

ADEQUACY OF
WORKMEN'S
COMPENSATION

BY

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To
AUGUSTA

*who was not aware, even at the time, of the value of her contribution
to this work*

PREFACE

THE WRITER was invited in 1937 by the Harvard University Committee on Research in the Social Sciences to make a study of industrial accident insurance in the United States. The field work on this project was done between September 1, 1937, and September 15, 1939. The study had assumed approximately its present form when in 1943 the writer was ordered overseas to serve in the Army of the United States. Since his return to the United States in November, 1945, he has made necessary revisions in the text, including the addition of a supplement on recent developments.

The original intention to prepare a general work on industrial accident insurance was abandoned when a survey of writing in the field then completed or in progress showed such a work to be unnecessary, particularly in view of the two books on workmen's compensation insurance by Hobbs and the books on administration of workmen's compensation by Dodd and Dawson. Instead, a group of special problems was selected for more intensive analysis. The problems selected were the development of coverage and of benefit provisions, the proportion of wage loss compensated, the trend of the cost of workmen's compensation insurance, and the relation of injury prevention to compensation costs. A relation between these problems was early noted. The inadequacies revealed by the analysis of coverage and benefit provisions were found to reflect fears regarding costs, while the rising benefit level was found to have resulted generally in only a very slight rise in costs, due largely to the success of injury prevention. It eventually seemed wise to draw the title of the project from this relation, calling the study *Adequacy of Workmen's Compensation*.

Any analysis of workmen's compensation in this country is necessarily conducted in an atmosphere not altogether friendly to impartial investigation. The conflicting interests of employers and employees are in the background, with insurance organizations often inclined to sympathize with the former and labor departments with the latter. The writer has been at some pains to avoid being drawn into any purely partisan stand at any point.

He believes this effort to have been particularly rewarding in this case because accident and health hazards in industry are matters in which the proportion of common interest of employers and employees is unusually large. It goes without saying, of course, that neither group of extreme partisans will be satisfied with his conclusions, though very likely both will find the analysis useful.

The near future will see not only extensive revision of the provisions of existing workmen's compensation laws, but also the growth of related coverages through union contracts and state or federal laws. It is to be hoped that disability insurance or health insurance may bring a change of outlook in the field of workmen's compensation. Hitherto a narrow conception of the responsibility of industry for industrial injuries and of the practicable pattern for compensating them has tended to produce not only ungenerous but also irrational benefit provisions. It is not too much to say that the continuance of the system of separate state laws and of the generally prevailing resort to nonpublic means of insurance is at stake. There are advantages in both these systems, but these will be outweighed if federally provided or collectively agreed coverages of a related character prove more rational, more generous, and less costly.

It is necessary to acknowledge a heavy debt to a large number of persons who, notwithstanding the insistent pressures of busy lives, have coöperated with the writer during these years. Professor Sumner Slichter has supervised the project throughout and the value of his judgment and insight is reflected to a degree far beyond his modest estimate. Valuable advice has also been given by Professors Ralph H. Blanchard of Columbia University and C. Arthur Kulp of the University of Pennsylvania, and by the writer's colleagues, Professors Carl W. Hasek and Sheldon C. Tanner.

Numerous officials of state and national agencies dealing with workmen's compensation have been extremely helpful. The writer desires particularly to acknowledge the counsel and assistance of the following: Max D. Kossoris of the U. S. Bureau of Labor Statistics, the late Clarence W. Hobbs, A. Z. Skelding, and J. J. Smick of the National Council on Compensation Insurance, H. D. Hatfield and L. W. Scammon of the Massachusetts Rating and Inspection Bureau, Lt. Col. Harry D. Immel, formerly chief of the Industrial Inspection Division of the Pennsylvania Depart-

ment of Labor and Industry, and Arthur G. Smith of the New York Compensation Insurance Rating Board.

Officials of insurance carriers were also most helpful, especially officials of the Liberty Mutual Insurance Company, the Aetna Group, the Pennsylvania State Workmen's Insurance Fund, and the Ohio State Insurance Fund. The untiring assistance of Dr. Henry D. Locke, Research Director of the Liberty Mutual Insurance Company, was of particular value. He can legitimately complain that the writer did not always agree with his suggestions, but his interest and insight were keenly appreciated.

A number of persons assisted at various times in assembling and treating the data. Professor Roger Hamilton of Northeastern University did so in 1938, and Mr. Anthony Abate in 1938 and 1939. Later the writer was assisted by the following students: Messrs. R. M. Sigmond, Edward Soza, Irvin Freed, M. R. Beck, and Morris Cohen.

It goes without saying that the writer accepts full responsibility for this book, for its conclusions and its details, and for any flaws that may be present in either.

A. H. R.

State College, Pennsylvania
April 20, 1946

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INTRODUCTION

INDUSTRIAL injuries take a heavy toll in the United States each year. In 1940, 16,600 employees paid with their working lives for industrial mishaps. The great majority of these individuals were killed, but a few were left to spend a miserable existence, permanently and totally incapacitated for work. In the same year, 80,600 employees suffered permanent but only partial impairment, while 1,599,700 employees were temporarily injured.¹ The best available estimates suggest that an average of some 36,000,000 nonagricultural employees were at work in 1940.² About 2,600,000 hired workers were engaged in agricultural employments.³ This means that workers were injured at the rate of about 44 per 1000 workers. Kossoris and Kjaer have estimated the total time loss for both self-employing and employed at 233,840,000 days.⁴ Careful analysis of the estimated injuries to the employed alone indicates a time loss for them of some 210,000,000 days. For the 39,000,000 employees, then, the injury severity averaged over five days per worker.

Consider the probable cost of these industrial injuries. The wage loss sustained may be estimated by converting the time loss to 30,000,000 weeks and assuming an average weekly wage. At \$20 per week the loss would amount to \$600,000,000. Available evidence indicates that the medical loss was about \$90,000,000.⁵ The National Safety Council has estimated the insurance overhead (or expense loading) at \$110,000,000. It has been widely

¹ M. D. Kossoris and Swen Kjaer, "Industrial Injuries in the United States during 1940," *Monthly Labor Review*, LIII (1941), 327 ff. Estimates of the National Safety Council for temporary and permanent injuries are somewhat more conservative because unadjusted for underreporting of minor injuries.

