 to 44; but workers 20 to 24 have shown more, and workers under 20 very much more unemployment in proportion to their numbers, even than workers of 65 and over.

In the "productive" departments of the steel industry, as in the service departments of railroading, there is a ladder of promotion. It extends, supposedly, from the labor gang to the highest-paid tonnage jobs. In filling the higher jobs, the bosses sometimes observe the principle of seniority, and the workers have a tradition that the bosses ought to make all promotions on that basis. The bosses justify their selections, when these are out of the "regular" order, on the basis of the greater "efficiency" of the workers chosen—that is, when the bosses feel called on to make any justification at all. But the workers know that favoritism and graft account for a large proportion of the exceptions. Promotions go to the friends and relatives of the bosses, and to the workers who are willing to pay bribes.⁵ The same discrimination



—Photo by Margaret Bourke-White

STAKING DOWN SLAG IN THE OPEN HEARTH



The New York home of Chas. M. Schwab, Chairman of the Bethlehem Steel Corp.



The "Home" of a Bethlehem Steel Corp. Worker in Johnstown, Pa. Two three-room dwellings are contained in this ramshackle house.

between individuals, and for the same reasons, is shown in the matter of layoffs. "Promotion according to seniority" was one of the demands in the great steel strike of 1919; and layoff according to seniority, while it solves nothing regarding unemployment viewed in the large, is a privilege which the older workers feel they have earned.

UNEMPLOYMENT BY AGE GROUPS IN APRIL, 1930
In Occupations Including Two-thirds of All
Steel Workers *

(Source: Compiled from 15th Census of the U. S. (1930),
Unemployment, Vol. II, Chap. I, Table 7.)

<i>Age Group</i>	<i>Per cent Unemployed</i>
10-19	19.6
20-24	15.0
25-29	11.2
30-34	10.4
35-39	10.9
40-44	11.3
45-49	12.1
50-54	12.5
55-59	13.8
60-64	14.3
65 and over	14.9
All ages	12.5

As would be expected in an industry where seniority plays some rôle in layoffs, unemployment at the census date in 1930—and probably before and after—was more severe among the laborers than in other occupations. The percentages unemployed in each group were: laborers, 13.6%; rollers and roll hands (metal)—mostly skilled—10.8%; operatives, not otherwise specified (an intermediate group), 11.0+%;

* Furnace men, smelter men, puddlers, etc.; rollers and roll hands (metal); and blast furnace and steel [and] rolling mill operatives and laborers not otherwise specified. The first two occupational groups contain some workers from other branches of industry.

and furnace men, smelter men, etc. (a miscellaneous classification including skilled and semi-skilled and a few unskilled), 11.0—%.

However, this rule did not hold universally. In Pennsylvania, unemployment was more severe among the rollers and roll hands (14.5%) than among the laborers (13.8%), and in Indiana unemployment was more severe among the operatives not otherwise specified (9.3%) than among the laborers (8.5%).

UNEMPLOYMENT BY NATIVITY AND COLOR

(Source: Compiled from 15th Census of the U. S., *Unemployment*, Vol. II, Chap. I, Table 7.)

Occupation	Total	Per cent of Males Unemployed April 1, 1930		
		Native White	Foreign- born White	Negro
Furnace men, smelter men, puddlers, etc. ...	11.0—	11.0—	10.7	13.2
Rollers and roll hands (metal)	10.8	11.0—	10.4	12.3
Operatives (n.o.s.)* ...	11.0+	11.6	10.3	9.6
Laborers (n.o.s.)*	13.6	14.7	12.8	13.7

* Not otherwise specified.

Unemployment has “normally” been less among the foreign-born white than among Negroes or native whites. It has also been less among Negroes than among native whites, in the two occupation groups where most of the Negroes have been found (laborers, and operatives not otherwise specified). It must be remembered that many of the Negroes are employed in Alabama and Maryland, where it is exceptional for Negro and white workers to hold exactly the same job, so that conditions are different for these two the difference in unemployment between Negroes and for-

eign-born on the one hand and native whites on the other, especially among the unskilled laborers, may be explained on the basis that the foreign-born and Negroes, being comparatively recent arrivals in the industry, move along when they lose their jobs. Some may even return to the farming life they came from. The native whites are fixtures in the industry as a rule.

As was to be expected, the increase of unemployment was greatest between April, 1930, and January, 1931, among the laborers, next greatest among the intermediate groups (operatives not otherwise specified) and least among the skilled workers (rollers and roll hands, metal). The increase was, laborers, 217% (that is, more than three times as many unemployed at the latter date); "operatives," 212%; and rollers and roll hands, 172%. The miscellaneous group of "furnace men, etc.," for some reason showed an increase of 260%.

Among the laborers, the most homogeneous group that is classified by the Census Bureau, the mass layoffs of the last eight months of 1930 hit the Negroes in the midwestern area harder in proportion to their numbers than the foreign-born whites, and the foreign-born harder than the native whites. The increase in unemployment between April, 1930, and January, 1931, amounted to 216% among the Negroes, 212% among the foreign-born, and 203% among the native-born whites. This difference is not as great as might have been expected. When all the four occupations that contain the bulk of the steel workers are considered together, it is found that the increase in unemployment during this period of mass layoff was 210% for native whites, the same for Negroes, and 215% for foreign-born whites,⁹ who, it will be remembered, showed the least unemployment of any of the three groups in April, 1930.

The figures just cited show that Negroes and foreign-born were not selected for mass layoff in the first phase of the crisis. There is a widespread impression to the contrary

effect. Workers from the field cite instance after instance where there was discrimination in favor of native whites. These workers insist that at any rate in the later stages of the crisis, Negroes and foreign-born were victimized. However, a moment's thought will show that mass layoffs of one race or nationality would be contrary to a policy of the employers which they consider of really crucial importance—that of splitting the ranks of the workers. If all the Negroes in a given plant were laid off, it would be that much easier for the remaining workers to get together, since there would be no difference in color for the bosses to invoke.* So it appears that the mixing of races and nationalities in the steel plants is just as marked to-day (1933) as it was before the crisis.

Employers' "Relief" for Unemployed

The idea that the workers in an industry have a claim on that industry for a livelihood is an idea traditionally foreign to capitalistic habits of thought. But the desire to avoid "labor disturbances" is always present in the mind of the employer. Read, for example, the summary chapter of a recent (1930) study on *Lay-off and Its Prevention* by the National Industrial Conference Board. There it is stated: "If . . . the period of reduced earning power is protracted, or the curtailment is progressively severe . . . the whole labor force may become dissatisfied and *even lend itself to labor agitation, as has been the case in notable instances.*" (P. 78. Emphasis not in original). No stronger evidence than this passage could be presented for the contention that mass protest is effective in forcing immediate concessions from employers. It is primarily the militant protest of discharged and

* The above is written in full awareness of the fact that some plants have closed their doors to Negroes from the beginning. The superintendent of the Wisconsin Steel Co. plant in South Chicago will not have Negroes in the plant because he doesn't like them.

part-time workers, that has forced some concessions from employers in the iron and steel industry in the matter of relief for laid-off workers.

A rather obvious way of preventing distress among discharged workers, at least for a time, is to present them with a "dismissal wage," or separation allowance as it is sometimes called, if and when they are laid off without notice. Such allowances are the rule in certain capitalist countries of continental Europe. In the United States steel industry, only the American Rolling Co. and the Bethlehem Steel Corp. have ever reported payment of such allowances, and each of these companies only at one plant at one particular time. The sole concession usually made to a worker summarily fired, is that he gets paid off immediately, whereas if he quits voluntarily he has to wait till pay day for his accrued wages.

The Stagger Plan

When the great crisis hit the iron and steel industry, the main technique which the industry had developed for meeting distress among the workers was the so-called stagger plan or share-the-work scheme. From the point of view of the employer, this plan had three separate advantages: (1) it reduced to a system the support of workers by each other, so that demands on the company for relief, either direct or in the form of demands for contributions to public or other charitable agencies, were likely to be minimized; (2) it kept attached to the job ready for full production a maximum number of experienced workers; and (3) it kept these workers from getting "soft." *

* "The terrific heat and speed-up in the Bethlehem Steel Co. Blast Furnace at Bethlehem almost killed three workers on September 4th. These workers had been laid off for many months and recalled to work, but starvation in the ranks of the unemployed had weakened them so that they were unable to stand the pace in the mills. One is in the hospital in a very serious condition." ("A Steel Worker," in *Labor Unity*, September 19, 1931.)

The workers were in no position to meet the crisis out of their own resources. The stagger plan of rotating employment, which was officially endorsed by Pres. Green of the American Federation of Labor and Pres. Hoover, had been in use on a large scale for many years in some of the older centers of the industry even before 1929. In the U. S. Steel plants along the Monongahela River in Western Pennsylvania, which plants were rebuilt and "modernized" after the war on a huge scale, the number of workers required to man the mills decreased so suddenly that the company apparently did not dare to fire all the workers outright. In this district, as in many others throughout the country, the steel workers' savings at the beginning of the crisis were all but non-existent.

As the crisis deepened and the number of totally unemployed mounted, the part-time workers came to form a larger and larger percentage of the workers still on the payrolls. From figures issued by the U. S. Steel Corp. it may be computed that workers on part time were 67% of the firm's "employed" workers in March, 1931, 75% at the end of 1931, and 88% on the average during 1932. In March, 1933, the company's chief executive announced that the firm had practically no full-time workers at all.

The stagger plan takes various forms. Some companies (*e.g.*, Bethlehem, Colorado Fuel & Iron Co.) have used the 6-hour shift on continuous processes; one (Corrigan-McKinney at Cleveland) is stated to have used the 4-hour shift on its blast furnaces. More usually, a man works one or two days a week and then gives way to another man; or, when the plant is operating only one or two days a week, two men work alternate weeks.

For a time in the Youngstown area, the plan was tried (*e.g.*, by the Republic Steel Corp.) of having two full crews on the job in the hot mill spelling each other off, the company paying each crew for only half a shift's work. The

workers kicked so much that the company modified the system.

If a man is working on the stagger plan, even if he puts in only one day a month, he is not entitled to any unemployment relief, in the view of the steel companies. U. S. Steel has even forbidden its employees to apply to any charitable organizations for relief, as long as they are still carrying the company's employment check.⁷ This edict was in pursuance of the policy put forward by Myron C. Taylor, chairman of the company's finance committee, at the American Iron & Steel Institute sessions in October, 1930. Taylor urged, "Let it be said of the steel industry that none of its men was forced to call upon the public for help."

The stagger plan has been used by some superintendents to stir up the workers against each other and split their ranks. A worker from Youngstown, Ohio, reports the following ingenious plan in the mills of Youngstown Sheet & Tube:

Starting with the galvanizing department, the boss came to the workers and said: "There are 60 men in this department and we have work for only 40 on the double-up [stagger system] time. Twenty men will work the first three days and twenty will work the second three days. We will pick the first twenty and these men will give their jobs to whoever they want for the second three days, out of the forty men left."

The boss then selected the 20 men who were to work the first three days and these men naturally gave their jobs to their friends after they had finished their time for the week. This meant that 20 men were left without any work at all for the week.

Many of the men got sore at the men who worked the first part of the double-up for not giving them the three remaining days' time. In fact several fist fights took place by some of the more backward men who could not see that this is exactly what the company wanted to happen.⁸

At the billet mill of the Illinois Steel Company's South Chicago works, there were in the spring of 1931 too few air hoses for all the chippers, and some workers came as early as 5 A.M.

to be sure of getting a hose and thus a day's work. There was some feeling among the workers at Sparrows Point because the best and heaviest orders seemed all to be going to certain mills, while other mills got all the light orders with a poorer grade of steel.⁹ Of course, whenever there is work to be distributed arbitrarily, favoritism crops up, compared with which the organized stagger system seems almost preferable.

So far did the Youngstown Sheet & Tube Co. carry the policy of having a huge reserve army always at its gates that it hired considerable numbers of workers at the most intense point in the crisis, even though they had to wait thereafter for employment as much as four or five months. This company had, in October, 1932, 23 workers on its payroll for every ten jobs. The following April the Republic Steel Corp. had on its payroll 25 workers for every ten jobs. Late in 1932 the steel companies in the Youngstown area announced that they would guarantee \$20 a *month* minimum wages to all employees. Even this promise was never carried out in any thoroughgoing way. In the Youngstown district it was at one time fairly common for men to be called to work, and then sit around in the wash rooms for the whole turn and be sent home without a cent.

Company "Relief"

Even the first winter of the crisis brought so many cases of complete destitution among the steel workers that it became evident to the big companies that they would either have to give relief themselves, or contribute to the local charities on a much larger scale than formerly, if food riots and demonstrations were to be avoided. Their policy has been to keep power over their own employees in every way possible. They have created a little "made" work; they have given credit at company stores; they have given relief to workers having their employment checks; they have fostered employee gardening and taught the women how to bake their

own bread and sew their own clothes; and when forced by overwhelming public sentiment to contribute to the local charity, they have made a large part—sometimes the whole—of the contribution out of “voluntary” collections from the workers in the mills.

The breakdown of the stagger plan as a means of providing support for the 7,000 steel workers in the Lackawanna plant near Buffalo was officially admitted by the Bethlehem Steel Corp. in December, 1931. At this time it was announced that the company would give relief work to all its Lackawanna employees who were receiving less than a living wage. A Federated Press reporter investigated a month later, and found just 250 men who had been given relief work, tearing down three old mills.

Typical of the firms having company stores is the Jones & Laughlin Steel Corp., which allows credit to employees *only so long as they are working*.^{*} Of course the amount advanced at the store is checked off of the worker's pay until the debt is extinguished. Sometimes it never is extinguished. In Birmingham, Ala., where the system of company stores and company houses is very extensive, the writer has run across families which were caught in the net of the stagger and credit system even before the crisis and had not had any cash in years. Everything was supplied on credit by the company—a carryover into industry of the infamous sharecropper credit system. The company store booms in depression, since workers have not enough cash to buy at the (cheaper) chain groceries. The Lukens Steel Co. of Coatesville, Pa., has given no relief at all, so that its workers, on part time, will be years in paying off the huge debts they are accumulating at the company (“coöperative”) store.

A number of the larger companies had set up their own

^{*} Both this company's plants are located in Pennsylvania, which has a law prohibiting company stores. The company gets around the law by having the same people own the steel company and the stores.

mechanism for poor relief already before the crisis. Thus the Illinois Steel Co. established in Gary in 1913 the W. P. Gleason Welfare Center, named after W. P. Gleason who in 1933 was still general superintendent of the company's Gary works. This center has distributed relief in the crisis. In addition, this company maintains at each plant a Good Fellows Club, which has as part of its program the relief of necessitous members. Dues for the Good Fellows Club have been checked off the wages of the members, and in some of the works the men did not dare not to join; membership was virtually compulsory.

One feature of this relief work carried on under company auspices has been that it brought the company officials actually into the homes of the workers and enabled them to find out exactly how the workers were getting along. Thus in Indiana Harbor a committee of department superintendents headed by H. R. DeHoll, the general superintendent of Inland Steel, established an airtight monopoly on the handling of all relief applications from Inland Steel Co. employees, and the superintendents and foremen personally investigated every applicant, though this work was also performed as a matter of routine by Salvation Army investigators.

In the Pittsburgh district in the winter of 1931-32 the Jones & Laughlin Steel Corp. was giving \$2.10 a week to the families of "its" unemployed workers, and the Carnegie Steel Co. \$3.00. But the companies decided that they were paying too much relief. They revised the relief scale. A Homestead worker reported in November, 1932, that the Carnegie Steel Co. was dispensing to "its" workers relief tickets worth \$1.90—one ticket a month to a single man or a married man without children, one every 3 weeks to a man with 1 to 3 children, and one every 2 weeks to a man with more than 3 children. The companies also called in a number of employment checks, thereby throwing some thousands of workers onto the county. Discharge did not necessarily mean greater

immediate hardship for the workers, who often got more from the public agencies than they had been getting from the companies, *even when employed*.

In Gary, thousands of steel workers' families were expected to live on \$1.75 a week in the summer of 1932. The chief breadwinner was getting one day's work every two weeks, and was forbidden to apply for charitable relief elsewhere. The U. S. Steel Corporation's order forbidding its employees to apply to public agencies for relief has necessarily been disregarded by many workers, who preferred the chance of losing their (half of a) job to actual starvation. The families that managed to get onto public relief received from \$2 up a week depending on the size of the family. In the neighboring steel town of Indiana Harbor, the maximum scale of public relief was, in 1932, \$14 a month, irrespective of the size of the family. Most of the steel companies, including some of the largest, have given no relief at all in the crisis.

The net result of the changes introduced by the companies in 1932 was to increase the proportion of relief furnished in the form of a loan and to decrease the proportion furnished as a gift. Not that the sums advanced as gifts in 1931 were large. The U. S. Steel Corporation, for example, advanced to the workers in that year only \$9.64 per part-time worker, and of this only \$3.08 was an outright gift from the company. The Good Fellow Clubs advanced an average of \$1.26 per worker; the company does not mention in its annual report the fact that these clubs are financed almost entirely by deductions from the workers' wages. The remainder of the \$9.64—\$5.30, or 55% of the total—was advanced in the form of a loan. But see how this proportion increased in 1932. Whereas outright gifts increased only about 20%—from \$470,689 to \$577,216—and advances through the Good Fellow Clubs and other welfare organizations in about the same proportion—from \$173,876 to \$218,711—the loans

to employees more than trebled. The sum rose from \$801,484 in 1931 to \$2,690,037, and the proportion from 55% of the total advances to 77%. The new policy was adopted also by other steel companies. Any one who has observed the consistency with which loans are collected from employees, by being checked off their wages, will agree that the company's loss on this account is likely to be small.

The companies finally seem to have become alarmed at the size of the reserve army they had succeeded in building up, and set about to demobilize a part of it. The "back-to-the-land" movement was a unique product of the crisis. The movement was carried out in different ways according to where the workers came from. If from abroad, then the companies collaborated with the efforts of Secretary of Labor Doak to deport the workers. The companies even allowed Doak's agents to come into the plants and ferret out the foreign-born. If from Mexico, then the steel companies collaborated with the railroad companies in removing the workers wholesale to their native land. It is reported that 2,500 Mexicans, many of them steel workers, were thus sent south from the Calumet region in 1932.

Although the companies have not actually removed many of the American-born to the farms, some of the company spokesmen have made it quite plain that they expected former farm workers to return home in the crisis. Myron C. Taylor of U. S. Steel told the Boston Chamber of Commerce that "it [was] difficult to see how in the existing situation the large number that had migrated to the cities [could] all get work at fair compensation, while, on the other hand, the vast productive land areas of the country [were] offering opportunity for a more widely distributed self-sustaining population."¹⁰ He did not mention the fact that his company had advanced thousands of dollars as late as 1923, in order to bring farm workers to the mills.

For resident workers the larger companies, aided in some states by legislation, have evolved a "feed-yourself" program of gardens. The garden allotments furnished to steel workers by company or community have not been a source of welcome diversion to the workers; they have been a matter of grim necessity. Some part-time workers have been threatened with outright discharge if they did not raise their own vegetables. To the companies the gardens have been a tremendous help. The U. S. Steel Corporation is so pleased with their success that it plans to make the 60,000-odd work gardens permanent. The company may be disappointed. Many of the steel workers would have been glad enough to cultivate a garden, already before the crisis. But they had no energy for it after a day in the mills. Also, it was hard to make anything grow in the immediate vicinity of the mills' smokestacks.

The high point in "relief" from the business point of view was apparently reached in Sparrows Point, where a worker reports that colored families (mothers and children) were permitted to pick coke out of the cinders discarded by the company. This they did because, having been unable to pay rent in the company houses, their gas had been turned off. In return for the coke, they were expected to spread the cinders around in the places where the company (Bethlehem Steel Corp.) wanted them. For this spreading work the company had formerly been accustomed to employ men at 37 cents an hour. Thus its system of giving relief seems to have enabled the company to fire several more workers.

The system of company relief, either direct or through the Good Fellows Clubs, has been intensely unpopular with the workers, who revolted in several places. Dues for the Good Fellows Club were deducted from the wages of workers at the South Chicago Works of the Illinois Steel Co. even after these workers had gone onto one or two days a week. A

campaign against this system, conducted by the Steel & Metal Workers Industrial Union and the Communist Party, ended in a hunger march on the plant; and the check-off was modified soon after.

Charity and Public Relief

The steel officials have gone actively into community poor relief, public and private, and in many towns have taken direct charge of it. From the federal unemployment organization of 1931, which was headed by a member of the board of directors of U. S. Steel (Walter S. Gifford) and whose advisory board included two other directors of the same board (Samuel Mather until his death, and Myron C. Taylor), to the semi-rural steel towns like Donora and Farrell, steel officials or their wives have doled out the miserable relief or served on the committees which have raised or administered the inadequate funds.

The officials have had a very definite policy of making the workers pay, and this policy might not have been so easy to carry out if some one other than themselves had sat on the relief committees. A number of steel companies, of which the Central Alloy Steel Corp. (now a subsidiary of the Republic Steel Corp.) is reported to be an outstanding example, do not even ask their employees to contribute to the Community Chest; they simply deduct one day's pay and turn it over to the local Chest. Other companies instruct the foremen to collect from one to three days' pay each from the workers, and then say that the men's contribution has been "voluntary." Many workers have contributed who knew at the time that they would be completely destitute before the end of the year, as in fact they were. If the foremen collect enough, the company sometimes contributes nothing at all (example, Wheeling Steel Corp. in 1931). The following table has been compiled by Harvey O'Connor of the Federated Press to show the relationship between company profits,

surplus and assets in 1930 and company gifts to charity chests, in Pittsburgh in 1931.¹¹

<i>Corporation</i>	<i>Profits</i>		<i>Surplus,</i>	<i>Assets,</i>	<i>Gift,</i>
	<i>1929</i>	<i>1930</i>	<i>1930</i>	<i>1930</i>	<i>1931</i>
A. M. Byers ...	\$ 1,977,000	\$ 1,133,000	\$ 5,218,000	\$ 25,954,000	\$ 7,500
Blaw-Knox Steel.	2,838,000	2,689,000	.....	24,212,000	7,500
Allegheny Steel..	3,311,000	1,610,000	10,516,000	30,100,000	.....
Jones & Laughlin	27,639,000	15,013,000	74,749,999	219,583,000	60,000

U. S. Steel, employing 45,000 in the Pittsburgh area through its Carnegie Steel Co. alone, gave a paltry \$150,000 to this particular drive. Its surplus at the end of 1931 was stated to be \$421,837,191.

Contributions to Community Chest drives are admitted to be good business for the companies even by the Bureau of Internal Revenue in the Federal Treasury Department, which permits companies to deduct from their gross income for tax purposes, contributions to Community Chests and like organizations. The bureau finds that the corporations may expect to receive a benefit commensurate with the amount of the contribution.

But the steel companies do not, as a rule, contribute to the private charitable agencies as much as these agencies lay out in the relief of the employees of these same steel companies. In the crisis, when public relief assumed larger proportions relatively to private, the amount of money expended by the public authorities for the relief of steel workers was sometimes less than the whole amount the community received from the steel employers as taxes. During a debate in the Maryland House of Delegates early in 1933 on an unemployment insurance measure introduced under pressure from the working class, Miss Lavinia Engle, member from Montgomery County, stated that the Sparrows Point steel industry "cost the taxpayers of Maryland \$200,000 a year in public money, to carry the families of men turned out [by the Bethlehem Steel Corp.] and told to go to the charitable agencies. Families of 1,231 of its employees," added Miss Engle, "are

now under the care of public welfare agencies.”¹² The bill passed the House and failed in the Senate by only three votes.

The steel companies seem to have contributed to charity only because it was cheaper to do so than to carry on relief work themselves. Thirteen steel firms of national importance contributed to community chests an average of \$17,000 from each firm in 1929, \$14,200 in 1928, \$13,500 in 1927, \$13,200 in 1926 and \$12,300 in 1925.¹³ These niggardly amounts were evidently fixed in pursuance of a policy (which the National Bureau of Economic Research finds to be general among private corporations) of contributing to charitable organizations only when these have been carrying on work of direct service to the company's employees.¹⁴

The winter of 1930-31 was the worst the steel workers had seen since 1914. That of 1931-32 was far worse, and before the coming of the memorable winter of 1932-33 whole steel communities had sunk into poverty, and were totally dependent on public agencies, which meant on federal relief—a fair indication of how the “American standard of living” had gone completely to pieces in the crisis.

The steel workers, although profoundly dispirited by years of part-time work, did not lose their fighting spirit, and in the winter and spring of 1932-33 a number of local demonstrations including both employed and unemployed workers set the authorities of the Pittsburgh, Youngstown and other districts by the ears and forced the granting of more relief by the county. These movements were led by the Unemployed Councils, the Steel and Metal Workers Industrial Union, and a number of smaller groups (Unemployed Citizens' Leagues, Associations of the Unemployed, and so on).

Pittsburgh was by no means the worst hit of the steel cities. In that city at the end of 1932, the allowance for food in families of three or more was 90c per person per week, supplemented by a little milk and flour. The local charities (the Public Health Nursing Association and the Family Wel-

fare Association) tried to pretend that this was enough to keep the families in health. But Helen Glenn Tyson, assistant welfare commissioner of Pennsylvania, described it early in 1933 as a "starvation diet." "In many instances," she told the U. S. Senate Committee on Manufactures, "where work has been found for men it has been discovered that they were too weak to perform it."

The jobless, starving steel workers, plodding through the darkening streets of an evening, past a mill that was working part time, could occasionally see the gates open to let out a procession carrying the unconscious body of a man—a worker, collapsed from overwork!

CHAPTER VI

THE VANISHING JOB:

TECHNIQUE, MARKETS, AND LOCATION OF THE INDUSTRY

IRREGULARITY of employment in steel is nothing new, and speed-up has been only intensified, not invented, in the post-war period. The new feature of the present situation is that steel workers feel themselves squeezed in the vise of declining jobs.

The reason is that capitalism, based on the private ownership of the highly developed means of production which turn out a mass of commodities not for use but for profit, has got itself tangled in a maze of contradictions from which it is unable to find any escape. It has passed the progressive stage and entered a period of decline.

In this twilight period of world capitalism, when markets appear saturated and huge industrial giants remain sporadically idle, certain tendencies of industrial production come sharply into view. They may even be blamed for the situation that has really been created by capitalism itself. Thus the introduction of new machinery and processes, which results in greater output per worker, is blamed by some for the fact that steel workers who lose their jobs cannot get back into the industry, nor perhaps into any industry. But productivity of labor has not increased since the war any more rapidly than in many previous decades.

Secretary of Labor Perkins recently pointed out that the wages of workers in steel works and rolling mills as compared with value added by manufacture declined from 57% of the value in 1923 to 47% in 1929. Horsepower used per wage-earner employed in the industry increased 42% from

1909 to 1929. There is no doubt that the "organic composition of capital" is changing, and that constant capital absorbs a larger proportion of the employer's outlay relatively to variable capital than was formerly the case. But this tendency too has long been characteristic of the heavy industry, even in the days when it was expanding most rapidly. The great difficulty of steel under capitalism is that its markets are failing.

The markets are limited, not by any physical satiety, nor because people would be unable to use more goods if they were produced, but simply and solely through the operations of the capitalist system itself. The workers are unable to buy back what is produced. Wealth accumulates in the hands of a few, who consume part of what they receive, waste a part, and reinvest the rest; and the pyramiding of productive equipment tends to outrun the possibilities of financial return on this equipment. Capitalism can continue functioning only by means of periodic shut-downs during which a large part of the previously accumulated capital is wasted and rendered valueless.

Capitalism has saved itself temporarily from the effects of previous crises by developing new markets both abroad and at home and more thoroughly exploiting old ones. To-day the world is fully divided up among the capitalist nations and all regions have been drawn into the orbit of one capitalist nation or another. Domestic markets have also been more fully exploited than ever before; agriculture has become far more than ever before dependent on the demand of an international market. All capitalist nations are caught in the same maze. They erect tariff barriers in a desperate effort to save home markets for their own capitalists, with the result that the foreign trade of all nations declines still further.

Crises under capitalism get more serious the more fully capitalism develops. This is because the capitalist mode of production is itself the creator of crises. The present crisis

has been the most widespread and the most serious in the whole history of capitalism. It has been accentuated by the fact that several leading nations never staged a real come-back from the after-effects of the war, and that agriculture in many capitalist nations was over-developed during the war and has been depressed ever since.

The Soviet Union presents a striking contrast with the capitalist nations. In the Soviet Union, where the surplus wealth is used for the common good, workers form shock brigades with the idea of increasing output, and emulate each other in fostering inventions. In capitalist America, sabotage of production by employers has bred in the workers a certain cynicism regarding new improvements.

Productivity

Just how fast has physical output per man-year been increasing in steel? The following table, compiled by Meredith B. Givens, shows how much more product is turned out by the individual worker to-day than formerly.¹

AVERAGE ANNUAL OUTPUT PER WAGE-EARNER, IRON AND STEEL INDUSTRY, UNITED STATES, 1879-1929

(Source: *Encyclopædia of the Social Sciences*, "Iron & Steel Industry.")

Year	Blast Furnaces		Steel Works and Rolling Mills		Composite Index (1889 = 100)
	Gross Tons	Index (1889 = 100)	Gross Tons	Index (1889 = 100)	
1879	31	57	...
1889	...	240	54	100	100
1899	...	370	82	153	153
1909	...	671	111	207	217
1919	...	716	97	180	192
1929	...	1707	138	257	284

The U. S. Bureau of Labor Statistics calculates that productivity per worker in blast furnaces increased 50 times between 1850 and 1925.² Man-hour productivity in the iron and steel

industry as a whole increased between 1899 and 1925 by 165%, according to the same authority.³

Horsepower used per wage-earner employed is a good index of the degree to which mechanical equipment has been introduced. In the heavy industry, the horsepower per wage-earner increased from 12 to 17, or 42%, between 1909 and 1929. Only ten of the 329 industries in the United States use more horsepower per wage-earner than iron and steel, and of these two employ less than a thousand workers and two more, coke and cement, are almost a part of the steel industry.*

Increased productivity of labor has been caused partly by the speedup described in Chapter IV, but chiefly by engineering improvements: more expensive machinery, better routing of materials, better integration of processes, and so on. Such engineering improvements may and may not involve greater physical effort on the part of the workers; in the main, as we have explained in Chapter I, the actual physical labor is probably becoming less arduous. However, speed-up increases the nervous tension of the job; and the exploitation of labor in the economic sense has never been so great as at the present time.

Changes in Technique

Will productivity continue to increase at the same rate of speed? There are some who doubt it. Prediction is always dangerous. But we do know that seemingly impossible improvements in technique have been accomplished in the past. Passing over, as we necessarily must, the record of mechanization on the Iron Range where great steam shovels pick up 20 tons of ore at a bite, and on the ore docks where 12,817 tons have been unloaded from the ore pockets to the hull of a Great Lakes steamer in 16½ minutes, and leaving on one

* Figures as of 1927. See Appendix VII for table, compiled before 1929 and 1931 figures became available.

side also the technical changes in coal mining, transport and coke-oven practice, let us consider in order technical improvements in the three main sections of the heavy iron and steel industry—blast furnaces, steel works, and rolling mills.

Since 1880, when Julian Kennedy and Capt. William Jones discovered how to “drive” a blast furnace under heavy blast, the blast furnace has made tremendous technical advances. When the ore car reaches the blast furnace, it is picked up bodily, turned over, and dumped by a huge machine; and an overhead crane with its grab bucket moves the ore from the stock pile to the bin. The ore runs into the larry car when it is wanted for the blast furnace. The larry-man pulls a lever to pour the ore into the automatic skip-hoist which takes ore, coke and limestone up to the top of the furnace and dumps them in.

At the furnace front the tap-hole is plugged by the “mud gun,” operated by compressed air. A great advance was made when a way was discovered of taking the molten iron direct from the blast furnace to the steel works and keeping it hot in the so-called mixer until it was wanted in the steel furnace. Sand-casting of pigs, a process involving much back-breaking work, is now used only for the higher grades of iron. For ordinary grades, the “pig machine” does the trick.

Inventors still dream of making steel direct from iron ore, but so far no successful method of accomplishing this feat is known.* An interesting experiment is Prof. William Smith's low-temperature oven, requiring no coal or coke, which was first announced in 1928. This process is being exploited by the General Reduction Corp. of the United States. Some also foresee possibilities for blast-furnace operation in the high-temperature furnace of Dr. E. F. Northrup of Prince-

* However we must not omit to mention the Buffalo hollow-electrode furnace, which is said to have shown that the problem can be solved.

ton, who in an experiment has created a temperature of 3,600 degrees Centigrade and vaporized rocks.

Steel had been made from iron for many hundred years by the laborious process of cementation, when the so-called Bessemer process was developed simultaneously in several plants at once during the eighteen-sixties. It is named after Sir Henry Bessemer, who first put the process on a commercial basis. Molten iron is poured into a tilted crucible or converter with a perforated bottom. The converter is then raised upright and air blown through the holes in the bottom and up through the iron. The oxygen unites with the impurities in the iron and burns them out one after the other, after which carbon is added and the resulting steel poured (teemed) into molds.

The Bessemer process is cheap and rapid but does not permit the use of iron and steel scrap, which is becoming increasingly important as a raw material for steel. Also the chemical composition of steel made by the Bessemer process is difficult to control. For these and other reasons the open-hearth furnace is increasingly used for steel-making, usually alone, but sometimes in order to put the finishing touches on steel made by the Bessemer process. This double treatment is called the duplex process.

The open-hearth furnace uses gas almost universally as its fuel. It was formerly stationary, but the development of flexible ports for the gas has made it possible to tilt the furnaces by machinery. The heavy job of charging has also been taken over by the machine, and most of the lifting and carrying here and throughout the industry, is done by overhead cranes.

The electric furnace, which was put on a commercial basis in America about 1910, is probably only at the beginning of its development. Its high temperatures, under accurate control, are especially useful in the making of alloy steels, although the expense involved is still great enough to prevent

the use of any but small-scale furnaces. The electric process has taken over the manufacture of the so-called crucible steel, and electric steel manufacture is growing much more rapidly than open-hearth steel manufacture which as noted is supplanting Bessemer. The production of steel in electric furnaces increased 463% between 1916 and 1929 while the production of steel by all other processes was increasing 30%. Electric furnaces have been especially popular on the Pacific Coast where there is cheap electricity but no good coking coal. The Bosshardt furnace, which was introduced in the United States in 1931 after having been used for ten years previously in Germany, develops a temperature of between 3,600 and 4,000 degrees Fahrenheit, several hundred degrees higher than can be commercially developed in an electric furnace of the usual type. It is used for making direct castings of steel. Some foresee the development of electric blast furnaces.

From the steel furnace or converter the ingots are run off to the "soaking pits" (underground gas-heated chambers), where they remain while the heat becomes evenly distributed throughout their mass. This operation is necessary because the present conditions of teeming make it impossible to secure uniform heat all the way through an ingot and there is danger of imperfections in the steel. But a new process of running the steel into a revolving mold (the "centrifugal ingot" process) is said to make it possible to eliminate not only the soaking pit but even the first rolling mill to which the ingot is ordinarily brought, where the ingot is rolled to a "bloom."

In the rolling mill the economic pressure is always for the development of a continuous mill which will pass the red-hot metal only once through each pair of rolls and carry it right through to the finished or semi-finished product with no reheatings. Continuous mills were developed comparatively early for steel rails and comparatively late for sheets and plates. The completely mechanized plate mill in which the

product is not moved by man-power at all from entrance to exit has recently been perfected. Ninety per cent of all sheets are now made by some continuous or semi-continuous process. At the American Rolling Mill Co.'s Ashland mill 20 workers produce as much tonnage as 360 could turn out with the old hand-rolling process.

Live rolls, platforms that raise and lower, straightening machines, wire-drawing machines, and other ingenious contrivances now do most of the work in the rolling mill. Even inspection of the finished product is being turned over to X-rays and photoelectric cells.

The wrought iron industry, which declined with the rise of steel, staged a temporary come-back in 1929 when Aston developed a new and much more efficient process for the A. M. Byers Co. The hand-puddling plant had employed 400 workers and turned out 4,000 tons a month. The mechanical puddling plant employed 150 workers and turned out 4,500 tons a month. It should be added, however, that the workers in the mechanical plant were working twelve hours a day, as against eight in the hand-puddling mill.

The electric arc weld has been an invention of great importance to the iron and steel industry, especially to pipe manufacture. The A. O. Smith Corp. of Milwaukee was producing 32 miles of pipe a day within a short time after it perfected this welding process.

Steel has heretofore been rolled to give it shape and toughness. But with the introduction of tougher alloys, engineers have been working on a rival principle, that of extrusion. In this method, molten steel would be admitted through a valve into a chamber, and from there forced through a die of the desired shape to any desired length. The changing of dies would be a far simpler process than changing rolls, which now requires anywhere from 20 minutes to three hours.

Advances in chemical knowledge have been of great importance to steel. During the period of railroad building

which ended about 1906, the year when production of steel rails reached its all-time peak, the demand for steel tended to outstrip the supply, and the cry was for more tonnage. Since the rise of motor transportation there has been more and more emphasis on getting lighter and stronger steel. Several newly discovered and comparatively rare metals have been alloyed with steel in varying proportions, thereby giving it new and superior qualities. The industrial discovery of molybdenum steel, for instance, is said to have made possible the mass production of automobiles and airplanes. The auto industry took no less than 84% of the total production of alloy steels in 1931.

Rust, which is more important than wear in using up steel, is due mainly to impurities in the product. The so-called Armco iron from which nearly all impurities have been removed, and stainless and rustless steels, invented just before the war and greatly developed since, have all but solved the problem of rust. So less steel will be needed in the future for replacement.

The search for new ways of dispensing with workers is going actively on. Some of the smaller specialty firms, such as the A. O. Smith Corp. and the American Rolling Mill Co., have always emphasized research as an essential factor in their set-up. The A. O. Smith Corp. employed in 1928 a staff of 600 engineers. It planned to amortize its fixed investment in new plant in not longer than a year.* The larger firms have lagged in research heretofore. They have made sweeping improvements in plant, but usually by way of enlarging the scale of the previous installation, or introducing some process perfected abroad. About 1924 several steel companies joined with the Department of Metallurgy of the

* By 1933, however, the number of engineers employed had been reduced to about ten. On A. O. Smith's methods see "The A. O. Smith Corporation," article by Stuart Chase in *Fortune's Favorites* (New York, 1931), pp. 111-132.

Carnegie Institute of Technology and with the Pittsburgh Experiment Station of the United States Bureau of Mines to set up a joint research bureau in Pittsburgh. U. S. Steel decided to set up its own research department for the first time in 1927 (though actual research did not begin until 1929). The crisis has stimulated all the steel firms to greater activity in their search for ways of cutting costs, *especially labor costs*. New processes and appliances have been introduced; workers have been driven harder; and the few workers who were still employed in the crisis found their wages cut to the bone.

The Market for Steel

Up to the end of the war, the market for steel was expanding very rapidly. The rate of expansion of the market has been slowing up. The table shows that this slowing-up process has been very marked in recent years, even before the crisis, though production in 1929 set a new high record for all time.

One reason why the market for steel may be expected not to develop as rapidly in future as it did for example before the war is that steel is now getting active competition from other minerals. So much has been written about the way steel replaces wood that we almost forget how aluminum is replacing steel. Aluminum is derived commercially only from bauxite ores; but the potential reserves of this mineral are enormous. Alumina constitute 8% of the earth's crust while the various oxides of iron make up only 5%. Already the Alcoa Ore Co., subsidiary of the Aluminum Co. of America (Mellon), has put into service ten 70-ton hopper cars whose bodies and under frames are constructed entirely from strong aluminum alloys and which have the strength of structural steel but weigh only one-third as much. Aluminum, especially in the form of duralumin, an alloy of aluminum, is competing with steel in the manufacture of automotive equipment, in

building construction, and in the making of furniture and articles of household use.

GROWTH OF IRON AND STEEL PRODUCTION IN THE U. S., 1861-1931

(Source: Computed from American Iron and Steel Institute, *Annual Statistical Reports*.)

	Pig Iron		Steel	
	Average annual production (thousands of long tons)	% increase over average of previous decade	Average annual production (thousands of long tons)	% increase over average of previous decade
1861-1870	1,187	...	.....	...
1871-1880	2,406	112	497	...
1881-1890	5,690	137	2,473	394
1891-1900	9,812	72	6,558	165
1901-1910	21,132	115	18,767	186
1911-1920	32,264	53	35,099	87
1921-1930	34,084	5.6	40,578	16
1931	18,289	-46†	25,908	-36†
1932	8,650*	-75†	13,096	-68†

* Preliminary.

† Decrease.

Magnesium is another very widely distributed mineral. It weighs only two-thirds as much as duralumin and is as strong as steel. The Magnesium Development Co. was formed early in 1932 by the Aluminum Co. of America and the I. G. Farbenindustrie A. G. of Germany to develop and utilize the commercial possibilities of magnesium. The company will presumably be backed by the Mellon fortune. The Dow Chemical Co. is already utilizing magnesium in a big way.

Steel however will not be crowded off the map by these new minerals all at once. It will be used more in some types of products and less in others. The new "shot-welding process" has made it possible to construct box girder sections of stainless steel which, weight for weight, are 50% stronger than similar sections made of duralumin.

The following table shows the relative importance of different industries as consumers of steel. In interpreting the table, it should be remembered that 1923 and 1929 were years of good business, 1922 was a year of relative depression, and 1931 and 1932 were years of crisis. Thus the increase between 1929 and 1932 in the proportion of steel going to food containers, though partly a genuine increase, was due chiefly to the fact that sales of food in the crisis declined less than sales in other lines of business. The most striking thing shown by the table is the growth in the importance of motor transport as compared with rail transport.

CONSUMPTION OF STEEL

(*Iron Age* estimates; see first number of each year.)

Consumed by	Percentages of estimated total in				
	1922	1923	1929	1931	1932
Railroads	22	27	17	13.5	12
Building and construction	15	15.5	16.5	18.5	16
Automobile industry	10	11	18	16	17
Oil, gas, water and mining	10	10.5	10.5	11	8.5
Export trade	7	6	5.5	4	3
Food containers	4	3.5	5	9	11.5
Agriculture	4	4	5.5	4.5	3.5
Machinery	28	3	3	3	3
All other		19.5	19	20.5	25.5*
Total	100.0	100.0	100.0	100.0	100.0

* Includes shipbuilding 1%, highways 4%.

Foreign Markets for American Steel

The apparent decrease in the proportion of steel going to the export trade is due to the fact that less and less steel is exported in the raw and semi-finished state. About 10% of the American production of iron and steel has found its way into the export trade, directly and indirectly, in each year since 1923. But the failure of steel exports to increase, in the face of a growing world demand for steel, is very striking and may be traced directly to certain policies followed by the capitalist nations of the world, policies which the steel inter-

ests of the several countries have helped to shape. Competition between the steel producers of the several countries has been intensified since the war.

In the international trade as in the American domestic trade, overdevelopment has stimulated competition. World capacity for the production of steel ingots exceeded world production in 1927 by nearly 18%, according to an estimate by the British Parliamentary Committee on Industry and Trade. This overcapacity was even more marked in certain foreign countries than in the United States. Furthermore, the chief foreign steel-producing countries are more dependent on their foreign markets than is the United States. It was estimated in 1928 by the U. S. Department of Commerce that France must export between 40 and 60% of her output in order to utilize her capacity effectively and economically, Germany and Great Britain from 20 to 35%, and Belgium and Luxemburg from 60 to 75%.

The rest of the world depends less and less on the export trade for its requirements of iron and steel. These five countries and the United States, taken together, had increased their exports of steel by 1930 but 7% as compared with 1913, though world production of steel had increased in the same period by 44%.⁴

Making Steel and Making Wars

The great monopolistic and semi-monopolistic enterprises which struggle for economic advantage in undeveloped sections of the world are associated with particular national governments whose military forces are used to further the advantage of their nationals. It is assumed that the United States government, for example, will seek to extend abroad the markets and the raw material supplies not only of the American steel companies but of all other American companies whatever.

In each country certain big banking and steel concerns

have stood very close to the government, which has worked quite frankly for their interests. In France this tie-up has been openly admitted. "You can see from the statistics," said M. Pichon, French Minister of Foreign Affairs, in 1911, "that we have obtained valuable results . . . especially for our great metallurgical industries."⁵ The Minister no doubt had in mind the firm of Schneider-Creusot, which is to-day (1933) as close to the government as ever. It has directed the government's policy on foreign loans in the French market, and in 1932, it is charged, the French government made a secret loan to Hungary, diplomatic enemy of France, for no other purpose than to help the Schneider interests.⁶ The Schneider firm now operates internationally, since it has purchased the great Czechoslovak munition works at Skoda.

The steel companies know how to stir up national feeling when it is to their interest to do so; but they also know how to disregard national boundaries for the sake of greater profits. They fill armament orders impartially for their own government or for any other.

In the United States, the leading armament firm is the Bethlehem Steel Corporation, which has been in the armament business since 1885. This firm has maintained close relations with the Navy Department ever since W. H. Jaques of that department conducted negotiations to put Bethlehem into the armorplate business. Jaques afterward joined Bethlehem. It has happened that navy officers were on the payroll of armor and steel companies at the same time that they remained in the government service.⁷

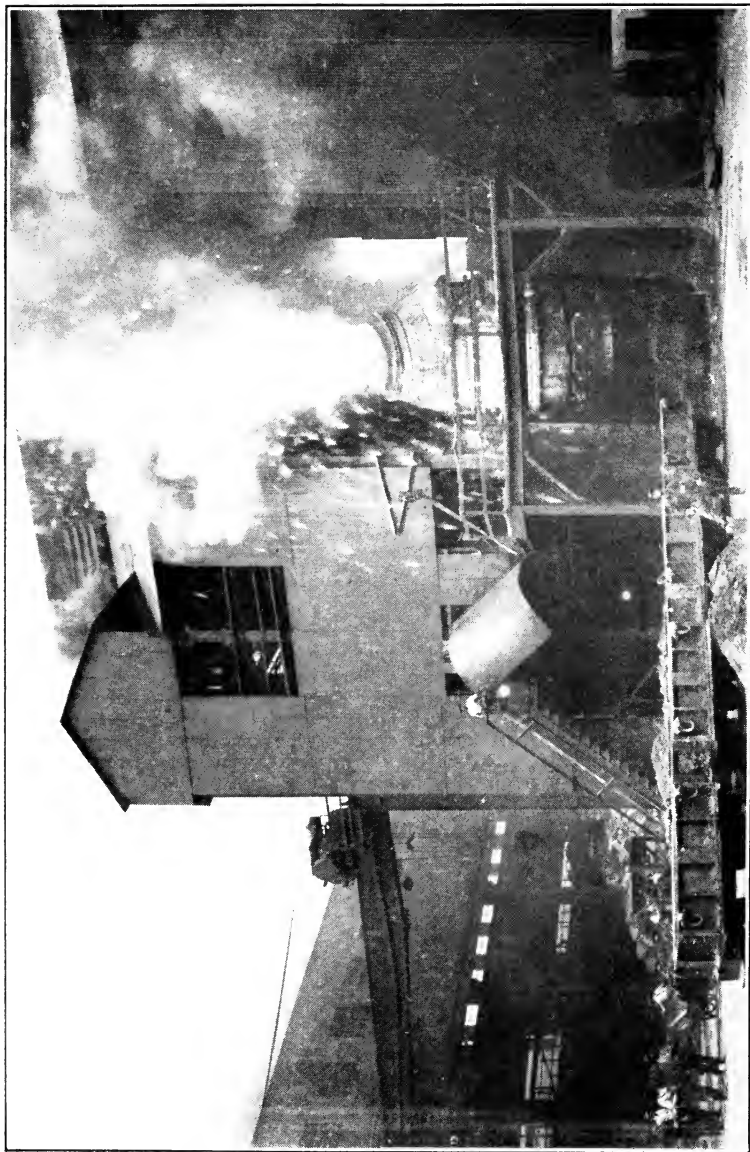
Among the organizations working for a big navy in the United States none has been more active than the Navy League. This organization was formed in 1903 on the model of similar organizations which had been active for some years previously in England and Germany. At that time and for 15 years afterward the only three manufacturers of

armorplate in the country were the Midvale Steel Co., the Bethlehem Steel Co., and a subsidiary of the U. S. Steel Corp., the Carnegie Steel Co. The 19 founders of the Navy League included the Midvale Steel Co., Charles M. Schwab of Bethlehem, J. P. Morgan, ruler of the U. S. Steel Corp., and Harry Payne Whitney, then a director of the Eastern Steel Co. Officials of other steel companies afterwards became officers of the League, and still other steel men, including Elbert H. Gary, executive head of the U. S. Steel Corp., were regular contributors to its propaganda work. Yet the secretary of the League had the effrontery to write to members of Congress in 1914 that if they thought the Navy League was supported by people who were interested in the sale of war materials to the navy, they were mistaken! Clyde H. Tavenner, U. S. Congressman from Illinois, stated in a speech in the House on December 15, 1915: ⁸

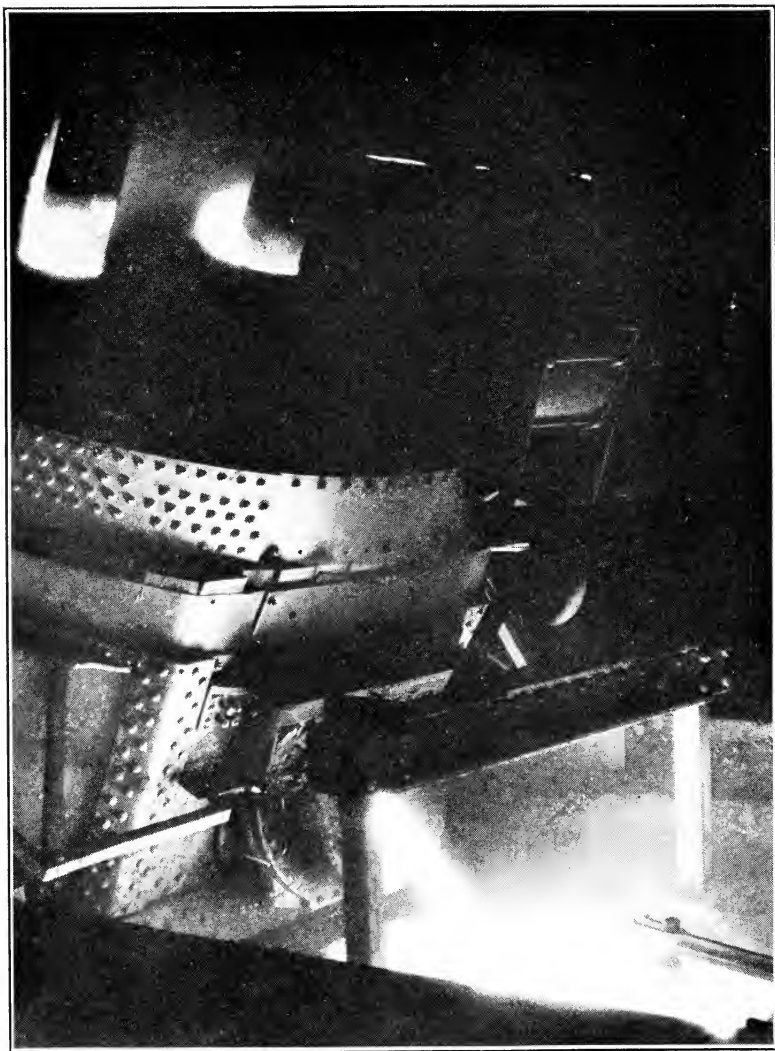
The Navy League upon close examination would appear to be little more than a branch office of the house of J. P. Morgan & Co. and a general sales promotion bureau for the various armor and munition makers and the steel, copper, and zinc interests.

The steel magnates have since resigned their directorships in the Navy League, which no longer publishes lists of its contributors. But the steel barons have not relaxed any of their interest in war orders. Bethlehem Steel was one of three companies which made up a \$25,000 pool to send the lobbyist William B. Shearer to the "disarmament" conference at Geneva in 1927; and Shearer's employers were so well pleased with his services at this time that they kept him on their payroll for a couple of years longer, lobbying at Washington.* The steel shipbuilders did not necessarily believe

* Later Shearer quarreled with the men who had employed him and gave the whole game away. See "Alleged Activities at the Geneva Conference," *Hearings* before a sub-committee of the Committee on Naval Affairs, United States Senate, 71st Congress, First Session (1930).



THE BLOWING OF A BESSEMER CONVERTER



AN ELECTRIC FURNACE

Stainless steels are formed in electric furnaces. Photo shows the tapping or pouring process when the furnace is tipped.

Shearer when he claimed to have wrecked the Geneva conference; they knew that real disarmament was not and could not be the policy of capitalist governments. But they knew that the bigger the navy the more the orders. The shipbuilding industry was asked to contribute, and probably did contribute heavily, to the election of Franklin D. Roosevelt, who had long been known as a "big navy" man and who on assuming office promptly started building warships in a fierce naval race with Japan and Great Britain. Early in August, 1933, Bethlehem was awarded contracts for the construction of one heavy cruiser and four destroyers, at a total cost of \$27,304,000. Federal Shipbuilding & Dry Dock Co., subsidiary of U. S. Steel, got a contract to build two destroyers with a cost of \$6,821,600.

The steel financiers derive super-profits from the war system, and are perfectly aware of the financial advantage which wars and rumors of wars bring to them. But nationalization of all munition and armament firms by all capitalist nations would not stop wars. Indeed, the deliberate fomentation of wars by private war-material firms is only a minor cause of the wars that arise under capitalism. Antagonisms between competing interests in different countries get bigger as the interests get bigger; these antagonisms cause "diplomatic tension" and tend ultimately to cause wars between capitalist nations, and would do so even if there were no private profit in the munitions industry.⁹

The Tariff

Like the military arm of the government, the protective tariff has become in recent years a weapon of the controlling business and financial interests for use in the foreign field. Throwing aside the argument that the tariff should be used to protect "infant industries," they have used it boldly to keep up prices at home at the same time that they sold abroad at sacrifice prices in an effort to capture new markets.

The purpose of the tariff has obviously not been to protect American labor. The Republicans won the election of 1890 largely on the plea of protecting American workers against "European pauper labor." Then in 1892, the protected steel industry cut wages at Homestead, and caused the famous strike. (See Chapter X.)

When the U. S. Steel Corporation was formed in 1901, it controlled such a large proportion of the supply of pig iron that by cutting down production in its own furnaces and buying over a period of years some 20,000,000 tons of pig iron, it was able to set a price for pig iron which was higher than the foreign price by nearly the full amount of the tariff. This artificial "bulling" of the price of pig iron lasted for about 11 years, and brought big profits to the company and all other steel companies, since the price of steel and of steel products was determined as a differential above the price of pig iron.

From the proceeds of these profits, U. S. Steel was able to carry on a campaign of selling its products abroad at less than the domestic price. This practice, which is called dumping, has been carried out on a bigger scale by U. S. Steel than by any other American company in any industry.¹⁰ At one time U. S. Steel sold steel in South Wales so cheaply that Welsh tinplate makers were enabled to buy it, finish it, and sell the finished product in competition with the corporation's own tinplate.¹¹ As late as October 27, 1932, George E. Dix, American representative of the Vereinigte Stahlwerke, leading German concern, presented evidence to the Bureau of Customs that American steel companies were still selling their products more cheaply abroad than at home.

Since the war, and especially since the beginning of the crisis, American iron and steel products have been shut out of one country after another by means of protective tariffs. Some of these tariffs were aimed specifically at American dumping.

Among the foreign countries which increased their tariffs on iron and steel products generally between 1913 and 1926 were Spain, India, Australia, Rumania, and (in comparison with the pre-war rates in force in its constituent parts) Jugoslavia. The government of India has for many years subsidized the domestic production of steel.

A number of countries have recently imposed special duties as an emergency measure. On April 4, 1930, the importation into Australia of finished products of iron and steel was prohibited. China's 1930 tariff laws imposed on many if not most iron and steel products the maximum duty allowed by treaty.

Effective April 25, 1932, England placed duties of 20 to 33 1-3% on iron and steel and their products (excepting pig iron, on which no new duty was imposed). The following July, Canadian purchasers of American steel took steps to transfer their purchases to England. Canada has been the most important foreign market for American iron and steel. Thus the crisis has had the effect of cooping nations up still tighter within their respective compartments, increasing national isolation and cutting down foreign trade.

The governments of the capitalist nations have at the same time fostered unification of their domestic iron and steel industries. They have laid the groundwork for economic warfare on a tremendous scale. Serious proposals have recently been advanced in Canada by which the iron and steel manufacturing properties of that country would be amalgamated into a single unit and operated under public control. A similar proposal was recently acted on in Japan, and the Iron and Steel Trades Confederation of Great Britain, leading iron and steel union, has sponsored a resolution, adopted by the Trades Union Congress in 1931, which calls for bringing the industry in England under the control of a public utility corporation. A national committee of the industry recommended early in 1933 a plan which would set up an

Iron and Steel Corporation of Great Britain to coördinate a dozen or so associations each dealing with a group of products. The purpose of all these proposals is to reduce or eliminate competition among domestic producers, to concentrate production in the best plants, and to increase the country's ability to compete in foreign markets. The central government of Germany in 1932 obtained a controlling interest in the United Steel Works (*Vereinigte Stahlwerke*), which controls directly over 40% of the crude and finished steel industry and dominates a much larger proportion through indirect participation. The purpose of the step, as reported in the press, was to prevent the properties, which had been pledged as security for foreign loans, from passing into the hands of French and Dutch financiers.

The European iron and steel industries are caught in the same scissors grip as the American industry. Less rapid growth of domestic demand is in immediate prospect for all the European countries to the west of the Soviet Union. The more excess capacity emerges and the higher tariff barriers are raised, the more will the steel exporters of these countries try to force their products into the few remaining open markets. The territory left for American expansion will be small indeed.

The immediate prospect for steel is thus not a decline in production (in the crisis production sank below the levels required for replacement) but a decline in the rate of increase of production, as compared with pre-crisis conditions. With the natural improvements in technique which are to be expected, there will be fewer jobs in steel. Capitalist America makes little provision for finding jobs elsewhere for steel workers, who are simply thrown out to join the jobless masses dropped by other industries.

Shifting Locations and Vanishing Jobs

There remains one phase of the problem of joblessness which is usually overlooked—the problem of what happens to the steel worker when his plant shuts down permanently. It may be that another plant is opening up about the same time in a more favored location. Does the worker thrown out of the old plant find a job in the new one?

Some, especially among the skilled workers whose skill is still in demand, will no doubt be able to make the shift. But the majority of the workers in a steel plant fill jobs that require no training at all, or next to none. A new mill nearly always hires a considerable proportion of workers from its new neighborhood, and these newcomers to the industry in effect replace the workers discharged or put on part time at about the same time from some older mill in a less favored location. Thus unemployment and under-employment of steel workers undoubtedly increased between 1919 and 1929, though the total number of workers in the industry was a little greater at the later date.

The following table shows how the jobs have shifted, in the short space of ten years. Pennsylvania, which in 1919 had nearly 45% of the jobs, had less than 37% in 1929, while the share of Michigan had more than doubled over the same period. All the lake districts increased their relative share, including the Indiana section of the Calumet district. (Indiana is not shown in the table.) Ohio increased on the whole, though the Youngstown district showed a tendency to lag, especially toward the end of the decade.

In locating his plant, the manufacturer in the heavy industry considers two things mainly—the cost of shipping the product to the market, and the cost of assembling the raw materials. Like textile and other employers, the steel boss also desires to be able to pay low wages and to drive his workers. But steel is different from textiles in that labor

cost is a comparatively small proportion of the total cost of the product. Wages paid to blast furnace workers amount to not more than 6 or 7% of the value of pig iron at the plant, and the wages paid to open-hearth workers are an even smaller proportion of the total cost of a ton of open-hearth steel—perhaps 4%.

PERCENTAGE DISTRIBUTION OF JOBS IN BLAST FURNACES, STEEL WORKS AND ROLLING MILLS, BY STATES, 1919 AND 1929

(Compiled from U. S. *Census of Manufactures*, 1929.)

State	Per cent of total jobs	
	1919	1929
Alabama	3.2	2.8
Illinois	5.3	7.9
Michigan	0.6	1.3
New York	4.8	4.7
Ohio	19.9	22.6
Pennsylvania	44.7	36.7
Other	21.5	24.0
Total U. S.	100.0	100.0

The manufacturers of some finished rolled products do, it is true, still use considerable crews of skilled workers, and their labor cost per ton of product is higher. Certain companies making sheets for example have in the past shifted their location slightly in order to get away from the union and pay lower wages. When the American Steel Roofing Co. of Cincinnati, reorganizing as the American Rolling Mill Co., opened its new plant in Middletown in 1900, the main reason for the move was the manager's desire to get into farm country. The farm boys, they thought, "could be trained to believe in and carry out the ideals of the company."¹² Later the company developed the continuous sheet and strip mill and fired a large proportion of the skilled workers who remained in its employ.

Changes in location may be forced by changes in markets, by changes in the sources of raw materials, by changes in transportation facilities affecting the cost of assembling raw materials, by changes in the source of power, and by changes in related industries. Perhaps the most important of these factors in the long run is the factor of *markets* for iron and steel. Markets at one time even forced a change in the fuel, from charcoal to anthracite. The rolling mills and to a lesser extent the blast furnaces and steel mills have a tendency to locate near the big markets, as the history of the industry shows.

The heavy industry located at Pittsburgh originally because Pittsburgh was a natural trade center and furnished a big market for rolled products.¹³ Later, when Connellsville coke and Lake ore replaced charcoal and local ore, Pittsburgh developed greatly because it was favorably located for the assembly of raw materials. It was a Pittsburgh firm, the Carnegie Steel Co., which formed the core of the United States Steel Corp., organized in 1901.

Since 1901, there has been a great development of the industry on the Great Lakes—first of all at Chicago, the largest midwestern market, and more recently, with the growth of the Michigan automobile industry, at Detroit. Cleveland and Buffalo have remained important centers. The Pittsburgh district has declined in relative importance, and the neighboring Youngstown district (Mahoning and Shenango Valleys), having no special advantages and a disadvantage in assembly cost as compared with Pittsburgh, has entered a decline which may eliminate it altogether. The Colorado and Birmingham heavy industries draw on local supplies of raw materials and supply mainly local markets. Neither of these districts is invading the markets of the older centers. The old plants of the eastern seaboard which originally used charcoal and local ore, now use midwestern coal and have supplemented their local ores with imports from abroad.

Although the bulk of the steel workers are now congregated in relatively few states, there are good reasons for thinking that this concentration of production will become less in the near future. Steel shares with other industries the tendency toward decentralization.¹⁴

Markets are shifting and are becoming, on the whole, more decentralized. Railroads were formerly by far the most important consumers of steel. They could pick up the product at the point of cheapest production, and this fact made for concentration. But railroad orders are now confined largely to replacements. Some think that the auto industry, which has recently been the most important consumer of steel (85% of the autos now come from Michigan), will spread out. Henry Ford has repeatedly announced his intention to build small plants in farm country.

In the *cost of assembling raw materials*, there is no longer as much advantage for the leading districts as there used to be. In the first place, the development of the by-product *coke* industry has made it unnecessary for the mills to locate near mines producing coal of good quality. An iron and steel plant using by-product coke may be erected anywhere within a 300-400 mile radius of any coal mine of fair quality. The steel industry of the St. Louis district, centering in Granite City, Ill., now uses largely Illinois coal, which formerly was not considered suitable for coking. In the second place, the better grades of *ore* in the Lakes region—the chief source of supply—are being exhausted, and as the quality declines, the probability that the ore will be smelted near the mines increases. Some foresee the growth of a great blast-furnace industry at Duluth, where an important plant is already located. Foreign sources of ore (Cuba, Chile, Newfoundland and Brazil) are likely to become more important in the future, to the great advantage of seaports and, later, lake ports. This shift will create the possibility of a whole series of plants at the big ports, wherever fuel can be cheaply sup-

plied. *Iron and steel scrap* is becoming increasingly important as a raw material for steel. The locations which consume steel are the locations which supply scrap, so that decentralization of markets will mean decentralization of the supply of this raw material.

A large proportion of the steel is *transported* by rail. The rise in freight rates since 1900 relatively to the price of steel has tended to shift the industry nearer to markets. *Power* is now obtained largely from electricity, which can be transmitted longer and longer distances. The growth of giant power will tend to decentralize all industry, but perhaps especially iron and steel, where the use of electricity may increase very greatly in future.

Changes in related industries affect iron and steel. In at least three instances (in the eastern seaboard area) the location of pig-iron production has been determined by the market for coal-tar dyes and other products reclaimed in the new "by-product" coke oven. So profitable have these "by-products" proved that ovens have been built for the special purpose of producing them. Then blast furnaces have been erected to use up the coke. What may be the importance of the growth of alloys, most of which depend on foreign sources of supply for the alloy metals, is difficult to forecast.

Decentralization will be tremendously furthered if the new centrifugal casting process has the development which is predicted for it. One reason why the industry has been concentrated at relatively few points is that the integrated plant has required tremendous production for the most efficient operation. Two stages especially have called for mass production: the blast furnace and the blooming mill. Modern blast furnaces have outputs up to 45,000 tons a month; and blooming mills are usually built to roll 35,000 to 60,000 tons a month. To keep these furnaces and blooming mills operating at capacity a large complement of steel mills and finishing mills are essential. The centrifugal casting process, operating

in connection with an electric furnace, can dispense with blast furnaces, soaking pits, and blooming mills altogether. An all-scrap mixture can be used in the melting furnace, and the circular ingot, cast by the centrifugal process, can be taken direct to a billet mill, which can be operated efficiently on a far smaller tonnage than the old blooming mill. Thus it becomes possible to take the steel plant to the point of steel consumption, where, naturally, large quantities of raw material in the form of scrap continuously accumulate. The first centrifugal-casting plant is being constructed in Detroit. The second will be, according to plan, in New England, which has heretofore shipped the large quantities of scrap it produces as far as Pittsburgh and Philadelphia for re-melting.¹⁵

The hope of profits has guided the men who have had charge of developing the steel industry. We shall see in a later chapter how richly this hope has been realized. Here we merely note that profits have been the main consideration governing company policy not only on points of engineering but on disease prevention, wages, hours, layoffs, and conditions in the plants.

When the steel lords are challenged concerning these conditions, they usually try to justify themselves by pointing to their "welfare" activities. Myron C. Taylor, chief executive officer of the United States Steel Corporation, before a Senate committee in 1933 admitted that his firm had cut wages 23% in two years; but, he added, the firm had spent in only one year no less than \$16,000,000 on welfare. Since welfare is only one phase of what is usually called the "labor policy" of the corporations, we purpose in the next chapter to analyze in detail this labor policy, bringing out the disadvantages to the workers as well as the alleged advantages which the companies' program has involved.

CHAPTER VII

THE FEUDAL DOMAIN OF STEEL

THE steel employers continuously exert pressure to force their employees into greater and greater servitude. A glance into history shows that there is no length to which steel employers will not go in this direction.

Colored slave labor manned the furnaces and forges of the South from colonial times to the Civil War. Indentured white labor was also widely used during the colonial period and at least some of this group of workers were doing forced labor in a very real sense. The famous iron works at Saugus, Mass., had in the 17th century about 40 unskilled laborers who had been taken prisoners in Scotland by Oliver Cromwell's army and sent to the works under ten years' indenture to the company.¹ Coming to more recent times, we find the steel employers in Alabama using convict labor under lease as late as 1911 in their coal mines.

With the decline of unionism since 1892 and the growth of the power of the great steel companies, steel workers have slipped back to a sort of semi-free existence.² The officials of the United States Steel Corporation have more arbitrary power over the lives of more families than do the rulers of some independent nations. The powers exercised by the modern steel barons, and particularly by the heads of the biggest company, U. S. Steel, are comparable to those exercised by a sovereign ruler, and are greater in some respects than those once exercised by the feudal lord; for the lord's vassals were at least protected by the binding force of custom, while the orders of the steel companies jump over customary limitations. The purpose of this chapter is to examine in

detail some of the methods by which the steel companies have assured their control over the conditions of the labor contract.

Steel mills require much land, and they are seldom built in the middle of an already existing city. Rather the mill is located outside urban areas, sometimes far from any important center of population. Steel workers come to live near the mill; they form a town. In this town the steel company commonly exercises in fact, if not in law, all the functions of government. The company dominates education and organized religion. It is the state.

The forces that police the steel communities exercise governmental authority but typically are paid by the companies and responsible directly to them. In time of industrial peace, the mills and company towns are policed by special deputy sheriffs, usually in uniforms—the retainers of the feudal lords of steel. In Pennsylvania these guards were formerly members of the force known as the “coal and iron police.” In 1928 the Carnegie Steel Co., one of the several subsidiaries of U. S. Steel which operate in Pennsylvania, was employing 475 coal and iron policemen, or more than any other company in the state; all the subsidiaries of U. S. Steel together must have been employing over 700 such police.³ All commissions were revoked in 1931, but the legal basis of the system remains unchanged. The United States is the only important industrial country which permits private payment of officers of the law.

Company Towns

Let us examine the life of a worker in the town of Aliquippa, formerly Woodlawn, Pa., on the Ohio River some 20 miles below Pittsburgh.⁴ The worker is never allowed to forget that the “J. & L.” (Jones & Laughlin Steel Corp.) is his boss. The J. & L. whistle wakes him up in the morning; he spends his days in the J. & L. plant; the chances are that he lives in a house that was built by the J. & L.-controlled

land company, and pays his water bills to the same. When his savings have been eaten up by the stagger plan, he will have to trade at the J. & L. store, which grants him credit. No movie will be shown, no teacher will be employed, that says anything against the company.

Even more than in most company towns, the company in Aliquippa makes persistent efforts to control the votes of its workers, locally, and nationally. At election time, workers' party candidates and their active supporters are driven out of town; at one time a number of Communist workers were tarred and feathered and deported from the town. A few other Communists who remained were spied on by company police, who raided one of their informal meetings in 1928; and as a result three of them were convicted of sedition and sentenced to long terms in prison, where one—Milan Resetar—died. In one election campaign Communist leaflets had to be dropped from an airplane. Campaigning even for the Democratic Party is believed by workers to have caused some men to be discharged from the plant.

In 1914, . . . on the Thursday before election day [reports Amos Pinchot], I saw 5,000 men discharged from one steel plant in western Pennsylvania, with the admonition, given them by the foreman at the gate, that unless Senator Penrose were returned, the plant would stay closed indefinitely.⁵

On one occasion a small shopkeeper pointed to the fact that members of the governing council of Aliquippa were at the same time continuing to receive salaries as J. & L. officials, in violation of Pennsylvania state law. At the next election these men were replaced with others not openly in the company's pay but equally satisfactory to it. "The company ought to have something to say about the way the town is run," said an official of the J. & L. housing subsidiary, describing the incident. "The company owns pretty near everything in sight."

In the South, U. S. Steel virtually has the power of life and death over the Negro residents of its company towns. When Matt Lucas, a colored millwright's helper in the Fairfield mill of the Tennessee Coal, Iron & Railroad Co. (U. S. Steel subsidiary), "got sassy" with a foreman, he was taken out of his home the same night and foully murdered, and no mention of the murder appeared in the press.⁶ When the facts of this killing were brought to the attention of the high officials of the T. C. I. and of the U. S. Steel officials in New York, two of the murderers were still in the employ of the Alabama concern. The feudal lords of steel did not find the mere fact that these men had killed a Negro sufficient reason to discharge them.

Probably the most tightly "closed" company town of any size in the Middle West is Weirton, W. Va., which is controlled by a subsidiary of the National Steel Corp. In Weirton all workers' organizations are watched for evidences of Communism or unionism, and it is reliably reported that workers who voted a left-wing ticket in the local branch of the Croatian Fraternal Union were fired from the mill shortly after. Union organizers take their lives in their hands when they visit Weirton. One organizer of the Steel & Metal Workers' Industrial Union received word from the chief of the company police that a machine gun was ready for him any time he was seen in the town.⁷

Against this terror the workers are helpless only because they do not choose to assert themselves. Even the most blustering and hard-boiled company mayor is helpless to prevent a mass rising of the workers. Meetings had been prohibited ever since 1910 in McKeesport, Pa. (the "Tube City"), and in Duquesne, just across the river, and all union organizers had been run out of town except for a short period during the steel organization campaign of 1919. Then in 1932-33 the workers under the leadership of the Communist Party and the Steel & Metal Workers' Industrial

Union broke down the ban on free speech and began holding street meetings in defiance of the mayor and police.

Aliquippa is an incorporated municipality of 27,000 population, but it is no less a company town than the patches adjoining the Jones & Laughlin coal mines some miles to the south. Indeed, up to 1927, when the company broke off relations with the miners' union, there was more freedom of thought and expression in the coal patches than in Aliquippa. The fact that steel workers are for the most part city dwellers does not in itself preserve them from company domination; it merely means that the company exercises its control on a more grandiose scale.

The despotism exercised by the steel companies is not a "benevolent despotism"; it does not create garden spots for the workers and pamper them with luxuries. At Gary, for example, a barren stretch of sandy lake shore was transformed within twenty years into a city of 100,000 population, owing entirely to the fact that the U. S. Steel Corp. built several mills on the lake front. But Gary typifies the worst mistakes of American city planning, or rather lack of planning. After some insiders had taken advantage of a "leak" in the U. S. Steel Board of Directors to clean up a fortune in real estate by buying land options in advance of the company, the "development" of the town was turned over to a group of capitalists who have run the town for their own profit. No provision was made for securing a beach for recreational purposes until the people of the growing town set about to secure one for themselves. Houses were built cheaply and sold expensively, always too slowly for the needs of the expanding population, so that Gary has been chronically overcrowded. Park space has been stuck in according to no ascertainable system. In the laborers' residential sections, buildings have been crowded onto lots in violation of decent standards.*

* See above, Ch. III.

Like the coal industry, the steel industry has its "pluck-me" company stores which thrive on the misery and degradation of the workers. A welfare worker of the Jones & Laughlin Steel Corp. in Pittsburgh blamed 80% of the pre-crisis financial difficulties of the workers on the company store credit system, operating of course concurrently with the stagger system. As early as 1929, nearly half of the workers in the Pittsburgh plants of the J. & L. had accounts at the company store, and their debts to the store were regularly checked off their wages. Since the depression, the proportion has vastly increased, so that nearly all the workers are being "carried" to a greater or less extent at the store, until they get laid off entirely. This "carrying" puts the workers more than ever in the company's power. The owners of the J. & L. operate seven "company" stores. It prefers to have the workers tied to the company. Other companies follow a similar policy.

Investigation of store prices in the Birmingham area indicates that the steel company stores charge more than the same type of stores run independent of the company, the difference being much greater on some classes of goods than on others. Workers in most centers complain that the company stores sell above the market price. The Union Supply Co., a subsidiary of the Carnegie Steel Co., started operating a chain of stores, mainly in the coke region, in 1898. The capital put into the business was \$75,000. By 1910, without any new capital having been invested, the Union Supply Co. had paid dividends of \$4,709,067, and had on hand cash and tangible assets amounting to \$1,400,000.⁸

Workers in the South who must have advances before payday on accumulated wages must pay a discount of anything up to 50% in order to get cash. Employees of the T. C. I. get advances in the form of company checks, redeemable only in goods at the company store. The worker who needs cash must discount these checks with somebody else, who charges

what he can get for the favor, or the worker may buy goods at the store and resell them at a loss.

The Lukens Steel Co. of Coatesville, Pa., has used the workers' own money to assure the company's control over the workers' lives. It took the initiative in founding a "coöperative" store in which the workers were invited to buy stock. But the control of the store has remained in the hands of the company officials. It sells to outsiders and grants credit to outsiders but has never paid any dividends. In the depression, nearly all the workers have been driven to run up accounts at the store, and the company knows, or may ascertain, the private finances of every one.

Some companies encourage their skilled workers to enter into financial relations with the company by lending them money on first mortgage to build homes. As early as 1892, the Carnegie Steel Co. had loaned \$42,796 to its workers in Homestead alone.⁹ The company's loan, secured by the house, is as safe as money invested in the steel mill. The company did not hesitate to use this lever to force workers to scab on the steel strike of 1919. Since 1920, 6,284 steel workers have borrowed from the U. S. Steel Corporation money with which to build houses, and 3,748 owed the company money on this account at the close of 1932.

All the steel companies that have company stores or company houses make the payment of debts incurred by the workers to the company a first charge on the payroll. Often workers have no money left after their rent is deducted, and come back on the local charity to be fed.

The company town in the iron and steel industry is nothing new; as far back as the 16th century the British ironmaster Ambrose Crowley had a well-advertised company town in County Durham, where he controlled education, medical services, and even poor relief. Neither is it unprecedented for steel companies to describe the public services of the company towns as "welfare." The Cambria Iron Co. of Johns-

town, Pa., which was notorious for the low wages it paid, secured favorable write-ups in the magazines of the eighteenthies and later because it sponsored various social activities (mostly paid for by the workers, through special deductions from their wages). But no company has ever quite equaled U. S. Steel in the blatancy of its advertising concerning "welfare," especially in the South.

The number of items which U. S. Steel lists under "welfare" is really imposing. "Safety" work is the pivot around which much of the so-called welfare turns. Included as "welfare" are accident prevention, relief for injured men and for families of men killed (do these payments, one wonders, include those legally compelled under the workmen's compensation laws?), employees' stock subscription plan, some pension payments, sanitation (again: what proportion of the sums expended under this head were compelled by rising public standards of sanitation and disease prevention?), playgrounds, schools, clubs, gardens, visiting nurses, etc. The installation of urinals and clothes lockers is listed under the head of "welfare"; the investment which the company has made in dwelling houses rented to employees is likewise so classified. Piped systems for drinking water are part of welfare, as are the salaries of the full-time safety inspectors. "Wells and springs protected against pollution" and "water closet bowls" are also included. If typhoid fever or malaria occurs in a steel town, that is "normal"; if the disease danger is removed, the company has undertaken "welfare work." Thus, in one of the bulletins put out by the company is a picture with a caption as follows: "Drainage of swamps for mosquito control in Alabama. Through this work malaria fever cases have been reduced from a *normal* 6,000 cases annually to approximately 200 cases." (Emphasis not in original.) One item, and one only, which might be included, is missing from the published list of "welfare" activities: the

cost of the spy system, which as a matter of fact, is probably also charged to "welfare."

In building "model" company towns, the companies have one leading motive, namely to cut down labor turnover while at the same time continuing to pay low wages.

Up to about 1905, the bad conditions of working and living made production very difficult in the Birmingham area. The workers gave the steel industry there a wide berth, or moved on after a short trial. An attempt was made to import foreign-born workers; but these soon left for the North.

The companies used convict labor as long as they could. Through a misunderstanding, the Tennessee Coal, Iron and Railroad Co. (subsidiary of U. S. Steel) did not get its quota of convicts on lease in 1911. Pres. George Gordon Crawford of the T. C. I. protested vigorously to the chairman of the State Board of Convict Inspectors, on the ground that if the company could not use convicts it would have to build decent houses for free labor. The leasing of convicts was abolished soon afterward in Alabama. This system had never met more than a part of the steel companies' demand for "cheap and contented" labor.

The program of building nice houses, schools, and hospitals which received a big impetus from the abolition of convict leasing, had really begun about 1906, when John A. Topping, who was then president of the Tennessee Coal & Iron Co., said,

The main thing we are driving for in the South is to get good men. . . . Living conditions at our mines and plants must be improved, and new tenements and schools built.

A deliberate policy of flattering the Negro workers was instituted. Negro schools were built from the same plans as the white schools, and Negroes were admitted to the pretentious base hospital at Fairfield (on payment of the usual fee, and of course strictly on a Jim-Crow basis). The company

achieved its aim. It cut down turnover, and wages of laborers in the Alabama steel industry remained at a level of about 60% of that of the steel industry in Chicago and Pittsburgh until July 31, 1933, when a change in the differential brought the common labor rate in the South up to 75% of the Pittsburgh-Chicago rate.

Company Unions

As pioneers used to fight prairie fires with little back-fires of their own creation, so the steel companies have set up their own "company" unions to prevent their plants from being overwhelmed by the onrush of genuine militant unionism. Under the company union or, as the bosses call it, the "employee representation" plan, a shop committee or works council, elected usually by the workers in a given plant, meets with representatives of the management for discussion of recreation, safety and efficiency, and for adjustment of minor grievances; and the management follows a policy of granting just enough of the requests that are made by these workers' "representatives" so that the workers, or some of them, will feel they are gaining something from the scheme. A division in the ranks of the workers is thereby created. The workers' "representatives" dispose of no funds, have no connections with workers outside the plant, and have in general only as much power as the bosses choose to give them.