² *Handbook of Labor Statistics*, U. S. Bureau of Labor Statistics Bulletin No. 694 (1941), 183.

³ "Farm Wage Rates, Farm Employment, and Related Data," U. S. Department of Agriculture (mimeographed, 1943).

⁴ "Industrial Injuries . . . 1940," p. 327.

⁵ National Safety Council, *Accident Facts* (1940 edition), p. 60. The Council's estimates are: wage loss, \$490,000,000; medical expenses, \$80,000,000. But as noted above these figures cover a smaller number of injuries, since they fail to take account of underreporting of minor injuries.

held that the employers' indirect costs of industrial injuries (due to stoppage of production, spoilage, employment of green hands, etc.) average about four times their direct costs.⁶ If we assume that roughly two-fifths of the workers' wage loss⁷ and about nine-tenths of their medical expenses are borne by employers, the direct costs including insurance overhead will total about \$430,000,000. The indirect costs, if four times as great, would amount to about \$1,700,000,000. The total cost of industrial injuries in the United States in 1940, whether borne by employers or workers, may accordingly have exceeded \$2,500,000,000.

At common law, the victim of a work injury had numerous legal barriers to surmount before he could collect damages from his employer. He was obliged to show that the injury was due to the negligence of his employer as legally defined and limited. It would be so held if his employer had failed to furnish him with safe working quarters or reasonably safe and suitable appliances and equipment, or to establish reasonably safe rules of work, or to warn of special dangers. The burden of proof was clearly on the injured man in these matters. The employer, on the other hand, enjoyed three defenses. The worker could not recover if shown to have been negligent in any degree if this contributed to his injury, regardless of any negligence on the part of the employer. This was the defense of "contributory negligence." Nor could the employee recover if a fellow worker could be proved to have caused the injury by negligence on his part. This was the "fellow servant" defense. Finally, the injured man could not recover if it was proved that his injury was due to an ordinary hazard of his work of which he had, or should have had knowledge. This was the defense of "assumption of risk."

Over the years the employer's responsibility for industrial injuries was somewhat enlarged in many jurisdictions by enactment of employers' liability laws. These laws made the employer responsible not only for his own negligence, but also for that of his supervisory staff. The employee might recover damages if his injury was occasioned by defects in ways, works, or machinery arising from negligence of a superintendent, or not discovered or

⁶ See, for example, W. H. Heinrich, *Industrial Accident Prevention* (1931), pp. 17-33.

⁷ For the basis of the assumed proportion of wage loss compensated see below, Part III.

remedied by someone entrusted with the duty of keeping them in proper condition. Despite the broader responsibility under employers' liability laws, litigation over industrial injuries generally resulted unsatisfactorily for the employee. Suits were often discouraged or defeated, although an occasional jury verdict yielded an amount out of all proportion to the injury sustained.

The aim of a workmen's compensation law is to replace the uncertainties of litigation at common law or under employers' liability laws with a definite scale of benefits payable regardless of fault. Such benefits are in part indemnity for wages lost as a result of injury, in part medical services made necessary by the injury. Legal formalities are minimized and the issue of negligence is virtually eliminated. Industrial injuries are regarded as part of the productive process, and their costs are therefore held a proper charge against the cost of production.⁸

It is useful to inquire to what extent the compensation principle is operating in the United States. This is the purpose of Part I, which makes this inquiry from three directions. In Chapter I the laws of the several states are analyzed with a view to determining what workers are not included. In Chapter II an estimate of the number of workers covered by workmen's compensation is presented, together with indications of whether this coverage is compulsory or elective. In Chapter III the laws are again analyzed in the light of court decisions, this time with a view to determining what injuries are compensable. It is recognized that workmen's compensation laws, like all laws, are living things. Hence the title of Part I: "The Expanding Scope of Workmen's Compensation, 1915-1940." The coverage is examined in four selected years, 1915, 1920, 1930, and 1940, and estimated from analysis of census data for 1910, 1920, 1930, and 1940.

The benefit scale is the most important test of a workmen's compensation law. No such law provides full indemnification for the loss sustained. The protection afforded by the definite scale of benefits must be judged by its limiting effect in relation to the losses sustained.

The benefit scale is studied directly in Part II for each of four degrees of disability: death, permanent total disability, permanent partial disability, and temporary total disability. It is also studied

⁸ For a detailed analysis of the evolution of the compensation principle see W. F. Dodd, *Administration of Workmen's Compensation* (1936), chap. i.

for medical benefits. The progress of the provisions for each type of benefit is noted for each of the selected years for which the coverage is estimated in Part I. The level of these provisions is compared with that of wages and living costs. The progress is observed not only in the level of the provisions, but also in the suitability of them from the standpoint of the nature of the loss sustained.

The benefit level is analyzed in a different fashion in Part III. Here the question at issue is what proportion of the wage loss sustained by injured workers is compensated. The limiting effect of maximum installments, durations, and total amounts is examined for each degree of disability. The effect of minimum payments and of waiting periods is also considered. An attempt is made to estimate working life expectancy for the purpose of measuring wage loss in fatal and permanent injury cases. In Chapter X a method of computing the theoretical proportion of wage loss compensated is set forth. In Chapter XI the actual experience of Massachusetts in 1935-36 is analyzed.

Fears of excessive costs are found to have impeded the progress of workmen's compensation benefit scales. For this reason the cost of workmen's compensation insurance is examined in Part IV. In Chapter XII the nature of insurance provisions is discussed. The method of rate-making employed in workmen's compensation insurance is briefly set forth in Chapter XIII. In Chapter XIV the distribution of the workmen's compensation hazard among the several types of insurance carriers is analyzed, as well as the changes that have occurred in this during the period 1915-1940. Chapter XV analyzes the cost of workmen's compensation insurance in Massachusetts during this same period, not only to employers generally, but also for the several classes of employees for whom individual rates are prepared. The possibility of reducing costs of workmen's compensation insurance is examined in Chapter XVI.