The company union movement in the United States really got under way when the Rockefeller interests, acting under the advice of the Canadian politician W. L. Mackenzie King, started a company union in the coal mines of the Colorado Fuel & Iron Co. in 1915, and extended the idea the following year to the same company's Minnequa Steel Works at Pueblo. The campaign to organize the steel workers which was launched late in 1918 and culminated in a national strike in the fall of 1919, called forth a new crop of company unions in steel, and a few more were started in the years that fol-

lowed. It was recently estimated that nearly 100,000 steel workers were under such schemes.¹⁰

The original Rockefeller company union was introduced at the close of a mine strike and was intended to forestall further unionization moves. The steel workers realized the purpose of the plan, and when the steel organization campaign of 1918-19 reached its climax, they formed their own committee, presented demands to the management independently of the company union, and when they were refused went on strike.

The company unions which were introduced in 1918-19 by the Bethlehem Steel Corporation, Youngstown Sheet & Tube Co., Cambria Steel Co. (later absorbed by Bethlehem) and International Harvester Co. (in its Wisconsin Steel Co.) were also intended to forestall unionization. The companies took pains to control the elections to the committees, and see that only "safe" men were chosen.¹¹

Their success was uneven. The committee in charge of organizing the steel workers exposed the company union movement at a national delegate conference of the rank and file of the 24 unions involved in the campaign, and advised the delegates to capture or fight the company unions. In Johnstown a ceaseless campaign was carried on by the organizers from the national committee, exposing the company union and its failure to fight for the workers' demands. Real unionism won a 100% victory. At South Bethlehem, Pa., the national committee captured the company union. It was experiences like these that made the executives of U. S. Steel and Jones & Laughlin decide to keep out of the company union movement for the time being.

Some other company unions did not fall so easily under the sway of the national committee and its representatives. At the Wisconsin Steel Co. plant in South Chicago, the company union was introduced in March, 1919. A number of former union men were chosen as representatives in the first

election. The very first business presented to the "works council" (company union) was a motion by Representative Studnik to introduce the 8-hour-day for 11 hours' pay. The council went into executive session, the motion was withdrawn, and Studnik resigned. As the steel workers' national organization campaign gained momentum, the council presented demands on the management, and when certain concessions were actually obtained (the president of the company came personally to the plant and granted the maintenance men the actual 8-hour day with a small increase in wages just before the strike) the council got some credit in the eyes of the workers. Two former officials of the Amalgamated Association of Iron, Steel & Tin Workers were on the council, and acted as a brake on the enthusiasm of the more militant members.¹² The strike affected the Wisconsin Steel Co., but only after an interval of several days; and the ranks of the strikers broke earlier at this plant than at some others. During the rush back to work, the council, then completely under the dominance of the management, met daily and passed on the applications for reemployment. It weeded out the active union leaders. A similar task was performed by the company union at the plants of the Youngstown Sheet & Tube Co. The constitution of this "union" provides, "No official of a Labor Union shall be eligible to act as a representative."¹³

Most of the firms which had company unions during and just after the war have continued them, the Lukens Steel Co. being the only exception that has come to our attention. But it is admitted, even by the management in some cases, that the workers show little interest in these puppet unions. This lack of interest extends to the Minnequa plant of the Colorado Fuel & Iron Co. whose company union is given credit for having obtained the actual 8-hour day some four years ahead of the general run of steel plants. "Put in to kid us," "Too much boss—not enough union," "Real complaints can't be

got across," "No real stuff"—these are some of the phrases used by Bethlehem workers to describe the company union at the Lackawanna plant of that company.

Even the managements do not pretend that the company unions exercise any real power. The Colorado Fuel & Iron Co. plan specifically states that wage rates in the Minnequa plant shall be those paid by competing companies, meaning U. S. Steel. The Wisconsin Steel Co. council members did push for a wage increase early in 1923, but they were emphatically informed that it was "not in the woods," because U. S. Steel had not increased wages. The Bethlehem company unions do not "dictate" (!) to the management, says Charles M. Schwab.¹⁴

Company unions tend to confuse the workers and may be dangerous as a weapon against real unions.¹⁵ Any large-scale organization campaign would probably see a revival of their use, and unless they were captured or exposed, as in 1919, their influence might be appreciable.*

Education

Several of the steel companies undertake to "educate" their workers. Not only do they attempt to increase the average productive efficiency of the skilled workers by intensive courses in foremen training—they circulate at considerable expense leaflets warning against the dangers of Bolshevism. The American Rolling Mill Co. has been especially active in both kinds of "education." In order to show its workers that "the capitalist system . . . has stood the test of time, and . . . can properly reward individual initiative, ability and ambition," it caused to be reprinted a lurid and inaccurate speech by the professional patriot Fred R. Marvin, entitled "Bootlegging Mind Poison," and distributed copies of the reprint to all the workers in the organization.¹⁶

* On company unions under the "New Deal," see below, p. 267 ff.

Stock Purchase Plans

An ingenious method of tying the aristocracy of the steel workers to the company is the system of stock-purchases, introduced by the U. S. Steel Corp. in 1903 and copied since, with modifications, by Bethlehem and some of the smaller companies. The U. S. Steel plan in its turn grew out of the works savings plan of the Carnegie Steel Co., under which the workers at the Homestead plant alone had, in 1892, no less than \$140,000 of their savings on deposit with the company and drawing interest. The cost of the stock purchase plan is charged to "welfare" by U. S. Steel, indicating that the company considers this plan a part of its program of influencing and controlling the workers.

The worker gets regular dividends from the date he starts his subscription. In addition, the company announces a special bonus each year to employee stock purchasers. This bonus amounts (1933) to \$2 a year for the first two years and \$3 for each of the following three years. If the employee is continuing his payments regularly, he receives his special bonus, in the form of a deduction from payments due under the plan.

Many of the buyers are fired, or quit, or withdraw from the plan. All these get their money back with 5% interest. The company does not pay them the bonus; instead, it pays a corresponding sum into a "jack-pot." At the time the fifth bonus is due, the "jack-pot," which has meanwhile been accumulating compound interest at 5%, is divided in proportion to number of shares held, among those who have continued their payments and who according to the corporation's "final determination in its discretion" are "deserving thereof."

After the payments are completed, and the bosses' pets have received their rewards for "being good," the workers may keep or sell the stock at their option. But there are no more special bonuses. Therefore many workers sell the stock

they have just finished acquiring in order to start the purchase of new stock. The number of shares of common stock subscribed for under the plan in the 22 years 1909-1930 inclusive was, in round numbers, 1,820,000; yet at the end of 1930 U. S. Steel employees, including of course the president and other officers, held only 803,328 shares of common, and it is not stated whether all of these shares were bought through the stock purchase plan. It is evident that at least half of the shares so bought are presently sold again, even in "prosperity." Since the crisis began, thousands of shares have been sold for what they would bring. The workers who have completed payment and received full title to their stock cannot turn it in to the company and receive again the money they laid out for it, as those who are still paying can do.

The workers have suffered losses, under the stock purchase plans of U. S. Steel and other companies, of millions of dollars since 1929.

The purpose of the U. S. Steel Corp. plan is obviously to give the worker a stake in the company and tie him securely to his job—to make him "capital-minded" rather than worker-minded. Since the unskilled workers cannot be expected to buy much stock, the stock purchase plan has an additional function: to split the ranks of the workers. Even those who are buying stock are set against each other by the provisions concerning the "jack-pot." When some stock-purchasers drop out, or go on strike, the pot is that much richer for the "loyal" workers.

A company which sells its common stocks to its own workers is leading the workers into a risky speculation for its own ends, even if it limits the number of shares that any one worker may purchase, as the steel firms do. It is urging them to put all their eggs in one basket. Workers who wish to save money, and to invest it so as to support them during unemployment, could hardly select a worse type of investment than common stock, especially common stock of the company

they work for. Preferred stocks, such as the Bethlehem Steel Corp. sold to its workers from 1923 through 1931, and such as U. S. Steel and the Wisconsin Steel Co. (International Harvester Co. subsidiary) used to sell before they switched to common, are a little less risky than common stocks. But the Bethlehem stock which was offered to workers in 1931 at 121 had dropped by April 30, 1932, to a market value of 38.

Other companies which have, or have had, stock purchase plans for employees include the Acme Steel Co., American Rolling Mill Co., Belmont Iron Works, Jones & Laughlin Steel Corp., Wheeling Steel Corp., Youngstown Sheet & Tube Co., and three subsidiaries of the Republic Steel Corp. It was estimated recently that companies employing 70 to 80% of the workers in the industry had such plans.¹⁷

With all of the companies the purpose is the same—to split the workers, to tie up the skilled workers and to keep them “loyal” to the company, which thereby gains in “stability.” This desire for “stability” is put foremost by the American Rolling Mill Co. in discussing the reasons for its employee stock-selling plan. “One of the greatest stabilizers in human activities is the practice of personal thrift,” says its pamphlet *Facts for Foremen*.

There is some indication that the bosses may drop their employee stock purchase plans. The scheme works nicely as long as the general trend of stock prices is upward; but when workers are caught by a drop in the market their ire knows no bounds. Even the conservative Industrial Relations Section of Princeton University, which usually hesitates to express any opinion on the subjects it studies, has recently declared that employers and employees alike have lost more than they have gained from the employee stock ownership movement.¹⁸

*Pensions*¹⁹

The feudal lords of steel, in their efforts to retain control over the conditions of the labor contract, maintain lobbies at the state and national legislatures to defeat protective labor legislation. When pressure for a given legislative reform becomes strong, some companies are apt to make a nominal reform within their own little domain. A fine illustration of what usually happens is seen in the field of old age pensions, legislation for which has been agitated in the United States at least since 1900.

The International Harvester Co. instituted a formal pension plan in 1908, which of course affected the workers in the Wisconsin Steel Co. plant. The Cleveland-Cliffs Iron Co. followed the next year, and U. S. Steel with a great blast of trumpets set up its own pension plan in 1911. Since then, the following have established formal pension systems: Colorado Fuel & Iron Co., 1917; Henry Disston & Sons (Philadelphia) and Clyde Iron Works (Duluth), 1920; Bethlehem Steel Corp., Jones & Laughlin Steel Corp., and Wickwire-Spencer Steel Co., 1923; and West Leechburg Steel Co., 1929. The Acme Steel Co., with 1,500 employees, instituted a plan in 1919, but discontinued it in 1929. The number of companies having plans has thus remained the same since 1923. Such important steel firms as the Youngstown Sheet & Tube Co., Republic Steel Corp., National Steel Corp., Inland Steel Co., Pittsburgh Steel Co., Gulf States Steel Co., etc., etc., have no formal plan and do not contemplate establishing any. Altogether it is estimated that only 43% of the employees of all steel companies are working for companies having a formal pension plan.

These plans provide that when a worker reaches a certain age—usually 65—he may be retired on pension provided he has a specified number of years' service with the company to his credit. The service requirement with U. S. Steel is

25 continuous years. Most of the other companies require 20 or 25 years' service. The amount of the pension is usually 1% of the average wage earned during the last ten years, multiplied by the number of years of service. This method of calculating pensions discriminates in favor of the salaried worker and against the wage worker. The salaried worker typically reaches the peak of his earning power late in life, whereas the skilled wage worker is often physically unable to hold a "good" job much past the prime of life, and is dropped back to a low-paid job at least ten years before he reaches pension age. The method may also be used to cut down the amount of the pension paid to workers who in their later years have worked irregularly. The Bethlehem Steel Co. has calculated pensions on the basis of actual rather than full-time earnings—a kind of chiseling which is "as cheap and contemptible as stealing the pennies from a blind beggar's cup." ²⁰

Even the worker who has been granted a pension is not sure that he will continue to receive it. All of the companies announce that they will terminate pensions for "cause" or for "gross misconduct." It is understood that misconduct for this purpose includes refusal to scab on a strike. Thus an incidental advantage to the companies of having their own pension plans rather than a state-administered system is that they are assured of help in an emergency. Old workers cannot be expected to perform all the processes in the mill, but they are experienced and can train up scabs.

What actually happens to steel workers over 65? Nearly half of them in a period of "prosperity," and a much smaller proportion since 1929, go on working for a shorter or longer period, either because they have not yet accumulated the necessary service requirement, or for some other reason. Of those who, in a period of "prosperity," quit work at or after the age of 65, some 42% receive pensions, and most of the other 58% remain without work and presumably de-

pendent.²¹ Some kind of informal pension is granted by nearly every steel company to a very few old workers. Since 1929, the proportion of old workers who are dependent has of course increased greatly. The chances are against the young steel worker ever receiving any kind of pension, supposing the present picture to remain unchanged.

Most of the steel companies meet their pension payments out of current expenses; the West Leechburg Steel Co., which employed only 825 in 1930, is the only one to have reinsured the pension risk. The U. S. Steel plan is only 10% funded, and the only other plans which are funded at all are those of the Wisconsin Steel Co. and the Jones & Laughlin Steel Corp. Myron C. Taylor, financial wizard of U. S. Steel, won enormous credit with J. P. Morgan by paying off most of the company's funded debt in 1929 when dollars were cheap, but his wizardry did not lead him to build up at the same time a reserve fund for the company's pension plan.

Any change in the conditions surrounding a plan which seems likely to lead to additional expense for the company, is usually followed by a worsening of the conditions of the plan. About 1925, there became evident a definite lowering of the average age at which pensioners were retiring from U. S. Steel, and a corresponding increase in the number of retirements. There followed in 1927 a change in the plan's provisions. Theretofore a worker who was totally incapacitated could claim a pension if he had 15 years' continuous service to his credit. After the change, he had to show 25 years. The number of retirements for incapacity immediately fell by 25%.

The Colorado Fuel & Iron Co. was the first to give its pensioners a "wage cut" in the crisis. All pensions were reduced 10% March 1, 1932, and at the same time the minimum pension payment was reduced from \$300 to \$144 per year. In 1932, when the U. S. Steel Corp. was having diffi-

culty in continuing payment of dividends on its preferred stock, it set its actuaries to work reëxamining the pension plan, and on May 1, 1933, the pension payments were cut by amounts varying from 5 to 25%. There is nothing to prevent any of the companies—again excepting the West Leechburg Steel Co., which has a contractual plan—from changing or abolishing its plan as it pleases; and if the management should happen to take a stand for retention of any particular plan, any stockholder of the company could probably get all pensions, and the plan, abolished by court action. In each company there are some superintendents who seem to make a point of discharging workers just before they would have become eligible for a pension; and the number of such discharges seems to increase in a crisis.

The primary purpose of pensions in steel is not to protect the workers in their old age. It is to tie the workers to the company, and to stave off social legislation.

Meanwhile, what happens to non-receivers of pensions—the majority of the superannuated steel workers? A feature story in the *Pittsburgh Post-Gazette* for June 26, 1929, was suggestive. It carried a picture of a wretched tumbledown shack on the banks of the Monongahela River, occupied by three old beach-combers who, when the river was low, climbed into the sand to drag out scrap iron and steel, which they sold to junk-yards for \$7 a ton. (The price, incidentally, has since dropped to \$4 a ton.) They drank from cans that had the lids fashioned into handles. Their beds were hard planks, their coverlets old clothing,—and this was in the days of “prosperity”! Yet they had all been skilled steel workers—one a roller, one a patternmaker, and the third an electrician.

For all steel workers, there is only one satisfactory kind of pension—a steady money pension guaranteed by the government on an adequate state or country-wide basis, not the

skimpy semi-local basis now provided by the few states which have pension laws.

Group Insurance

The need for real social insurance is becoming more and more widely recognized in the United States, especially since the establishment by the Soviet Union of a really adequate system of social insurance against all the important risks to which the wage worker is subject. Private insurance is impossibly expensive for the average steel worker. Life insurance is too dear because of the heavy loading of the premiums under private insurance, and because the steel industry is so risky that its workers must pay extra premiums. Burial insurance—the so-called “industrial insurance”—is even more expensive for the protection received, because of the method of collection and because so many holders of policies are obliged to drop out along the way. Health insurance is simply out of sight, and steel workers, like other wage-earners, usually cannot get through a long illness in the family without coming back on private charity. The only exceptions are in the few plants which have employees' mutual benefit associations financed by deductions from wages. So a fairly strong movement grew up in the United States just after the war which had for its object the passage of state health insurance laws, modeled more or less on those which had been in force for 30 years in Germany and for a shorter period in England and other countries. This movement was defeated all along the line through the efforts of the lobbies of the big employers, and the movement lapsed for a time after 1920. The bosses had been given a good scare, and they began to take out group insurance.

Some of the steel companies (Jones & Laughlin, Youngstown Sheet & Tube, Superior Steel, Wheeling Steel, Spang-Chalfant, Bethlehem, etc.) have group insurance plans which provide small payments in case of sickness; but most

group insurance plans cover only life insurance, with small payments in case of permanent total disability resulting from a non-occupational accident. The Republic Steel Corp. group insurance plan affects only some of the company's plants, and covers perhaps 10% of the total of its employees; but all of the others out of the ten largest steel companies, and very many of the small ones, have group insurance plans.²² The exceptions include the Sloss-Sheffield Steel Co., Davison Coke & Iron Co., McKeesport Tin Plate Co. and Alan Wood Steel Co. Probably 85 to 90% of the employees of steel companies come under some kind of group insurance plan. A common policy is \$1,000, and a common premium rate is \$1 a month.

Ernst and Hartl found in 1929 that a clear majority of all steel companies having plans made the workers pay the whole cost. The tendency is for group insurance premium payments to be shifted more and more onto the workers. The Allegheny Steel Co., which formerly paid the whole cost and now shares the cost with the workers, is an example. Two companies (Keystone Steel & Wire Co. of Peoria, Ill., and American Rolling Mill Co.) still pay the whole premium, but the amount of insurance provided is so little that the workers are urged to add to the value of the policy out of their own pockets.

Group insurance is always term insurance—that is, it covers only a limited term (one year), and does not build up a reserve. The plan may be dropped at any time, and when it is dropped, the workers have no accumulated funds on which to draw. Most of the workers in a plant must come in on the plan in order for it to be adopted at all; the New York law, for example, requires 75% coverage. The Jones & Laughlin Steel Corp. takes no chances, but signs up its whole force. In all companies having group insurance, the plans are voluntary in name and compulsory in fact for the general run of the workers.

The large coverage makes it possible for the insurance companies to dispense with the physical examination and still make a profit. The group insurance salesman makes a great talking point of the fact that a worker leaving the company while a group insurance plan is in force may take out a policy of his own, straight life insurance, endowment insurance, or any other kind of life insurance, without taking a physical examination. The insurance experts well know that workers do not add to their expenses just at the time they lose their jobs, and that the number of workers who take advantage of this "privilege" is negligible.

The premium is usually set high at first so as to be sure to cover the cost. As a result there are apt to be dividends paid back by the insurance company at the end of the year. The steel workers, even those who pay the whole premium (through deductions from their wages), never see these dividends. The Colorado Fuel & Iron Co. workers pay over half of the group insurance premium, but the company keeps all the dividends, which in the first year of the plan amounted to 14.5% of the premium paid in.²³ The Lukens Steel Co. workers pay more than 90% of the premium, and the dividends on the group insurance, which amounted in the first year to 25.8% of the premium, go to the company benefit society, which uses them to create a pension fund. The president finds that group insurance is good business.

I am perfectly frank in stating [he wrote to the insurance company in 1929] when I first went into the proposition of group insurance I was somewhat skeptical as to the benefits which would accrue to our company and our employees. However, it is a pleasure for me to state that my skepticism has changed to strong faith and belief in the efficacy of group insurance.²⁴

The steel companies see to it that the insurance companies get their premiums, even under the stagger plan. It has been common in some localities, perhaps especially the Chicago

area, for workers to be called on for just enough work each month to pay their insurance premium, leaving them with little or no cash. The premium payments are checked off the wages like charges at the company store, or rent for a company house, or any other payment to the company. Such payments are always a first charge on wages. So bad did the situation become that some companies were finally forced to put slight limitations on the practice of checking off insurance premiums.

Group insurance benefits have been cut in the crisis. Workers for the Bethlehem Steel Corp. formerly got from \$10 to \$12 a week in case of sickness, the amount depending on the rate of pay. Early in 1933, reports a worker in the Sparrows Point plant, a flat cut of \$3 a week in the benefit payments was announced. At the same time, there was reported from Gary a move on the part of a U. S. Steel subsidiary there (the American Sheet and Tin Plate Co.) to have the workers turn in their group insurance policies for new ones. The new policies would carry the same rate of premium, but the clause providing for \$1,000 benefit in case of permanent total disability would be removed. Some workers immediately raised the demand that the company should pay for all the insurance.

A special kind of insurance somewhat resembling group insurance is in force in the isolated mining communities of the Iron Range in Minnesota. The so-called "Mesaba plan" of the Oliver Iron Mining Co. (subsidiary of U. S. Steel) has been adopted by most of the iron mining companies of that state. This plan provides medical care during disability for the worker and for dependent members of his family, provided the disability is not due to an accident covered by the workmen's compensation law. To support this service, every worker has a certain sum—in the past usually \$1.25—deducted from his wages each month.²⁵

Group insurance is not necessarily opposed by the workers,

who are strongly in favor of the principle of dividing up risks. But the workers readily see the superior advantages of real social insurance, which is reserve insurance (not term insurance); which is administered with workers' representation in England, and by the workers themselves in the Soviet Union; which does not involve the payment of salesmen's commissions and heavily inflated salaries to private executives; which covers all the workers in an industry (in the Soviet Union, the workers' families as well as all of the workers themselves are covered); which can be made to provide benefits for sickness, invalidity, and unemployment as well as for death and total disability; and which is paid for, in all countries having such a system, at least partly by the employers and the government, and in the Soviet Union altogether by the industry, which of course is run by the government. Compared with real social insurance, company pensions and group insurance are a racket.

Spy System and Blacklist

The steel companies' most important weapon for retaining control is not "welfare," but the spy system coupled with the blacklist. The spy system in steel is probably as old as unionism in the industry. The investigators of the Interchurch World Movement's commission of inquiry in the steel strike of 1919 uncovered an extremely far-reaching spy system the existence of which was not denied by the companies because it could not be.

But there are still some questions regarding the spy system that have not heretofore been answered. Does the system operate continuously, or only during a union organization campaign? Does it operate on a country-wide scale, or only where the unions are active? Do the companies run their own spy systems, or do they rely on paid agencies such as the Sherman Service (now the Sherman Corporation) and the Corporations Auxiliary Co.?

These questions have been answered, as far as U. S. Steel is concerned, by two sensational investigations, one carried out on the Iron Range in Minnesota in 1928 and reported by Frank L. Palmer in *Spies in Steel: An Exposé of Industrial War*, and the other carried out for the writer by a trained investigator in Pittsburgh in the latter half of the year 1932.²⁶ As a result, we are able to state with complete positiveness that U. S. Steel's spy system operates continuously, as continuously as any other part of its "personnel" program; that the plan is country-wide in scope; and that the company itself hires and pays its own spies, and receives their reports. Of course the fact that a company has its own regular staff of spies does not exclude the possibility that the company may hire agency operatives for special work; but this is seldom done because it is expensive.

The head offices of the U. S. Steel spy system are located in Pittsburgh, in the Carnegie Building directly under the offices of the Carnegie Steel Co., U. S. Steel's most important subsidiary. At the head of the spy system of the Carnegie Steel Co. is one Charles W. Tuttle, whose office is at Room 1009. Frank L. Palmer visited him there in July, 1933, and found him receiving spy reports as usual. The head of the company's spy system in Chicago is W. L. Furbeshaw of the Illinois Steel Co., who testified before the Fish Committee investigating Communism in the United States. The subsidiary of U. S. Steel on the Iron Range is the Oliver Iron Mining Co., and its vice-president, Pentecost Mitchell, receives the spy reports and presumably directs the spy work in that area, or did in 1928. These three offices exchange reports, and refer matters of unusual importance to the head office in New York.

The head of the spy system in the H. C. Frick Coal & Coke Co., another U. S. Steel subsidiary, is one George Ruch, a former agent for the United States Department of Justice who during the railroad shopmen's strike of 1922 helped get

the information on the basis of which the then Attorney-General Harry Daugherty secured his notorious injunction.

The U. S. Steel Corporation's spy system is also active in the South. Its subsidiary, the Tennessee Coal, Iron & Railroad Co., is the dominant firm in the Birmingham area, where T. S. Rawlings, a machinist, was caught spying in 1930, and Harry Hites, salesman for the Pennington Auto Co., was exposed in 1931.

In Mr. Tuttle's 5-room office is maintained one of the best current libraries on labor and radical activities in the country. About 90% of all information obtained through the steel espionage system comes from labor and radical publications. These publications are scanned for names which are carefully filed and indexed. All the principal labor and radical leaders in the country who might conceivably be of interest to the company are in the files, though of course the spies pay special attention to organizers, workers and leaders who are active in steel.

Post office boxes used for receiving espionage information are rented with the connivance of post office officials. It is necessary for the renter of a post office box to give references. The references are either the steel companies themselves or high executives in the company. Since these boxes are rented under assumed names, it is obvious that postal authorities know they are being used for "peculiar" purposes.

Mr. Tuttle personally has been accustomed to rent six post office boxes to receive radical and labor publications and spy reports. Scarcely a day passes without a dozen spy reports being received in his boxes. Box 134, for instance, to which radical publications were sent under the fictitious name of Ivan Bezick, was at one time used to receive Carnegie Steel spy reports for Mr. Tuttle.

Many spy reports are received in handwriting and copied by a stenographer, after which they are promptly destroyed. Two stenographers are kept busy almost continuously copying

spy reports. But the Carnegie Steel Co. gets most of its spy information orally. Its "outside man" coöperates with one closer to the labor and radical movement. A common procedure is for the "outside man" to meet his confederate at some open meeting, where the insider will point out the leading individuals in the movement.

Who are these "inside men"? Usually they are just ordinary workers who have got into trouble. The steel company's spies find out about their embarrassments and approach them with an offer, quite innocent-looking at first. Once he is in their toils, the company seems to treat him much like any other worker, confident that he will not dare to "squeal."

The company makes special efforts to have officials of unions and political leaders of labor on its payroll. In approaching them it is much more cautious. But it does succeed in some cases. Among U. S. Steel's spies on the Iron Range were Cletus L. McMillan, former secretary of Lodge 274, International Association of Machinists, Chauncey A. Peterson, member of the International Brotherhood of Electrical Workers and former Farmer-Labor member of the Minnesota state legislature, and A. J. ("Gus") Valley, formerly secretary of the Western Federation of Miners.²⁷

The U. S. Steel Corporation has no monopoly on hiring spies. The evidence on the other companies is not so clear, but taken together it makes a convincing picture. When a man is caught spying on Inland Steel Co. workers, for example, the workers suspect that he is on the payroll of the Inland Steel Co. even when the connection cannot be proved by documentary evidence like that which is available to prove the statements made above on U. S. Steel.

Here are some illustrations:

A spy named Rentz, who had got into the Metal Workers' Industrial League, was exposed in Philadelphia in May, 1931. He confessed that he was employed by the Bethlehem Steel Corp.

and had also been in the service of the U. S. Department of Justice.

Another spy named Shawalow was exposed in the same area in January, 1932.

The Red Billet, published by the Communist Party nucleus in the plant of the Republic Steel Corp., in June, 1931, exposed a spy named Jagumis. The man lost his job with the company soon after, allegedly because he had ceased to be of use to it.

Eighteen steel workers were fired from the plant of the Inland Steel Co. at Indiana Harbor in May, 1928. This was attributed to the fact that they had joined the Trade Union Educational League, and Frank Lance, electrician, of East Hammond, who worked in the mill and had joined the League and the Communist Party, was blamed. When put under charges by the party, he failed to appear in his own defense.

Foster's chief lieutenant at Wheeling in the strike of 1919 was later shown to be a spy.²⁸ The chief companies in this area are the Wheeling Steel Corp. and the Weirton Steel Co. (now a subsidiary of the National Steel Corp.). The U. S. Steel Corp. also has plants near by. Definite evidence is available showing that the Wheeling Steel Corp. has used spies.

The accumulated evidence of spy exposures leaves no room for reasonable doubt that *all the principal steel companies* use the spy system as a matter of course.

The chief use that the companies make of the information secured through spies is to see to it that the victims whose names have been secured are fired and blacklisted. The blacklist may extend to all the companies in a given area. A minor official of the T. C. I. told the writer in 1929 that a man who had seriously offended that company had better change his name or he would not be able to get work in the Birmingham area. Instances of the operation of the blacklist could be supplied, if necessary, from nearly every steel plant in the country where there has been any organization activity. Militant workers applying for work at the Gary plant of the Illinois Steel Co. have been told openly, "You can't get work here; you are too much of a Bolshevik."

When for any reason the company has not secured the

information it desires and is unable to spot the leaders, it sometimes resorts to mass firing. The most spectacular examples are furnished by the wholesale discharges from the Johnstown (Pa.) plant of the Cambria Steel Co. (since absorbed by the Bethlehem Steel Corp.) in the steel strike of 1919, and the discharge of several hundred workers from the Homestead plant of the Carnegie Steel Co. in 1901, when the union had just been revived. When organization work was first started in the plant of the Blaw-Knox Steel Co. at Blawnox, Pa., in 1931, the workers took great precautions about their first meeting, and held it at night on an island in the Allegheny River. Next day over a dozen men were fired, but not the "right" ones. The McKeesport Tin Plate Co. is stated to have met an organization move on the part of its workers in the spring of 1932 by firing all who had been seen listening to the organizer at an open-air meeting.

The effectiveness of the spy system has been much exaggerated. A very large part of the spy's work merely duplicates information that is already public property, and a considerable portion of the remainder is inaccurate or irrelevant.²⁹ Spies can be spotted. Methods of detecting them have been tested and found adequate. Above all, the effectiveness of the spy is not great enough to check a really widespread organization move. This truth was demonstrated in the strike of 1919 and has been proved over again several times since.

Who Benefits by "Welfare"?

In their "welfare" policy the companies follow the same general policy that we have seen them using elsewhere in their dealings with the workers—that of attempting to split the workers' ranks. The stock-purchase, home-owning, relief, and pension plans are especially designed to appeal to the skilled, settled worker—the "family man"—and to persuade

him, if possible, that he is a substantial citizen; in a word, to give him a petty-bourgeois psychology.

But the crisis has shown many of these "solid citizens" how nearly equal they are to the unskilled before the law of profits. The workers cannot forget that the firm that sells them stock and offers them a few groceries at the end of a long roll of red tape, is the same firm that plants spies in their organizations and blacklists those of their fellows who fight for good conditions.

How much does "welfare" cost the companies? As pointed out above, there is no agreement about what really constitutes "welfare." U. S. Steel pads its "welfare" expenditures so openly that the Welfare Account must be a standing joke around the corporation offices. George W. Perkins, member of the board of directors and for a time chairman of the finance committee of U. S. Steel, said to the Stanley Committee in 1911 that a contribution of \$3,000 made to aid in financing a second edition of George P. Curtiss's *Protection and Prosperity* should have been charged to "Welfare Work," and added, "We do a great deal of that." Even so, the expenditures on "welfare" from 1912 through 1925 were only 3.2% of the payroll. The proportion for the industry as a whole is undoubtedly lower.³⁰ This compares with employers' expenditures for social insurance of more than 10% of the payroll in countries like France and England, where all steel workers come under the compulsory sickness insurance, old age and invalidity insurance and, in England, under the national unemployment insurance as well. In the Soviet Union, the number of risks covered by state social insurance and the degree of provision for them is much greater than in any other country, and the proportion of the payroll devoted to this purpose correspondingly larger.³¹

The officers of the companies have never denied that "welfare" paid. An official statement from the Bethlehem Steel Corp. in 1925 contained this passage,

These plans [*i.e.* "personnel work"] have been put into practice because they are considered good business and in line with good business policy. Accidents, turnover, waste, etc., are all expensive and reduce production and net profits.

U. S. Steel has, it is true, taken a different line on occasion. In 1920, in a speech before the American Iron & Steel Institute, Mr. Charles L. Close of U. S. Steel made the statement that "primarily [welfare work has been] purely humanitarian. . . ." But six years later Mr. Close came to heel when the Bureau of Safety, Sanitation and Welfare, of which he was head, published the company's *Twenty-Fifth Anniversary Bulletin*, in which is found this classic statement,

The [U. S.] Steel Corporation is not an eleemosynary institution. All its activities for the good of the worker, apart from considerations of humanity, have been amply justified by plain business reasons—they paid eventually. The men who direct the policy of the Corporation have never lost sight of the fact that the first object of any company is to make money for its stockholders.

When a steel company hands its workers a present in the shape of "welfare" paid for by the company, the discerning worker perceives inside the silken glove of company unions, stock purchase plans, pensions, and company contributions (if any) to group insurance the mailed fist of company police, company towns, spies and blacklists. It cannot be too strongly stressed that the "welfare" plans are nothing more than the company's way of buying itself off cheap from wage increases, social insurance, and genuine unionism. Every one of the "welfare" plans we have discussed is directed against the workers just as definitely as the company payments to corrupt and complacent government officials for their help in smashing workers' organizations. Thus it is not surprising to find that company unions are ineffective in remedying genuine grievances, stock purchase plans are ineffective in providing a safe investment for workers' savings, pension

plans provide no real security for the aged, and group insurance is a business enterprise in which the profits are shared between the insurance company and the steel company. All are part of the company's program, which emerges in its true light when the spy system is studied in detail—to extend its control to the utmost possible degree and to reduce the workers as nearly as possible to the status of serfs.

CHAPTER VIII

THE STEEL TRUST:

WHAT IT IS AND HOW IT WORKS

FROM the preceding chapters it will have become evident that the big steel companies act with striking unanimity on matters affecting hours and wages. This they do as a matter of policy in order that no one of them shall have an advantage over the other in the matter of labor cost. It is a matter of common knowledge that the big companies also act together on prices, so that steel has become known as a "trustified" industry.

Everybody has heard of the "steel trust." But who can define just what he means by the term? Is the "trust" the United States Steel Corp., the giant that sets wages and prices and conditions for the bulk of the industry? That would be a narrow view. Rather the "trust" includes all the important firms in the industry. U. S. Steel is the leader; but why do the others follow its lead? Why, when U. S. Steel shuts down its plants and holds prices somewhat above the level which would be forced by cut-throat competition, do the other firms refrain from stealing its markets, shade prices only a little, and come quickly to heel when the big leader announces a rise in prices? There must be some reason other than U. S. Steel's immediate control of the market for steel; for the giant, as we shall see, does not have as much as 60% of the ingot capacity even in the district where it is strongest. In this chapter we shall tell something of the reasons for forming the trust; of the companies that comprise it, the relations between them, and the powers be-

hind them; and the methods they use to assure joint action among themselves.

The steel industry has developed on a grand scale. Given a large market free from tariff barriers, the engineer has been free to experiment and to select the size plant which will produce cheapest; and in steel, that size has been enormous. Ever since the manufacture of steel rails became definitely established in the United States—about 1875—American steel makers have astonished the world not only by the size of their furnaces and mills but by the way they scrapped an old plant before it was worn out, in order to build a bigger one.

How far has this development gone, and how rapidly? The *Census of Manufactures* gives some idea of the trend in the twenty years to 1929. The following table shows how average physical product per establishment—a fairly good measure of the scale of production—has nearly doubled in steel works and rolling mills, and has more than trebled in blast furnace operation.

AVERAGE PHYSICAL PRODUCT PER ESTABLISHMENT, IRON AND STEEL, 1909-1929

(Based on *Census of Manufactures*.)

Year	Blast furnaces		Steel works and rolling mills	
	Long tons (1919 = 100)	Index	Long tons* (1919 = 100)	Index
1909	123,000	79	43,000	84
1914	145,000	93	43,000	84
1919	157,000	100	51,000	100
1925	299,000	191	69,000	135
1929	405,000	258	82,000	161

* Finished rolled products and forgings.

These figures, although the best available, give only a rough idea of the trend because the census definition of an "establishment" is vague and indefinite. As a rule, the term signi-

fies a single plant or factory. In some cases, however, it refers to two or more plants operated under a common ownership and located in the same city, or in the same county but in different towns. On the other hand, separate reports are occasionally obtained for different industries carried on in the same plant, in which event a single plant is counted as two or more establishments.¹ Thus blast furnaces and steel mills are listed as separate establishments, though they may be part of the same plant. The figures give no indication of the concentration of ownership and management in fewer and fewer hands.

The average number of workers per establishment, like the physical product per establishment, has been increasing, but at a slower rate. Indeed, from 1919 to 1929 the only increase has been that which resulted from combining in one plant processes formerly conducted separately.* Modernization has brought to certain plants tremendous reductions of working force, even when production in such plants was increasing. Such modernization has of course been characteristic of other large-scale industries too. Steel is one of the two or three largest industries, as measured by workers per establishment, in the United States.² In point of workers per employer, it is probably the largest of all, especially if the workers in the steel mills are included with the workers in allied industries who are employed by the same firm.

In *horsepower per establishment* also blast furnaces and steel and rolling mills have ranked first or second among the industries of the country.³ There has been a tremendous and continuous increase since 1909, reflecting both mechanization and the rapidly developing scale of production.

It is not intended to imply that the larger the mill the more efficient it becomes in the engineering sense. The large firms can, it is true, produce with less expenditure of labor power and mechanical energy per unit of product than the

* See Appendix VIII.

small firms, given a full order book; but the very large firms do not necessarily have any engineering advantage over the fairly large firms.

It is interesting to consider how few of the biggest mills and furnaces have been owned by U. S. Steel. At the time that U. S. Steel was formed, the world's record for the production of four-inch billets in a 24-hour period was held by the Lorain Steel Co., a relatively small concern which joined the big combine. The largest blast furnace in the country (*i.e.*, the one with the greatest daily output) belonged in 1929 not to a subsidiary of U. S. Steel but to Jones & Laughlin; when the record was broken, Republic Steel broke it. The first 350-ton steel furnace was introduced by the Weirton Steel Co. when it was still a small firm. The Brier Hill Steel Co. was a still smaller "independent" at the time of its absorption by Youngstown Sheet & Tube in 1923, yet even then Brier Hill could claim to possess the largest mill building under one roof in the country. The largest plate mill is claimed by the Lukens Steel Co., and the largest tinplate works by the McKeesport Tinsplate Co. Both of these companies are relatively small. There are possibilities of joint action among companies for particular purposes, to secure the economies of large-scale operation; for example, the use of huge machinery at the Mahoning ore mine in Minnesota, which supplies several steel companies with ore.

HORIZONTAL COMBINATION—THE DECLINE OF COMPETITION

It was not a desire to secure further economies from large-scale production, but a desire to preserve profits for the companies already in existence and to secure further profits through the establishment of monopoly prices, that led to the formation of U. S. Steel in 1901. It was the bankers, not the engineers and technicians, that guided the formation of that giant combine. There were reasons of business strategy that led these bankers to seek combination for its own

sake. The search for the most profitable size of operations had made steel into a large-scale industry; the final step, the establishment of virtual monopoly, was taken by the bankers.

The larger the scale of operations on which an enterprise is conducted, the greater is the burden of overhead costs—interest, taxes, salaries, insurance, depreciation. When markets are inactive, a desire to make something—anything—toward the overhead prompts the manufacturer to sell at prices right down to prime costs. He may do this even in good times if he thinks he has the edge on his competitors in technical equipment and strategic position, so that he can force them to the wall.

Such undercutting, however profitable it may be to the individual manufacturer, is ruinous in the long run to his group. Small fluctuations in sales cause large fluctuations in the rate of profit. Capitalists cannot withdraw fixed capital. They cannot “lay off” their machines. Once they have invested they wish to safeguard their investment. They may be induced to enter into an agreement not to cut prices or, since such agreements tend to break down, the successful competitor may devour his rival, or two or more competitors may combine. Economists use the term *horizontal integration* to describe the combination of formerly competing companies.

Everybody knows that the U. S. Steel Corp., formed in 1901 by the J. P. Morgan interests and since then ruled by them, was created in order to suppress competition among the big steel firms and keep it suppressed.* The company is still dominant in the great territory between the Rocky Mountains and the Alleghenies, where it overshadows by far every “independent” that might be considered as a rival. On the Atlantic seaboard, U. S. Steel has never had any comparable importance; instead Bethlehem Steel, which in 1901 did not rank as high in the East as half a dozen other steel

* We should perhaps except Prof. A. S. Dewing (see Appendix X) and E. S. McCallum (see his book already quoted).

companies, has by a series of mergers become as powerful in the East as U. S. Steel is in the Midwest. These two companies between them control the Pacific Coast area.

The Midwest

The U. S. Steel Corp. represented a combination of the leading steel firms in the area bounded on the east by the Allegheny Mountains, on the south by the Ohio River, and on the west by the Mississippi. This area produces over 80% of the country's steel. In the western section of the Midwest, where U. S. Steel still produces 51.5% of the ingots and 53% of the finished products, its preëminence is greater than in the so-called middle section (western Pennsylvania, eastern Ohio, West Virginia and the Buffalo district of New York), where it has only 41.7% of the ingot capacity and 36% of the capacity of finished rolled products.⁴ But even in the middle section it leads every other company.

U. S. Steel's dominance in the Midwest has never been seriously challenged. Up to 1930 all really important mergers proposed affecting this area had mysteriously broken down. The Republic Steel Corp., formed by merger in 1930, has a big ingot capacity in the Middle West but produces largely for the specialty market; its alloy steels compete comparatively little with U. S. Steel's products. Bethlehem Steel has only 11% of the ingot capacity and 6% of the capacity for rolled products in the middle district of the Midwest.

U. S. Steel's position has been considered impregnable largely because it has Lake ore to outlast the other companies by from 10 to 20 years, and controls 76% of the "iron ore in sight" in the Lake Superior region. But Lake Superior ore will not be the key to steel dominance in the next generation as it was in the last. The supplies are definitely limited, and their production will presumably show a marked drop after 1945, even if improved methods of mining and beneficiation (increasing the percentage of ore content)

prevent any great increase in costs of production per ton up to that time. The St. Lawrence waterway would bring the supply of high-grade foreign ores within the reach of the iron and steel companies in the Great Lakes area. Odd lots of ore are already coming through the canal, and the steel works on the Atlantic seaboard have been using foreign ore for years. U. S. Steel has not monopolized and cannot expect to monopolize the enormous inland ore deposits of Brazil. These amount to nearly one-eighth of the world's actual reserves, average 67.5% iron content as compared with about 50% for Lake Superior ore to-day, are low in phosphorus, contain practically no sulphur and a mere 1 to 4% of silica, and only await transportation facilities to be used.

The South

U. S. Steel did not complete its dominance of the Mississippi Valley until 1907, when it took advantage of the panic to gobble up the leading company in the important Birmingham area—the Tennessee Coal & Iron Co., later known as the Tennessee Coal, Iron & Railroad Co.

This coup was sanctioned in advance by President Theodore Roosevelt and his attorney-general, and was carried out so adroitly that many believe, even to-day, that it was a major factor in halting the panic. But O. M. W. Sprague's "History of Crises under the National Banking System" makes it clear that the worst of the panic had already passed.⁵ And no one has ever explained why Morgan and his crew had to *buy* the Tennessee company stock instead of making a *loan* to the embarrassed broker Schley.* U. S. Steel has

* Frick advocated a loan. U. S. Steel by the transaction absorbed its chief competitor, which was closely affiliated with another competitor, and was considering a merger which would have brought in also a third. It obtained control of an ore reserve of over 500,000,000 tons (in extent a third as large as the holdings then controlled by U. S. Steel in the Lake district) and coal reserves of 1,000,000,000 tons as well. Who can doubt that these facts explain why Morgan in-

dominated Birmingham and its markets ever since. It controls 41% of the "iron ore in sight," including the bulk of the best deposits.

The East

When the U. S. Steel Corp. was formed, there were a number of important iron and steel firms east of the Alleghenies, most of them with old equipment. None was dominant. Negotiations were undertaken to bring the Midvale Steel Co., important armament firm, into the U. S. Steel combine, and the Morgan syndicate at one time held all the stock of the Bethlehem Steel Co., which had been purchased by Charles M. Schwab, first president of U. S. Steel; but neither firm eventually came into the giant combine.

The Bethlehem Steel Co. reorganized in 1904 as the Bethlehem Steel Corp. and took over the shipbuilding properties of the unsuccessful U. S. Shipbuilding Co. It has since expanded gradually in both the shipbuilding and steel producing fields, and has absorbed all but two of the important steel-making "independents" in the Northeast.*

The dominance of Bethlehem on the Atlantic coast matches the dominance of U. S. Steel in the Midwest. Bethlehem has 47.3% of the rated steel ingot capacity and 34% of the capacity of finished rolled products in the eastern area, while U. S. Steel in the same area controls only 5% and 9% of the tonnage respectively. Bethlehem imports most of its iron

sisted on purchasing the stock instead of making a loan to Schley? In *Trust and Corporation Problems*, Seager and Gulick contend (p. 234) that the price paid for the T. C. I. stock was high, and it was, compared with the market value of the stock. But the market value was being determined by a relatively small amount of stock. The members of the controlling syndicate always insisted they were not anxious to sell. The U. S. Steel directors would hardly have dared to buy out the T. C. I. except under cover of the panic. (See Corey, *House of Morgan*, pp. 345-347, for the best short account of the whole affair.)

* The two are the Lukens Steel Co. of Coatesville and the Alan Wood Steel Co. of Conshohocken.

ore, chiefly from Cuba and Chile, in both of which countries it operates iron mines. The old equipment in its mills has been largely modernized, and a big new plant has been built at Sparrows Point, near Baltimore, Md.—the only large American plant on tidewater.

The Rocky Mountains and the Pacific Coast

The Colorado Fuel & Iron Co., a Rockefeller concern, was invited to join the U. S. Steel Corp. when the latter was formed, as the Lake Superior Consolidated Iron Mines (also a Rockefeller concern) actually did. However, the C. F. & I. has remained aloof. It is the only important iron and steel firm in the Rocky Mountain area.

There are no blast furnaces on the Pacific Coast, but several steel and rolling mills have been built to supply the local market. In 1929-30 the important ones were merged with U. S. Steel (which acquired the Columbia Steel Corp., with a rated capacity of 340,000 tons of ingots) or with Bethlehem (which got the Pacific Coast Steel Co. and the Southern California Iron & Steel Co.).

The United States as a Whole

The following table shows the rated capacities and number of employees of the 10 largest steel ingot producers in the United States. These companies between them control over 84% of the country's capacity of raw steel. It is estimated that these and ten others make 90% of the gross sales in the steel industry, the other 10% of the sales being made by concerns which are engaged primarily in finishing and fabricating steel products, and are in the steel business only incidentally.⁶

Some idea of the progress of the merger movement may be obtained from a comparison with the corresponding list as of January 1, 1921. The ten leading producers then controlled only 68.8% of the total rated ingot capacity. Cambria,

Lackawanna and Midvale, then among the first ten producers, have since merged with Bethlehem.

LEADING PRODUCERS OF RAW STEEL IN THE UNITED STATES

Name of Corporation	Rated Ingot Capacity as of January 1, 1932 ⁷	
	(Millions of tons)	No. of Employees *
1. U. S. Steel Corp.	26.78	224,980 ** (1929)
2. Bethlehem Steel Corp. ..	8.61	64,300 (1929)
3. Republic Steel Corp.	4.81	30,000 (1930)
4. Jones & Laughlin Steel Corp.	3.42	22,300 (1929)
5. Youngstown Sheet & Tube Co.	3.12	20,100 (1929)
6. National Steel Corp.	2.00	12,500 (1931)
7. Inland Steel Co.	2.00	8,500 (1929)
8. American Rolling Mill Co.	1.88	11,300 (1929)
9. Wheeling Steel Corp. ...	1.61	17,300 (1929)
10. Crucible Steel Co. of America	1.00	
Total of 10 companies...	52.23	
Total U. S. capacity	65.75	

* Includes all employees. For number of iron and steel workers only, employed by these and other companies, see Appendix IX.

** 162,500 in manufacturing properties; 21,834 in coal and coke properties; 10,876 in iron ore properties; 24,199 in transportation properties, and 5,571 in miscellaneous properties. (*Annual Report for 1929, p. 11.*)

“VERTICAL” COMBINATION

Steel companies have grown in size not only through the development of huge plants and the combination of formerly competing companies, but also through the combination of successive stages in production or “vertical” combination.

Steel makers in the early days sometimes had difficulty in filling orders. The coal, coke and ore companies were careless about the quality they supplied, and did not always live

up to their contracts with the steel firms if they got a better offer. So, as the iron and steel companies increased their scale of operations, they also began buying coal mines and ore mines and building coke ovens. Iron and steel companies control directly 11% of the bituminous coal output of the country, according to a 1933 estimate;⁸ and certainly more than half the output of iron ore and an even larger proportion of coke production is controlled by steel firms.

Coke ovens, blast furnaces, steel mills and rolling mills have been linked more and more closely from a technical point of view. Blast furnaces supply pig iron direct to steel furnaces in molten condition, and steel mills furnish ingots to rolling mills by way of the "soaking pit" which keeps them continuously hot. Surplus gases generated at the blast furnaces and coke ovens are utilized for by-products and as auxiliary fuel. Of course technical association of processes is not the same thing as financial integration, as the building industry shows. A blast furnace has been known to supply molten ore direct to a steel mill which was under separate management and separate ownership. But there is a strong tendency in iron and steel for close technical connection of consecutive stages in production to be followed or accompanied by corresponding ties of a managerial and financial nature.

All of the big steel companies and many of the smaller ones are vertical combinations. As early as 1919, there were 134 vertically integrated concerns in iron and steel. Four of these concerns included each of six stages from the production of raw material to the manufacture of complex finished products; seven included five out of six stages in production; and 16 covered four stages.⁹ Even these figures give an inadequate idea of the extent of vertical combination in 1919, since the manufacture of coke was not treated as a stage in the production of iron and steel.¹⁰ Most or all

of the big concerns have operated their own coke ovens since before 1919.

Vertical integration has continued since 1919, with special emphasis on the inclusion of selling agencies. Steel companies have also tried to get a full line of finishing mills so as to be able to supply all the different products in widely separated markets.¹¹ Sometimes this kind of vertical integration has involved joint action by supposedly competing companies.

Technical considerations draw the heavy iron and steel industry close to certain other industries. Iron and steel companies have long manufactured cement, and in Ohio the Pickands-Mather iron group entered into the utility field when its blast furnaces began to supply gas to certain municipalities.

The finishing trades have reached back into the heavy industry to control the source of their own raw materials. It was stated above that only about 20 companies make the production of raw or semi-finished steel their main business. Most of the other steel-producing firms are primarily finishing and fabricating concerns. Some of the larger finishing concerns reach all the way back to the ore and coal mines.* The steel companies induced the Standard Oil group to stay out of the manufacture of tubes only by granting it rebates on tinplate.¹²

The process of vertical integration does not proceed without setbacks. A tendency for the steel companies to lose

* Examples are the International Harvester Co. (through its subsidiary the Wisconsin Steel Co.) and the Ford Motor Co., which latter also operates a disassembly conveyor to convert used motor cars into iron and steel scrap for its furnaces. General Motors Corp., on the other hand, has relied on the looser method of community of interest. It is the largest stockholder in the Newton Steel Co., which is a maker of steel sheets and is affiliated with the Corrigan-McKinney Steel Co., with large ore and coal reserves. General Motors (dominated by Morgan and duPont) buys about 60% of its steel from the U. S. Steel Corp. (clearly a Morgan concern).

control of the final stages in the preparation of steel for the user has appeared since the coming of the automobile. Companies which have bought coal mines capable of supplying their needs 100 years in advance are finding the carrying charges heavy in the crisis, and some seek to resell their mines. But the tendency toward vertical integration has only been slowed up, not reversed.

Vertical combination brings ore and coal miners, coke workers, transport workers, and workers in the heavy and light iron and steel industry under a common employer. Horizontal combination and "gentlemen's agreements" enable the steel firms to follow a united policy with regard to labor. All the workers in the heavy industry and many workers in other industries have interests in common which can be looked after only by broad united action.

Integration, both vertical and horizontal, is more extensive and significant in iron and steel than in any other industry. The financial interests have frequently found their way to control through the merger route, as a survey of mergers in the last generation will show.

RECENT MERGERS

A few of the larger companies have fought shy of horizontal mergers, though all have expanded vertically. The Jones & Laughlin company turned down an invitation to join the U. S. Steel Corp. in 1901. The Inland Steel Co. (Chicago), the Lukens Steel Co. (Coatesville), and the three purely southern "independents" in the Birmingham area (Gulf States Steel Co., Woodward Iron Co. and Sloss-Sheffield Steel & Iron Corp.), have remained under about the same ownership and have not combined with any competing companies. Most of the other important concerns, however, have participated in horizontal mergers in the period since 1901, and especially in the decade 1920-1930.

Eaton Challenges Morgan

In this period of spectacular mergers, no consolidator attracted more attention than Cyrus H. Eaton, partner in the banking firm of Otis & Co. of Cleveland. He controlled Continental Shares, Inc., and other investment trusts and had big interests in public utilities and rubber. In association with a group headed by William G. Mather, big ore dealer and chairman of the Otis Steel Co. of Cleveland, Eaton built up the Republic Steel Corp., a combine composed largely of specialty firms, which on its completion in 1930 ranked third in ingot capacity. Continental Shares controlled the Cliffs Corp. This company in turn controlled the Cleveland Cliffs Iron Co., the oldest and largest independent mining company in the Lake Superior region, with the largest supply of "free" ore for sale in the country. (It mined for sale 3,000,000 tons of ore in 1929.) Cleveland-Cliffs bought control of the Corrigan-McKinney Steel Co. of Cleveland, with 1,000,000 tons of ingot capacity. Associated with the Eaton interests were also the great ore and iron concern of Pickands, Mather & Co., and the M. A. Hanna Co., another large producer of ore. It was planned to bring into a combine with Cleveland-Cliffs the Republic Steel Corp., which is definitely short of ore (in 1930 it had to buy a million tons of ore on the open market), and possibly Pickands, Mather as well. Such a merger as this, considering the close association of the Hanna interests, would have caused Republic Steel to rank alongside U. S. Steel as the only big steel firms which were not definitely short of ore for current requirements.

Eaton's group bought into Youngstown Sheet & Tube and Inland Steel, which firms have had adjoining plants at Indiana Harbor ever since Youngstown Sheet & Tube purchased the Steel & Tube Co. of America in 1923. Eaton tried to get the two companies to merge but negotiations broke down in 1928. The Eaton interests bought into the

Woodward Iron Co. and the Gulf States Steel Co. Spang-Chalfant & Co. (Pittsburgh) was drawn into the Eaton orbit when it entered into an agreement with Republic for joint operation of a steel pipe plant at Butler, Pa., to manufacture seamless tubing. The Eaton interests elected a director on the board of the Newton Steel Co. of Cleveland. At the peak of his ambitions, in November, 1929, Eaton made an unsuccessful move to get hold of a big block of Bethlehem stock.

Just what Eaton planned to do with the Youngstown Sheet & Tube Co., after the negotiations with Inland failed in 1928, is not known. He denied that he planned to merge it with the Republic Steel Corp. Whatever his plan was, he cared enough about it to fight a merger which was arranged early in 1930 between Youngstown Sheet & Tube and Bethlehem; and it was this fight which eventually broke him. Youngstown Sheet & Tube officers saw the decline of Youngstown as a producing center and desired to unload and step out. Bethlehem was reported as seeking connection with a midwestern concern manufacturing tubes. A merger plan was secretly drawn up, and Eaton did not hear of it until it was submitted to the stockholders for ratification.

Eaton challenged the merger and called for the Sheet & Tube stockholders to defeat it. An exciting battle for proxies resulted in a victory for Bethlehem. Eaton then succeeded in getting an order from the Mahoning County district court enjoining the merger as contrary to the interests of the Sheet & Tube minority stockholders. But Eaton's position in Continental Shares had meanwhile been undermined, perhaps through a flank attack by interests back of Bethlehem, and he was forced out of that concern, at the same time becoming heavily involved in other lawsuits. Meanwhile the financial collapse had destroyed the basis of the original merger between Youngstown Sheet & Tube and Bethlehem, and the latter concern was reported to have established an identity

of interest with the Pittsburgh Steel Co., large producer of seamless steel tubing. Some of the Continental Shares holdings were sold at auction in 1933.

"Independents" Grow

The most successful merger since the war, from the financial standpoint, has been the National Steel Corp., formed at the end of 1929 by the M. A. Hanna interests to exploit the growing market for steel on the Great Lakes, especially around Detroit. It took in the Weirton Steel Co. of Weirton, W. Va., notorious as the last large northern company to retain the 12-hour day; the Great Lakes Steel Corp. of Ecorse, Mich., founded in 1929; and several Hanna companies engaged in producing, transporting, and smelting iron ore, one of which was the Hanna Ore Mining Co. In 1931 the National Steel Corp. acquired the Michigan Steel Corp. The National Steel Corp. has a rated ingot capacity of over 2,000,000 tons. Through extensive leasing of ore lands by the M. A. Hanna Co. of Cleveland in the interests of the Hanna Ore Mining Co., the National Steel Corp. has become the second largest holder of Lake ore reserves. It recently entered the Chicago area.

The American Rolling Mill Co. of Middletown, Ohio, expanded greatly on the successful completion in 1927 of its experiments in the continuous sheet-rolling process. It acquired control of Norton Iron Works, Inc., at Ashland, Ky., took a half interest in the Hamilton Iron and Coke Co., at Hamilton, Ohio, which it formed jointly with the Koppers interests, and obtained the properties of the Forged Steel Wheel Co. at Butler, Pa., which had successfully imitated the Armco patent and was threatening intensive competition, by buying 99% of the common stock of the Columbia Steel Co. of Elyria, Ohio, which had just acquired the control of the Forged Steel Wheel Co. In 1930 it acquired the Sheffield Steel Corp. of Kansas City, Mo., and

began to operate in collaboration with John Summers Sons Co. a sheet mill at Shatton, England. Already in 1921 it had acquired the Ashland Iron & Mining Co. of Ashland, Ky. It is the eighth largest steel producer in the U. S., and has licensed its continuous rolling patents to nine other steel companies, including U. S. Steel.

THE OLIGARCHY—CONTROL BY FINANCIERS

The number of stockholders of each of the three largest steel companies runs into thousands and even tens of thousands. But control of each individual company is concentrated in a very few hands.

Management depends on banks for credit and for advice on present and future business conditions. The bankers and financiers are in a strategic position. They have taken over outright the management of certain steel companies, including U. S. Steel. The men who headed certain other steel companies have themselves gone onto the boards of big banks. In either case, the result is the same. The big steel companies are more and more tied up with the banks, and the banking interests exercise greater and greater influence in the steel companies' management. As Lenin put it, "The predominance of finance capital over all other forms of capital means the dominating position of the rentier and the financial oligarchy. . . ." ¹⁸

The power of the Morgan group in U. S. Steel depends not only on stock ownership—although in a corporation where stock ownership is so widely distributed the 10% of the total estimated to be directly owned by this group might be sufficient in itself—but also on the fact that J. P. Morgan & Co. has acted as banker for the firm; that it is the power back of the brokers who have usually had on hand up to 25% of all the outstanding common stock of U. S. Steel; and that the Morgan firm and allied banks administer many

trust funds which control in the aggregate a substantial block of stock.

The evolution of a firm from local control to Wall St. domination is well illustrated by the history of Bethlehem. The Bethlehem Iron Co. remained under local control until about 1886, when the great expansion occasioned by the firm's entry into the armament business caused it to call on that canny Quaker financier Joseph Wharton. He put up cash to make munitions. Philadelphia bankers also became interested, and by 1901 Edward T. Stotesbury, later a Morgan partner, had appeared on the board of directors along with Wharton. When Charles M. Schwab reorganized the concern as the Bethlehem Steel Corp. in 1904, he brought with him a group of New York financiers, including the celebrated Wall Street speculator Thomas Fortune Ryan.

Other new faces were added with the post-war consolidations, and the company drew closer to the Morgan financial group. Bethlehem maintains an account of over a million dollars with J. P. Morgan & Co. The Morgan firm supported Bethlehem stock as well as U. S. Steel stock during the stock market crash of 1929. Pres. E. G. Grace and Vice-President A. J. Johnston have been on Morgan "preferred lists." Since about 1923 the president of Bethlehem has sat on the board of the Guaranty Trust Co., a Morgan firm, and the president of Guaranty Trust Co. has sat on the board of Bethlehem. In most if not all important matters of policy Bethlehem acts with U. S. Steel, as for example in cutting wages, in export, and in paying off bonded indebtedness (in 1929). Bethlehem is clearly a Morgan concern, but with representation also from other financial interests. Several of its directors have been on the "preferred lists" of Kuhn-Loeb.

The Hanna ore interests in Cleveland form a financial group of considerable power. They were active in forming the Republic Steel Corp., which is interested in their ore

holdings, and also took the lead in the National Steel Corp. merger, M. A. Hanna joining the board of directors of that concern. The Cleveland Trust Co. has had directors in common with large steel concerns throughout Ohio. The van Sweringens are reported to be well entrenched in the Otis Steel Co. All three of these interests—Hanna, Cleveland Trust Co., and van Sweringens—have more or less close affiliations with the Morgan group.

Since 1927 Morgan banks have participated to a greater or less extent in bond issues for three other "independents," namely, Youngstown Sheet & Tube Co., National Steel Corp., and Wheeling Steel Corp.

The Eaton-Otis-Mather group controls the Republic Steel Corp., as already stated, but the Mellon and Hanna interests are also represented on the board. The Eaton group holds directorates in Inland Steel (dominated by the Block family) and Gulf States Steel, the first time apparently that either firm has admitted outside financial interests to its board. Gulf States Steel has also had interlocking directorates with the Chemical Bank (Kuhn-Loeb) and the Bank of America (now merged with the National City Bank).

No financial group has connections in a greater number of "independent" steel companies than the Mellon interests. This group has established itself securely in the American Rolling Mill Co., on whose board it has two directors; in Jones & Laughlin, the chairman of whose board since 1927 has been W. C. Robinson, director of two Mellon banks;* in Republic, where it has two directors; in Pittsburgh Steel, on whose board H. C. McEldowney, president of the (Mel-

* B. F. Jones, 3rd, of Jones & Laughlin is also director of two Mellon banks. W. C. Robinson is a director of the Phelps-Dodge Corp., and president of two of its subsidiaries. This company has recently drawn close to the Morgan group; a Morgan partner—T. S. Lamont—sits on its board. Jones & Laughlin has always worked in close harmony with U. S. Steel, which as we saw has always been a Morgan concern.

lon) Union Trust Co., and two directors of the (Mellon) Workingmen's Savings Bank hold seats; in the Alan Wood Steel Co., half of whose stock is owned by the Koppers (Mellon) interests; in the Mystic Iron Works; and in the Davison Coke & Iron Co., a Pittsburgh firm which was started in 1929 by a Mellon man. The Mellon contact in the National Steel Corp. board of directors is presumably Edmund W. Mudge. He is vice-president of the Fidelity Trust Co., which is usually listed as a Mellon bank. The Mellons are reported to have come into Bethlehem in 1931 when that firm absorbed the McClintic-Marshall Construction Co., theretofore a wholly owned subsidiary of the (Mellon) Koppers Co. R. B. Mellon is a director of the Crucible Steel Co. of America. Andrew W. Mellon was recently reported as owning 30,000 shares of U. S. Steel stock, and his daughter, Ailsa Mellon Bruce, held 10,720 shares of U. S. Steel common in 1931, when the Union Gulf Corp., a Mellon concern, also owned 30,000 shares.*

The Mellons were active in the affairs of several steel companies about 1900, and backed H. C. Frick, lifelong friend of Andrew Mellon, in Frick's Union Steel Co., which was to have rivaled the Carnegie firm. But since the Union Steel Co. was absorbed by U. S. Steel (1904), the Mellon group has not appeared publicly as a moving force in steel. Rather it has tended to concentrate on other fields, especially "new" metals like aluminum.

The Investment Trust

The term "trust," which formerly was used to describe industrial monopolies and dominant industrial firms, is to-day usually reserved for the investment trust. This type of

*U. S. Steel received \$96,000,000 in tax refunds during the time that Andrew W. Mellon was secretary of the treasury. The amount of such refunds was determined not by any mathematical formula but by "a species of bargaining" (John N. Garner's phrase).

organization has occasionally been used for the purpose of controlling steel companies. The promoters retain control firmly in their own hands and use the money turned over to them by speculative-minded small capitalists in order to buy up and consolidate corporations.

The Eaton-Otis-Mather group formed several investment trusts, including Continental Shares, Inc., Commonwealth Securities Co., International Shares Corp., and the Cliffs Corp. The only other important instance in which an investment trust has taken an active part in consolidating steel firms is that of Pennsylvania Industries, Inc., an investment company formerly known as the Oil Well Supply Investment Co., which bought into a number of steel firms in the Pittsburgh and Youngstown areas in 1928-29. This concern, dominated by the Hillman group (rivals of the Mellons), caused the merger of the Standard Seamless Tube Co. with Spang, Chalfant & Co., and bought into this concern, the A. M. Byers Co., and the Sharon Steel Hoop Co.

The importance of the investment trust in the iron and steel industries seems to lie chiefly in the future. It supplies a mechanism for further concentrating in a few hands control over great quantities of capital. It is thus the latest development in the tendency toward concentrated financial control over industry.

Price Control

It has not been a simple matter to maintain unity of action among the steel firms. Up to the turn of the century, pools and "gentlemen's agreements" on prices usually broke down. It was only when the scale of production got very large and a few firms controlled the bulk of the industry, that it was possible for prices in the industry to be ruled by lasting agreements.

Since the U. S. Steel Corp. was formed, price wars have

practically stopped. The methods of controlling prices have varied. In the words of Prof. Fetter:

The unanimity of action in the period before 1907 was mainly secured by pools and agreements unquestionably illegal, and from 1907 to 1911 by "understandings" furthered by the Gary dinners, likewise illegal. . . . The rule was a continued adherence of all to a scheme of prices based on Pittsburgh . . . and the exception was an occasional period in which reductions of prices went to the extreme, as in 1908, 1909, and 1911.¹⁴

During the world war prices were set for a time by the government. The price structure fell to pieces for a short time in the depression of 1921, but was presently re-established, and has remained firm, with only minor shadings by some companies, to the present time (1933). The Dow-Jones average price of eight important iron and steel products dropped only 9.7% between 1930 (average for the year) and December 13, 1932—a period in which raw material prices in general dropped more than 30%.¹⁵

That the prices set by U. S. Steel have not been competitive was clearly shown in the Federal Trade Commission's hearings on "Pittsburgh plus" (case decided 1924). Prices were quoted not "at the mill" but "delivered." The price for buyers in Pittsburgh was high enough to enable the Pittsburgh mills to make a profit, and the price for buyers everywhere else, except in the Birmingham area, was arrived at by taking the Pittsburgh price and adding to it a sum equal to the freight from Pittsburgh to the point in question. Thus, although steel can be produced at Chicago at least as cheaply as at Pittsburgh, the price at Chicago on all important steel products up to the war, and on many for some years after the war, was higher than the Pittsburgh price by the amount of the freight from Pittsburgh to Chicago.

After 1924 the number of basing points was increased, but the practice of quoting prices on a "delivered" basis rather than f.o.b. was continued. The present system differs

from "Pittsburgh plus" only in that the number of basing points has been increased from two to as many as 19 (on pig iron), the number varying with the product. On sheets there are only four basing points; on tinsplate, only three; and on several products such as tool steel bars and pipe-rigid electrical conduit, only two.

It has been calculated that in "normal" times the "independents" have observed U. S. Steel quotations on 90% of their sales. The remaining 10% represent deviations that would be sanctioned by that company.¹⁶ There is no question that U. S. Steel's quotation has been high enough, in "normal" times, to allow a comfortable profit to at least all the big concerns.

Spokesmen for the big companies no longer deny that prices are deliberately controlled. Myron C. Taylor, chairman of the board of U. S. Steel, spoke in 1932 of "a justifiable price control that sacrifices some part of production volume to secure reasonable (!) price levels for commodities."

The leadership of U. S. Steel in the industry has been unchallenged for several reasons. Its very strong position with regard to ore supply is one. Another is its possession of fine modern mills in the best market—Chicago—which gives it a strategic advantage over most other concerns. The very heavy capital investment necessary to start a modern steel mill is the third and final reason. Business men know that they must have strong financial backing for an enterprise such as this; and few financiers feel strong enough to set up a major steel company in direct competition with J. P. Morgan & Co.

Prices in some branches of steel production are very completely controlled. Only four companies produce heavy *steel rails*, and orders are allocated among them on the basis of the traffic they give to the railroads. There is no pretense at competition.

The Armament Trust

The number of producers of *armorplate* has never been above three. Bethlehem was first in the field in 1887, armorplate having been previously imported from abroad. The Carnegie interests built an armorplate plant at Homestead in 1891. In 1896 the Secretary of the Navy reported that Bethlehem and the Carnegie company had never competed for U. S. government orders, but had divided the business between them. The imperial Russian government placed an order about 1892 with Bethlehem in a period of slack business at \$249 a ton, whereas the U. S. government was paying \$616 a ton. But when the Tsar's government sought to repeat its good bargain, the Carnegie and Bethlehem companies simply divided the orders and charged \$520 a ton.

The Midvale Steel Co. entered the field before 1904, but without causing any increase in competition. In the congressional debates on the naval appropriation bill in 1913, Senator Ashurst of Arizona said,

Bids were opened about ten days ago by the Secretary of Navy for approximately 8,000 tons of armorplate for the dreadnought *Pennsylvania*. The companies [bidding] were represented here by Pres. Dinkey of the Carnegie Co., Vice-Pres. Johnston of the Bethlehem Co. and Vice-Pres. Petrie of the Midvale Co. These gentlemen all stopped at one of the leading hotels here and were frequently in conference. As a consequence, when the bids were opened it occasioned no surprise to find that the bids did not vary a dollar a ton between the three companies, and that the bids were in fact \$25 a ton more than the price received by these companies on the last previous contract.¹⁷

The question of government manufacture of armorplate was before Congress almost continuously for twenty years before the world war, and twice Congress appropriated the money for the erection of such a plant. But both times there was a joker in the act, and both times the effort came

to nothing.¹⁸ Finally in 1918, the money having been again appropriated, work actually began on a plant at Charleston, West Virginia. It was completed after the war, but has not operated except for a trial run. Midvale was absorbed by Bethlehem in 1922-23.

The same companies which controlled the manufacture of armorplate also controlled the bulk of the manufacture of *ammunition* down to the war, although they shared the field with the duPont powder interests. The records are full of complaints by certain government officials who said that they were unable to obtain real competitive bids in munitions, either before or during the war.

The gradual absorption of competing *shipyards* by the Bethlehem Steel Corp., which at the time of its organization in 1904 controlled at least 35% of the shipbuilding capacity of the country, brought about a situation after the war where the government contracts for new war vessels were not awarded competitively, but were parceled out among the existing companies on some sort of percentage basis. The companies had arrived at an excellent understanding with each other regarding war contracts, as the Shearer incident showed.* Charles M. Schwab of Bethlehem was in charge of the government's shipbuilding program during the war at a salary of \$1 a year.

The existence of a world-wide armorplate trust was reported in 1896 by the then Secretary of the Navy Herbert, who said:

There is and has been for some time at the least a friendly understanding among armor contractors both in Europe and America as to the price to be charged for armor.¹⁹

This understanding continued until the world war. In 1901 the Harvey United Steel Co. was organized in England to "amalgamate or control four other companies holding the

* See above, p. 128.

rights for the Harvey patents for treating steel." This company was also the licensor for the Krupp and Charpy processes for hardening armor. The Bethlehem Steel Corp. held 4,301 shares in the Harvey Steel Co., and big blocks of stock were also held by the leading munitions firms of seven European nations. The Harvey Steel Co. passed out of existence in 1911.²⁰ The opinion was then expressed that the understanding among the munitions makers was only nominally dissolved, and was continuing behind the scenes.

Price Control in Other Related Industries

In several industries allied to steel production monopoly is maintained effectually, sometimes by the very same interests which dominate steel. Thus the two leading producers of *agricultural machinery* are clearly Morgan concerns, while Morgan influence is also traceable in the principal firms making *locomotives*. Price competition has disappeared from both these lines of production. In some fields allied to steel, however, the existence of monopoly has been traced to steel concerns.

Crucible steel is very closely controlled, over half of the production of this product being in the hands of one company, the Crucible Steel Co. of America. At the outbreak of the war, U. S. Steel controlled almost the whole domestic production of *ferro-manganese*. Several *alloy steels* are produced under non-competitive conditions. When the Vanadium-Alloys Steel Co. of Latrobe, Pa., in 1932 acquired the capital stock of the Colonial Steel Co. of Pittsburgh, the Federal Trade Commission charged that "the effect of such acquisition . . . has been and is . . . to tend to create a monopoly . . . in the alloy and other forms of steels."

Cement may be made from blast furnace slag. U. S. Steel doubled its capacity in the cement field by acquisition in 1929 of the Atlas Portland Cement Co., and is now (1933) the leading producer with 13.5% of the country's capacity. It

is in a position to dominate some local markets. U. S. Steel's interest in this rising industry may be explained partly on the ground that reënforced concrete was beginning to compete successfully with steel in several fields.

It was charged in the House of Representatives on January 21, 1928, that U. S. Steel, which operates a large fleet of vessels between the United States and the Orient, had combined with foreign shipping interests to control the *transportation of jute burlap* from India.

Combination in Foreign Trade

The caution shown by U. S. Steel during the period when it was under fire probably explains the fact that it did not go in with the leading "independents" when these formed the Consolidated Steel Corp. in 1919 under the Webb-Pomerene Act to develop foreign trade, and also for the fact that it failed to rejoin the international rail pool when this was reorganized after the war as the European Rail Makers' Association. But in June, 1928 (the Consolidated Steel Corp. having lasted only three years), the marketing subsidiaries of U. S. Steel and Bethlehem came together in the Steel Export Association of America, a somewhat looser federation than the earlier export combine.²¹

The international steel cartel, formed in 1926, was never more than a European organization, and did not even include the whole of Europe, since the organizers were unable to come to terms with the English. During the crisis following 1929, competition in the international market increased to such an extent that the cartel was dissolved.

Interlocking and Exchange of Information among "Independents"

The "independents" in the steel industry in earlier years always emphasized that they were in no way dependent on anybody, least of all on U. S. Steel. The heads of Bethlehem

and of Republic in 1912 glibly assured the Stanley Committee investigating the U. S. Steel Corp., that U. S. Steel could not put them, the independents, out of business. They got away with it.

Ten years later, when the U. S. Supreme Court had declared that U. S. Steel was unable to dominate the industry, Pres. Eugene G. Grace reversed Bethlehem's testimony and admitted to the counsel of the Lockwood Committee in New York that the "independents" existed "by the grace of the U. S. Steel Corp." He did so with the greatest reluctance. All appearance of collusion, especially in the matter of prices, between the leader and the followers has been scrupulously avoided.

The leading "independents" however have exchanged some rather intimate statistics. In 1926 four of them—Bethlehem, Jones & Laughlin, Republic, and Youngstown Sheet & Tube—began the publication of comparative accident statistics, not only by companies but also by plants and by operations. The companies give to their "competitors" information which the U. S. Bureau of Labor Statistics is not allowed to publish in detail.

In the hearings on the Youngstown-Bethlehem merger injunction (1930) it was revealed that these same "independents" had been exchanging their cost figures too. In a genuinely competitive industry such an exchange would be unthinkable.

Some of the big steel companies are directly interlocked with each other, and with smaller steel companies. Samuel Mather, director before his death of U. S. Steel, was also a director of Youngstown Sheet & Tube, and as partner of Pickands, Mather & Co. was heavily interested in the "independent" ore trade. H. G. Dalton, partner of the same Samuel Mather, was a director simultaneously of Bethlehem and of Youngstown Sheet & Tube, and helped work out the terms of the merger that was later enjoined. Dalton was

also chairman of the \$50,000,000 Interlake Iron Corp., a vertical merger formed just at the end of the boom period. It included ore and coal properties, and 1,000,000 tons of pig iron capacity—the largest merchant blast furnace interest in the Chicago area. The vice-president of the Wheeling Steel Corp. is chairman of the board of the Woodward Iron Co. G. M. Humphrey is on the boards of the Republic Steel Corp. and the National Steel Corp.

Trade Associations

Since prices and competition in the production of steel have been effectively regulated without the guidance of a trade association, the American Iron and Steel Institute, formed in 1909 to collect statistics and hold semi-annual meetings, remained until 1932 relatively inactive. In April, 1932, a reorganization of the Institute was decided on. The Institute declared for "more adequate protection against foreign steel," and also for the first time announced a policy of attempting to "influence" prices—not by "price fixing" (oh, no!) but by the "discouragement of admittedly unhealthy practices!" The Institute took charge of drawing up the employers' "code of fair competition" and of defending it before the National Recovery Administration in 1933.

In the finishing stages of the heavy industry, trade associations have been numerous, and often active in limiting competition. The National Association of Flat Rolled Steel Manufacturers is a strong organization of independent sheet producers. The National Association of Sheet & Tin Plate Manufacturers merged early in 1932 with the Hot-Rolled Steel Strip and Cold-Rolled Steel Strip Institute. The *Iron Age* pointed out in 1928 that drastic price reductions had been "eliminated" in the field of bars, plates, shapes, sheets and wires, by formal or informal joint action. Steel interests engaged in the manufacture of bolts, nuts and rivets have organized the jobbers in the trade and "coöperated" with

them, with the result that a loss of \$12,000,000 in the trade in 1924 was changed into a profit of \$6,000,000 a year for each of the following three years, according to the *Iron Age*.²²

The "Attack" on the Trust

The founders of the U. S. Steel Corporation of course violated the Sherman Anti-Trust Act, but they were not much worried by the specter of jail sentences. They had too much to say about the way the law was administered.

Philander C. Knox, former counsel for the Carnegie Steel Co. and close friend of U. S. Steel director Henry Clay Frick, was U. S. Attorney-General when the company was formed. Steel was well represented in high places throughout the administrations of Theodore Roosevelt and W. H. Taft. Elihu Root, former attorney of the Carnegie Steel Co., was Secretary of State under Roosevelt, and was succeeded by Knox, while Knox was replaced as Attorney-General by George W. Wickersham, formerly attorney of the U. S. Steel Corp. Truman Newberry, president of a subsidiary of U. S. Steel, was Secretary of the Navy, an important post in steel politics. Herbert Satterlee, son-in-law of J. P. Morgan, was Assistant Secretary of the Navy. Robert Bacon, a partner of J. P. Morgan and a director of U. S. Steel, was for a time Secretary of State. Judge Gary was confidential adviser to the White House on economic matters.²³ His company was investigated several times, beginning in 1907; but not until 1911 did the trust-busters finally force the U. S. Attorney-General to start a dissolution suit against U. S. Steel.

The U. S. Supreme Court in a close decision in 1920 gave the combine a coat of judicial whitewash. Any one who doubts that the courts consider themselves the guardians of vested interests should read this decision.²⁴ The majority judges state that "the many million dollars spent" by the

corporation, "the developments made, and the enterprises undertaken, the investments by the public [read "capitalists"] that have been invited are not to be ignored." They freely admit that their decision is influenced by a desire not to cause a decline in the foreign trade of the U. S. Steel Corporation. They express their earnest wish not to disturb existing conditions in the financial world for fear of creating a panic. (The country was then near the crest of a speculative boom the like of which was not seen again until 1927-1929.) This decision was signed by the famous liberal judge Oliver Wendell Holmes; indeed his concurrence made the decision possible.

Judges, Attorney-General, and steel directors, are members of the same financial oligarchy. In 1930, when the Bethlehem-Youngstown merger suit came before the federal court in Cleveland, it even happened that all three of the judges were disqualified from sitting in the case because they held stock in either one or the other of the two steel companies involved.

The Federal Trade Commission, set up in 1914 supposedly to serve as a watch-dog over the big corporations, has engaged in some shadow-boxing with the steel companies. It investigated their war costs and profits, tried unsuccessfully to get them to render annual reports according to a uniform prescribed accounting system, ordered U. S. Steel in 1924 to "cease and desist" from quoting prices on a "Pittsburgh-plus" basis, and attacked the Bethlehem-Lackawanna-Cambria merger of 1922. It has not been even an annoyance to the steel companies.