The relation of injury prevention to compensation costs is the subject of Part V. It is pointed out that, notwithstanding the timorous attitude with which statisticians have usually examined this question, there has been a general downward trend in injury frequency which tends to lower not only direct (compensation) costs of industrial injuries, but their indirect (damage, spoilage, morale) costs as well. The preventive activities of employers,

workers and unions, insurance carriers, and regulating agencies are examined in successive chapters. The thesis is then developed that there is a causal relation between preventive activities and adequate compensation. The necessity for compensating accidents more adequately tends to stimulate preventive activity. The increased safety thus encouraged tends to make possible still more adequate compensation.

The American workmen's compensation system is a living thing, constantly changing as laws are amended, administrative practices altered, and work practices improved. The year 1940 has been used in final measurements of coverage, benefits, and costs in this volume for reasons largely statistical in character. There has been no over-all census since 1940. Cost statistics, especially of an insurance character, are quite generally accumulated on a basis which makes impossible accurate tabulating for the immediate past (see Chapter XIII). Aware that substantial changes in all the matters considered below have occurred since 1940, the writer has accordingly added a supplementary section, Part VI, in which the principal changes are set forth and their significance briefly appraised. It is hoped that this will correct any impression the reader might otherwise have formed that there is any special merit in selecting the year 1940 for appraising the American system of workmen's compensation.

PART I

THE EXPANDING SCOPE OF WORKMEN'S
COMPENSATION, 1915-1940

CHAPTER I

EXCLUDED EMPLOYMENTS

No ONE has ever successfully challenged Downey's contention that "the compensation system should comprise all industries, all persons employed therein and all personal injuries which arise in the course of industrial pursuits."¹ Yet none of the state workmen's compensation laws covers all employments. The New Jersey act most closely approximates complete coverage, excluding only casual employments and those of elective officials. In most states agriculture, domestic service, and employments casual in nature or not conducted as a part of the employer's business are exempted from the provisions of the act. Nine compensation acts exclude a dwindling number of nonhazardous employments. Twenty-five states exempt employers of less than a given number. Other less common exclusions affect those engaged in work not conducted for gain, those earning more than a specified salary or wage, those serving as officials of corporations, those elected to public office, and so forth. These exclusions are indicated state by state in Table 1.

DOMESTIC SERVICE

The most common exclusion, effective in all states except Connecticut and New Jersey, denies coverage to domestic callings. In most states the exclusion is specific, but five state laws, covering only hazardous employments, have simply omitted domestics from the enumerated employments.² The laws of four states, while not specifically excluding domestic service, provide that no penalty shall apply to employers of servants rejecting the act.³ The Ohio statute covers workmen "except (in) a household establishment," while the Oklahoma statute excludes domestics under a clause extending coverage only to employment "for pecuniary gain." The

¹ E. H. Downey, *Workmen's Compensation* (1924), p. 21.

² Kansas, Louisiana, New Mexico, Oregon, and Washington.

³ Illinois, Maine, Massachusetts, and Michigan.

EXPANDING SCOPE OF COMPENSATION

TABLE 1
EXCLUSIONS IN AMERICAN WORKMEN'S COMPENSATION LAWS, 1940

State	Domestic service	Farm labor	Numerical exemptions	Casual workers ^a	Other exclusions
Ala.	*	*	sixteen	*	Public service
Ariz.	*	*b	three	*	o
Calif.	*	d	...	*	...
Colo.	*	*	four	*	...
Conn.	...	...	five	*	Outworkers
Del.	*	*	five	*	Outworkers
D. C.	*	*	...	*	...
Fla.	*	*	three	*	e
Ga.	*	*	ten	*	Not for gain
Idaho	*	*	...	*	f
Ill.	g	...	...	*	h
Ind.	*	*	...	*	...
Iowa	*	*	...	*	Clerks
Kansas	i	*	five ^j	*	k
Ky.	*	*b	three	...	...
La.	l	l	...	*	k
Maine	*g	*g	six	*	Logging
Md.	*	*	...	*	l, m
Mass.	*g	*g	...	*	...
Mich.	*g	*g	...	...	...
Minn.	*	*b	...	*	...
Mo.	*	*	eleven ⁿ	*	o
Mont.	*	*	...	*	k
Nebr.	*	*	...	*	Outworkers
Nevada	*	*	...	*	...
N. H.	*	*	five ^p	*	Public service
N. J.	...	...	...	*	...
N. Mex.	i	i	four	*	k, q
N. Y.	*	*	four ^p	...	r
N. C.	*	*	five	*	Logging
N. Dak.	*	*	...	*	o
Ohio	*	...	three	*	...
Okla.	i	*	two	...	Not for gain ^k
Oregon	i	i	...	...	k, r
Pa.	*	*	...	*	Outworkers
R. I.	*	*	four	*	o
S. C.	*	*	fifteen	*	Logging
S. Dak.	*	*b	...	*	...
Tenn.	*	*	five	*	Public service
Texas	*	*	three	*	s
Utah	*	*	three	*	...
Vt.	*	...	eleven	*	t
Va.	*	*	eleven	*	...
Wash.	i	i	...	...	k
W. Va.	*	*	...	*	u
Wis.	*	*	three	*	...
Wyo.	*	*	...	*	k, v

For footnotes, see page 3.

law of Kansas provides for voluntary election by employers of domestics, but contains a numerical exemption. Connecticut also has a numerical exemption but has arranged for election without penalty below the limit.⁴

The nearly universal character of this exclusion does not imply that coverage is undesirable. There is little warrant for the prevailing view that work around the home is not hazardous. The low scale of remuneration offers little opportunity for accumulating the wherewithal to tide over a period of disability. Admittedly, it would be difficult to administer many provisions of the law so far as domestics are concerned. Enforcement of accident reporting, compulsory application or presumed election, insurance requirements, wage accounting provisions, and the like would present real obstacles where involving large numbers of small employers. The experience of New Jersey suggests that few of these difficulties are insuperable, and that for domestic callings such requirements as insurance may safely be waived. It is unlikely that the law will be applied to domestics in many states, however, less because of the enumerated obstacles than because those affected are in no position to press for coverage.

AGRICULTURE

Almost equally common is the practice of excluding farm hands. Again, this is not always accomplished by excepting this employ-

⁴ For the nature of elective coverage see below, pp. 19 ff.

- a* And/or persons not in course of employer's business.
- b* But the law applies to employees using threshing machines, etc.
- c* Inapplicable to those earning more than a stipulated sum: in Arizona, public employees earning over \$2400; in North Dakota, executives earning over \$2400; in Rhode Island, employees earning over \$3000.
- d* Farmers paying over \$500 in wages annually are presumed to have elected coverage unless they give written notice to the contrary.
- e* Excludes employees of sawmills, or those engaged in catching, preparing, and shipping fish, or in growing and harvesting cane sugar.
- f* Excludes outworkers and those whose employment is not for gain.
- g* Election is permitted but it is explicitly provided that defenses are not abrogated in the event of nonelection.
- h* The Illinois Act lists hazardous employments which are compulsorily covered but nonhazardous employments are covered electively with penalty for nonelection.
- i* The employment is not specifically excluded but the law applies only to enumerated hazardous employments.
- j* Inapplicable to employment in mining and construction.
- k* Excludes employees in callings not considered hazardous.
- l* Not applicable to services of country blacksmiths, wheelwrights, and other rural services.
- m* Unlisted employments if found hazardous (by Commission) are also covered.
- n* At the discretion of the commission, may be declared inapplicable to hazardous employments.
- o* Excludes public service, outworkers, and those earning over \$3000.
- p* Applies only to nonhazardous employments.
- q* Covers employees of contractors on public projects if working over ten feet above the ground.
- r* Excludes corporation executives and employees engaged in logging.
- s* Excludes corporation executives and public employees except those of the State Highway Commission.
- t* Excludes employments not for gain and employees earning over \$2000.
- u* Excludes corporation officers.
- v* Excludes outworkers, clerks, and employments not for gain.

ment from the application of the law. Four states covering hazardous employments refrain from listing agriculture as such.⁵ Vermont spares most farmers with its numerical exemption of those employing less than eleven.⁶ Maine, Massachusetts, and Michigan provide for election but subject those failing to elect to no constraint.⁷ California, while exempting agriculture from its compulsory act, presumes election unless notified of rejection in the case of all farmers paying over \$500 annually in wages. The Ohio law does not mention agriculture, and its numerical exemption (employers of three or less) frees only the very small operators from compliance with its compulsory terms. The Connecticut exemption (employers of five or less) is rendered less effective by provision for election without penalty. A recent amendment (1939) has made the Illinois act applicable to agriculture. The New Jersey act has always covered hired workers.

Summarizing, one may say that six laws—those of California, Connecticut, Illinois, New Jersey, Ohio, and Vermont—apply to a significant proportion of agricultural workers. Elsewhere, however encouraged, coverage of this employment is purely voluntary. The powerful farm lobby is the principal explanation. In most cases laws which applied to agriculture could not have passed, and in nearly all cases inclusion of agriculture would have involved concessions in the benefit level. It can be maintained that coverage of small farms would be administratively impractical. Unlike the employer of one or two servants, the typical small farmer knows little about accounting and is hard pressed financially.

Critical examination tends to subvert two plausible explanations of this large gap in coverage: (a) that agricultural employments are relatively safe; (b) that hired hands are like members of the family, and are not in straits when disabled. Agriculture is full of hazards, and in 1938 cost more lives than any industrial group. The average number of agricultural employees that year was about 10,745,000. The corresponding average for manufacturing was 8,297,000. Yet the number of fatalities in agriculture was 4400, and in manufacturing only 1900. As for the status of hired workers, they are almost never treated like "members of the family" when the number hired is large. Indeed, even on small

⁵ Louisiana, New Mexico, Oregon, and Washington.

⁶ But since 1943 this has been reduced to less than eight (see below, p. 379).

⁷ See below, p. 20.

farms they do not always receive such treatment. In any event, the dependence of injured workers on families with small incomes is highly undesirable.

NONHAZARDOUS EMPLOYMENTS

The laws of nine states apply only to hazardous pursuits. This aspect of compensation legislation originally arose from fears regarding the bounds of the police power. Decisions covering other forms of labor legislation, notably hours regulation, suggested that the state might act to protect the public health only where it was immediately and definitely threatened. Not until 1917 did the Supreme Court allay these apprehensions by ruling that states might pass compensation laws of universal application.⁸ In the meantime many states had "played safe" by seeking to compensate only those injured while following hazardous employments. Since that decision, however, there has been a tendency to liberalize or abandon the nonhazardous exclusion. Four states have converted to laws of general coverage.⁹ Considerable additions to the enumerated lists have been made by the other jurisdictions. Only one law adopted after 1917 has incorporated this exclusion—that of New Mexico.

The terminology varies from law to law. Four laws use the term "extra-hazardous," three "hazardous."¹⁰ The Kansas act calls the covered employments "especially dangerous," the Montana act, "inherently hazardous." Some adhere strictly to the list principle, covering only the employments the law specifies. The Maryland act includes a provision that makes it "apply to all extra-hazardous employments not specifically enumerated therein, and to all work of an extra-hazardous nature."¹¹ In the Oregon act the Commission is authorized to declare other callings hazardous after a duly conducted hearing.

Whatever the form of the exclusion, the results are generally similar. The lists are more often determined on the basis of polit-

⁸ *New York Central Railroad Co. v. White*, 243 U. S. 188.

⁹ Arizona, Illinois, New Hampshire, and New York. But the compulsory laws of Illinois and New York apply only electively to nonhazardous callings. For difference in coverage see below, pp. 19-20.

¹⁰ The four are Maryland, New Mexico, Washington, and Wyoming; the three are Louisiana, Oklahoma, and Oregon.