For two decades after 1901 the steel industry made advances in productive efficiency chiefly by applying known ideas on an increasing scale. Sweeping new inventions were not encouraged by the big bankers. In fact, the bankers have sabotaged engineering efficiency. Fundamental research

has been neglected. As Edwin C. Eckel, mining engineer, points out,

A new process means writing off a part of your fixed capital, and scrapping existing plant. If you have no competition, there is no reason why you should accept this certain loss.²⁵

Badly located and antiquated mills have been kept in operation for reasons of business strategy. Cross-hauls are so numerous that they cease to cause comment. According to *Steel*,

The perfect industry of your making would differ in many important respects from the existing one. Furnaces and mills would be redistributed. The ratio of capacity to requirements would be corrected—not only in geographical areas but in the country as a whole. Iron-making, steel-making, and finishing capacities would be brought into proper balance. Dozens of existing sites of blast furnaces, steel works and mills would be abandoned and certain new ones established. Most of the obsolescence in equipment would be wiped out. Excessive provisions for future requirements in certain raw materials would be corrected. The capital structure would be revised.²⁶

The realization of a planned organization such as the writer of the above passage envisions is impossible under capitalism. The primary purpose of capitalist industry still remains not engineering efficiency nor the creation of use-values, but the creation of profit for the owners. All planning is subordinate to this end; and as long as monopoly increases profits, planning will be directed to the creation of monopoly with all its waste and deliberate sabotage. How the finance capitalists have realized gigantic returns out of steel will be shown in the next chapter.

CHAPTER IX

PROFITS

IN this chapter we shall attempt to analyze the profits of the leading steel companies in such a way as to bring out the true extent of the unearned income which has been piled up by workers for owners. We shall also try to describe some of the methods used by the owners in accumulating their piles.

Analyzing Company Profits

All of the big steel companies now publish annual reports which, while incomplete in some important respects, give figures on dividends and capital investment which may be used for purposes such as ours. Most of the persons who analyze these reports do so in order to give advice to capitalists—specifically, to the investor or speculator who wants to know whether to buy or sell the securities of particular companies. Therefore profits are usually calculated as a percentage return on the total investment.

For our purposes such an analysis tells only half the story. We want to know not only what the capitalist may expect to make who puts his money into a concern to-day, but what the capitalist made who put his money into a concern some years ago. We shall talk in terms of the original investor or speculator, and shall endeavor to show what return he has made in the period since he put his money into the business, supposing him to have held onto his securities and to stock issued subsequently in the form of stock dividends.

A very large proportion of the net earnings of a steel

company, on the average about one-third, are kept in the business year in and year out. They appear on the balance-sheet as surplus, or undivided profits. The United States Steel Corp. left in the business from April 1, 1901, to December 31, 1931, the staggering sum of \$1,403,460,692, the sum being distributed in the balance sheet over a number of accounts. Thus "appropriated surplus," "unappropriated surplus," "common stock issued as dividend in 1927, and deducted from surplus at that time," and money set aside out of earnings "to amortize the cost to U. S. Steel of stocks of subsidiary companies in excess of their investment in tangible property"—in plain English, to put real values behind the fictitious (par) value of the original common stock—are all surplus accounts. The value of the capital investment in the heavy iron and steel industry in 1928 has been estimated at between four-and-one-half and five billion dollars. On this enormous sum the financiers expect a "return" to be paid. The workers slaved in the mills in order that U. S. Steel common stock, admittedly backed by no tangible value when issued, should become "the premier industrial security in the United States," and rise from a low of \$8.38 per share in 1905 to a high of \$366.45 in 1929.*

We shall treat capital which is accumulated and not paid out to security-holders as an investment of the business itself, to which workers and customers are indispensable no less than the capital originally put in. This capital, remaining in the business as surplus or undivided profits, is legally the property of the stockholders, and has to be added to the other forms of profit in order to arrive at the total return that the security-holders have made.**

* The actual high for one share of U. S. Steel stock was \$261.75. However in 1927 there had been a stock dividend of 40%, so that in terms of 1905 stock the price was equivalent to \$366.45.

** The analysis on which this and the next two sections are based was made by Kalmun Hecht from company reports. For method and definitions see Appendix XI.

Our analysis shows that in the period 1905-1931 inclusive the profit, including profits left in the business, for companies which in 1931 controlled 61% of the ingot capacity and in previous years have controlled well over 70%, was at the annual average rate of 14.3%, or almost exactly one-seventh. The average *cash* return to holders of securities was at the rate of 9.26% per year on the investment, or about one-eleventh. The rate of profit in the whole industry is no doubt fairly indicated by this very large sample. In other words, the owners of some billions of dollars' worth of securities have got from the industry every eleven years a sum equal to the amount originally put in, without using up the original capital at all, while huge equities piled up in the business were causing their whole capital to be reproduced for them once every seven years. In these companies alone—U. S. Steel, Bethlehem Steel, Inland Steel, and Youngstown Sheet & Tube—the cash paid to security-holders in the 26-year period has been in round numbers \$2,950,000,000; and a further \$1,600,000,000 stood to the credit of the stockholders at the end of 1931, not counting the value of the original real investment which has presumably been maintained.

These companies employed at the peak of operations in 1929-1930 a total of 304,000 workers. The book surplus on hand December 31, 1931, was therefore the equivalent of \$5,623 per worker. For the U. S. Steel Corp. alone, the total earnings of the company in the period 1901-1931 inclusive, not including money used to pay off and retire bonded indebtedness, have been equivalent to \$621.20 per employee (wage-earners and salaried workers both included) per year, or about twelve dollars per employee per week. The returns to U. S. Steel security-holders have been at the rate of \$19,138 (\$12,436 in cash, the rest in equities) for every worker steadily employed on the average over the 31-year period. For every dollar paid out by the company in wages

and salaries from its formation to the end of 1931, security-holders have been credited with $46\frac{1}{2}\%$, of which 30% has been paid to them in cash. For this return they as security-holders have of course rendered no service whatever aside from the act of making the investment.

Total payments by the steel companies to capitalists include not only dividends and interest but royalties (lumped with "expenses") and interest on short-term indebtedness. Taxes go to support a government which works more or less openly for the owners of industry; and taxes paid to the federal government alone by U. S. Steel in the period 1901-31 aggregated over a billion dollars net, *i.e.*, after the company had received back \$96,000,000 in refunds. Our calculations on rates of return include only profits in the narrow sense, not total return to capitalists.

The Inland Steel Co., a Chicago concern which was founded in 1893 and for many years was enabled to sell practically its whole products at inflated prices owing to the operations of "Pittsburgh-plus," has been the most profitable of the four companies. From 1905 through 1931 it paid in cash to security-holders over \$65,000,000 on a real average investment of \$22,000,000, or at the rate of 11.3% per year. The surplus remaining at the end of 1931 was over fifty-three millions, and the real earnings, including surplus, on the real investment were at the rate of more than 20% per year.

Youngstown Sheet & Tube was not far behind. Its real earnings in 1905-31 averaged 19.9% on the real investment, and 10.5% per year on the average real investment was paid in cash. From 1901 to 1922 the earnings were at the rate of 32.4% per year on the real investment. This company started with a capital of \$1,000,000 in 1901, and building up largely through reinvestment of earnings had accumulated by the end of 1931 a surplus of \$107,000,000.

U. S. Steel's rate of earnings in the period 1905-31 was on the average 15.3% on the real investment, cash payments

accounting for 9.9% and surplus for the balance. For the period 1901-1931 inclusive the earnings on the real investment averaged 17.22% per year. Unappropriated surplus as of December 31, 1931, amounted to \$421,837,192, according to the company's balance sheet. Total earnings left in the business amounted, as already stated, to \$1,403,460,692.

Bethlehem's record cannot be satisfactorily traced. Its finances have never been fully investigated by a competent outside agency. On the record, its rate of earnings on real investment average in the period 1905-31 inclusive 8.9%, of which 6.5% was paid out in cash. Surplus standing to the credit of stockholders on December 31, 1931, amounted to \$115,000,000.*

Other Profitable Concerns

The above computations refer only to the big companies. Comparisons according to the usual methods of capitalist investors show that small companies are quite as profitable as large; in fact, the rate of profit on the "investment" is so similar for different sizes as to be surprising.¹ The small companies vary more among themselves than the large, but they average about the same rate. Competition keeping profits down to moderate levels would ordinarily be expected, if at all, among companies in fields where no one company overshadows the others, as for example in the production of tinplate. U. S. Steel produces only three-eighths of the country's tinplate.* Yet prices have been high enough to bring big gains to the leading "independent" in the field, namely the McKeesport Tin Plate Co., which incidentally is notorious for the bad working conditions in its plant.

Suppose a capitalist to have purchased 120 shares of the stock of this company in 1914 for \$12,000, and to have kept all the stock that was issued to him in the form of stock

* For further details on all four companies see Appendix XI.

* Average of years 1927-1931 inclusive.

dividends. By the end of 1931 he would have received \$43,146 in cash (20% per year on his investment) and would have had equities standing to his credit on the books which, combined with his cash dividends, would have made an annual average return of 67.1%.

The Crucible Steel Co. of America is a little industrial trust. It controls between one-half and three-quarters of the output of the so-called crucible steel, most of which is now made in electric furnaces. This company was formed in 1900. It put out \$25,000,000 of common stock, which was all water. Up to December 31, 1931, it paid in cash to security-holders, \$92,711,039, or an average of 10.1% per year on the real investment. In addition it piled up a surplus of \$52,000,000. The earnings on real investment were at the average rate of 15.8% per year. Thus the company has been only slightly less profitable than U. S. Steel.

Many other examples could be cited if space permitted. Thus, it could be shown that the Sloss-Sheffield Steel & Iron Co.'s rate of profit on real investment over the 10-year period, 1922-1931, which has amounted to 16% per year, is nearly twice the average rate on the nominal investment (8.4%). Unfortunately, the analysis cannot be extended to the whole industry, but must close with the reminder that not all companies have made exceptional profits. A few of the smaller "independents" have done only moderately well—such as the Pittsburgh Steel Co., which in the 26-year period has made an average profit on the real investment of "only" 8.4%—and some of the small companies have been squeezed out altogether.

Post-War Profits

The decade 1922-1931 has been a profitable decade for the big steel companies. In spite of increasing competition, the rate of earnings dropped only a little below the average for the 26-year period. As we calculate them, earnings on the

real investment (which, it must be recalled, is not the same as total investment) have been actually higher for U. S. Steel in this decade than in the 26-year period of 1905-31 as a whole.

The records of the Jones & Laughlin Steel Corp. are available from 1922 on, and this company, the fourth largest producer, has accordingly been included in the analysis for the post-war period. It has done better by its "original investors" than even the Inland Steel Co. It reorganized in 1922, and capitalized a large part of its surplus without drawing in new capital to any great extent. Counting this capitalized surplus as only a part of earnings of previous years, and considering the par value of the remaining securities to represent the real investment, we find that in the decade 1922-31 inclusive the average return on the real investment was at the rate of 25.9% per year, as compared with Inland's 14% return in the same decade.

Five of the seven largest producers and 66% of the country's ingot capacity have been included in the post-war analysis. Of the two large companies which were omitted perforce, one—National Steel Corp.—has been more profitable than the average, and the other—Republic Steel Corp.—has been less profitable. The post-war analysis gives for its period an even better indication of rates of profit in the industry as a whole than the 27-year analysis above gives for the long span.

The five companies paid out to security-holders in cash during the decade the sum of \$1,314,000,000, and added \$547,000,000 to surplus. The total earnings amounted to 13.4% per year on the average real investment.

This analysis, we repeat, is based on the public statements of the companies. It is not exhaustive, because the companies do not publish exhaustive reports. Even U. S. Steel, which had the shadow of anti-trust prosecution hanging over it from its inception and has therefore published fuller re-

ports than most companies, has never itemized some 6¼ billion dollars of its expenses, or 26.4% of its total receipts from sales to the end of 1931.

Dividends in the Crisis

The surplus of the steel companies constitutes a reserve for bad times—a sort of unemployment insurance, wrote Ida M. Tarbell, the biographer of E. H. Gary, in 1927. Her statement was correct. Only she did not state that it was the return to capital, not to labor, which was insured for bad times.

The steel industry made a net operating loss for 1932 of about \$150,000,000, estimated Robert P. Lamont, former president of the American Iron and Steel Institute. Dividends on common stock were “earned” only by a few companies which specialized in finished products, such as the National Steel Corp. and the McKeesport Tin Plate Co. Yet not only did all the important steel companies pay interest on their bonds right through 1932—companies with four-fifths of the ingot capacity paid some dividends as well.* Certain companies, including U. S. Steel, continued dividend payments on stock that was originally all water, at a time when their employees were undergoing slow starvation and keeping their children home from school for lack of clothes.

A compilation has been made to bring out the facts of dividend policy in the crisis. Companies with 65.3% of the capacity studied paid some dividends to all their stockholders, including common stockholders, in both 1931 and 1932. Companies having 16.3% of the capacity paid dividends on preferred and common stock in 1931 and on preferred in 1932. These two groups cover four-fifths (81.6%) of the

*The Colorado Fuel & Iron Co. defaulted payment of \$800,000 due on its bonds and went into receivership at the end of July, 1933. As is usual in business failures, the president of the company was appointed receiver.

included capacity. Companies having 5.1% of the capacity paid either (a) preferred dividend in 1931 and 1932 or (b) dividend on both preferred and common in 1931. Companies with 4.1% of the capacity paid dividends on preferred stock in 1931 and no other dividends in the two years. The only important iron and steel companies which paid no dividends at all in either of the two years were the Republic Steel Corp., the Keystone Steel & Wire Co., and the Ludlum Steel Co., controlling between them 9.2% of the capacity for which calculations have been made, and also two companies which do not make raw steel, the Sloss-Sheffield Steel & Iron Co.—which produces only iron—and the Eastern Rolling Mills, a finishing concern.

It is probable that the above calculations, covering as they do nearly 84% of the country's ingot capacity, reflect the dividend policy of the industry as a whole. But the fact that dividends continued after wages had been cut and long after mass layoffs had begun is not the whole story. Salaries continue for the big bosses even when there is little or nothing for them to do. Management, ownership, and finance extract the money from steel, in bad times as in good. From the surpluses piled up in good times, the workers receive in bad times no protection at all.

Royalties

Figures on the earnings of the steel companies do not include the sums paid as royalties to the owners of ore and coal lands, for these payments are an expense to the companies. Royalties on iron ore amounted to between twenty and twenty-five million dollars in 1929, the equivalent of approximately 30 cents on every ton of iron ore and 50 cents on every ton of pig iron produced in the United States. In 1919, royalties on iron ore in the country as a whole amounted to 41¢ per ton of ore, or 11.5% of value of the ore.² Royalties paid by steel companies on coal cannot be estimated, but

it was stated in 1913 that the royalty paid by the U. S. Steel Corporation on one 2,000-acre coal property near Uniontown amounted to \$250,000 a year, or 25 cents on every ton of coal produced.³

Royalties are unearned income of the purest sort. In some instances the families owning the land underneath which iron ore was discovered, had already taken out of the territory a fortune in extinguishing the game and another fortune in removing the timber.

In the sections that follow, the rates of profit given are calculated in the way that is usual to accountants for business firms. These rates are therefore not to be compared with those contained in the previous sections of this chapter.

War Profits

There is plenty of profit in the armament trade even in time of peace. The Bethlehem Iron Co. (as it then was) began making armaments in 1887. "The Bethlehem's own figures show," wrote the Secretary of the Navy nine years later, "that up to November, 1896, its profits paid for this plant in full, . . . paid 10% on its cash investment, and left a surplus of \$672,000." The Carnegie Co. started making armor plate three years after Bethlehem. The Secretary of the Navy stated that it had managed to amortize the whole cost of its plant by 1896 while paying 10% regularly on the money it claimed to have invested.⁴ This secretary (Herbert) evidently knew a good thing when he saw it. On quitting office he became counsel for the Carnegie interests.

War abroad with the home government neutral is the ideal situation for armament firms, according to Ralph Humphreys Stimson, student of the armament question.⁵ Operating net earnings of the Bethlehem Steel Corp. for 1916 were 13 times its net earnings for 1911. In the same year, U. S. Steel made 363% of its 1911 net earnings. Bethlehem made \$38,-

200,000 more and U. S. Steel \$247,000,000 more in 1916 than in 1914.

Bull speculators in steel stocks made killing after killing in 1915 and 1916. Before the war, the price of common shares of the Bethlehem Steel Corp. fluctuated around \$40. At the end of October, 1915, the same shares sold as high as \$500. The increase during 1915 in the value of the securities of corporations filling war orders from the United States government, has been estimated at over \$850,000,000.

A war in which the home government participates is better than peace in piling up profits for the steel companies. U. S. Steel's profits on its nominal "investment" (par value of securities plus surplus—far higher than real investment) as it existed at the beginning of the war amounted to 21% in 1916, 18% in 1917, and 12½% in 1918, after payment of federal taxes. Ninety-one "independent" steel companies studied by the Federal Trade Commission showed aggregate profits during 1915 equivalent to 9.4% on the pre-war total balance-sheet value of stocks, bonds and surpluses. Net earnings, after taxes, on the same total, amounted to 33.6% in 1916, 42.1% in 1917, and 23.1% in 1918.⁶ The profits of these four years were greater than the whole amount invested in the companies before the war, even counting watered stock at full (par) value. U. S. Steel did not specialize on munition-making and was prevented, like other companies, from setting its own prices during part of the time that the United States was at war; but on its war contracts it is stated to have realized a 50% profit. This statement was made by counsel for the Bethlehem Steel Corp., which, he said, made a profit of only (!) 21% on its war-time shipbuilding contracts. But Bethlehem made a straight 100% profit on many government war orders which its management knew could not be placed elsewhere.

Some of the steel companies which were selling at the fixed price set by the government got restless at the fat

profits going to other companies. The government had grouped the companies into different classes, and it was class 3 that made objection against the government prices as being too low. The Federal Trade Commission examined their books and found that the profits of ten of them on their nominal investment were as follows in 1917:⁷

	<i>Percent</i>
Alan Wood, Iron & Steel Co.....	52.63
American Tube & Stamping Co.	40.03
Eastern Steel Co.	30.24
Follansbee Bros. Co.	112.48
West Penn Steel Co.	159.01
Allegheny Steel Co.	78.92
Central Iron & Steel Co.	71.35
Forged Steel Wheel Co.	105.40
Nagle Steel Co.	319.67
West Leechburg Steel Co.	109.05

Forty-nine leading heavy-industry producers, including U. S. Steel, added approximately \$689,000,000 to their surplus accounts between the end of 1915 and the end of 1918.

The share of the American armament firms in the profits of the World War are indicated, says the British Union of Democratic Control, in the approximate value of the contracts which were placed by J. P. Morgan & Co. According to the history of the Ministry of Munitions this value amounted to \$2,063,350,000 during the period 1914-18.⁸

No wonder the steel industrialists "coöperate" cordially with the government's plans, as described before the War Policies Commission in 1930, to keep the industry always ready for diversion from a peace-time to a war-time basis.

Frauds in the Armament Trade

The armament makers have not been content with cashing in on their monopoly profits. They have cheated the government year after year.

Charles M. Schwab has often been caught at this game. Four men who had scabbed on the Homestead strike in 1892 brought to the Navy Department in the following year evidence that the Carnegie Steel Co. had been violating its contracts for the manufacture of armor-plate. Investigation showed that blow-holes had been plugged, and that plates selected by government inspectors for testing had been re-treated after their selection. Schwab, who was superintendent of the plant at the time, admitted in a letter that he had authorized things which were specifically forbidden in the contract. The company paid a fine of \$140,484.94.⁹ Schwab had been caught cheating the government. Did he lose caste with the business community? Not at all! He and his immediate superior at the time, W. E. Corey, were afterwards made the first and second presidents, respectively, of the world's largest corporation at the time, U. S. Steel.

Schwab joined Bethlehem Steel in 1904, and this company perpetrated frauds on the government in its armament contracts right up to the outbreak of the world war, according to affidavits collected by Rep. Henry T. Rainey of Illinois.¹⁰

Schwab, who wept on the witness stand after the war because his patriotism had been questioned, engaged in an underground piece of business in 1915-1916 which would have caused his government "great embarrassment" if the transaction had been disclosed at the time. The British government approached Schwab to get him to build submarines, but the United States was still officially neutral and Schwab was forbidden to build them in America. Did he observe American neutrality? He did not!

He bought Vickers' shipyard in Montreal, manufactured the parts of the submarines in the United States, sent them to Canada as parts of motor-cars, assembled them in the shipyard and delivered them within five months after the placing of the order.¹¹

Who Gets the Money?

Graft payments, commissions to bankers and others, and all salaries of high officials, are entered as part of "expenses." The total of such "expenses" may be enormous; but the public and even the stockholders are not informed of the details.

The Bethlehem Steel Corp. has never rendered a detailed accounting of some \$11,000,000 paid it by the government, on contracts with the U. S. Shipping Board. A suit for an accounting was still pending in 1932, and is no doubt still pending. Charles M. Schwab, who was director-general of the Emergency Fleet Corp. from March to December, 1918, at the same time that he continued to be the largest shipyard owner in the country, drew out \$260,000 during this period for "personal expenses." The money has never been accounted for in detail.

Navy contracts are usually let on a basis of "cost plus a reasonable profit." This system leads directly to padding of payroll records and expense accounts. Of the "cost-plus" system, under which Bethlehem built most of its ships for the government, Homer L. Ferguson (who himself had received many such orders) said in 1931, "Cost plus I think is very bad. It is simply an invitation to the management and everybody else to be happy at the expense of the purchaser,"¹²—in the case of war contracts, at the expense of the government.

The ethics of the looting gang require that a thief shall play square with his pals. So Carnegie was much annoyed when he found that H. C. Frick was trying to sell for \$1,500,000 to the Carnegie Co., Ltd., of which Frick was chairman, a farm for which Frick had paid \$500,000.¹³ Somewhat later, Schwab told the board of directors of U. S. Steel that he thought he was the only one on the board who didn't have something to sell the corporation.

High salaries became associated in the public mind with the steel industry in the days when mass production methods were first applied to steel-making, at the Edgar Thomson plant of the Carnegie interests in Braddock. Andrew Carnegie paid Capt. William Jones, superintendent of the Braddock plant, \$100,000 a year.¹⁴ The largest salary in the business world is still reported to be paid to a steel executive—George Gordon Crawford, president of the Jones & Laughlin Steel Corp. The journalist John T. Flynn says that Mr. Crawford joined the company on a three-year contract calling for \$350,000 a year.¹⁵ Mr. Crawford denies the statement, but will not tell his stockholders what he is getting. Charles M. Schwab, chairman of Bethlehem Steel, says that after much urging from the board of directors he reluctantly agreed to accept a salary of \$150,000 a year. The President of the U. S. Steel Corp. was formerly paid \$100,000 a year. When Judge Gary assumed the position of chairman and chief executive officer, his salary was gradually increased until he was getting \$250,000. The Bethlehem Steel Corp. has a bonus system, established in 1911 and revised in 1917. The most expert analyst could not have learned from the published reports of the Bethlehem Steel Corp. that 21 directors and officers received between 1917 and 1930 over \$38,000,000 in bonuses, including a bonus of \$1,623,753 paid to Pres. Grace in the year 1929 alone. The facts came out in the Youngstown-Bethlehem merger suit, and the bonus plan was hastily revised under pressure from irate stockholders. U. S. Steel has a bonus system; and under its operation the executive officers and others received \$3,112,168 in 1930, or about the same amount that was paid in that year by Bethlehem under its revised bonus plan.

Directors of steel companies often get as much for an afternoon spent in attending a directors' meeting as a worker makes in four weeks at full time. This compensation is in

addition to their regular salaries. In 1932 directors of U. S. Steel were getting \$100 a meeting.

Apologists for capitalism such as Professor F. W. Taussig of Harvard University tell us that huge salaries are "necessary" in order to induce the highly competent captains of industry to put their best effort into their work. However, the elder J. P. Morgan was quoted as saying, "The trouble with the United States Steel Corporation is to find a president of ability who does not need all his time to spend his salary properly."¹⁶

In general, investment bankers who have arranged mergers of steel companies and the officials of the companies involved in mergers, have all "got theirs." For their services in financing the Trumbull Steel Co., which in the end was merged with Republic Iron & Steel, Cyrus S. Eaton's firm of Otis & Co. took a commission of \$1,280,000, plus an option to buy stock on which it realized \$300,000 more. For underwriting the preferred stock of the Republic Steel Corp., Otis & Co. received \$1,386,641. It got 12,500 shares of the stock of Central Alloy Steel (one of the companies merged) for an underwriting operation for that company. In addition it had the option to purchase 200,000 shares of the common stock.¹⁷ It is not always clear where the money comes from for these commissions, but two stockholders of Republic Steel have charged that Otis & Co. acting as clients for the Trumbull-Cliffs Furnace Co. engineered a trade of stock between Trumbull-Cliffs and the Republic Iron & Steel Co., in which the latter company lost the equivalent of \$1,700,000. It is estimated that bankers pocketed \$100,000,000 as a result of steel mergers which preceded the forming of U. S. Steel. This total is exclusive of the Morgan firm's commission for forming U. S. Steel, which amounted to \$62,500,000.

Fleecing the Little Gamblers

The directors of a big steel company are in a fine position to get rich at the expense of the small stock-market speculator, because the directors have inside information as to what is going to happen. In most companies, it is customary for them to use this information to buy and sell the stock of their own company for profit, which is like gambling with loaded dice. Gary made a great show of breaking up this practice in U. S. Steel; he used to boast that the figures on quarterly earnings of his company were given to the public at the same time they were given to the board of directors. But stocks of U. S. Steel still have a way of reacting in advance when the directors contemplate an important step. For example, the stock market thinks that a wage cut by U. S. Steel increases the earning power of U. S. Steel stock; and when the directors of the company were about to announce a 15% wage reduction for all employees in May, 1932, its stocks took a bound upward. The *Wall Street Journal* suggested that "boy friends of house-maids in the homes of Steel Corporation directors may have had premonitions of the wage cut and acted marketwise."

When a company buys and sells its own stock, even Wall Street takes notice. From 1923 to 1926, the Crucible Steel Co. of America, of which Horace S. Wilkinson is chairman and chief stockholder, bought on the market 100,000 shares of its own common stock, with a par value of \$10,000,000. On April 22, 1926, Chairman Wilkinson issued a statement saying, "It is not now, nor has it been, the policy of the company to buy and sell or speculate in its shares." At the end of 1929 the company spent \$2,676,000 in new purchases of its own stock.

J. P. Morgan and his associates who floated U. S. Steel used in 1901 a kind of trickery that is considered dirty even

in Wall Street. They hired a professional manipulator to "wash" sales. Let Alexander Dana Noyes tell the story:

On the Stock Exchange, a celebrated manipulator of speculative values was employed, when the shares were listed, to create a semblance of great investment activity, and to sustain the price. The project met with remarkable success. Starting on the curb at a price of 38 for "Steel common" and $82\frac{3}{4}$ for the 7% "Steel preferred," the Stock Exchange price advanced in a month to 55 and $101\frac{7}{8}$ respectively. Half a million of the shares were dealt in during the first two days of their appearance on the Stock Exchange; the next week's record was a million. The greater part of this was doubtless merely "matching of orders" by the syndicate's agent; but the public did not know this.¹⁸

Some Fortunes from Steel

Many individuals have taken fortunes from the steel industry. Charles M. Schwab, who received \$5,000,000 for helping Carnegie to fight Frick, and who in 1920 was spending some \$50,000 per month on himself and his family (C. W. Barron's estimate), stated that the Carnegie steel interests alone produced 50 or 60 millionaires, and not all of these fortunes came from simple reinvestment of dividends and interest. Many steel fortunes were accumulated by illegal methods. Alexander Peacock, steel millionaire, got his start by bribing Tammany boss Croker, it is broadly intimated by the *Wall Street Journal*. John W. Gates, one of the original steel promoters, got rich by violating patents in barbed wire.¹⁹

Lavish spending has failed to dissipate the piles of the leading speculators and monopolists. Many have tried to hold their fortunes together even after their death, and have tied the money up in trust funds, so that their immediate heirs are not legally able to touch the principal.

Samuel Mather, Cleveland ore and steel magnate, and director of U. S. Steel, left more than \$100,000,000 at his death in 1931. Elbert H. Gary lived in a house which was sold after his death for over \$400,000; his total estate

amounted to \$22,500,000. Frederick R. Wickwire was a steel capitalist of whom most men have never even heard; yet owing to the fact that he belonged to the family which founded the Wickwire-Spencer Steel Corp., he had between three and four million dollars to his credit when he died in 1929. Norman B. Ream, one of the less known founders of U. S. Steel, and long a director, left \$40,000,000 on his death in 1915. H. C. Frick, who directed the smashing of the Homestead strike, lived in a home appraised at over \$3,000,000. He left an estate of \$50,000,000. Frick's big boss, Andrew Carnegie, gave away \$350,000,000 during his life. His will in 1919 specifically disposed of a net estate of \$23,000,000; however, no schedule of the whole estate was filed. The dynasty had already been founded before Carnegie's death. His sister-in-law, Mrs. Lucy Carnegie, who died in 1916, left \$15,000,000.²⁰ Henry Phipps, a former partner of Carnegie who was long supposed to be one of the country's richest men, appears to have passed along most of his fortune during his long life. He left an estate of only (!) \$3,000,000 in 1930.

The various foundations endowed by Carnegie received mainly U. S. Steel bonds as their endowment, so that many doctors, professors, librarians, other professional workers and preachers have had a direct financial interest in keeping the profits rolling in to the trust.

So smoothly does the system pour money into the pockets of the owners that some of them have come to look on capitalism as a creation of God. Inveighing against those who would change the system, Myron C. Taylor, who has been delegated by the House of Morgan to run U. S. Steel, said, "To tear down these facilities and supplant them with something of the unknown quality which has no particular virtue to recommend it would be a crime against the Creator and the faculties which He inspired to produce these benefits."

CHAPTER X

HISTORY OF UNIONISM TO 1918

So far, this book has been in effect a rehearsal of what the employers have done in steel. We have studied their policy on safety and diseases, the wage rates which they have set, the schedules of hours and production which they have enforced, and the types of "welfare" which they have seen fit to introduce; and we have also examined their business organization and the profits which they have taken out of the industry. We turn now to the workers' efforts at organization for winning power in the industry.

From its foundation in 1875 until 1892, the Amalgamated Association of Iron and Steel Workers was known as the strongest union in the United States. In 1932 it was one of the weakest, including in its membership less than 1% of the workers in iron and steel. Since other unions following the same policy and based on the same principles as the Amalgamated Association have made equally little headway in penetrating large-scale, trustified industry, the story of this union is of unusual interest and importance.

Early History

The American steel workers have a tradition of struggle which goes back more than eighty years. In 1849 the puddlers of Pittsburgh—which was already the center of the heavy industry in the Midwest—staged a strike lasting from December until the following May.¹ It was the puddlers also who in 1859 formed the United Sons of Vulcan—at first as a secret organization, but later emerging into the open to set up a national organization in 1862.

The organization reflected at its origin the conservative, narrow spirit of the men who founded it, which however was not different from that of the typical craft union of the day. The union's purposes were

the elevation of the position of its members, the maintenance of the best interests of the craft, the relief of the sick and distressed members, and all other things appertaining to the business in which the members under its jurisdiction may be involved.²

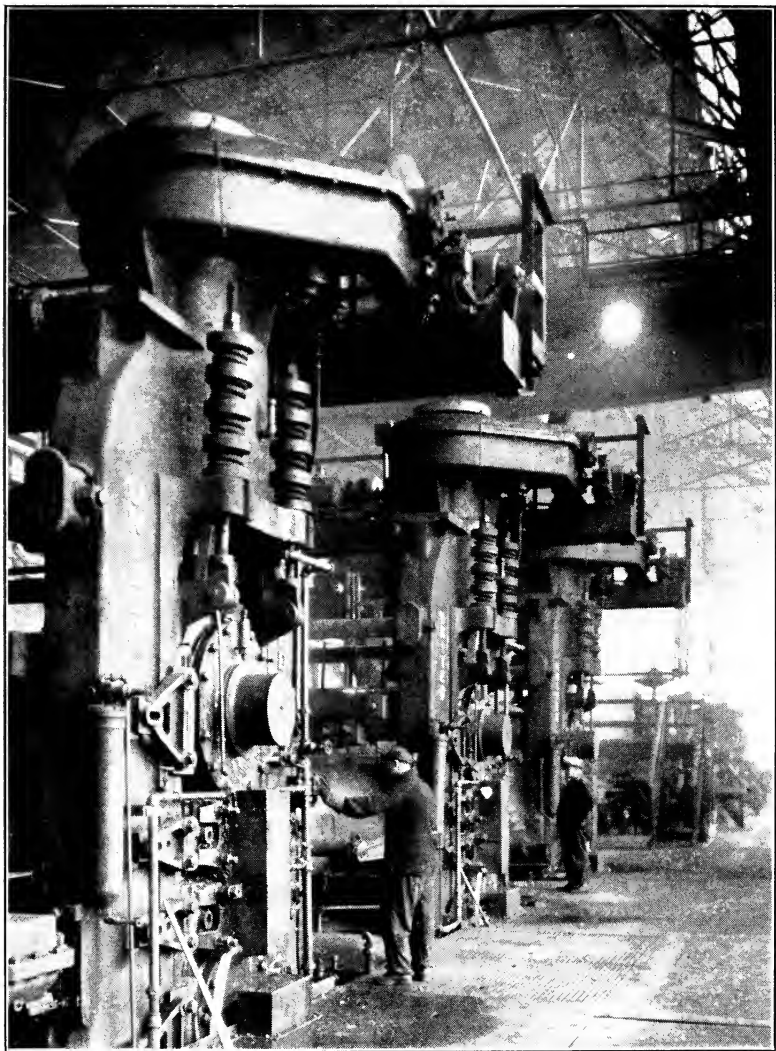
When the rollers and heaters set up their union (the Associated Brotherhood of Iron and Steel Heaters, organized nationally at Chicago in 1872), the roll hands, semi-skilled men working around the rolls, set up their own Roll Hands' Union (National Union of Iron and Steel Roll Hands of the United States) as a protest against the exclusiveness of the rollers.³ After the crisis of 1873 the sentiment for amalgamation among the various iron and steel unions grew rapidly. The Amalgamated Association of Iron and Steel Workers was formed at Pittsburgh in August, 1876, including the three unions already mentioned. A local of nailers was also admitted. The puddlers did not wish to admit their helpers but were obliged to do so because the rollers' helpers were in.

During the first decade of the new union's existence there was a growing sentiment in favor of admitting the unskilled to membership as well. This sentiment was tremendously increased by the success of the Knights of Labor, an organization which became for a time the leading labor organization in the country. It admitted to membership all types of workers and even some non-wage-earners, though its constitution provided that at least three-quarters of the membership of any local body should be wage-workers or farmers. Unskilled and semi-skilled were welcome, and as



A MANUAL TYPE SHEET MILL

The older process in sheet rolling, which is still in use. The white-hot sheet shown at the left is seized with a pair of tongs and passed through a series of rolls until it is elongated and thinned down to the proper proportions.



A CONTINUOUS SHEET MILL

In this new sheet-rolling process the sheet is automatically passed through each pair of rolls.

they joined in increasing numbers the organization became in spite of its leaders a militant body.

Beginning in 1873, the Knights established locals in a considerable number of iron and steel plants, including several in Allegheny County. T. V. Powderly, Grand Master Workman of the Knights of Labor, visited the convention of the Amalgamated Association in 1886, at the height of his power, and invited it to affiliate on a basis that would guarantee it complete autonomy. The convention referred the matter to the lodges, which voted it down. The Knights contested the leadership of the Amalgamated Association at Scottsdale and Braddock, Pa., in 1886, and at Mingo Junction, Ohio, in 1887; but the Mingo Junction incident resulted disastrously for the Knights. The next year they formed the "National Trade District 217, Iron, Steel and Blast Furnacemen"; but it came to nothing.

It is said that the influence of the Knights at Braddock, where they at one time held a key position, forced the Amalgamated Association lodge in the Carnegie mill there (the Edgar Thomson works) to take in all workers in and around the mill. This policy would not have been opposed by William Martin, general secretary of the Amalgamated Association, who was a believer in industrial unionism. However, the Knights declined after 1886, and the Amalgamated Association has remained to this day a sort of amalgamation of craft locals, whose craft consciousness has led to frequent bickerings and occasional secessions.*

The Homestead Strike of 1892

The Amalgamated Association was a skilled workers' union; but furthermore, it was an iron workers' union. The

*The nailers withdrew soon after the amalgamation, and came back only several years later. The heaters left the union just after the start of the Homestead strike of 1892, and the puddlers were out for the better part of the following two decades.

union's orientation on iron rather than on the rapidly-rising steel industry accounts for the fact that its organizing campaigns in the important Edgar Thomson steel works during the eighteen-eighties were desultory and in the end ineffective. Out of the three mass-production steel plants in the Pittsburgh area in 1891—those at Braddock, Duquesne, and Homestead, all controlled by the Carnegie interests—only one, at Homestead, was organized, and that imperfectly. The great National Tube Co. plant at McKeesport was also non-union.

The proportion of iron and steel workers organized was probably at its greatest in 1891, when the union had a membership of 24,068 out of perhaps 100,000 eligible, or 24%.⁴ But even at this time it is doubtful if as much as 50% of the steel workers in Allegheny County, the center of the heavy industry, were members.

In June, 1892, when the union's contract at Homestead was about to expire, H. C. Frick as spokesman for the Carnegie interests met the union representatives in conference and presented three demands, as follows:

1. The basis of the sliding scale should be altered. (Under the 1889 agreement, wages were to rise and fall with the price of steel billets, but should reach a minimum when billets were selling at \$25 a ton. The company proposed that this basic minimum should be lowered to \$22.)

2. The date of the expiration of the scale should be changed from June 30 to December 31.

3. A reduction of tonnage rates for certain workers was demanded. (The occasion for the reduction was a series of changes in the mechanism of the plant, which had greatly increased the capacity of the works.)

These demands were unacceptable to the union. The proposed wage reductions affected only a few hundred of the workers in the plant, but these were the very men who belonged to the union, and it was felt that reductions in their

tonnage rates would be followed by reductions all along the line. The expiration of the contract in winter-time was dangerous because it gave the employers the advantage in the discussions over renewal; the workers would go far to avoid a strike in winter. The demands were therefore refused.

Every one knew that Frick was eager for a fight. In 1889 he had demanded dissolution of the union and signature of individual contracts. In 1891 he had directed the fight which broke up the miners' union in the near-by Connellsville coke district. Even before he met the union leaders he had completed the preliminary arrangements for hiring a large force of "watchmen" from the Pinkerton Detective Agency and had caused to be built a 15-foot board fence around the works, surmounted with barbed wire and pierced at intervals with holes—loopholes, the workers called them. Nobody was in doubt that the real issue at Homestead was unionism versus non-unionism.

The negotiations broke down before the company had even secured the maximum concessions that the union was willing to make.⁵ It became evident that the company was throwing its great resources into a finish fight. The Pinkertons collected 312 men ready for service at Homestead, and shipped to Pittsburgh from Chicago 250 rifles, 300 pistols, and ammunition, all of which were loaded onto two barges. The "watchmen," thugs gathered from all over the East and Middle West, were put secretly on barges near Youngstown.

As the barges proceeded up the Monongahela River during the night and early morning of July 6, they were spotted by the scouts of the strikers. Most of the town of 12,000 was lined up along the shore as the barges prepared to dock. With a rush the workers broke down the 15-foot fence at the waterline, and surged forward to block the landing of the Pinkertons. These, armed with rifles, threw out a gangplank and prepared to land. The workers drove them back.

The fight with the Pinkertons continued, intermittently, all day. The officers of the Amalgamated Association tried to calm down the workers, and President-elect Garland finally succeeded in arranging a truce. The "watchmen" were disarmed, and marched up between two rows of men, women and children through the town to the skating-rink. The day's dead numbered about ten, most of them strikers. The militia arrived at Homestead soon after and protected the scabs whom the company imported.

The union was poorly prepared for the struggle that followed. It paid no benefits except strike benefits, and consequently its reserve was not large. Furthermore, its treasury had been depleted by two years of unsuccessful strikes. Out of 2,000 men in the Homestead works eligible to membership in the Amalgamated Association, only 400 had joined up to the beginning of 1892; and an organizing campaign during the spring brought in only 400 more.⁶ During the strike, relief cost \$3,000 per day, and since the ranks remained nearly unbroken for four and a half months, the expense was enormous. The A. F. of L. collected for the legal defense of strikers over \$7,000, of which a little over half was spent.

The idea was current among the strikers that the Homestead mill could not operate without the skilled men. In fact the skilled men do seem to have been necessary. Although the company had begun importing scabs as soon as the militia arrived, it made comparatively little progress in running the mill until October. But the workers did not manage to tie up all of the company's other mills. The company's huge profits of the previous decade gave it large staying power.

The strike was declared off November 21. It was stated at the time that less than 800 of the 3,800 who had gone on strike in June had gone to work in the mill, and only a limited number elsewhere. The fact that there were so few

deserters furnishes a fine proof of the strikers' solidarity in one of the major struggles of American labor history.⁷

The Amalgamated Association up to 1892 had been a real force in the iron and steel industry. Even employers admitted its power. A. F. Huston, vice-president of the Lukens Iron and Steel Co., said in July, 1892,

Iron and steel labor in Pittsburgh and vicinity commands higher wages than in any place east of it. The reason for this is that the Amalgamated Association is stronger in the western part of Pennsylvania than anywhere else. (*Boston Herald*, July 28, 1892.)⁸

The defeat at Homestead ended the union's power in steel.

If the union had maintained its organization at Homestead, it might eventually have controlled all the other Carnegie mills. It was not driven out of the Jones & Laughlin plants until 1897, and had locals in the Illinois steel mills as late as 1901.

The Battle for the Key Positions

Both employers and unions had learned by the end of the 19th century the importance of controlling the low-cost mills, especially in those branches of the industry where technique was rapidly being improved. The union did not immediately collapse after the Homestead strike, but made aggressive attempts to extend its control in those trades where it still had some strength. In 1899 it claimed 85-90% of the sheet iron workers and 95% of the tin plate hot-mill workers, while the tin house men had been organized by the president of the Amalgamated Association into a separate union which had secured a contract from the newly-formed American Tin Plate Co.⁹

When the American Tin Plate Co., the American Sheet Steel Co., and the American Steel Hoop Co. became part of the United States Steel Corp. in 1901, the Amalgamated

Association promptly moved to sign up all the plants of the three companies. It had had enough of seeing the big companies sign for their high-cost mills and then close them down while they concentrated production in the low-cost mills. It called a strike July 14 against the three companies, and the union workers responded loyally; but only one non-union mill joined their ranks. The union was unable to penetrate such localities as Vandergrift, in Allegheny County, Pa., where the American Sheet Steel Co. had a highly modernized plant and a closely-guarded company town, both built only five years before. As a last desperate gesture, President Shaffer of the Amalgamated Association on August 11 issued a call urging the rest of the U. S. Steel's 168,000 workers to strike. But it was estimated that only 14,000 answered the call, and of these a large percentage were members of the union who were forced into the strike on threat that their charter would be revoked.¹⁰

The strike of 1901 was a defeat for the union, and all but ended its power in the plants of the U. S. Steel Corp. Clauses 3 and 4 of the agreement which ended the strike practically meant that the union agreed not to organize the non-union workers in the American Tin Plate Company's plants.*

These provisions were a symptom of the union officialdom's attitude where U. S. Steel was concerned. From 1901 to 1904, according to Pres. M. F. Tighe of the Amalgamated Association, the union gave way to every request that was made by the U. S. Steel subsidiaries "when they insisted upon it."¹¹

*"Third. The company reserves the right to discharge any employee who shall, by interference, abuse or constraint, prevent another from peaceably following his vocation without reference to connection with labor organizations.

"Fourth. Non-union mills shall be represented as such, *no attempts made to organize, nor charters granted*; old charters retained by men if they desire." (U. S. Commissioner of Labor, Report cited. vol. III, p. 127. Emphasis not in original.)

The American Sheet Steel Co. and the American Tin Plate Co., both subsidiaries of U. S. Steel, were merged to form the American Sheet & Tin Plate Co. Sixty per cent of the American Sheet & Tin Plate Co.'s mills were still union in 1909, when the Amalgamated Association was locked out and completely eliminated from the U. S. Steel Corporation's plants in a 14-month struggle. Repeated attempts during this strike to penetrate the company town of Vandergrift were unsuccessful. Union organizers were menaced by mobs of thugs, attacked, and run out of town; meetings were prohibited, and owners of halls were intimidated.

The strike of 1909 was a militant strike, at least as far as the rank and file were concerned. At Steubenville, the company detectives brazenly attempted to bring imported scabs into the LaBelle mill in full sight of the crowd of pickets. The crowd chased the detectives, who ran and shot backwards, wounding four people.¹² When the Aetna plant (Bridgeport and Martins Ferry, Ohio) reopened early in 1910, Sol Edwards, picketing striker, was shot and killed by a scab.

The iron and steel workers in the years 1881 through 1905 conducted strikes at the rate of more than 33 per year, or nearly three a month, and nearly two-thirds of these (517 out of 835) were not called by any union. The Amalgamated Association was capable, almost up to 1914, of conducting militant actions. As the principal union in the industry, it was largely responsible for the fact that 43% of the iron and steel strikes called by unions in the 25-year period, 1881-1904, were partly or wholly successful.¹³

The Amalgamated Association in the South

The iron workers had lodges in the South as far back as the days of the Sons of Vulcan. The Amalgamated Association lost its hold in the Birmingham area in 1902. It had

an agreement with the Tennessee Coal & Iron Co. covering this company's skilled workers at Bessemer, in the Birmingham area, and a lodge had been formed in the steel works of the company at Ensley, adjoining the city of Birmingham. On Labor Day, 1902, many of the lodge members paraded, and when the night shift came on some of them started to upbraid the men on day shift who had worked right through and had not paraded. There was an argument and one of the workers was shot in the leg, whereupon the superintendent fired several unionists. The other unionists at Ensley struck, and the lodge at Bessemer came out in sympathy. Both strikes were lost.¹⁴ In 1909 the union was completely eliminated from the South.

Attitude to Negroes and Unskilled

The poor success of the union in the South and its failure elsewhere to maintain itself and meet the companies on equal terms was due in large part to the exclusive, sectarian attitude which led it to neglect the interests of all but the skilled, native-born workers. This attitude came out most clearly with reference to the Negroes in the South. When the Tennessee Coal & Iron Co. still had an agreement with the union, its president once asked why the union did not organize the competing plant of the Republic Iron & Steel Co. at Thomas (Birmingham). He was told, "Because they have too many Negroes there."¹⁵ In 1906 a union delegation trying to settle a strike in Birmingham asked the superintendent to "discharge all the niggers" as a condition of their union calling off the strike.¹⁶

In the North, the employers have tried to split off the white worker from the Negro worker ever since they imported Negro puddlers from Richmond to Pittsburgh to break a strike in 1875. The Amalgamated Association did not admit Negroes to membership at all until several more strikes had been broken in the same way. In 1881 Negroes

were admitted, but only in the North and only in Jim-Crow lodges. In the critical strike of 1901 the ranks of the strikers were weakened by a flagrant piece of race discrimination on the part of certain white unionists, which made it possible for the employers to use some skilled Negro workers to break the strike at the Butler St. plant of the Carnegie Steel Co.

A number of Negroes employed in the Butler St. plant of the Carnegie Steel Co. had been admitted to the Lafayette Lodge of the Amalgamated Association. They struck with the other unionists in 1901. Three of the Negroes, together with a white officer of their local, went down the river to get work at a union plant not affected by the strike. The superintendent promised them work if the white workers already there would work with them. But the white workers, their union "brethren," refused. The colored men then returned to their mill and led a back-to-work movement of all the colored strikers.¹⁷

Yet the Negroes have shown themselves excellent unionists where the whites were willing to receive them as such. When the American Federation of Labor unions in the metal finishing plants of the Birmingham area went on strike in 1918 for the 8-hour day and other demands, the steel plants became involved, and the Negroes, who made up 40 to 45% of the force in the heavy industry, struck and fought shoulder to shoulder with the white workers under the leadership of the International Union of Mine, Mill & Smelter Workers. A gang of bosses' agents including one city policeman broke up a meeting in North Birmingham, kidnapped a white organizer and a Negro organizer, took them far into the country and gave them a terrible beating. Another Negro organizer's house was dynamited.

Technically, membership in the Amalgamated Association has been open ever since 1889 to unskilled and semi-skilled steel workers not claimed by any other craft union, such as the carpenters or machinists. Practically, the matter of ad-

mitting the unskilled has been left up to the several lodges. These were for many years free to refuse admission to the unskilled; and even though a new growth of industrial-unionist sentiment culminated in 1911 in a rule that all subordinate lodges should be obliged to accept the unskilled on application, the lodges have not always complied.

The Amalgamated Association has also maintained a rather aloof attitude toward the various foreign-language groups, who in 1910 actually made up a majority of all the steel workers in the country. Yet the foreign-born showed a ready willingness to organize, and led several important strikes before and during the war period.

Failure of the Amalgamated Association Leadership

The high officers of the Amalgamated Association have set the tone of the suicidal exclusiveness and narrowness in their union. They have taken great pains to avoid independent political action by the workers. They have fought the sentiment for industrial unionism. In putting the brakes on the more militant members of the rank and file, the officials have consciously or unconsciously performed a service to the employers which the latter have not been slow to appreciate.

Until quite recently, the presidents of the union have regularly been awarded political jobs by the political machine where the steel bosses have a determining voice. Two former presidents went directly into the service of the employers.

Miles S. Humphreys, first Grand Master of the Sons of Vulcan, became commissioner of labor statistics of the state of Pennsylvania, and afterwards fire commissioner of the city of Pittsburgh. Joseph Bishop, last president of the Sons of Vulcan and first president of the Amalgamated Association of Iron and Steel Workers, became secretary of the board of arbitration of the state of Ohio. John Jarrett, the

next president, tried hard to get the job of first U. S. Commissioner of Labor Statistics, failed, and became successively secretary of the American Tin Plate Co., consul at Birmingham, England, and business man in Pittsburgh. William Weihe (1884-1892) became inspector of immigration in New York. M. M. Garland (1892-1898) became surveyor of the port of Pittsburgh, and later Representative from Pittsburgh in the lower house of the United States Congress. Theodore Shaffer (1898-1906), a former preacher, dropped out of the labor movement when defeated for reelection to the presidency, and did not go into public life. P. J. McArdle (1906-1912) was elected to the Pittsburgh city council on the Republican ticket, and in 1933 was still a member. John Williams (1912-1918) became secretary of a steel manufacturers' association on the Pacific Coast. His successor was Michael F. Tighe, the incumbent up to 1933.¹⁸

Union officials who get elected to public office on capitalist party tickets show their true colors in a crisis. One, Waddington of Newcastle, Pa., was elected sheriff of Lawrence County with the support of the official *Journal* of the Amalgamated Association shortly before the strike of 1909. When the strike at Newcastle became intense, Waddington issued orders to keep all "pickets and persons" off the public street in front of the mills. The picketing continued, so he had 31 pickets arrested and clapped in jail.

The close connection of the union officialdom with the Republican Party, which is also the party of the steel bosses, has been made possible by the union's opposition to independent working class political action. Thus the union's most distinctive political activity has been its support of the protective tariff which has brought big profits to the steel bosses.¹⁹

Steel Employers Smash Unions in Other Industries

The steel companies have smashed the unions on the Lakes and the Iron Range as well as in the mills. On the Lakes, the U. S. Steel's ore transport subsidiary united with the other ore-shipping firms in the Lake Carriers' Association and eliminated the unions one by one, beginning in 1904. The last effort of the unions was a three-year strike which started in 1908. A jurisdictional dispute between the International Longshoremen's Association and the Lake Seamen's Union was of great service to the employers.²⁰

On the Iron Range, the Western Federation of Miners conducted an organizing campaign in 1907. The Oliver Iron Mining Co., subsidiary of U. S. Steel, answered with terrorism and goaded the workers into a premature strike, which was lost. The skilled American workers, steam shovel men, engineers, and crane operators, did not join with the immigrant miners, and the skilled unions were not smashed until later. Another iron miners' strike began spontaneously in 1914, and was led by the I. W. W., but with no more lasting results.²¹ The largest iron miners' strike to date, also led by the I. W. W., came in 1916. It is described below. The organization did not survive the strike.

The resistance to the miners' organization campaign in eastern Kentucky in 1931 was directed largely from the U. S. Steel Corporation's coal town of Lynch. The erection of structural steel in New York City has been on a non-union basis since 1904 because of the pressure exerted by the U. S. Steel, the Bethlehem Steel, and the financial interests back of them. The anti-union forces which control the steel industry are a standing menace to unionism in other industries as well.

Early "Left-Wing" Activities

Various groups on the left wing of the labor movement have kept alive the sentiment for industrial unionism and socialism, a sentiment which at times has permeated deeply even the Amalgamated Association itself. The Socialist Labor Party and the Socialist Trades and Labor Alliance, the latter formed as the Knights of Labor were ceasing to be a factor in the industrial field, were the leaders of this left wing in the eighteen-nineties.

The Western Federation of Miners, an organization with a revolutionary program which for a time in the nineties was very strong in the Rocky Mountain area, and which participated in the founding convention of the I. W. W. in 1905, claimed jurisdiction over iron-smelting, but was always chiefly interested in the non-ferrous metals and in mining. The Federation never on its own initiative ran an organization campaign in the iron-smelting industry on any considerable scale. About 1910 it went into a decline. It became affiliated in that year with the A. F. of L., and six years later changed its name to the International Union of Mine, Mill and Smelter Workers. It was given jurisdiction over the blast furnaces, the only "productive" section of the iron and steel industry not claimed by the Amalgamated Association.

The I. W. W. was advertised to the steel workers by its activities in the strike against the Pressed Steel Car Co. at McKees Rocks in 1909. Although it carried on some propaganda in 1906 at Reading, an old iron center, and organized a local in the Clark Rolling Mill at Massillon, Ohio, in 1910, the I. W. W. never secured a real foothold in the steel mills.

However, it led several strikes on the Iron Range, the last and most militant being in 1916. Ten thousand workers were affected directly and 15,000 indirectly in that strike. A thousand gun thugs, deputized by the sheriff, were unable to cow the miners, so the militia was sent for.²² A group of

deputized gunmen went to a miner's house and a fight started in which two men were killed. A miner was shot and killed on the picket line. The strike ended without a settlement, but the principal demands of the workers are stated to have been granted directly afterwards by the steel companies.²³ Here was an instance where militant action won an immediate success, which however was not transformed into a permanent organizational gain.

SPONTANEOUS STRIKES

The steel workers themselves initiated most of the strikes which affected the industry from 1910 to 1918. The series of spontaneous strikes which mark this period show clearly that the semi-skilled and unskilled do not wait for the leadership of the skilled when they are really aroused. The Bethlehem strike of 1910 began among the skilled workers in the machine shop; but the East Youngstown strikes of 1916 were begun by a group of laborers, and the short stoppage at the Braddock steel plants in the same year was brought about by the strikers from a neighboring plant.

Bethlehem Strike of 1910

The most important unorganized strike in the iron and steel industry during the immediate pre-war period was that at South Bethlehem, Pa., in 1910.²⁴ Wages, hours, and conditions of work were all at issue, but the immediate occasion was a protest against Sunday work and speed-up, and a demand for the restoration of extra pay for overtime and Sunday work. The strike at first affected only three machine shops; but when organizers appeared and drew up demands for the other departments, most of the other workers quit too. The workers were organized by the A. F. of L. into ten different craft unions. They became so militant that the company asked for and got the state police, who put up their horses in the company stable. The workers objected so

strongly to the presence of the cossacks that the latter started shooting and killed a bystander. Some 30 strikers and sympathizers were arrested and kept overnight in the company office, and their hearings were held in Pres. Schwab's office the next day. The strike was lost.

Youngstown Strike of 1916

The most spectacular outburst of the war period was the so-called East Youngstown riot of January, 1916, which is noteworthy also as growing out of a strike originated by unskilled and unorganized workers. Beginning about December 20, 1915, laborers walked out of the Republic Iron & Steel Co. plant, demanding an increase in wages from 19½ cents an hour (10-hour day). By January 5, from 300 to 500 workers were out, mostly laborers. On that day the strikers pulled out many workers from the Brown-Bonnell and Bessemer mills at Lansingville and Haselton, and many also quit at the plant of the Youngstown Sheet & Tube Co. The number of strikers at the Republic plant grew to 2,500 out of 6,000 employed. A. F. of L. organizers appeared. The strikers were in a fighting mood.

An increase of wages was announced by the Carnegie Steel Co. in Youngstown. Judge Gary, who had opposed granting the workers' demands for a wage increase, had his mind changed by the militant action of the strikers. The A. F. of L. organizers made no attempt to organize the Youngstown Sheet & Tube Co. workers, but put out a series of wage-and-hour demands, applicable to all mills, which included a 25-cent-an-hour minimum for unskilled labor.

On January 7 four "independents," including Republic and Youngstown Sheet & Tube, announced increases to 22¢ an hour for laborers, with no definite statement on skilled workers. The number on strike on this date was estimated as low as 8,000 (by the local press) and as high as 15,000 (by George P. West; see *The New Republic*, January 20,

1916, p. 330), out of 30,000 steel workers in the district. In East Youngstown, a striker was arrested, but a spirited mass protest at the jail forced his release.

Just at the time when the strikers were assembling to discuss the companies' refusal to meet their full demands, word came that two train loads of strikebreakers from the South had arrived and were being smuggled into the mills by the railroad siding.²⁵ The rage of the strikers burst all bonds. Mill guards fired into a crowd at the mill gates in East Youngstown, and three strikers were killed. The workers raided the saloons, rolled kegs of liquor into the streets, emptied them and set them afire. Houses caught and six square blocks burned down. The governor ordered out the militia, and the strike ended soon after when a further wage increase was announced.

The grand jury, impaneled to find a scapegoat for the property damage, brought in a surprising verdict. It actually put the blame where it belonged. It found that guards, hired by the Youngstown Sheet & Tube Co., had precipitated the disturbance, and it indicted Elbert H. Gary and 113 corporations for violations of a state anti-trust law, charging them with conspiracy to keep down the wages of common labor and to raise the price of steel. The indictments were, of course, quashed.²⁶

Other Strikes

An incident four months later in the strike at East Pittsburgh of workers in the Westinghouse Electric and Manufacturing Co. plant showed that the angry temper of the East Youngstown steel workers was characteristic of the proletariat in other steel centers too. The Westinghouse workers, in the fourth week of their strike, marched to the town of Braddock, adjoining East Pittsburgh, and paraded up the waterfront of the Monongahela River, where several

industrial plants, including two belonging to subsidiaries of the U. S. Steel Corp., were located. At each plant the workers quit in sympathy with the strikers. They arrived at the Edgar Thomson plant of the Carnegie Steel Co. just before the change of shift, and the men there joined the parade. Greatly elated by their success in getting the Edgar Thomson men out on strike for the first time in 30 years, the strikers planned another parade the following day. The plant was then surrounded by a weak wooden fence, not at all the same as the concrete wall that has since been built. Next day the company stationed an armed force inside the plant, and when the paraders arrived, a miniature pitched battle took place, ending in the rout of the strikers.²⁷ By-standers were hit with pistol bullets from the plant, and two strikers were killed.

In the same year a strike was lost at the Pittsburgh Plant of Jones & Laughlin. In 1918 the big strike in the Birmingham area resulted in defeat. During the same year, the machinists led a strike of 5,000 at the South Bethlehem works of the Bethlehem Steel Corp.


At all periods, but especially during the war, small local stoppages affecting, it may be, only one department of a plant have shown that the workers are still independent at heart and cannot be pushed too far by their exploiters. Not all of these local strikes appear in the official statistics.

Workers with experience of the class struggle have learned to expect that the forces of the capitalist government will be arrayed against them. The experience of Homestead, where the sheriff, realizing the strength of the union, refused to deputize the Pinkertons at Frick's behest, was not lost on the bosses. They hire their own police to-day, and in a crisis do not hesitate to subsidize those forces of "law and order" which are not directly in their pay.

The period since 1918 has seen, in the labor movement

as a whole, a growing realization of the key importance of steel. The "left wing" especially has insisted on the necessity of smashing down this stronghold of reaction. The tactics followed and the varying success of these tactics will be discussed in the next chapter.

The Strike Has Failed



GO BACK TO WORK
 ПОВРАЩАЙТЕСЬ КЪ РАБОТѢ
 RITORNATE AL LAVORO
 WRACAJCIE DO PRACY
 GRIZ KITE PRIE DARBO
 IDITE NATRAG NA POSAO!
 VOJTE NAZAD DO ROBOTY
 POJENEK VISSZA A MUNKABA

<p>Uvrađajte se u svojemu Američki</p> <p>Each nation in this world has its own government, its own laws, its own customs, its own traditions, its own history, its own language, its own religion, its own culture, its own character, its own spirit, its own soul, its own life, its own death, its own resurrection, its own glory, its own honor, its own power, its own wisdom, its own knowledge, its own science, its own art, its own music, its own poetry, its own literature, its own philosophy, its own religion, its own morality, its own ethics, its own politics, its own economics, its own sociology, its own psychology, its own anthropology, its own geography, its own history, its own prehistory, its own future, its own destiny, its own fate, its own luck, its own chance, its own risk, its own reward, its own punishment, its own justice, its own mercy, its own compassion, its own kindness, its own generosity, its own hospitality, its own friendship, its own love, its own affection, its own 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nation in this world has its own government, its own laws, its own customs, its own traditions, its own history, its own language, its own religion, its own culture, its own character, its own spirit, its own soul, its own life, its own death, its own resurrection, its own glory, its own honor, its own power, its own wisdom, its own knowledge, its own science, its own art, its own music, its own poetry, its own literature, its own philosophy, its own religion, its own morality, its own ethics, its own politics, its own economics, its own sociology, its own psychology, its own anthropology, its own geography, its own history, its own prehistory, its own future, its own destiny, its own fate, its own luck, its own chance, its own risk, its own reward, its own punishment, its own justice, its own mercy, its own compassion, its own kindness, its own generosity, its own hospitality, its own friendship, its own love, its own affection, its own devotion, its own loyalty, its own courage, its own bravery, its own valor, its own heroism, its own sacrifice, its own martyrdom.</p>	<p>Uvrađajte si svojemu Američki</p> <p>Each nation in this world has its own government, its own laws, its own customs, its own traditions, its own history, its own language, its own religion, its own culture, its own character, its own spirit, its own soul, its own life, its own death, its own resurrection, its own glory, its own honor, its own power, its own wisdom, its own knowledge, its own science, its own art, its own music, its own poetry, its own literature, its own philosophy, its own religion, its own morality, its own ethics, its own politics, its own economics, its own sociology, its own psychology, its own anthropology, its own geography, its own history, its own prehistory, its own future, its own destiny, its own fate, its own luck, its own chance, its own risk, its own reward, its own punishment, its own justice, its own mercy, its own compassion, its own kindness, its own generosity, its own hospitality, its own friendship, its own love, its own affection, its own devotion, its own loyalty, its own courage, its own bravery, its own valor, its own heroism, its own sacrifice, its own martyrdom.</p>	<p>Uvrađajte si svojemu Američki</p> <p>Each nation in this world has its own government, its own laws, its own customs, its own traditions, its own history, its own language, its own religion, its own culture, its own character, its own spirit, its own soul, its own life, its own death, its own resurrection, its own glory, its own honor, its own power, its own wisdom, its own knowledge, its own science, its own art, its own music, its own poetry, its own literature, its own philosophy, its own religion, its own morality, its own ethics, its own politics, its own economics, its own sociology, its own psychology, its own anthropology, its own geography, its own history, its own prehistory, its own future, its own destiny, its own fate, its own luck, its own chance, its own risk, its own reward, its own punishment, its own justice, its own mercy, its own compassion, its own kindness, its own generosity, its own hospitality, its own friendship, its own love, its own affection, its own devotion, its own loyalty, its own courage, its own bravery, its own valor, its own heroism, its own sacrifice, its own martyrdom.</p>
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Go Back To Work

This full-page advertisement appeared in the Pittsburgh newspapers for a period of 10 days during the steel strike in 1919.

CHAPTER XI

THE STEEL STRIKE OF 1919 AND AFTER

THE failure of the Bethlehem strike in 1910, where ten different A. F. of L. unions had tried all at once to sign up members from among the strikers, had shown the need for some kind of centralized direction at least, if such organization moves were not to result in futility. To many the incident showed the greater effectiveness of industrial unionism for an industry like steel. Among those who set to work to devise a plan of organization for steel, which should secure united action among the craft unions and ultimately merge them, was William Z. Foster.

An early convert to the philosophy of revolutionary class action, Foster had joined first the Socialist Party and later the I. W. W. About 1911 he left the I. W. W. and threw himself into union organization in the A. F. of L. During the war he and John Fitzpatrick, president of the Chicago Federation of Labor, led the fight to organize the industries of Chicago. They won a big success with the packinghouse workers, who were taken into a single huge local attached at first directly to the Chicago Federation of Labor. They then turned to steel, in which a great number of A. F. of L. unions claimed jurisdiction.

The story of how Foster induced the heads of these unions to come together for a drive on the steel industry is one of the less-known episodes of the history of the famous steel strike of 1919. Finding that the officials, including those of the Amalgamated Association, were not anxious to jeopardize the position of their existing locals in such a big undertaking, Foster established contacts with workers in the rank

and file of their unions. Thus the officials were subjected to a continuous bombardment from within their own organizations, calling for a steel organizing campaign. Finally, Foster went personally to the 1918 convention of the A. F. of L. as delegate from the Chicago Federation of Labor and succeeded in getting his plan adopted. A committee, including representatives from 24 unions (later increased to 25), was set up to run the campaign. Samuel Gompers, president of the A. F. of L., was chairman at first, but the job of acting chairman fell to Fitzpatrick. Foster was secretary-treasurer.

At this time, membership in practically all unions (including even the Amalgamated Association) was increasing rapidly. The newcomers in the unions were largely unskilled and semi-skilled workers, whose attitude to political action and reformist tactics was very different from that of the conservative skilled workers who had theretofore made up the backbone of the American labor movement. There seemed to be a real possibility that the new element would obtain a controlling voice in the A. F. of L., and that the Gompers-Woll clique would be ousted in favor of a more radical administration. Part of Foster's purpose in setting out to organize the packing and steel workers in great industrial unions was thus to cause a re-orientation of the American trade union movement as a whole, away from a conservative craft unionism and toward militant industrial unionism.¹

*The Great Steel Strike*²

The tale of the steel organizing campaign of 1918-19, which culminated in a strike of about 365,000 workers on September 24, 1919, forms one of the epics of American labor history. It revealed in naked form the workings of class forces in American industrial society—the workers with a handful of liberal and radical middle-class sympa-

thizers lined up on one side, and on the other nearly the whole weight of the government, the press, the conservative middle and upper classes, and of course the "open-shop" employers and bankers. The officials of the A. F. of L. unions occupied a middle position, giving lip service to the idea of organization but sabotaging the efforts to achieve it.

The National Committee for Organizing Iron and Steel Workers was formed August 1-2, 1918, and organization work continued for over a year before the strike took place. Lack of resources forced the committee to begin work in one locality—Chicago—instead of in all centers at once. The big companies granted the basic 8-hour day soon after the start of the campaign, which meant that time-and-a-half was paid thereafter for all work over eight hours. Workers outside the Chicago district did not understand that it was the organizing campaign that had forced the concession. The committee moved its headquarters to Pittsburgh on October 1, 1918, for the purpose of spreading the campaign and maintaining close contact with the most important center of the industry.

The form of organization was that of a federation of trades. Some of the organizers took orders only from the international headquarters of their own unions. About 40 such organizers on the average were kept on the job during the whole period, the number rising to 75 during the strike period. In addition to these "floating" organizers were the stationary organizers under the direct orders of the committee. Altogether from 100 to 125 men, including some 25 chosen to work among the foreign-born, were allocated to the job of getting together the steel workers. This was probably the largest force of organizers ever assembled for a job of unionization in the United States. Even so, it was quite inadequate to cover more than the blast furnaces and steel plants, and the plan of organizing the iron mines and lake transport systems had to be abandoned.

That organization was essential was demonstrated when the strike was finally called September 22, 1919. The response to the call was tremendous. The movement swept over twenty states. Foster estimated that 365,000 workers had struck, which would mean that the strike was more than 80% effective in the heavy industry.³ But no center struck where organizers had not been at work, and not even all those which had been reached. Except in Youngstown, all plants which had gone on strike during the war period failed to respond actively to the strike call in 1919. Plants and departments where the strike took place prematurely (*e.g.*, Sparrows Point) also failed to stick in September. In the key Pittsburgh district, some towns (Donora, Monessen) struck nearly solid. Others (Woodlawn—now Aliquippa—and Midland) were not reached at all. In general the strike was partly effective, with the skilled workers responding less than the semi-skilled and unskilled. In the Chicago district the strike was solid at first, but weakened early, and the same was true of the Steubenville, Wheeling and Youngstown districts. The strike was partly effective in the eastern plants, very effective in the Buffalo, Johnstown, Cleveland and Colorado districts, and ineffective at Lorain, Birmingham and Duluth.

The attitude of the capitalist authorities played a big part in the strike. Especially in the Pittsburgh district were local officials used to hamper organization and prevent meetings from the beginning of the campaign. The mayor of Duquesne was quoted as saying, several weeks before the strike, "Jesus Christ himself could not speak in Duquesne for the A. F. of L." There was often no pretense that disorders had actually taken place. State police were called, deputy sheriffs sworn in, and private police hired on the plea that violence *might* occur. A regiment of troops was stationed at Gary, where martial law was declared. Strikers were clubbed, arrested, and terrorized, and their meetings broken

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up. The steel workers, insufficiently educated in the real class nature of the state, were influenced by the hostility of the government.

The mass pressure of the workers during the preliminary campaign broke down the ban on free speech in Western Pennsylvania and elsewhere. But when the strike began all meetings were promptly stopped again throughout the Pittsburgh district, except in the Pittsburgh Labor Temple. The policy announced by Sheriff Haddock of Allegheny County was followed by every burgess and mayor of every steel town in the county. Haddock issued on September 20, two days before the strike, a proclamation stating, among other things,

All peace officers throughout Allegheny County until the present emergency [*i.e.*, the strike] has passed are commanded to disperse and prevent upon the highways or vacant property of all populous sections the loitering or gathering of *three or more persons*, and whenever such gatherings occur to immediately direct and command such persons to proceed about their lawful business, avocation, or return to their homes and habitations. (Emphasis not in original.) *

Picketing was suppressed throughout the county. Police and company officials went into workers' homes and forced them to go to work.*

The bosses did not even stop at murder. Mrs. Fannie Sellins, who had been largely responsible for organizing several mills of the U. S. Steel Corp. in the Black Valley district north of Pittsburgh, was brutally murdered by company deputies during a mine strike just before the great steel strike began. All told, 18 strikers were killed, hundreds seriously injured, and thousands jailed on flimsy pretexts.

* "There were probably a hundred citizens besides our police force, a lot of police we had in the mill, that *went into the homes*, and in some instances brought the men to work."—A. F. Diehl, general manager, Duquesne Works of U. S. Steel Corp. (Senate *Hearings*, p. 503. Emphasis not in original.)

At first, there was such a contrast in the attitude of the Pennsylvania and Ohio authorities that workers from the Sharon and Farrell district marched several miles across the state line to hold their meetings. Later, the Ohio authorities obeyed the orders of the steel trust, and in East Youngstown a whole local union, No. 104, Amalgamated Association, was arrested for holding a business meeting.

The system of handling finances and of supplying food to the strikers through commissaries was a model for later strikes to follow. It is very remarkable, in view of the thinly veiled hostility with which the leaders of the Amalgamated Association and the A. F. of L. regarded Foster, on account of his radical views, that no charge of graft was ever brought in connection with the strike finances. After the strike campaign got under way, it financed itself. The cooperating international unions must have received back, in dues and initiations, most if not all of the half million dollars or so which they advanced in the early stages. The Amalgamated Association had a treasury balance of \$137,879.23 on March 31, 1918, and increased this amount to \$344,024.58 two years later.⁵

The strike held fairly firm for about two months and weakened in the third. It was called off January 8, 1920. Some causes of its failure may be briefly discussed.

(1) *Hesitancy and timidity of the A. F. of L. leadership.* This defect, in turn, was a natural result of the decentralization and conservatism of the American Federation of Labor. The essence of the plan drawn up by Foster was for a concerted, smashing drive, national in scope, that would take the companies by surprise, and force them to give in to the demands of the workers. This plan would have appealed to the rank and file of the steel workers. But Foster dealt with the rank and file largely through the intermediary of the conservative union officials. This fact made it difficult to capitalize

on the alertness and initiative of the developing rank-and-file workers.

(2) *Failure to interest enough skilled workers.*⁶ The excellent results obtained by the rod and wire mill men showed what could have been accomplished if a real attempt had been made to set up committees of skilled workers in each branch of the mills.

(3) *Failure to solve the Negro question.* The groundwork for this difficulty had been laid long before the strike, in the discriminatory attitude of very many A. F. of L. unions. But even so, the white strikebreakers were, as usual, more numerous than the colored.

(4) *Insufficient support from the railway unions.* The Interchurch World Movement, which carried out a thorough investigation of the strike while it was in progress, quotes a local strike leader as saying, "If the railwaymen in the steel plant yards had struck, this strike would have been won." The railroad brotherhoods insisted that their men having contracts remain at work, and left it up to the others in each local situation to decide whether they would quit or not. Only a few did so.

(5) *The greater cohesiveness of the employers' organization.* This was a fundamental point. The employers had no above-board strike organization; but they all accepted the leadership of the U. S. Steel Corp., and Gary spoke for all when he spoke for one. The aggregation of unions, pulling in 24 different directions and some even scabbing on the strike (Stationary Engineers), were no match for this kind of united front.

Failure to present the steel workers' case adequately to the public also reacted against the strikers. The facts about the steel workers' living conditions and demands were not even known; the fundamental research had not been done. As a result, the chance to win allies in the lower middle class was thrown away.

The machinery of the A. F. of L. was hopelessly out of date for a struggle with the steel employers. It had not learned the lesson of Homestead, the lesson that the mammoth corporation having semi-monopolistic power cannot be successfully fought by the old methods and with the old form of organization. The rank and file of the unions were far ahead of the officials in their consciousness of the needs of the hour. But the officials hesitated, put on the brakes, and in the end lost.

It is an open question whether the heads of the Amalgamated Association and the A. F. of L. really desired to win the strike. The writer has satisfied himself by personal interviews with two officials of the Amalgamated Association—President M. F. Tighe, and Vice-President D. J. Davis (who wrought such havoc in the National Committee)—that neither put his full efforts into winning the strike, that neither expected it to succeed, and that both had firmly made up their minds before the strike that they would organize in the plants of the U. S. Steel Corp. only if they were literally forced into it. The Amalgamated Association officials took an open sabotaging stand against the strike. They withheld necessary financial assistance and made an open bid to Gary for a separate agreement and settlement on the eve of the strike. Finally, they completely withdrew from the National Committee after the strike.

Foster's account of the strike, written shortly after its end, was moderate in tone, but contained the history of certain actions of the Amalgamated Association during the strike with which he disagreed in principle, and on some of which he refrained from making a fight at the time in order to preserve the unity of the organizing committee. The answer of the Amalgamated Association, delivered by President Tighe through the columns of its organ the *Amalgamated Journal*, was more damning than the charges themselves. The Amalgamated Association officials believed, wrote Presi-

dent Tighe, that the time of sending out the strike vote (July 20, 1919) was "inopportune"; that "*under no condition should there be even talk of a strike for at least two or three years; that it would take that long to thoroughly discipline and educate these new members.*"⁷ (Emphasis not in original.) Not a word of the wholesale discharges at Johnstown and elsewhere. Not a word of the favorable business situation and the militant temper of the workers. "The time was inopportune!"

Policies of the A. F. of L. Unions in Steel 1920-1932

The A. F. of L. sponsored a committee in 1923 which conducted a "drive" for members in the steel mills. This committee, which was headed by President Tighe of the Amalgamated Association, accomplished nothing except to use up \$75,000 which had remained in the treasury of the National Committee at the close of the steel strike of 1919.

From that time until 1932, the high officials of the Amalgamated Association did not even attempt to keep themselves informed on conditions in the mills of the big concerns, much less establish contacts there. "We have never been able to get reliable information regarding wages or working conditions . . . in and around steel mills," wrote President Tighe in 1926.⁸

In the defensive strikes which the Amalgamated Association officials were forced to call, they used the methods of 1875—a simple withdrawal of labor, coupled with the payment of small strike benefits, and a warning, published in the union journal, advising union members to "keep away" from the locality affected. If the local lodges sometimes showed militancy, as at Wheeling in 1921, where a striker—Elmer Cost—was shot and killed by a guard; or at Newport, Ky., in 1921-22, when the militia brought in a tank and enforced a curfew law in its efforts to curb them, that was their own affair. The strike may, and often does, go on officially for

years (the Newport strike lasted just 7 years) without the central office doing anything effective.

The union was driven out of Wheeling and three Ohio towns by the Wheeling Steel Corp. in 1921-24; out of Newport, Ky., by the Newport Rolling Mill Co. (since absorbed by Armco) and the Andrews Steel Co. in 1921-28; out of Fort Worth by the Texas Steel Co. in 1925-26; out of the St. Louis Screw Co. plant in 1926-27; out of Cleveland by the Bourne-Fuller Co. (which is now a part of the Republic Steel Corp.) in 1927; out of Middletown, Ohio, by the American Rolling Mill Co. in 1929; and out of the Canonsburg (Pa.) Iron & Steel Co. plant in 1931. In 1932 it lost the Follansbee, W. Va., plant of Follansbee Bros., which was closed permanently, and saw its position undermined in the Youngstown plant of the Sharon Steel Hoop Co. In June, 1932, it took without even a protest a cut of 10½ to 15% in the basic wage scale of its sheet and tin mill workers. All attempts to set up new lodges or even to revive lapsed lodges during this period failed, so far as is known.

In February, 1929, a group of workers from the Elwood, Ind., plant of the American Sheet & Tin Plate Co. (U. S. Steel subsidiary) where a wage cut of from 7 to 10% had just been imposed, sent a delegation to the A. F. of L. to ask for help in getting organized. The executive council of the A. F. of L., meeting shortly afterwards at Miami (!), bravely branded the cut as "unjustifiable," "unwarranted," and "socially and economically wrong." But it did not organize the workers, and neither did the Amalgamated Association. The "drive" of the A. F. of L. to organize the South, launched in the same year, resulted in an organizer being dispatched from the headquarters of the Amalgamated Association, whose task it was to organize single-handed the 16,000-odd iron and steel workers of the Birmingham district. His efforts attracted no attention at

all, during the short time they lasted, from any one except perhaps the company spies.

The height of the Amalgamated Association officials' surrender to the companies and desertion of the workers was reached in 1931. The union still had two lodges on the Pacific Coast when Bethlehem took over the companies in 1930. The following letter, which explains itself, was written soon after by Pres. Tighe:

Pittsburgh, Pa., February 7, 1931.

DEAR SIR AND BROTHER:

. . . You ask if there is any of our lodges in the Bethlehem Steel Corporation plants, or if there is any propoganda going on among their employees at the present time. My answer to both questions is "No."

The Bethlehem as well as the United States Steel, and other large corporations of like kind, have no organizations of labor in them. Only last year, 1930, the Bethlehem Steel Corp. took over the Pacific Coast Steel Corporation with plants at Seattle, Wash., and South San Francisco, or as it is called, St. Bruno, and immediately the management called the committee of lodges in and informed them that as the attitude of the Bethlehem Steel Corporation was non-union, it, the Bethlehem Steel, would live up to its agreement made with the Amalgamated Association until the end of the agreement, but after that its policy would be in effect.

This statement had the effect of both lodges surrendering their charter to the Amalgamated Association, and announce their intention of working under the non-union policy of the said corporation.

You can readily see under such conditions how useless it would be to attempt to unloose the hog-tied workers of this corporation, especially under present industrial conditions.