¹¹ Maryland act, sec. 32, subsection (46), quoted in W. R. Schneider's *Complete Compilation of Workmen's Compensation Laws*, II (1939), 1425.

ical expediency than degree of hazard. Some of the distinctions are almost ludicrous. In Wyoming, for example, dude ranching is defined as extra-hazardous, while stock raising is specifically exempted.¹² In none of the states is agriculture included in the list, and in five of the acts concerned it is specifically excluded.¹³ Yet the injury hazard in agriculture is comparatively high, as was noted above. The lists vary greatly in detail. That for New Mexico is contained in a dozen lines. The 1934 list for Washington (since which time the act has referred the reader to the rate book of the state insurance fund) covered eight pages.

Even where an employment may clearly be shown to be non-hazardous, its exclusion is indefensible. An injury is no less severe, nor the resulting economic distress less serious, because the employee was plying a trade of low hazard. A bona fide low hazard is, in fact, a strong argument for coverage since the cost of coverage will be correspondingly slight.

NUMERICAL EXEMPTIONS

In 1940, twenty-five of the forty-seven state workmen's compensation acts contained a stipulation exempting employers of less than some specified number of workers. The bulk of these exemptions were modest in size, and in four laws their scope was closely guarded.¹⁴ The Oklahoma act exempted only the employer of a single worker. Seven laws exempted employers of less than three workers, four laws less than four workers, and six laws less than five workers. At the other extreme, Alabama covered only employers of sixteen or more workers and South Carolina only employers of fifteen or more. Three states covered only employers of eleven or more workers. Most of these exemptions have been arranged by removing the penalties for nonelection by small employers, but four states have made their laws inapplicable to small employers.¹⁵ In general the exemptions are less common in leading industrial states, but they are both general and substantial in the states of growing industrial importance in the southeast.

The New Hampshire and New York exemptions do not apply to

¹² Marshall Dawson, *Problems of Workmen's Compensation Administration*, U. S. Bureau of Labor Statistics Bulletin No. 672 (1940), p. 35.

¹³ The five are Kansas, Maryland, Montana, Oklahoma, and Wyoming.

¹⁴ See the following paragraph.

¹⁵ Arizona, New Hampshire, Oklahoma, and Texas.

hazardous employments, and the list in the New York act is so comprehensive as to make the exemption scarcely operative. The Kansas provision does not apply to mining and building operations, and the Missouri commission is permitted to designate hazardous employments in which coverage must be general. In New Mexico the exemption does not apply to injuries on scaffolds or other superstructures if occurring ten feet or more above ground. On the other hand, broader exemptions for favored employments are found in some of the laws. Florida's modest limit of "less than three" becomes "less than ten" for sawmills, and North Carolina raises its limit from five to fifteen for both sawmill and logging operators. Maine and South Carolina exclude them altogether. These employments have consistently registered the highest frequency and severity rates in this country, and are predominately small operating units.¹⁶ To coddle these extremely hazardous employments is utterly indefensible.

The customary defense of numerical exemptions is the familiar one of administrative difficulty. Admittedly it is both difficult and expensive to exact compliance with the law from the very small employers. The keeping of accounts, the taking of safety measures, and the other requirements of a compensation act undoubtedly work a greater hardship to the very small operator. Complicating factors are the high mortality of small concerns and the shifts in size of establishments with the movement of the business cycle. Dodd points out that the increasing number of firms eligible for numerical exemptions in periods of depression is reflected in an increased number of rejections of elective acts.¹⁷ The time is ripe for a searching analysis of the administration of labor laws as they affect small concerns in those jurisdictions which avoid exemptions. We may be sure that it is small comfort to an injured worker, if not covered, to know that his injury occurred while he was working for a tiny firm.

¹⁶ In 1939 the frequency rates for logging and sawmills were 112.36 and 51.48 per million man hours respectively. The severity rates were 19.18 and 6.64 per thousand man hours respectively. The next highest rates were 35.59 (pulp, frequency) and 4.80 (fabricated structural steel, severity). See "Industrial Injuries in the United States during 1939," by Max D. Kossoris and Swen Kjaer, *Monthly Labor Review*, LI (July 1940), 92 ff.

¹⁷ W. F. Dodd, *Administration of Workmen's Commission* (1936), p. 750. He cites a report of the Colorado Industrial Commission giving figures for the fiscal years 1931 and 1932.

OTHER EXCLUSIONS

Those whose work is casual or not in the usual course of their employer's business are not generally covered. Only six states unequivocally cover the casual worker.¹⁸ The exclusion is implied in the Louisiana statute, and voluntary election is provided in the Montana statute. Coverage of casual workers bristles with administrative problems. The accounting procedures, safety programs, and administrative details are naturally geared to the normal and regular employments. Wage records from previous employment, where required, are hard to obtain. If the authorities enforce coverage too vigorously, this may act as a deterrent to the employment of casuals. Yet just because many of those concerned may, by reason of their irregular employment, be more susceptible to injury than regular employees, the difficulties need to be faced, analyzed, and if possible, overcome.¹⁹ The experience of the covering states should be enlightening.

Public employees are generally more completely covered than private employees, but a few jurisdictions still exclude them. The Texas act applies only to employees of the State Highway Commission. The New Mexico act covers only the hazardous employments of the Highway Commission. In Alabama only state employees are covered. Public employees in Missouri, New Hampshire, and Tennessee may be covered only by voluntary election. Elsewhere partial exclusions of small groups of public employees are found in twelve jurisdictions. Generally speaking, jurisdictional issues of a constitutional nature, or conflicting social programs (pensions, etc.) are responsible for incomplete coverage.

¹⁸ Kentucky, Michigan, New York, Oklahoma, Oregon, and Washington.

¹⁹ No definitive evidence is available to show whether or not irregular workers actually are more susceptible to injury.