Fraternally yours,

(Signed) M. F. TIGHE,
President.

The membership of the Amalgamated Association at intervals is given in the following table:

MEMBERSHIP OF THE AMALGAMATED ASSOCIATION OF IRON, STEEL AND TIN WORKERS⁹

<i>Year</i>	<i>Membership</i>	<i>Year</i>	<i>Membership</i>
1871 (Sons of Vulcan)	1,959	1919	19,700
1881	10,359	1920	31,500
1891	24,068	1921	25,400
1901	13,893	1922	15,900
1911	4,355	1932 (Sept.)	4,944
1918	16,100		(in 89 lodges)

By 1932 the membership had dropped back practically to the level of 1911, 21 years before, though the number of workers in steel had increased greatly meanwhile.

Organized iron and steel workers have operated local sick and death benefit funds with fair success ever since the days of the Sons of Vulcan. Establishment of a national benefit system was often debated, and finally in 1903 the national convention of the Amalgamated Association established a death benefit fund. In 1908 the system was revised and sick and accident benefits added. A 1916 amendment made special provision for cases of permanent disability. In 1926 all the benefits except the death benefit were discontinued "for lack of funds."

Of the few remaining members of the Amalgamated Association, a considerable proportion retain their books for the sake of the death benefit feature. As a result of the union's failure to draw in young blood, the average age of the members has increased to such an extent that the death benefit fund has become seriously endangered.

The membership tended after the beginning of the crisis to include a larger proportion than ever of the relatively high-paid men. There is no provision for remission of dues in unemployment; the member must pay up or drop out.

Granite City, Ill., and the Mahoning Valley were the only areas which in 1932 still conceded power to this once flourishing organization.

Although the Amalgamated Association did not hesitate either in 1901 or in 1909 to order out on sympathetic strike locals which were thereby obliged to violate collective agreements with their employers, the union's officers have since developed a fanatical devotion to the sanctity of the signed agreement. In the steel strike of 1919, the Amalgamated Association insisted that its locals having agreements should remain at work. The International Union of Mine, Mill and Smelter Workers, which formerly, under the name of Western Federation of Miners, refused to sign agreements even when it could have done so, has outdone the Amalgamated Association in its insistence on observing contracts. It has not hesitated to destroy locals which went on unauthorized strikes.

Opposition Groups in the Amalgamated Association

Not all of the steel workers have shared the defeatist view of the Tighe-Davis administration. For a time it even appeared that this administration would be overthrown by the action of the union members themselves. The rank and file showed an increasing restlessness for several years after 1919. An industrial-unionist element, which had always existed, gained markedly in strength, so that the conventions of 1923 and 1924 went on record for a vigorous assertion of the Amalgamated Association's jurisdictional claim—granted to it by the A. F. of L.—to enroll *all* workers in and around iron and steel works.* The element that sup-

*The grant to the Amalgamated Association of jurisdiction over the whole of the steel mills seems inconsistent with the fact that 25 A. F. of L. unions were affiliated with the National Committee for Organizing Iron and Steel Workers in 1919. The explanation is twofold. The campaign of 1918-19 drew in unions having jurisdiction over *any* employees of the steel companies (United Mine Workers, International Seamen's Union). But further, there is a distinction to be made between the large centers, where the several craft unions supposedly maintain organizations of workers outside the steel industry, and the isolated steel communities where the only organization is

ported this policy fell after 1923 under the leadership of a group calling itself the I.D.K.D.Y. Club, the initials meaning "I Don't Know, Do You?" This group, as its name implies, had no well-defined program (other than impatience with the existing leadership of the union). Nevertheless, it mustered nearly half the votes in the officers' election of 1925. But for frantic preparations by the Tighe forces, who utilized to the full their control of the *Journal* and also (it was claimed) kept an appointed officer of the union on the road for some time before the convention, campaigning for Tighe & Co., the reactionary clique would certainly have been defeated. The strength of the insurgents was chiefly in the large centers; of the administration, in the weaker, smaller lodges. The Progressives (as they came to be called) finally got the union to launch a drive to revive lapsed lodges. The drive was a flat failure. The influence of the Progressives in the union gradually waned.

From 1929 to 1932, the Conference for Progressive Labor Action (C.P.L.A.), of which A. J. Muste is chairman, attempted to establish an opposition within the Amalgamated Association. The C.P.L.A. adherents sponsored a resolution introduced at the 1932 convention of the union to create the office of General Organizer and thus to put more em-

supposedly that of the steel union. In the former case, the craftsmen in the mills have joint interests with the workers of the same craft outside the mills, and can best be taken care of, according to the A. F. of L. theory, by joining the union of their craft. In the latter case, they can best protect their interests by joining with the steel workers proper. In England, where the workers are well organized and the employers still compete with each other, this arrangement has worked fairly well. But in a weakly organized country with monopolistic production, such as the United States, the theory has no application. As Foster has pointed out, the mere assertion by the Amalgamated Association of its claim to jurisdiction over the whole steel industry would solve nothing unless the other A. F. of L. unions chose to recognize the claim, and there is no certainty that they would do so. (*The Great Steel Strike*, p. 258.) Jurisdictional disputes within the A. F. of L. show no tendency to die out.



—*International News Photo*

WILLIAM Z. FOSTER

Organizer and leader of the great steel strike of 1910, as he appeared at that time.



—International News Photo

Two hundred deputies armed with tear gas and rifles attacking a picket-line outside the Spang-Chalfant Seamless Tube Mill, at Ambridge, Pa., during the strike in October, 1933. Notice the tear gas and the deputy at the right taking deliberate aim at retreating striker. One picket was slain by a bullet in the neck.

phasis on organizing in the field. The resolution was defeated by 28 votes to eight. Early in 1933 the C.P.L.A. was weakened by internal splits. It had succeeded in winning the leadership of a few groups of unemployed steel workers in Pittsburgh and the Youngstown district.

The Metal Workers Industrial League

Discontent among organized and unorganized steel workers with the policies and tactics of the Amalgamated Association, and the latent desire for a real union of steel workers, crystallized in 1929 when the Metal Workers Industrial League (M.W.I.L.) was formed at Pittsburgh. The initiative in starting the M.W.I.L. came from the Trade Union Unity League.

The M.W.I.L. did not set itself up, at the time, as a union in opposition to the Amalgamated Association. It undertook to organize groups of steel workers and other metal workers, on the basis of industry rather than craft, to fight for the immediate demands of these workers. The Metal Workers Industrial League led an agitation against wage-cuts, speed-up, and lay-offs, and put forward other concrete demands. These included posting of working schedules (against standing at the gate day after day waiting for work under the stagger-system), protest against forced contributions to "welfare" and Community Chest funds, demand for adequate safety protection, etc. In the space of three years, it is estimated that the league won about a hundred of these minor demands.

The Steel and Metal Workers Industrial Union

In August, 1932, the Metal Workers Industrial League reorganized as the Steel and Metal Workers Industrial Union. To the organizing convention, which was held at Pittsburgh, came delegates from all the important steel-producing districts east of the Rocky Mountains. An

especially strong delegation was present from the Youngstown area, where hundreds of former members of the Amalgamated Association, disgusted with the failure of that body to make a fight against a cut of 10½% to 15% in the basic wage scale for sheet and tin mill workers, had streamed into the Metal Workers Industrial League. But workers from centers without any history of organization in the Amalgamated Association or any other union were present in force, indicating the degree to which the Metal Workers Industrial League had made good its purpose of organizing the unorganized.

The new union repudiated and condemned "the policies of class peace and class collaboration by the leadership of the Amalgamated Association" and the "fake 'revival' Progressive movements of the Muste program." It announced its intention of organizing and leading "militant mass struggles of the steel and metal workers against the employers and their agents, for better wages, working and living conditions." It listed 18 demands, including the six-hour day without reduction in wages; establishment of better conditions on the job; adequate measures for the protection of life and limb; full and complete equality for Negroes, both on and off the job; abolition of company towns, company stores, scrip and evictions; unrestricted opportunity to organize; abolition of speed-up; against compulsory contributions in the shop for charity and welfare; against persecution and deportation of foreign-born workers; for no discrimination against women and young workers; for immediate local cash and food relief for the unemployed; for recognition of the union, and for collective agreements to establish union conditions. The convention adopted general political demands for unemployment and social insurance, and a statement that the union stood "against the bosses' preparations for a new world war, and for the defense of the Soviet Union." The new organization rejected arbitration as a method, and

identified itself with "the struggle of the entire revolutionary working class movement for its broader economic and political demands and aims," the final goal being "the abolition of capitalist exploitation and the capitalist system, and the establishment of a Socialist Society."

The constitution adopted is different in many important respects from that of the Amalgamated Association. A definite top limit of \$35 a week is set to the wages of its officers, this sum contrasting rather sharply with those of the six top officers of the Amalgamated Association who get over \$4,000 a year each. Special provision is made for organizing the unemployed, under certain circumstances, into separate branches, which should meet and work jointly with the local unit of the Steel and Metal Workers Industrial Union. The Amalgamated Association has consistently neglected the unemployed.

The form of organization of the Steel and Metal Workers Industrial Union is industrial, with all crafts and occupations in each mill combined in a single mill local. Dues are fixed on a sliding scale, varying from 5¢ every two weeks (for unemployed members and for members of women's auxiliaries) up to 25¢ every two weeks. Dues in the Amalgamated Association amount to \$1.25 a month for workers earning less than \$5 per day, and more for the higher-paid workers.

Initiation into the S.M.W.I.U. is 50¢ for workers earning up to \$10 per week, \$1 for those earning \$10 to \$25 per week, and \$2 for those earning \$25 and up. Initiation into the Amalgamated Association is \$3 for workers earning \$2.50 or less per day, and more for higher-paid workers.*

* The following is quoted from section 169 of the Constitution and General Laws of the A. A. for 1932-33:

Each new member of a sub-lodge earning more than \$2.50 per day, shall pay an initiation fee of \$5.00; and those earning \$2.50 or less per day, shall pay an initiation fee of \$3.00; but where the different locals desire a higher initiation fee, same to be left to the discretion

In omitting all benefits, the new union has reverted to the practice which the organized iron and steel workers followed when they were still members of a militant union.

Rank-and-file control and initiative cannot be insured by constitutions, but a reading of the basic document of the Steel and Metal Workers Industrial Union makes it clear that a desire to extend the power of the rank and file was present in the minds of the drafters. The constitution is intended, in a word, to serve as an instrument of trade union democracy—a conscious effort to get away from the bureaucracy which has come to characterize the Amalgamated Association.

The Metal Workers Industrial League had been set up as an organization for both the light and the heavy industry, and had developed some strength in certain plants of the finishing industry. The Steel and Metal Workers Industrial Union has four main divisions—iron and steel, electrical products, machinery manufacturing, and light metal products—but its orientation is, as its name implies, definitely on the heavy industry. Organization in the light branches is encouraged, but when these branches develop to maturity, it is anticipated that each will form its own national committee within the union. These committees will have a semi-independent union life of their own within the main structure. When two or more such committees have been set up and have begun to function, it is planned to reorganize the Steel and Metal Workers Industrial Union into a federa-

of the locals; and for dues, each member of a sub-lodge earning less than \$5 per day shall pay the sum of one dollar and twenty-five cents (\$1.25) per month. Members earning \$5 to \$7.50 per day shall pay \$1.50. Members earning \$7.50 to \$10 per day shall pay \$1.75. Members earning \$10 to \$12.50 per day shall pay \$2. Members earning \$12.50 to \$15 per day shall pay \$2.50. Members earning \$15 to \$20 per day shall pay \$3.25. Members earning \$20 or over shall pay an additional \$1 per month for each \$5 earned over \$20 per day.

tion of separate metal unions, each unit of which shall cover one branch of the industry.

In the heavy industry, the orientation is on the large plants, with the Pittsburgh, Mahoning Valley and South Chicago districts selected for concentration by the organizing convention.

Policies of the Trade Union Unity League

The Steel and Metal Workers Industrial Union has fraternal relations with the Trade Union Unity League (T.U.U.L.). Between the social theories of the T.U.U.L. and those of the leaders of the American Federation of Labor are profound differences. The American Federation of Labor leadership is more conservative even than that of the International Federation of Trade Unions.* Yet in the world trade union movement the International Federation of Trade Unions represents the conservative wing, while the Red International of Labor Unions represents the radical wing.

The American Federation of Labor officialdom defends the established order and believes in changing it gradually or not at all. This officialdom wars actively within the unions against militants who oppose its class-collaboration policy. The American Federation of Labor does not necessarily enter even a formal objection if one craft or group of workers advances its selfish interests at the expense of other sections of the working class. Its leadership "collaborates" with employers "for the good of industry," accepts the philosophy of arbitration in industrial disputes, and takes the part of the Wall Street government in international

* The International Federation of Trade Unions, also known as the "Amsterdam International," takes its political orientation from the Labor & Socialist (Second) International. The American Federation of Labor was affiliated with the International Federation of Trade Unions for a brief period just after the war.

affairs. The high officialdom of the A. F. of L. has, in fact, been incorporated into the ruling class machinery.

The T.U.U.L. and its unions, proceeding on the theory that there is a constant state of class-war between the workers and the employers, reject all policies of "class collaboration," arbitration, and narrow nationalism. They favor organization, on a basis of equality, for all workers regardless of race, creed, color, age, sex or working-job, and they stand for the international solidarity of the working class. Unions, they believe, should be industrial in form and should be democratically controlled by the rank and file. They accept the necessity for collective agreements as a means of consolidating their gains.

The T.U.U.L. organizations start with concrete economic demands. The winning of these demands is considered their most important immediate task. At the same time the leaders recognize that there is a definite limit to the economic concessions that can be won under capitalism, and they attempt to educate the workers regarding the class character of the state. This is not difficult; indeed such education is of the nature of the strike struggle itself. The workers find themselves fighting not only the employers but the police and the local government apparatus which are nearly always controlled directly by the employers or friendly to them. In large and important struggles the T.U.U.L. leaders make use of further opportunities for the political education of the rank and file of the workers.¹⁰ Political demands, however, should not be pressed to the exclusion of economic demands, in the view of the T.U.U.L. leaders. But "every turn in every strike movement should be skillfully used, as also each change in the outlook of the masses, every action by the enemy, for the purpose of adding various political demands to the economic demands first pressed at the outset of the particular fight."¹¹ Such a politicalization of the issues becomes the more obvious as the federal government aided by the A. F.

of L. officialdom sides openly with the employers as it has especially in strikes that have taken place against the terms of the National Recovery Act codes, and as it ultimately does in every really crucial struggle.

The T.U.U.L. advocates the organization of the unorganized, and at the same time organizing the opposition within the American Federation of Labor unions against the reactionary officialdom and its apparatus with the purpose of overcoming the influence of these "labor lieutenants of the capitalist class" and releasing the militancy of American labor. The T.U.U.L. urges its sympathizers to form a united front in the factories with the unorganized, and with the rank and file of the non-revolutionary trade unions. Against reactionary leadership, a continuous campaign of exposure is to be conducted, swinging the membership toward the militant channels of industrial unionism.

The Struggle for Hegemony

The Metal Workers Industrial League had begun to be a factor in the Ohio steel mills when the 1,600 employees of the Empire Steel Corp. at Mansfield went on an unorganized strike in May, 1931, against a wage cut.

The Central Labor Union (A. F. of L.) tried to throw the leadership of the strike into the hands of the Amalgamated Association, which sent in organizers; but representatives of the Metal Workers Industrial League, arriving in Mansfield about the same time, exposed the past history of the Amalgamated Association in strike situations, and the Amalgamated Association organizers had to leave the town. Four Metal Workers Industrial League organizers continued to work under cover in collaboration with a small minority of the more class conscious strikers. Members of the local American Legion, assisted by business men and officials of the city organization of the American Federation of Labor, caught two leading organizers of the Metal Workers Indus-

trial League, Meldon and Cush, near the picket line, and kidnapped them. But such tactics could not defeat the strike. It was won the same day after four days' duration and the wage-cut was withdrawn. The strikers went back without any union organization in either group.

In September, 1932, immediately after its formation, the Steel and Metal Workers Industrial Union became involved in a second clash with the Amalgamated Association, at Warren, Ohio, where the older union had an agreement in the Trumbull plant of the Republic Steel Corp. The company, alarmed at the growth of sentiment for the new union, fired several of its more active members late in August. At the same time the rumor circulated that a 6% reduction in wages was due under the sliding scale. The new union had the strength to strike the mill over the heads of the Amalgamated Association officials and the company bosses. The strike, which lasted one day, led to the firing of 25 more of the new union's active workers.

The calling of the strike against a wage-cut which had been rumored but not announced was an error in judgment which resulted in a severe setback for the new union throughout the district. But the Amalgamated Association, which coöperated with the company to break the strike, even stating that it had "no grievance with the Republic Steel Corporation," did not win prestige as a result of the incident. The strike had the effect of showing up the reactionary character of the leadership in the old union, which was revealed as placing coöperation with the company ahead of the interests of the union members.* It is not surprising that

* The agreement covered some 100 out of 800 workers in the plant. The membership of the Amalgamated Association in the plant was much below 100. A letter from its Warren correspondent to the *Amalgamated Journal* describing the strike is interesting, as showing where the Amalgamated Association looks for leadership. "A thing that is worthy of note," says the letter, "is that not one single citizen whose word has the slightest weight in the community, was among

some members of the Amalgamated Association revolted and joined the strike. The company did not dismiss the members of the Amalgamated Association after the Warren strike; instead, it encouraged membership. The rôle of the Amalgamated Association as a bulwark and buffer against a more militant organization, became perfectly clear to every one. The Conference for Progressive Labor Action (the "Brotherhood of the Mills") sided strongly and definitely with the old union and the bosses, and against the Steel and Metal Workers Industrial Union.

A candid examination of the facts must lead to the conclusion that expressions of militancy on the part of the rank and file of the steel workers, such as resulted in the strikes at Mansfield and Warren, have been rare in the past decade. Indeed, large-scale strikes seemed at one time to have almost disappeared from the industry, as the following table shows.

INDUSTRIAL DISPUTES IN THE IRON AND STEEL INDUSTRY

(Source: *Monthly Labor Review* of U. S. Bureau of Labor Statistics, June, 1932, p. 1359, and later months)

Year	No. of disputes	Year	No. of disputes	Year	No. of disputes
1916	72	1922	10	1928	2
1917	56	1923	10	1929	3
1918	74	1924	7	1930	3
1919	76	1925	7	1931	5
1920	25	1926	2	1932	4
1921	25	1927	2		

The "New Deal" and the Steel Workers

Beginning in the spring of 1933, the Amalgamated Association, galvanized at last into action by the presence of a the membership of the Steel and Metal Workers Industrial Union. *Not one single merchant of our city was at any time in sympathy with this movement.*" (*Amalgamated Journal*, Vol. XXXIV, No. 2, September 8, 1932, p. 12. Emphasis not in original.)

rival in the field, conducted a fairly active organizing campaign beginning in the Youngstown district and later extending to Gary, Pittsburgh and other centers. It signed the workers up in so-called federal locals, which look like industrial unions to the uninitiated; but the intention is to split up those locals later and distribute the members to the several craft unions. The Amalgamated Association undertook to purge its ranks of radicalism by expelling Elmer Cope, leader in steel of the Conference for Progressive Labor Action. The Steel & Metal Workers Industrial Union signed up a number of new plants, increased its agitation and put its national office on a functioning basis. So many new members were recruited into the union that by September, 1933, it claimed a membership of 14,000. This was more than twice the number claimed by the Amalgamated Association a year earlier. The Amalgamated Association itself had, of course, grown in the meantime.

Following out its policy of militant struggle, the Steel and Metal Workers Industrial Union led a number of strikes, and in six of these, two of them in the heavy industry, it won its most important demands. The victories were won in Buffalo, in Ambridge, McKees Rocks and Coraopolis, Pa., in the Republic Steel plant at Youngstown, and in the light metal industry of New York City.

The steel employers took counsel together and decided that the company union would be an effective weapon in fighting the organizing workers. Such organizations were set up on a uniform plan in the plants of a large number of companies, including for the first time the U. S. Steel Corp.

In some plants the workers failed at first to make any real fight against the company union. But where union agitation had been active there was a different story to tell. In the Edgar Thomson works of the Carnegie Steel Co. (U. S. Steel) at Braddock, one worker presented himself for election openly as a union representative, and was fired the

next day, though the company later reinstated him. At the McClintic-Marshall (Bethlehem Steel) plant in Rankin, adjoining Braddock, a union man was elected an official of the company union, and led an agitation which forced a thirty per cent wage increase. At Ecorse, Michigan, the workers tore up their company union books as soon as they received them. A similar scene was enacted at Gary, one of the strongholds of U. S. Steel. The temper of the workers in the New Kensington (Pa.) plant of the Aluminum Co. of America was characteristic of the feelings of the steel workers too. The company officials explained that there would be a ballot on the question of instituting a company union and urged the workers to vote for its establishment. When the ballots were counted it was found that the company union had been overwhelmingly defeated.

The incident at Ecorse illustrated well the employers' attitude to the unions in the field. When the company (National Steel Corp.) was unable to put across its own company union, it was then ready to see the workers sign up with the Amalgamated Association. As soon as the workers were made aware of the record of that union in the 1919 strike, they would have none of it either. In the end they formed an "independent" union of their own.

Incidents like these indicate that the employers do not wish to see the A. F. of L. unions completely destroyed, since the field would then be open for other and possibly more militant groups. There is the additional circumstance, important to the bosses especially in time of war, that a reactionary union leadership may hold even a radical membership in check. President Moyer of the International Union of Mine, Mill and Smelter Workers boasted in 1918 of his union's ability to stave off the demands of the membership for better conditions, and keep the workers at their jobs when the employers and the government together were unable to do so. He said,

Given . . . recognition, [our organization has] power to *discipline its members*. . . The withdrawal of the opposition of the employing interests in the mining industry to the affiliating of their employees with our organization would result in the complete organizing of the workers, thereby furnishing an agency through which they and the government might deal with the men who produce the metals so necessary in this emergency. . . . *No other method, one may be sure, will adjust the differences.* (*Report to 1918 Convention*, p. 29. Emphasis not in original.)

But since the A. F. of L. unions, including also the Amalgamated Association, may be driven to militancy by the rank and file, the employers fight them whenever they show signs of winning real power. From Mingo Junction, Ohio, from Ambridge, Pa., and from a score of other steel centers have come complaints that Amalgamated Association organizers were arrested, meetings broken up, and union members fired.

The Amalgamated Association accepted the National Recovery Act and started to work within its framework. The employers' code as adopted in August for a 90-day period set a maximum limit of 48 hours and six days per week (40 hours per week when averaged over a 6-month period). Even this maximum did not apply to maintenance workers. Further it was to apply only "as far as practicable"! The code provided a minimum wage scale of from 25¢ an hour in the South to 40¢ in the Pittsburgh and Chicago districts, a lower real wage rate than that which prevailed in 1929.

The S.M.W.I.U. fought the recovery act from the start. Its own code provided as follows:

1. A \$20 minimum weekly wage for common labor, for a 6-hour day, 5-day week. All hourly and tonnage rates to be raised in the same proportion as the increase in the common-labor rate. Time and a half for all overtime. Maximum working week to be 40 hours. Automatic wage increases to meet each rise in the cost of living.
2. A guarantee of 40 weeks' work per year: all workers getting less than 40 weeks' work to receive Unemployment Insurance

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- at the rate of full wages—the cost to be paid equally by the company and the Federal Government.
3. Unemployment Insurance for all workers permanently laid off at the expense of the employers and the Federal Government, and no part of which is to be deducted from the workers' wages.
 4. The unrestricted right to organize or join any union without interference from company or Government. Company recognition of elected workers' mill or shop committees, elected openly and representing all workers, without company participation or interference in the elections.
 5. No discrimination against the rights of Negro workers to hold any job. No discrimination in hiring Negroes. Equal pay for equal work.
 6. Abolition of all speed-up methods. The pace of production on the job to be decided by the workers affected. Restoration of full crews on all jobs, and of spell periods similar to 1929 working conditions. Strict observance by the company of all safety laws. Safety appliances on dangerous jobs to be designated by the workers' elected committees.
 7. Old-age pensions equal to two-thirds of regular wages for all workers 25 years in the industry, full cost to be paid by the company and Federal Government.
 8. No hiring of workers under the age of 16. All now working at that age or less to be taken off the job, given schooling and maintained at the expense of the Government. At least two 15-minute rest periods per turn for all workers under eighteen, exclusive of lunch period, at company expense. Same for female workers, regardless of age. Sanitary surroundings and facilities and constant medical supervision for all female workers.
 9. Abolition of compulsory company insurance and all "welfare" and "charity" collections inside the plants by the company or outside agents.
 10. The right of all workers to assemble, strike and picket without company or Government interference, for an ever higher standard of living.

In order to establish itself firmly in the industry, the new union will be obliged to develop the initiative of the masses so as to supply the personnel which is now so sorely needed. It will have to concentrate on certain strategic points until

it has built self-supporting organizations there; to adhere firmly to its policies of industrial unionism and of no discrimination against colored or foreign-born; to involve in its campaigns the various racial and national organizations and papers which have influence among the workers and which threw that influence against the strike of 1919; finally to extend the union's influence broadly by forming a united front with any and all workers who are willing to accept its basic principle of the class struggle, and thus involving the native whites, as well as the Negroes and foreign-speaking groups among whom lies its principal influence at the time of writing.

First steps toward carrying out of these essential policies were taken in the early fall of 1933, when steel workers were striking as never before since 1919. A wave of struggle and organization swept through the mills of some of the more important companies and gave tremendous impetus to the efforts of the militant union. The strike wave in steel was closely related to the stubborn resistance of workers in the mines of H. C. Frick Coal & Coke Co. (U. S. Steel Corp.) who refused to return to work until the company signed an agreement with the United Mine Workers.

Major conflicts of this period, which marked the recent high tide in steel strikes up to the date this book went to press, were in Ambridge, Pa.—where between 5,000 and 6,000 were out—in the plants of the National Steel Co. in Weirton and Clarksburg, W. Va., and Steubenville, Ohio—13,000 involved—at the plant of Standard Forgings Co. at Indiana Harbor, at the Republic Steel plant at Youngstown, and at other metal plants chiefly in Pennsylvania and New York.

These strikes demonstrated the ability of the workers to fight and organize in decisive sections of the industry. They threatened the whole compulsory arbitration apparatus of the Roosevelt-NRA régime. Although some of them ended in temporary failure, they all left the workers in a more ex-

perienced position to press on later against the low standards set up in the steel code. The militancy of the workers in these strikes was one of the most encouraging signs the steel industry has seen for more than a decade.

If history repeats itself, the industrial struggles of the year 1933 should mark the beginning of a wave of organization, affecting the lower-paid workers in American industry, which would last for several years and carry both the degree of organization and the revolutionary consciousness of the workers to higher levels than were reached in 1886, 1903, or 1919-20.

Much more is involved in this prospective wave of organization than was involved in any previous wave. At no time in the last hundred years, not even in 1919-20, has the world been more torn with social strife or so ready for a fundamental change. The antagonism of the worker toward the capitalist class has been held in check by deliberate brutal suppression throughout the most complete economic breakdown in American industrial history. It has reached an intensity which is faintly indicated by recent violent outbreaks in the mine fields. At the same time the lower-paid workers have emerged more and more as the decisive strata of the American working class. The conservatism of the older generation of skilled workers is disappearing as machinery takes over skilled jobs and the better-paid workers are forced into lower-paid positions or laid off altogether.

When they turn to seek organization and power, the steel workers are confronted with a choice between two national unions, each representing a distinct social philosophy. Of the two, the Steel & Metal Workers Industrial Union is in spite of its youth the better fitted by policy, structure and personnel to lead the steel workers in their struggle. The outcome of this struggle is of fundamental importance not only to the steel workers and their families but to the whole American working class.

REFERENCE NOTES

CHAPTER I

1. Sources of the wage figures are: *Twelfth Census of the U. S.*, "Special Report on Employees and Wages," by Davis R. Dewey (1903), Table 35; U. S. Commissioner of Labor, *Report on Conditions of Employment in the Iron and Steel Industry in the United States (1911-1913)*, Vol. III, Appendix J; U. S. Bureau of Labor Statistics, *Bulletin 567* (1932), p. 7.
2. *Report on Conditions of Employment in the Iron and Steel Industry in the United States*, Vol. I, p. xlii. See also *American Industrial Conditions and Competition*, edited by J. Stephen Jeans (London, 1902), p. 317.
3. Charles Reitel, *Machinery and Its Benefits to Labor in the Crude Iron and Steel Industries* (Collegiate Press, 1917), pp. 1-36. See also article by Walter N. Polakov in *The New Republic*, January 4, 1933.
4. The exact figures are: 1930 Census, laborers make up 38% of all gainful workers in iron and steel; 1910 Census, 48.5%.
5. Based on Barkin's data for New York State (see p. 18, note). The proportion of iron and steel jobs requiring no training at all is probably understated in Barkin's sample, which shows 31% (as compared with 16.7% for all industries). Barkin's data cover only the smaller, less mechanized steel plants, and omit the highly modernized plant of the Bethlehem Steel Co. at Lackawanna. In modern plants the proportion of jobs requiring no training is believed to be over 40%.
6. Ernst and Hartl in *The New Republic*, March 12, 1930, p. 92.
7. *Monthly Labor Review*, December, 1928, p. 93.
8. John A. Fitch, *The Steel Workers* (New York, 1910), pp. 183-184, quoting *Pittsburgh Dispatch*, September 26, 1904.
9. Barkin, *op. cit.*
10. Fitch, *loc. cit.*
11. Based on 1930 Census preliminary bulletins and 1910 Census, Vol. IV, *Occupations*, Table VI, pp. 339-340. The estimate for 1910 is based on the assumption that within the "21-44" age group, the age distribution was roughly the same as in 1930. Since the proportion under 30 was probably greater in 1910, the final estimate of the median age for that year is, if anything, too high.
12. J. H. Bridge, *The Inside History of the Carnegie Steel Company* (New York, 1903), p. 81.

13. Charles W. Coulter, *The Poles in Cleveland*, pp. 9-10.
14. Kathleen Bruce, *Virginia Iron Manufacture in the Slave Era*, pp. 231-233, quoting *Richmond Enquirer*, June 26, 1838.
15. "The Iron and Steel Industry of the Calumet District," *University of Illinois Studies in the Social Sciences*, Vol. XII, No. 2 (June, 1925), p. 93.
16. Paul S. Taylor, "Mexican Labor in the United States: Chicago and Calumet Region," in *University of California Publications in Economics*, Vol. VII, No. 2 (1932), pp. 93-94.
17. *Ibid.*, p. 157.

CHAPTER II

1. *Monthly Labor Review*, November, 1931, pp. 27-31.
2. L. I. Dublin and Robert J. Vane, "Causes of Death by Occupation," U. S. Bureau of Labor Statistics, *Bulletin 507* (February, 1930), p. 7.
3. L. H. Burnett, vice-president of the Carnegie Steel Co. (subsidiary of the U. S. Steel Corp.) in address to Pennsylvania Safety Congress, 1928; see *Safety Engineering*, April, 1928, p. 130.
4. *Bulletin 490* (1929).
5. *Monthly Labor Review*, March, 1933, p. 533 ff.
6. William Hard, "Making Steel and Killing Men," in *Everybody's Magazine*, November, 1907; reprinted in *Injured in the Course of Duty* (Ridgway Co., 1910), p. 13.
7. *Monthly Labor Review*, March, 1933, p. 533.
8. Burnett, *op. cit.*
9. *Proceedings of National Safety Congress*, 1918, p. 766.
10. *Iron Age*, September 9, 1926, p. 713.
11. Arundel Cotter, *United States Steel: A Corporation with a Soul*, p. 188.
12. *Iron Age*, March 13, 1930, p. 806.
13. *National Safety News*, July, 1930, pp. 21-22, and letter to the writer.
14. August 2, 1929.
15. *The Health Study of Ten Thousand Male Industrial Workers*, published by the U. S. Public Health Service, indicates (p. 94) that steel workers show an unusually large proportion of enlarged hearts.
16. E. R. Hayhurst, *A Survey of Industrial Health Hazards and Occupational Diseases in Ohio* (Columbus, 1915), pp. 300-301.
17. Letter from "L. N.," employee of Thomas Sheet Steel Co., subsidiary of Empire Steel Corp.; see *Daily Worker*, August 27, 1929.
18. C. P. Yaglou and E. W. Miller, *Journal American Society Heating and Ventilating Engineers*, July, 1924, pp. 538-539.

19. See Dean K. Brundage, J. J. Bloomfield, and others, "Frequency of Pneumonia among Iron and Steel Workers," Public Health Service, *Bulletin 202* (1932).
20. The basis for calculation is the 1930 Census. Adjustment has been made for unemployment.
21. Industrial Fatigue Research Board, "Fatigue and Efficiency in the Iron and Steel Industry," *Report No. 5* (London, 1920), pp. 78-99.
22. U. S. Public Health Service, *Reprint 1060* of Public Health Report, 1926, p. 12; and *Reprint No. 632*, p. 6.
23. U. S. Bureau of Labor Statistics, *Bulletin 507* (1930), p. 47.

CHAPTER III

1. U. S. Commissioner of Labor, *op. cit.*, Vol. III, pp. 82-83.
2. *Ibid.*, p. 220, note 2.
3. Calculated from data in *Bulletin 567* of U. S. Bureau of Labor Statistics, plus adjustments for wage changes.
4. Data in this paragraph from following sources: W. Simons, general manager of Guest, Keen & Nettlefolds plant at Cardiff, communication to the writer; T. Meehan of British Iron, Steel and Kindred Trades Association, February, 1927; U. S. Bureau of Labor Statistics, *Bulletin 422* (1927, pp. 35-37 and 72); *Monthly Labor Review*, April, 1932, p. 936, and November, 1931, pp. 182-183.
5. *Monthly Labor Review*, June, 1927, pp. 19-28.
6. *Federated Press*, Eastern Bureau, May 28, 1929.
7. *Op. cit.*, Vol. III, p. 205.
8. Paul F. Brissenden, "Earnings of Factory Workers, 1899 to 1927," *Census Monograph X* (1929), p. 219.
9. *Monthly Labor Review*, September, 1932, p. 692; and August, 1932, p. 424.
10. See his article in *Quarterly Journal of Economics*, Vol. 38, pp. 614-622, and H. R. Seager and C. A. Gulick, *Trust and Corporation Problems* (New York, 1929), pp. 240-242.
11. John R. Commons and William M. Leiserson, "Wage-Earners of Pittsburgh," in the volume "Wage-Earning Pittsburgh," of *Pittsburgh Survey*, conducted by Russell Sage Foundation (Survey Associates, 1914), p. 119, note.
12. *Iron Age*, September 10, 1931, p. 711.
13. Eugene M. Lokey in *New York Times*, August 2, 1931; and *Labor Unity*, April 4, 1931.
14. *Federated Press*, Pittsburgh Weekly Letter, January 4, 1932.
15. *Wall St. Journal*, February 2, 1933.
16. J. S. Robinson, "The Amalgamated Association of Iron, Steel & Tin Workers," in *Johns Hopkins University Studies in His-*

- torical and Political Science*, series XXXVIII, No. 2 (Baltimore, 1920), p. 14 and Chap. XI.
17. Rankin, Pa.: *An Interchurch Survey* (1920).
 18. *Housing* (organ of the National Housing Ass'n.), October, 1932, Vol. 21, No. 3, pp. 212-213.
 19. *Publication No. 122* (Washington, 1922), p. 5.
 20. Figures as of 1929. Deaths do not include stillbirths.
 21. E. S. McCallum, *The Iron and Steel Industry in the United States* (London, 1931), p. 249, quoting *U. S. Public Health Report 1060* (1926), pp. 12-13.
 22. *Negro Housing* (Washington, 1932), p. 10.

CHAPTER IV

1. *Monthly Labor Review*, November and December, 1931, and January, 1932, articles on "Wages and Hours in Certain Departments of the Iron and Steel Industry."
2. Federated American Engineering Societies, Committee on Work-Periods in Continuous Industries, *The Twelve-Hour Shift in Industry* (1922), p. 15.
3. This list of 12-hour firms was compiled by Emil M. Hartl and Edward G. Ernst. Summaries of their findings were published in *The New Republic* of February 19 and March 12, 1930, and in the *Information Service* of the Federal Council of the Churches of Christ in America, Vol. IX, No. 7 (February 15, 1930).
4. *Monthly Labor Review*, June, 1930, p. 185.
5. *Journal of the Iron and Steel Institute* (London, 1881), No. 1, pp. 136-137.
6. Fitch, *op. cit.*, p. 93.
7. *Ibid.*, pp. 218-219.
8. Federal Council of the Churches of Christ in America.
9. C. A. Gulick, *The Labor Policy of the United States Steel Corporation* (Columbia University Press, 1924), pp. 35, 37.
10. *Monthly Labor Review*, June, 1930, pp. 185-187.
11. U. S. Bureau of Labor Statistics, *Bulletin 513*, p. 10: "Rest after a change in turns is not considered relief, when the employee has to work a double turn or extra shift in order to obtain the rest."
12. Frederick W. Taylor, *Principles of Scientific Management* (1911), p. 59.
13. Frederick W. Taylor, *Shop Management* (Harpers, 1911), p. 198.
14. Carl G. Barth in *Frederick Winslow Taylor: A Memorial Volume* (Taylor Society, 1920), p. 58.
15. Taylor, *Principles*, p. 74.
16. Fitch, *op. cit.*, p. 188. "It [the bonus] becomes an inducement to men in authority to drive those below them."
17. *The Metal Worker*, October, 1930.

18. *Federated Press*, Central Bureau, June 30, 1931.
19. Interview with Arthur Murphy, organizer of the Trade Union Unity League, November 29, 1930.

CHAPTER V

1. J. F. Dewhurst, *Employment Fluctuations in Pennsylvania, 1920-1927* (Philadelphia, 1928); Pennsylvania Labor and Industries Department, *Labor and Industry Monthly Bulletin*.
2. Calculation based on returns from special unemployed census of January, 1931, covering 110,981 iron and steel workers, or nearly a fifth of the total in the industry.
3. Calculations of Robert R. Doane, based on government figures; see *New York Times*, January 1, 1933.
4. *Report on Conditions in the Iron and Steel Industry*, Vol. III, p. 206.
5. Interview with William Watt, veteran employee of Carnegie Steel Co., February, 1924.
6. Calculations in this and preceding paragraphs based on unpublished figures supplied by the U. S. Census Bureau for Buffalo, Chicago, Cleveland, Duluth, Pittsburgh, and St. Louis, covering in January, 1931, 27,341 unemployed steel workers in Classes A and B, all in the midwestern area. The occupations covered are the same as those given in the last table, and include, of course, some workers from outside the steel industry proper—just how many is not known.
7. Pres. James A. Farrell before the Senate Committee on Manufactures, October 29, 1931; see *United States Daily*, October 30, 1931.
8. *Labor Unity*, December 13, 1930.
9. *Ibid.*, March 14, 1931.
10. *New York Times*, March 25, 1932.
11. *Federated Press*, Pittsburgh Bureau, November 26, 1931.
12. *American Federation of Labor Weekly News Service*, April 1, 1933.
13. Pierce Williams and Frederick E. Croxton, "Corporation Contributions to Organized Community Welfare Service," *Publication No. 16* of National Bureau of Economic Research (1930), p. 150.
14. *Ibid.*, p. 153.

CHAPTER VI

1. These figures, based on census and trade publications statistics, are the most recent available on productivity. They do not correspond at all with the figures of the U. S. Bureau of Labor Statistics for the earlier years. See *Monthly Labor Review*, November, 1932, p. 1036, for summary. However, all statistics

- agree that there has been a marked increase in productivity and that this increase is still continuing.
2. *Monthly Labor Review*, June, 1928.
 3. *Ibid.*, December, 1926, p. 33.
 4. Calculated from *Statistics of the Iron and Steel Industries, 1931*, published in London by the National Association of Iron and Steel Manufacturers.
 5. Herbert Feis, *Europe, The World's Banker (1870-1914)*, p. 127, quoting from *Débats Parl., Chambre des Députés*, January 13, 1911.
 6. *Journal Officiel*, February 12, 1932, p. 572 ff. (Chambre des Députés, séance du 11 février). Speech by Paul Faure, deputy from Le Creusot.
 7. Clyde H. Tavenner, *The Navy League Unmasked*, p. 24.
 8. *Ibid.*
 9. See also Jan Relling, "The Political Connections of the International Armament Firms," in *The Communist* (New York), June, 1933, pp. 586-587; also, and especially, Lenin's introduction to *Imperialism and World Economy*, by N. I. Bukharin (International Publishers, 1929).
 10. J. Viner, *Dumping* (University of Chicago Press, 1923), pp. 84-85.
 11. *Ibid.*, p. 135.
 12. *The First Twenty Years*, published by the American Rolling Mill Co. (1922), p. 31.
 13. Malcolm Keir, *Manufacturing*, in *Industries of America* series (Ronald, 1929), p. 175.
 14. Census Bureau, *Location of Manufactures, 1899-1929* (1933), pp. 47, 65.
 15. Article by John D. Knox in *Steel*, March 13, 1933.