CHAPTER II

MEASUREMENT OF COVERAGE

HOOKSTADT'S ANALYSIS

THE LATE Carl Hookstadt was the pioneer in attempting to analyze the scope of the coverage provisions of the compensation laws by reference to employment data of the several states. In 1917 and again in 1920 he sought to estimate the number of workers to whom each of the compensation laws applied.¹ His computations were based upon the federal census of occupations of 1910. The first step was to subtract from the gainful workers in each state those employed in interstate rail transportation or by the federal government; the former, because they could not be covered by state laws, and the latter because they were covered by a federal statute. Employers and independent workers (including farmers and unpaid family workers) were then deducted. The remainder were assumed to be coverable. From this latter group subtractions were then made by reference to the provisions of the several laws, as interpreted by the responsible officers of the state concerned.

Table 2 represents Hookstadt's procedure and findings for the forty-two jurisdictions then having compensation acts in the United States proper.² For 1920 he found that, of the 32,010,000 resident gainful workers, 1,229,000 were employees of the federal government or of interstate railroads. About 9,971,000 were employers or independent workers. This left 20,810,000 employees subject to state laws. Of this number, Hookstadt counted 6,016,000 to be excluded by one or another of the provisions in the several laws. The remainder—14,794,000—he held to be covered, assuming all elections provided for by law were made. The most important exclusions were agriculture, which eliminated 11.3

¹ U. S. Bureau of Labor Statistics Bulletin No. 203 (1917), and Bulletin No. 275 (1920).

² The forty-eight states and the District of Columbia are here referred to as the United States proper.

TABLE 2

HOOKSTADT'S 1920 ESTIMATES OF THE NUMBER AND PER CENT OF PERSONS COVERED BY COMPENSATION ACTS^a

State	Gainful workers ^b (thousands)	Employers, etc. (thousands)	Per cent of gainful workers	Covered employees (thousands)	Per cent of gainful workers	Excluded employees (thousands)	Per cent of gainful workers	Per cent of employees	
								covered	excluded
Ala.....	978	602	61.6	126	12.9	249	25.5	33.6	66.4
Ariz.....	81	19	23.2	32	40.2	30	36.6	52.4	47.6
Calif.....	1,059	255	24.1	612	57.8	192	18.1	76.2	23.8
Colo.....	319	101	31.8	137	43.0	80	25.2	63.1	36.9
Conn.....	480	86	17.9	322	67.2	71	14.9	81.9	18.1
Del.....	82	23	27.5	37	46.1	22	26.4	62.9	37.1
Idaho.....	123	51	41.0	50	40.6	23	18.4	68.7	31.3
Ill.....	2,192	617	28.1	872	39.8	703	32.1	55.4	44.6
Ind.....	993	360	36.3	503	50.6	130	13.1	79.4	20.6
Iowa.....	786	361	45.9	267	33.9	159	20.2	62.7	37.3
Kansas.....	583	270	49.7	108	18.6	185	31.7	36.9	63.1
Ky.....	843	422	50.1	253	30.1	167	19.8	60.2	39.8
La.....	659	261	39.6	140	21.3	258	39.1	35.2	64.8
Maine.....	295	89	30.1	150	51.0	56	18.9	72.9	27.1
Md.....	523	117	22.4	188	36.0	217	41.6	45.9	54.1
Mass.....	1,498	235	15.7	1,109	74.1	153	10.2	87.8	12.2
Mich.....	1,081	362	33.4	598	55.3	122	11.3	83.1	16.9
Minn.....	789	309	39.2	379	48.1	100	12.7	79.0	21.0
Mont.....	159	48	30.0	57	35.7	55	34.3	50.9	49.1
Nebr.....	418	211	50.4	146	34.9	61	14.7	70.4	29.6

Nev.....	41	9	21.1	25	60.1	8	18.8	76.2	23.8
N. H.....	186	44	23.4	80	42.9	63	33.7	56.0	44.0
N. J.....	1,036	172	16.6	862	83.2	2	0.2	99.8	0.2
N. Mex.....	114	49	42.6	20	17.6	45	39.8	30.7	69.3
N. Y.....	3,898	772	19.8	2,503	64.2	623	15.9	80.1	19.9
N. Dak.....	208	115	55.3	43	20.9	49	23.8	46.8	53.2
Ohio.....	1,844	522	28.3	1,009	54.7	313	17.0	76.3	23.7
Okla.....	582	338	58.1	88	15.0	157	26.9	35.9	64.1
Oregon.....	286	87	30.5	97	33.8	102	35.6	48.7	51.3
Pa.....	2,996	577	19.3	2,150	71.7	269	9.0	88.8	11.2
R. I.....	245	36	14.9	173	70.6	36	14.5	82.9	17.1
S. Dak.....	211	118	56.0	54	25.6	39	18.4	58.0	42.0
Tenn.....	830	438	52.8	146	17.6	246	29.6	37.2	62.8
Texas.....	1,505	865	57.5	307	20.4	333	22.1	47.9	52.1
Utah.....	122	41	33.5	60	49.5	21	17.0	74.4	25.6
Vt.....	139	47	33.7	51	36.6	41	29.7	55.2	44.8
Va.....	763	304	39.9	209	27.4	250	32.7	45.6	54.4
Wash.....	488	117	23.9	192	39.2	180	36.9	51.5	48.5
W. Va.....	426	160	37.6	212	50.0	53	12.4	80.1	19.9
Wis.....	862	325	37.7	405	47.0	132	15.3	75.4	24.6
Wyo.....	61	18	29.5	20	32.7	23	37.8	46.3	53.7
Total.....	30,781	9,971	32.4	14,794	48.1	6,016	19.5	71.1	28.9
Noncompensation states (eight)....	5,950 ^b	3,390	57.0 ^c	...	...	2,562	43.0 ^e	...	...
U. S. civilian employees ^d	734	...	...	734	100.00	...	...	100.0	...
Interstate railroad employees.....	1,400 ^e	...	...	...	...	1,400 ^e	100.0	...	...

^a Adapted from Table 5 of U. S. Bureau of Labor Statistics, Bulletin No. 275 (1920), *Comparison of Workmen's Compensation Laws in the United States and Canada up to January 1, 1920*. Territories have been omitted, as well as the state of Missouri, the law of which was subject to a referendum that proved unsuccessful.

^b These figures, based upon the United States census of 1910, do not include federal employees and interstate railroad employees.

^c The Alabama percentages have been applied to the noncompensation states (except Missouri).

^d Figures as of July 1, 1919, taken from the United States Civil Service Commission's *Official Register of the United States*, 1919 volume, especially pp. 13-16.

^e Does not include shop employees and others usually subject to state compensation laws.

per cent of the eligible employees, and domestic service which eliminated 10.4 per cent. Numerical exemptions accounted for 2.5 per cent, and other exclusions 4.9 per cent, of the subject employees. Thus in the jurisdictions concerned 71.1 per cent of those to whom the law might apply were found within its scope. The variations were tremendous, the per cent of applicable coverage ranging from 30.7 in New Mexico to 99.8 in New Jersey. Of the ten states with the greatest industrial production, however, only Illinois provided for less than 75 per cent of its eligible employees.⁸ As Hookstadt points out, differences in coverage are less a function of legislative liberality than of industrial distribution. In nine states over 25 per cent of the eligible employees were excluded by the agricultural exemption alone. In New Mexico 40.5 per cent of employees were not covered because they were farm hands. The corresponding exclusion for Massachusetts was only 2.9 per cent.

In one respect Hookstadt's analysis is incomplete, although his figures contain most of the data with which to fill the gap. The weighted percentage of coverage in the listed jurisdictions is less important than a percentage indicating the proportion of employees in the entire country who are covered. Adding to Hookstadt's total number of eligible employees the eligible employees in the noncompensation jurisdictions and the separable federal rail employees (701,118) in the United States proper, we get a total of 24,806,000 employees. Of this number 15,527,000, or 62.6 per cent, were covered, and 9,278,000, or 37.4 per cent, were not provided for.

Hookstadt made no effort to conceal the difficulties he encountered in his analysis, pointing to the lack of agreement between classifications enumerated in the laws and in the census, to the inadequacy of the industrial groupings of occupations in the census, and to the incomplete indications of the census with regard to employer-worker status. The first difficulty was met with principally in estimating the effect of laws covering only extrahazardous callings. The laws were apt to contain a relatively small number of broad industrial designations, application of which to census listings left too much play to judgment. The Illinois act,

⁸ Eligible employees are those whom the state may cover. The state is not permitted to provide for compensation of interstate railroad workers, certain maritime workers, and others under federal jurisdiction.

for example, contained at this time only eight classifications, the last of which read as follows:

Any enterprise in which statutory or municipal ordinance regulations are now or shall hereafter be imposed for the regulating, guarding, use, or the placing of machinery or appliances or for the protection and safeguarding of the employees or the public therein.⁴

The general tendency of these laws was to use industrial rather than occupational designations. In any event, enterprises are likely to act as a unit in matters of policy, so coverage tends to follow industrial rather than occupational lines. Volume IV of the census of 1910, in Table VI, contained the first effort to produce a sound industrial classification of occupational statistics. Unfortunately this was attempted only on a country-wide basis, whereas in the nature of the case Hookstadt had to make his estimates state by state. For this purpose the standard industrial groupings of occupations were often misleading. More than a fifth of the 10,659,000 workers credited to manufacturing and mechanical industries were actually working in transportation or trade (construction workers, electricians, etc.). A similarly large number of employees of factories were counted in the groupings of transportation (teamsters), trade (commercial travelers), or clerical occupations. Because of difficulties such as these, Hookstadt was able to distribute only 700,000 railroad workers among the several states, although he suspected that about twice that number were excluded.⁵

The benefits provided under workmen's compensation laws clearly apply only to employees. For estimating coverage, therefore, data are required which allow a clear separation of the employed from the self-employing. The United States was the only major country which gathered occupations statistics without distinguishing employment status.⁶ Perhaps a dozen of the designations used in 1910 are sufficiently clear so that an employing status may be presumed, assuming that the enumerators correctly and uniformly listed the individuals concerned. At least sixty other designations are ambiguous on this point, and probably a substan-

⁴ Illinois, Acts of 1913, "Compensation of Workmen for Injuries," p. 335, sec. 3, par. (8). See also U. S. Bureau of Labor Statistics Bulletin No. 126 (1913), 222.

⁵ The total (for the 42 jurisdictions) of federal and rail employees combined was only 1,229,000. Of this number, 577,000 were federal employees.

⁶ This distinction is drawn for the first time in the census of 1940.

tial number of self-employing individuals were listed under them. Although he alluded to this difficulty, Hookstadt did not explain the method by which he surmounted it. Three years later, in reclassifying the 1920 census, he was franker. There he listed sixty-four occupations which he divided in determining the proportions of employers and workers, and he listed also the percentages he applied in doing this. It is evident from working his figures that a very similar procedure was employed in estimating the coverage of workmen's compensation laws from the 1910 census. This procedure is open to the serious objection, which Hookstadt conceded, that his percentages are based largely on individual judgment. Curiously enough, only a slightly different result is obtained by treating the occupations as wholes, counting those which contain a larger proportion of employers as employing, and vice versa.⁷

Hookstadt freely admitted that his figures would not state the facts as they existed at the time of writing, since his basic data referred to 1910. He thought that the percentages would differ only slightly except for states which had undergone a marked change in industrial development. Unfortunately, the 1920 data were not available when he was writing. The principal changes suggested by analysis of the later figures are: (a) a somewhat broader coverage—52 per cent of the gainful workers as compared with 48 per cent; (b) a lower discount for the self-employing, relatively speaking—25 per cent of the gainful workers as compared with 32 per cent; and (c) smaller exclusions for agriculture and domestic service, each by about 370,000 workers.⁸

WEISS'S ANALYSIS

There have been important changes in the scope of workmen's compensation since 1920. Six states and the District of Columbia have entered this field of legislation, and the federal government has undertaken to cover longshoremens and harbor workers.⁹

⁷ See the discussion of this problem by W. S. Woytinsky, *Labor in the United States* (1938), pp. 236-241 and 254-255.

⁸ The decline in servant classes is entirely bona fide, but some part of the decline in number of farm hands is due to the difference in time of year between the two censuses. The 1910 census was taken in April, the 1920 census in January.