CHAPTER VII

1. U. S. Bureau of Labor Statistics, *Bulletin 499* (1929), p. 66.
2. On all types of forced labor see Walter Wilson, *Forced Labor in the United States* (International Publishers, 1933).
3. J. P. Shalloo, "The Private Police of Pennsylvania," in *Annals of the American Academy*, Vol. CXLVI, No. 235 (November, 1929), p. 59.
4. An excellent first-hand account of life in Aliquippa is given by Charles R. Walker, Jr., in *Steel: The Diary of a Furnace Worker*.
5. Amos Pinchot, "Walter Lippmann: I. 'The Great Elucidator,'" in *The Nation*, July 5, 1933, p. 9.
6. See "A Substitute for Lynching," in *The Nation*, January 1, 1930, pp. 12-14.

7. Letter from Joseph Dallet, Jr., organizer of the S.M.W.I.U., May 3, 1933.
8. U. S. Commissioner of Labor, *op. cit.*, Vol. III, pp. 448-449, quoting *Hearings* before Stanley Committee, p. 4164.
9. Edward Bemis in *Journal of Political Economy*, Vol. II, p. 372.
10. McCallum, *op. cit.*, p. 273, quoting P. F. Gemmill, *Present-Day Labor Relations* (1926), p. 98. Besides the companies mentioned in the text, the following are known to have instituted company unions: Republic Iron and Steel Co. (now part of Republic Steel Corp.), in its Youngstown plant; Wheeling Steel Corp. (plan established 1921), Inland Steel Co., Commonwealth Steel Co., and American Rolling Mill Co. The Hydraulic Steel Co., dissolved in 1928, also had a company union.
11. *Ibid.*, p. 278, quoting Prof. Paul H. Douglas. See also Robert W. Dunn, *Company Unions* (Vanguard, 1927), especially Ch. VI.
12. Interview with Clyde L. Brading, director of labor and safety at Wisconsin Steel Co. plant, August 21, 1928.
13. Art. 1, Sec. 3 (draft of 1923).
14. *They Told Barron*, edited by Pound and Moore (1930), p. 82.
15. See (*e.g.*) "Organize the Unorganized" (pamphlet), *Labor Herald Library*, No. 17, p. 21; article "Company Unionism and Trade Unionism," in *Workers Monthly*, January, 1926; and (especially) article "Company Unions," in *Workers Monthly*, September, 1925. All are written by Foster.
16. Robert W. Dunn, *The Americanization of Labor*, p. 237, quoting *Proceedings* of the National Association of Manufacturers, 1924, p. 97.
17. McCallum, *op. cit.*, p. 284.
18. *New York Times*, April 30, 1933.
19. See on pensions Murray W. Latimer, *Industrial Pension Systems* (Industrial Relations Counselors, Inc., 1933).
20. See Bill Dunne in *Daily Worker*, Sept. 2, 1933.
21. The estimates in this paragraph have been made by the writer on the basis of figures supplied by Industrial Relations Counselors, Inc.
22. *The New Republic*, March 12, 1930, p. 92.
23. *Equitable Life Assurance Co., Agency Items*, July 15, 1929.
24. *Ibid.*, June 3, 1929.
25. Pierce Williams, "The Purchase of Medical Care through Fixed Periodic Payments," *Publication No. 20* of National Bureau of Economic Research (1932), pp. 133-137.
26. MS. report in the writer's possession. See also the author's article in *Common Sense*, July, 1933.
27. F. L. Palmer, *Spies in Steel*.
28. Sidney Howard and Robert W. Dunn, *The Labor Spy* (Republic Publishing Co., 1924), Chap. I.
29. Frank L. Palmer in *Labor Age*, December, 1929.

30. Cf. Abraham Epstein's article in *The New Republic*, April 6, 1927, p. 193.
31. Joseph Freeman, *The Soviet Worker* (International Publishers, 1932).

CHAPTER VIII

1. Fifteenth Census of the U. S., *Manufactures: 1929*, Vol. II (1930), p. 3.
2. Cf. National Bureau of Economic Research, *Recent Economic Changes*, 1929. I, p. 175.
3. *Ibid.*, p. 178.
4. *Iron Age*, July 4, 1929, p. 36. Figures here and later as of January 1, 1929.
5. See *Reports of the National Monetary Commission*, U. S. 61st Congress, 2nd Session, *Senate Document 538*, p. 274.
6. Edmund Newton in *Steel*, November 21, 1932, p. 11.
7. *Steel*, January 4, 1932, p. 126.
8. R. H. Sweetser in *Steel*, January 2, 1933, p. 74.
9. Willard L. Thorp, *Census Monograph III* (1924), p. 245.
10. *Ibid.*, p. 244.
11. Fraser and Doriot, *Analyzing Our Industries*, p. 252.
12. Stanley Committee, *Report*, 1912, p. 4.
13. V. I. Lenin, *Imperialism, the Highest Stage of Capitalism* (International Publishers, 1933).
14. Fetter, *The Masquerade of Monopoly* (Harcourt, Brace, 1931), pp. 128-129.
15. See *Wall Street Journal*, December 17, 1932.
16. Fetter, *op. cit.*, p. 173, quoting *Docket 962* of Federal Trade Commission, testimony of Hugh E. White.
17. *Congressional Record*, Vol. XLIX, Part 5, 62nd Congress, 3rd Session, p. 4317 (February 28, 1913).
18. *Annual Report of the Secretary of the Navy* for 1916, p. 21; for 1917, p. 56.
19. *Report of the Secretary of the Navy on Cost of Armor Plate*, December 31, 1896, *Senate Document 147*, 55th Congress, 2nd Session.
20. F. C. Howe, *Why War?* (Scribner's, 1916), p. 139; G. H. Perris, *The War Traders* (London, 1914), p. 60.
21. William Notz in *American Economic Review*, Vol. XIX, No. 1 (March, 1929), p. 11.
22. *Iron Age*, February 2, 1928, p. 3416.
23. Amos Pinchot in *The Nation*, July 5, 1933, p. 9.
24. *U. S. Reports*, Vol. 251, p. 453 ff.
25. E. C. Eckel, *Coal, Iron and War* (New York, 1920), p. 223.
26. *Steel*, January 4, 1932, p. 146.

CHAPTER IX

1. H. B. Summers, "A Comparison of the Rates of Earning of Large-Scale and Small-Scale Industries," in *Quarterly Journal of Economics*, Vol. XLVI (May, 1932), pp. 465-479.
2. *Fourteenth Census* (1920), Vol. XI, p. 349.
3. Statement of Peter Shields, representative of Josiah V. Thompson, banker and coal operator. See *More They Told Barron*, pp. 221-222.
4. *Senate Document 147*, 55th Congress, 2nd Session (1896), p. 80.
5. R. H. Stimson, *The Control of the Manufacture of Armament* (Abstract of thesis, University of Illinois, 1930), p. 6.
6. Compiled from figures in *War-Time Profits and Costs of the Steel Industry*, Report by the Federal Trade Commission (Washington, 1925), p. 137.
7. House Committee on Military Affairs, *Hearings*, 68th Congress, 1st Session (1924), p. 162.
8. *The Secret International: Armament Firms at Work* (Union of Democratic Control, London, 1932), p. 35.
9. *House of Representatives Executive Document 160*, 53rd Congress, 2nd Session (1894).
10. "The World Wide War Trust," speech by Clyde H. Tavenner of Illinois in House of Representatives, February 25, 1915, p. 28.
11. Lord Jellicoe in London *Daily Herald*, October 11, 1930.
12. *Hearings* before the War Policies Commission (1931), p. 323.
13. *More They Told Barron*, p. 223.
14. Statement of Charles M. Schwab. See article by Earl Sparling in the New York *World-Telegram*, June 2, 1931.
15. John T. Flynn, *Graft in Business* (Vanguard, 1931), pp. 195-196.
16. *More They Told Barron*, p. 218.
17. Flynn, *op. cit.*, pp. 208-209.
18. Noyes, *Forty Years of American Finance* (Putnam's, 1909), pp. 299-300.
19. Ida M. Tarbell, *The Life of Elbert H. Gary: The Story of Steel* (Appleton, 1925), p. 75 ff.
20. Henry H. Klein, *Dynastic America and Those Who Own It* (published by author, 1921), p. 54.

CHAPTER X

1. *Annual Report of the Secretary of Internal Affairs of the Commonwealth of Pennsylvania*, Part III, Industrial Statistics, Vol. VII, 1878-1879, p. 150.
2. *Ibid.*, p. 151.
3. See Fitch, *op. cit.*, p. 81.
4. Robinson's estimates; see *Johns Hopkins Studies, op. cit.*, p. 19.

5. *House of Representatives Report 2447*, pp. 107-108, testimony of W. T. Roberts.
6. E. W. Bemis, "The Homestead Strike," in *Journal of Political Economy*, Vol. II (June, 1894), pp. 372-373.
7. On the Homestead Strike see further the author's article, "Homestead: July, 1892," in *Labor Defender*, July, 1933, p. 17.
8. *Journal of Political Economy*, *loc. cit.*, p. 370. The strike of 1889 at Homestead had been caused because Carnegie, Phipps & Co. proposed to reduce wages to the eastern level. (*American Manufacturer*, May 24, 1889.)
9. U. S. Industrial Commission, *Hearings and Testimony*, Vol. VII (1900), pp. 85, 382. On suggestion of the A. F. of L., the tin-house workers' union was merged into the Amalgamated Association in 1913.
10. *New York Tribune*, August 11, 13, 15-17, 1901.
11. *Senate Hearings* on the steel strike of 1919, p. 342.
12. *Amalgamated Journal*, November 4, 1909, quoting *Steubenville Daily Gazette* and *Herald Star*.
13. "Strikes and Lockouts," *Twenty-first Annual Report of the (U. S.) Commissioner of Labor*, 1906, pp. 486-487.
14. Interview with Pres. M. F. Tighe of the Amalgamated Association, March, 1929.
15. *Ibid.*
16. See S. D. Spero and A. L. Harris, *The Black Worker* (Columbia University Press, 1931), Chapter XI.
17. *Ibid.*, pp. 251-252, quoting Pres. M. F. Tighe of the Amalgamated Association. In this instance, the central organization revoked the charter of the white workers in the down-river local after it was too late.
18. John A. Fitch, "Steel's Lost Labor Leaders," in *Labor Age*, January, 1923, pp. 4-5.
19. On the tariff see John Jarrett, "The Story of the Iron Workers," in *The Labor Movement, The Problem of To-day*, edited by George E. McNeill (New York, 1888), p. 287.
20. H. E. Hoagland, "Wage Bargaining on the Vessels of the Great Lakes," in *University of Illinois Studies in the Social Sciences*, Vol. VI, No. 3 (1917), p. 49.
21. See D. J. Saposs, *Left Wing Unionism* (International Publishers, 1926), pp. 138-141.
22. *The New Republic*, article by George P. West, September 2, 1916, p. 109.
23. See *Bill Haywood's Book* (International Publishers, 1929), pp. 290-293.
24. See *Amalgamated Journal*, June 9, 1910; U. S. Bureau of Labor, *Report on Strike at Bethlehem Steel Works* (1910); and U. S. Commission on Industrial Relations, *Hearings*, Vol. XI, p. 10612, testimony of Harry A. Cyphers, lawyer, of South Bethlehem.

25. Special report by Cleveland students, based on files of *Youngstown Evening Telegram*, interview with Tom Gordon, leader-participant, and J. G. Butler's *History of Youngstown and the Mahoning Valley* (1921), Vol. I, especially pp. 242-243.
26. Lewis L. Lorwin, *The American Federation of Labor: History, Policies, and Prospects* (Brookings Institution, 1933), p. 134, note 1.
27. Interviews with eyewitnesses, John Urban and Sam Watt.

CHAPTER XI

1. Wm. Z. Foster, "An Open Letter to John Fitzpatrick," in *Labor Herald*, January, 1924, p. 6.
2. Interchurch World Movement, Commission of Inquiry, *Report on the Steel Strike of 1919 and Public Opinion and the Steel Strike*; William Z. Foster, *The Great Steel Strike and Its Lessons*; *Monthly Labor Review*, December, 1919, pp. 79-94; U. S. Senate, *Hearings on the Steel Strike*, especially pp. 478, 503; *Amalgamated Journal*, Vol. XXII, Nos. 1-10.
3. Foster's figure is probably closer to the truth than that of the U. S. Bureau of Labor Statistics, which afterwards put the number of striking iron and steel workers at 367,000. Some coal miners (Johnstown), iron miners (Birmingham) and workers in finishing plants such as the Mesta Machine Works at Homestead, are included in Foster's total. (See *Monthly Labor Review*, June, 1920, p. 200, and Foster, *The Great Steel Strike*, p. 191.)
4. Senate *Hearings*, 1919, p. 1050.
5. Foster, *The Great Steel Strike*, preface to 2nd ed., p. iii, note 1.
6. *Ibid.*, p. 180.
7. *Amalgamated Journal*, Vol. XXII, No. 10, p. 1.
8. See *Hearings* before the Committee on Education and Labor, U. S. Senate, 69th Congress, 1st Session, on proposed investigation of wages and working conditions in certain industries (1926), p. 29.
9. Robinson, *op. cit.*, pp. 20, 21; *Financial Statement* of the International Lodge, A.A.I.S.T.W. of N.A., for quarter ending September 30, 1932, p. 6; L. Wolman, *The Growth of American Trade Unions, 1880-1923*, pp. 112-113.
10. Concluding speech by Lozovsky, in *RILU Magazine*, Vol. II, No. 3 (February 15, 1932), p. 244.
11. A. Lozovsky, "The Fifth RILU Congress," in the *Red International of Labour Unions*, Vol. II, Nos. 7 and 8 (November and December, 1930), p. 241.

APPENDICES

I. COMPARATIVE MORTALITY OF IRON AND STEEL WORKERS BASED ON YEARS 1915-1926

(Source: *Joint Occupation Study* of the Actuarial Society of America and the Association of Life Insurance Medical Directors, New York, 1929)

<i>Occupation in iron and steel works</i>	<i>Ratio of iron and steel workers' deaths to average deaths of all men of same age</i>
Laborers	227%
Cranemen, derrickmen and hoistmen	186%
Mechanics	184%
Stationary engineers and firemen	161%
Furnacemen, puddlers, etc.	144%
Semi-skilled operatives in blast furnaces, open hearths and rolling mills	135%
Semi-skilled operatives in not specified works.....	132%
Semi-skilled operatives in wire mills	108%
Rollers and roll hands	108%
Machinists	90%
Workers in by-product coke ovens.....	122%

II. COMPENSATION INSURANCE PREMIUM AS MEASURE OF INDUSTRIAL RISK

(A) For Iron and Steel Plants and for Median of All Industries, Pennsylvania, 1932

(Source: *Pennsylvania Manual of Compensation Insurance*, 1932)

	<i>Premiums per \$100 of payroll</i>
Blast furnace operation (except office and salesmen) ..	\$2.45
Steel making: open-hearth furnaces and Bessemer converters	2.00
Steel making: electric furnaces	2.00
Rolling mills: not otherwise classified	2.00

	<i>Premiums per \$100. of payroll</i>
Rolling mills: bolt and nut, nail and pipe, and horse shoe manufacturing	\$1.70
Rolling mills: tube or pipe (including iron puddling, not including cast iron pipe)	1.60
<i>Median (middle one) of all industrial divisions, including coal mining</i>	<i>1.35</i>
Sheet rolling mills	1.30

(B) For Iron and Steel in Relation to All Industries, All Other States (except Ohio and West Virginia)

(Source: National Council on Compensation Insurance, 1932)

<i>Industrial Classification</i>	<i>Relative Premium for Compensation Insurance (All Industries = 100)</i>
Blast furnaces	461
Steel works	207
Rolling mills	210
<i>All Industries</i>	<i>100</i>

(Note: The figures of the *Pennsylvania Manual* and of the National Council show the hazard of the industry as somewhat higher, relatively to large-scale industries, than it actually is, because these compilations do not include the self-insurers. Most of the large companies are self-insurers, and it is the large companies that have the lowest accident rates. The tables may fairly be taken to represent the hazard of small-scale iron and steel plants relatively to that of other small-scale firms.)

III. WAGE DIFFERENTIALS BETWEEN DIFFERENT DISTRICTS, AUGUST, 1933

(Source: Code of Fair Competition of the Iron and Steel Industry, Schedule E)

	<i>Minimum Rates of Pay for Common Labor, Cents per Hour</i>
1.—Eastern District	35
2.—Johnstown District	37
3.—Pittsburgh District	40
4.—Youngstown Valley District	40

	<i>Minimum Rates of Pay for Common Labor, Cents per Hour</i>
5.—North Ohio River District	40
6.—Canton, Massillon and Mansfield District.....	37
7.—Cleveland District	40
8.—Buffalo District	38
9.—Detroit-Toledo District	40
10.—South Ohio River District	37
11.—Indiana-Illinois-St. Louis District	37
12.—Chicago District	40
13.—Southern District	25
14.—Birmingham District	27
15.—Kansas City District	35
16.—Duluth District	37
17.—Colorado District	40
18.—Utah District	39
19.—Seattle District	38
20.—San Francisco District	37
21.—Los Angeles District	35

IV. NOTE ON WAGE STATISTICS

Figures on iron and steel wages are published currently by the National Industrial Conference Board, the *Census of Manufactures*, the U. S. Bureau of Labor Statistics, and some state bureaus. All of these statistics should be used with great caution.

(1) The National Industrial Conference Board is an employers' research organization, and gets its figures direct from employers, by questionnaire. Its figures on hourly earnings in iron and steel come mainly from U. S. Steel Corp. plants in the Chicago area. (Paul H. Douglas, *Real Wages in the U. S., 1890-1926*, p. 183.) It gives a figure that is much too high for the industry as a whole, since Chicago is a high-wage center compared with the whole country.

(2) The reports of the *Census of Manufactures* (biennial since 1919, quinquennial, 1899-1919) give total wages and average number employed, but do *not* compute average wages.

(3) The U. S. Bureau of Labor Statistics publishes figures on earnings, taken direct from the payrolls of the companies, about every two years. It computes "full-time weekly earnings." It also publishes each month "per capita weekly earn-

ings," but without defining exactly what workers are included in the compilation.

(4) State bureau figures are not any more complete than the figures of the federal bureau just mentioned, and are probably not so carefully compiled.

Paul H. Douglas, in his *Real Wages in the United States, 1890-1926*, rushes in where the Census Bureau fears to tread and computes "average wages" from the *Census of Manufactures* figures. Even employers hesitate to do this.

Neither the Census Bureau nor Douglas has found any adequate way of providing for the stagger system, which had begun to be widespread before the end of the period included in Douglas' study. Douglas' figures on per capita earnings of steel workers are probably too high. His methods and results have been further criticized by A. H. Hansen (*American Economic Review*, December, 1930, pp. 747-752), Leo Wolman (*Quarterly Journal of Economics*, February, 1932, pp. 398-406) and Murray W. Latimer (*Journal of the American Statistical Association*, December, 1930, pp. 479-485).

Paul F. Brissenden, in his "Earnings of Factory Workers, 1899 to 1927" (*Census Monograph X*, 1929), correctly rejects the "census average wage" as a measure of earnings per capita, but he seems to fall into another error in assuming that fluctuations in production are reflected in corresponding fluctuations in employment over long periods of time. Other difficulties with Brissenden's results have been pointed out by Douglas (*op. cit.*, pp. 593-608).

Leo Wolman is engaged, at the time of writing, in working over the available wage figures according to a method of his own.

The United States Steel Corporation publishes annually figures on the number of employees in each of its several departments, and the total wages and salaries. The company does not publish separately the figures for wage-earners, and it is impossible to tell how many bosses and salaried workers are lumped with the wage workers in its calculations of "average earnings per employee per day: all employees exclusive of general administrative and selling force"; yet even so this average was only \$5.80 in 1930, and in the following year was not even calculated. (*Annual Report of the U. S. Steel Corp. for 1930*, p. 10.)

Nobody needs to take too seriously what the companies say about the wages they pay, because their own statements are at

times contradicted by the government statistics, and at other times, by officials from other companies. At still other times, statements put out by the same company contradict each other. Examples are given below.

(1) *Company vs. government statistics.* Charles M. Schwab told the Stanley committee investigating the U. S. Steel Corp. in 1911, that the average earnings of an employee of the Bethlehem Steel Corp. were about \$1,000 a year. (Stanley Committee *Hearings*, Vol. 2, pp. 1305-1306.) The federal Bureau of Labor had shortly before completed an investigation of the company's South Bethlehem plant which showed that an employee working 72 hours a week for 52 weeks in the year—the median full-time hours at the Bethlehem plant—and earning the median wage (16 cents an hour) could make not quite \$600 a year. (*Report on Strike at Bethlehem Steel Works* (1910), pp. 12, 60.)

(2) *One company vs. another.* Schwab thought that the earnings in U. S. Steel were about the same as in Bethlehem, *i.e.*, according to his figures, \$1,000 a year. But the figures in the annual reports of U. S. Steel for that period give an "average wage" of a little over \$800. (Gulick, *Labor Policy of U. S. Steel Corp.*, p. 57.) As already explained, this figure probably includes some salaried employees, and is much more nearly a computation of *earnings per full-time job*, than of *earnings per worker*.

(3) *A company vs. itself.* In 1919 Gary told the U. S. Senate that 46,638 of the U. S. Steel Corp. employees were getting the common labor rate, referring to manufacturing companies. About the same time he told the Interchurch World Movement Commission of Inquiry that 70,000 men received that rate. He never cleared up the discrepancy. (*Ibid.*, pp. 79-80.)

In any district, the lowest wages are paid by small firms in small plants, usually not the best equipped or most up-to-date. But the firms paying the highest wages are not necessarily either the largest firms or the firms operating the largest plants.

Where wages are relatively high, there output per worker is high, and where wages are low, output per worker is low. (*Monthly Labor Review*, August, 1932, p. 263, Table 3.) This does not prove, of course, that output is high because highly paid labor is more efficient than low-paid labor, since equipment is far more important than the efficiency of labor in determining productivity.

V. METHOD OF CALCULATING UNEMPLOYMENT

(a) April, 1930

We here describe the steps by which we have arrived at the results given in the text. Since the final count (Census, 1930) of the women in the heavy industry differed materially from that in the unemployment census, we have not attempted to calculate the extent of unemployment among females, who are insignificant in number compared with the males.

The unemployment census listed 605,242 males in blast furnaces and steel [and] rolling mills, which compares with 602,358 in the final count. The difference is slightly less than one-half of one per cent. The number of unemployed as reported in the census must of course be reduced in this degree. Of the total, the census showed 87,200 "white collar" workers and bosses (employees in proprietary, official, supervisory, professional, and clerical and kindred pursuits). Allocating to the heavy iron and steel industry its proportional share of the male employees in unemployment Classes C and D as given in the decennial census, we get, in round numbers, 5,600, unable to work. Subtracting, we find 599,600 able to work. Of these, 63,000 in round numbers were unemployed (Classes A, B, and E plus proportionate share of omitted entries).*

A few (though not many) of the "white collar" workers and bosses were unemployed or unable to work at the census date, which it will be remembered antedated the beginning of the acute crisis in steel. At the same time, a certain number of steel workers were "on the bum" searching for work, and escaped the census count altogether. These two factors have to be set against each other, but there is no good way of estimating the size of either. We believe that the second factor was of at least as great im-

* Class A	36,166
B	24,947
E	1,005
omitted	1,200
	<hr/>
	63,318
Less ½%	316
	<hr/>
	63,002

portance as the first, and therefore have allocated the whole number of the unemployed to the wage-earning group. We then have the following computation:

MALE STEEL WORKERS AT CENSUS DATE

(April, 1930)

	<i>Wage-earners</i>	<i>White collar workers and bosses</i>	<i>Total</i>
Total	518,000	87,200	605,242
Unable to work	4,800	800	5,600
Able to work	513,200	86,388	599,642
Unemployed	63,000	—	63,000
Per cent unemployed (see above)	12.3%		

This computation contains certain doubtful elements, but is probably accurate within 10%.

(b) April 1, 1933

The estimate for the later date is much more hazardous and involves several important assumptions which cannot be checked. We do not know how many steel workers have died or retired. We also cannot tell how many boys in the steel towns have arrived at working age without being able to get any job in the mills, though under any but crisis conditions they would undoubtedly have done so. These youths are to all intents and purposes unemployed, though they are not so listed in some computations. We have included them with the unemployed, and assumed that their number about balances the number of workers who have died and retired. We have also assumed that the number unable to work has remained constant. The net movement out of the industry due to the crisis may be put conservatively at 3,200. (Based on American Iron and Steel Institute, *Statement of Employment Conditions and Rate of Operations in the Steel Industry*, submitted at steel code hearings of National Recovery Administration, July 31, 1933.) Our estimate is then as follows:

	<i>Index</i> (1926=100)	
Male wage-earners at work April, 1930.....	450,200	90.8*
Male wage-earners at work in 1929 (average).....		94.7*
Male wage-earners at work in 1931 (average).....		62.9**
Male wage-earners at work in April, 1933		46.0**
Decline in employment April, 1930, to April, 1933...		49.3%
Number thrown out of work in 3-year period.....	221,950	
Add: unemployed in April, 1930 (see above).....	63,000	
Subtract: Net movement out of the industry.....	3,200	
Total unemployed, April, 1933	281,750	
At work, April, 1933 (including part-time workers).	223,250	
Available for work, April, 1933	505,000	
Per cent totally unemployed, April, 1933		55.8%

We are able to check this estimate at one point with the companies' own statistics. Our figure for the decline in employment from 1931 (ave.) to 1932 (ave.) is 20%. The steel companies, especially the largest, made much ballyhoo during 1932 about the way they were keeping their workers on the job by means of the stagger system. Yet the annual reports of U. S. Steel and Bethlehem Steel show a combined net decline in men on the payrolls from 1931 to 1932 of 24%, or at a rate a fifth higher than we have allowed for the whole industry.

VI. FIGURES ON CAPACITY

"Capacity" is an elastic term, and figures on capacity are often underestimates. The American Iron & Steel Institute gives figures on "theoretical capacity." These figures supposedly represent a top limit, which could never be exceeded for a long period, such as a year. Since the whole steel industry ran for several months at 98% of "capacity" in 1929, we are entitled to question whether "capacity" had been accurately estimated. In the production of steel sheets, the demand for which has expanded rapidly, production exceeded "capacity"* in September, 1928, and for nine out of the eleven following months; in March, April and May, 1929, the production averaged over 115% of "capacity." For a period following the installation of the new continuous process for rolling sheets, the Ashland,

* U. S. Bureau of Labor Statistics, *Trend of Employment*.

** Same, corrected by reference to *Census of Manufactures*.

Ky., mill of the American Rolling Mill Co. operated at 125% of capacity. (*Wall Street Journal*, May 20, 1929.) These tremendous excesses over the supposed maximum give some idea of the caution that must be used in interpreting figures of capacity. According to *Steel*, the tendency is for these figures to understate capacity in times of industrial expansion and to overstate capacity in times of depression. (Cf. *Steel*, November 7, 1932.)

In *pig iron production*, not more than 90% of the total theoretical "capacity" (as defined in *Annual Statistical Report of the American Iron and Steel Institute for 1925*, p. vi) has been used at any one time since the system of reporting capacity was revised in 1925. In *steel ingot production*, "capacity" is geared to peak demand almost exactly, and in May and June, 1929, the industry operated at 100% of capacity. In the *production of rolled products*, on the other hand, there is admittedly overdevelopment, due to the multiplicity of products and the multiplicity of markets which they supply. Underemployment is much more serious in this branch of the industry than in blast furnaces and steel mills. The *Iron Age* estimates that rolling mill capacity has been "normally" 25% in excess of peak demand, and during 1930 the excess reached 35 or 40%. (January 14, 1932, p. 195.) That is, the first year of the crisis, instead of doing away with excess capacity (through junking, etc.) actually increased it!

It has recently been argued (by the National Industrial Conference Board, boss research organization; see its *Conference Board Bulletin*, June 20, 1932) that the apparent capacity, *e.g.*, in rolling mills, is not real because obsolescence so quickly does away with excess capacity. If this argument were sound, then nearly all the joblessness in blast furnaces and rolling mills could be attributed, like that in steel ingot production, to cyclical fluctuations. However, from the point of view of the workers who hang around a closed mill in the hope that it may some day open again, the argument is not sound—unless one assumes that the workers are also obsolescent!

* As calculated by the National Association of Flat Rolled Steel Manufacturers. Data from "Industrial Overcapacity: Source Material," mimeographed sheets compiled by Robert F. Martin of the Division of Economic Research, U. S. Bureau of Foreign and Domestic Commerce, August, 1932.

VII. MOST HIGHLY MECHANIZED MANUFACTURING INDUSTRIES, 1927

(Not including those employing less than 1,000 wage-earners)

(Source: Compiled from *Census of Manufactures, 1927*, pp. 1316-1329)

<i>Industry and Branch</i>	<i>Wage-earners* (average for the year)</i>	<i>Horsepower per wage-earner</i>
Manufactured ice	22,120	44
Cement	36,322	29
Copper smelting and refining	13,924	23
Compressed and liquefied gases	3,212	22
Coke, not including gas-house coke.....	21,082	21
Flour and other grain-mill products....	29,982	21
Paper and wood pulp	123,360	21
Beet sugar	7,402	19
<i>Blast furnaces, steel works and rolling mills</i>	389,270	17

* Total of those employed on the 15th day of each month, divided by 12.

VIII. WAGE-EARNERS PER ESTABLISHMENT IN THE IRON AND STEEL INDUSTRY, 1909-1929

(Source: *Census of Manufactures*)

<i>Census Year</i>	<i>No. of establishments</i>		<i>Wage-earners per establishment</i>			
	<i>Blast fur- naces</i>	<i>Steel and rolling mills</i>	<i>Blast fur- naces</i>	<i>Steel and rolling mills</i>	<i>Index (1919=100)</i>	
					<i>Blast fur- naces</i>	<i>Steel and rolling mills</i>
1909.....	208	446	225	636	85.2	72.0
1914.....	160	427	205	636	77.7	72.0
1919.....	195	500	264	883	100.0	100.0
1925.....	122	473	266	815	100.8	92.3
1929.....	105	486	247	852	93.6	96.5

IX. NUMBER OF STEEL WORKERS EMPLOYED BY
CERTAIN LEADING STEEL FIRMS

1929-30 and July 1, 1933

(Source: American Iron and Steel Institute, *Statement of Employment Conditions and Rate of Operations in the Steel Industry*, submitted to National Recovery Administration at steel code hearings, July 31, 1933)

<i>Company</i>	<i>Actual average number of em- ployees, years 1929 and 1930</i>	<i>Total number of employees being given some work on or around July 1, 1933</i>
U. S. Steel	139,622	115,466
Bethlehem Steel	43,679	33,848
Republic Steel	22,322	19,349
Jones & Laughlin Steel	16,753	14,439
Youngstown Sheet & Tube.....	15,931	13,873
American Rolling Mill	9,477	8,287
National Steel	13,158	14,689
Inland Steel	6,824	6,231
Wheeling Steel	11,043	12,633
Colorado Fuel & Iron	6,246	2,696
Crucible Steel	8,022	5,358
Corrigan-McKinney Steel	3,223	3,187
Newton Steel	2,639	1,293
Otis Steel	3,685	4,034
Pittsburgh Steel	5,962	4,998
Gulf States Steel	2,157	2,152
Roebing's Sons	4,464	3,225
Spang-Chalfant	3,102	2,289
International Harvester	2,800	1,936
Granite City Steel	2,278	2,360
McKeesport Tin Plate	2,870	2,876
Sharon Steel Hoop	1,983	2,008
Newport Rolling Mill	1,403	1,009
Continental Steel	2,409	2,333
Acme Steel	1,627	1,488
Lukens Steel	2,000	1,534
Byers (A. M.)	1,491	1,009
Keystone Steel & Wire	1,196	1,147
Central Iron & Steel	811	779
Phoenix Iron	857	662
Laclede Steel	918	1,192
Worth Steel	702	565
Total	341,654	288,945

X. PROFITS AND MONOPOLY

Professor A. S. Dewing, formerly of Harvard, has tried to prove that the profitableness of combinations, including the U. S. Steel Corp. has been less than the profitableness of the companies that preceded the consolidations. He gives figures to show that yearly profits of the companies that went into U. S. Steel were \$108,000,000, whereas U. S. Steel profits averaged only \$93,000,000 in the first ten years of the combine's existence. (See *Quarterly Journal of Economics*, November, 1921, pp. 95-96.)

There are several things to note about this calculation. In the first place, the figure of \$108,000,000 is an unchecked estimate by the *Commercial and Financial Chronicle*; several of the companies that joined U. S. Steel published no statements. In the second place, the figure refers to a boom year, 1900, when profits were fabulous. In the third place, competition was not active in that year; all the principal products were cartelized in 1900, and monopoly prices were already being charged. And in the fourth place, the "profits" of U. S. Steel for the first ten years as calculated by Dewing do not include "profits plowed under" which were only disclosed by the company many years later.

But even if Dewing's point could be taken as proved—which we deny—it would not be a significant point; in fact, it would leave the argument just where it was. The United States Steel Corp. was formed to prevent competition and insure monopoly profits; and it has succeeded in performing this task.

XI. ANALYSIS OF PROFITS

In order to show the return to the original investor it would be necessary to go back to the founding of the company. This procedure would be impossible and meaningless. All or nearly all the principal companies are reorganizations of earlier companies, many of which did not publish reports, and practically all of which were founded before the day of investors now living. We therefore take as the real original investment the sum supposed to represent the actual value of the properties at an arbitrary date. In the case of U. S. Steel, this date is April 1, 1901, the date when the company started operations. For the other companies, and for the consolidated analysis, the date is January 1, 1905, the earliest date at which reports of all four companies become available.

The *average real investment* is found by adding to the original real investment all tangible additions to capital made from outside the business after the original date, then dividing by the number of years covered. Stock dividends do not represent any new investment from outside the industry; they represent merely surplus kept permanently in the business. Therefore additions to stock through the issuance of stock dividends cannot be considered additions to the real investment.

Nominal investment is defined as the stated figure given by the companies in their capital set-up. *Watered stock* is defined as stock given to promoters or investors against fictitious or non-tangible values.

Earnings and *profit* are treated as synonymous and defined as including all cash paid out to investors, whether in the form of interest or dividends, and the surplus remaining in the business, whether in the form of undivided profit or stock dividends or appropriations from surplus for some specific purpose. Earnings include both operating and non-operating income. Depreciation and taxes are allowed as deductions from profit.

Return is defined as the cash received by an investor on his security; *rate of return* as the percentage of return on value of "investment," leaving the latter intact. *Real rate of return* is the percentage of return on the real investment. *Nominal rate of return* is the percentage of return on the nominal investment.

The units chiefly related are the dollar invested in the industry from the outside and the dollar paid by the industry to the outside.

Surplus is strictly limited in the interpretation to earnings left in the business. There is one item of "paid-in surplus" in the U. S. Steel Corp. reports and this item was combined with other invested capital and treated as "investment." In the case of the Jones & Laughlin Steel Corp. which, although organized in 1902, issued no information until 1913 and then only of a fragmentary nature until its reorganization in 1923, the surplus reported at the latter date is assumed to be entirely "earned" as the stated capitalization in 1902 made no mention of paid-in surplus.

Premiums and discounts on the sale of bonds are treated as an adjustment to "other income" and reflected in total net profit. Another possible method would have treated this item as an adjustment to investment. The latter treatment, though preferred, was abandoned in the face of the difficulties encountered in the gathering of information. Furthermore the differ-

ence in treatment would yield but an insignificant difference in the rates of earnings and return and these differences under the present treatment tend rather to minimize the rates than otherwise.

Most profit studies, including that of the Federal Trade Commission referred to below on *War-Time Costs and Profits in the Steel Industry* (1925), calculate the rate of profit for each year on the whole capital supposedly invested in the business at the end of the year immediately preceding. Thus, if a company with an "investment" of \$100,000,000 adds \$33,000,000 to surplus, the profit for the following year will be calculated on the basis of an "investment" of \$133,000,000. The result is to obscure the real position of the original investor or speculator who has held onto his securities. The surplus remaining in the business is theoretically the property of the stockholder just as much as the dividends paid to the stockholder in cash. For the absentee security-owner who takes no interest in the management of the concern and in fact for everybody concerned except the very small group that runs the business, this property right is purely theoretical. Accumulated surplus if handled skillfully makes it possible for the management to continue dividends in slack times, and it increases the owner's equity and therefore the value of his investment. But it does not represent any money drawn in from outside. We therefore count accumulated surplus as an addition to the owners' equity but not to the real investment.

All money actually put into the business from outside has been counted as real investment. Of course, some money was invested foolishly and lost; while other parts of the investment were made for business as opposed to technical reasons, and have caused the companies a continuing expense over the period considered. Thirty large steel companies with an ingot capacity of 65,000,000 tons yearly are said to have coal mines with an annual capacity of 85,000,000 tons, which is more than they need currently. The Wheeling Steel Corp. has coal reserves said to be sufficient for one hundred years' supply at the 1930 rate of consumption. U. S. Steel exploits currently only a fraction of its 800,000 acres of coal lands; and its ore lands, sufficient to assure it a full supply of ore for fifty years from 1931, are very incompletely developed. Investments in raw material supplies have often been made for reasons of business strategy; and the capital thus immobilized brings a return only in a strictly business sense, in that it preserves a company from

competition or from future shortage. We follow the usual practice in including inflated salaries and bonuses as an expense, except the notorious Bethlehem bonuses amounting to over \$38,000,000. These, although listed by the company as an expense and paid into the pockets of the high officials, were a part of "earnings" according to our definition. They have been so classified. Of course our figures are not to be compared with rates of return or rates of profit calculated by different methods.

Most of the large companies have watered their stock at some time or other. In the absence of definite indications we have refrained from listing any of the preferred stock of U. S. Steel as water, though some think it was more than half water. The company itself has conceded (*Annual Report for 1929*, p. 22) that the common stock was all water. Bethlehem common stock was watered to the extent of \$26,000,000 when that company absorbed its three chief competitors in 1922-23; Youngstown Sheet & Tube revalued its assets in 1922 and thus added water to the extent of \$10,500,000; and so on. (Much of the Bethlehem stock issued in 1904 may have been watered. We have not so listed it. Accountants for Youngstown Sheet & Tube charged in the Youngstown-Bethlehem merger suit (1930) that a \$5,000,000 block of Bethlehem stock was issued against nothing but good-will. We have not taken this charge as proved.)

PROFITS AND RATE OF RETURN OF FOUR LEADING COMPANIES IN PERIOD 1905-1931 (27 yrs.)

	<i>U. S. Steel</i>	<i>Bethlehem</i>	<i>Youngstown S. & T.</i>	<i>Inland</i>
Total Average Nominal Investment	\$1,443,973,171	\$252,421,481	\$67,732,076	\$32,126,241
Total Cash Paid Out to All Security-Holders	2,366,056,473	397,236,880 *	119,537,731	65,361,615
Average Annual Rate of Return on Nominal Investment	6.07%	5.83%	6.54%	7.82%
Total Average Real Investment	888,434,171	225,811,654	42,252,787	22,266,500
Average Annual Rate of Return on Real Investment	9.86%	6.52%	10.48%	11.3%
Surplus Undistributed	1,298,360,632	144,844,280	106,976,672	53,244,592
Total Income as % of Real Investment	15.28%	8.89%	19.86%	20.49%

* Includes bonuses to officials in amount of \$38,677,524.

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