⁹ The states concerned are Georgia (1922), Missouri (1925), North Carolina (1929), Florida (1935), South Carolina (1935), and Arkansas (1941).

Three states have abandoned exclusion of nonhazardous employments, and most of those retaining the exclusion have narrowed its scope. Five states have abandoned exclusion of public employments. Numerical exemptions have been reduced or eliminated in many jurisdictions. Four states have largely rewritten provisions affecting agricultural workers, and Connecticut now covers domestics. Further minor changes in coverage have been made in numerous amendments. The effect of these changes may be observed by using the indications of more recent censuses.

No full-length analysis of coverage paralleling Hookstadt's study has since appeared. In 1933, Harry Weiss attempted to bring the early estimates down to date with some rough computations on a national basis.¹⁰ He observed that the original estimate that 30 per cent of workers were excluded from coverage failed to take account of interstate rail occupations under federal jurisdiction. The omission was expedient in determining coverage by states, for it eliminated from the base workers who could not be covered by state laws. In considering the country-wide proportion covered, however, both the subtracted rail employees and the civil employees of the federal government, as well as those residing in noncompensation states, should be taken into account. Weiss attempted no segregation of self-employed on his own initiative, but assumed the same percentage (nearly 35 per cent on a country-wide basis) that Hookstadt had found. The assumption was certainly erroneous, for even including home farm laborers, the number is hardly 25 per cent of the 1930 gainful workers. A more important slip is counting home farm laborers as excluded agricultural workers, while implicitly counting them as self-employed by using Hookstadt's percentage.

Weiss thought 12 per cent of the "employees" were excluded by the agricultural, 5 to 8 per cent by the domestic, exemption. As pointed out below, the exclusions appear to have been about 8 per cent and 6 per cent respectively.¹¹ Weiss's crude estimate that 9,000,000 "employees" are not covered is a little large if only comprising the excluded workers, those residing in states without

¹⁰ Harry Weiss, "Development of Workmen's Compensation Legislation in the United States," Ph.D. thesis, University of Wisconsin (unpublished). An abridgment of this thesis appears in vol. III of John R. Commons and others, *History of Labor in the United States, 1896-1932* (1935), pp. 564-610.

¹¹ Below, p. 17; 4.5% and 4.1% of gainful workers, but 8% and 6% of employees.

compensation acts, and railroad workers; and it is decidedly small if the unemployed are taken into account. On the first assumption coverage was not accorded to about 8,000,000, on the second assumption over 11,000,000, "employees." Assuming a total of 33,000,000 "employees," Weiss's estimate indicates a coverage of 24,000,000, agreeing with the estimate of F. Robertson Jones.¹² Careful scrutiny of the census, whether following Hookstadt's procedure faithfully or the revisions suggested below, yields a figure of over 25,000,000 workers to whom compensation laws apply.

EXPANSION OF COVERAGE

In Table 3 the indications of the 1930 and 1940 census regarding coverage of workmen's compensation laws are presented on a country-wide basis, and contrasted with the situation in 1915 and 1920. In Table 4 they are presented on a state-by-state basis. Certain differences in method of calculation from that employed by Hookstadt should be noted. The gainful worker data include employees of railways and of the federal government, but exclude unpaid family workers. The self-employed have been segregated by subtracting the members of over forty classes which include persons predominantly independent in employment status.¹³ Since workers are covered only if employed, the volume of unemployment has been taken into account for the two most recent years selected. It has been impossible to do this for the earlier years, since no information on unemployment by states is available for those years.¹⁴ An attempt has also been made to account for the exclusion of casual workers in the 1930 and 1940 tabulations. The lack of comparable figures makes these adjustments impossible for 1915 and 1920. Hookstadt included the employees of water transport firms as covered, although at that time a series of decisions had already pointed to their exclusion from the application of state legislation. In Table 4, therefore, a new category of

¹² F. Robertson Jones, *Digest of Workmen's Compensation Laws in the United States and Territories, with Annotations* (New York: Association of Casualty and Surety Executives, 12th edition, 1931).

¹³ As closely as possible following the listings of Woytinsky in his *Labor in the United States*, pp. 240-242 and 254-255.

¹⁴ Even if available, this information would make relatively little difference. Unemployment was at a very low level in 1920, and amounted to only about half a million in 1910.

TABLE 3

EXPANDING SCOPE OF AMERICAN WORKMEN'S COMPENSATION LAWS

Groups of workers in the United States proper	Jan. 1, 1915 ^a		Jan. 1, 1920		April 1, 1930		March 1, 1940	
	(thousands)	(per cent)	(thousands)	(per cent)	(thousands)	(per cent)	(thousands)	(per cent)
Gainful workers ^b	34,857	100.0	39,764	100.0	47,170	100.0	51,346	100.0
Ineligible workers.....	10,177	29.2	9,914	24.9	13,563	28.8	17,764	34.6
Unemployed.....	...	...	...	...	3,188	6.8	8,006	15.6
Self-employed.....	10,177	29.2	9,914	25.0	10,375	22.0	9,758	19.0
Eligible workers.....	24,680	70.8	29,850	75.1	33,607	71.2	33,589	65.4
Covered workers.....	10,275	29.5 ^d	20,100	50.5 ^d	25,277	53.6 ^d	27,165	52.9 ^d
State laws.....	9,809	28.2	19,366	48.7	24,452	51.8	25,982	50.6
Federal act ^c	466	1.3	734	1.8	544	1.2	903	1.8
Longshoremen's Act.....	...	...	...	...	271	0.6	280	0.6
Not covered.....	14,405	41.3	9,750	24.5	8,330	17.6	6,423	12.5
Interstate rail.....	1,170	3.4	1,241	3.1	1,076	2.3	702	1.4
Extra-state water.....	221	0.6	295	0.7	...	...	...	...
No act.....	8,537	24.5	2,926	7.4	1,295	2.7	543	1.1
Excluded.....	4,476	12.8	5,288	13.3	5,959	12.6	5,178	10.1
Hired farm workers.....	1,377	4.0	1,897	4.8	2,131	4.5	1,573	3.1
Domestics.....	1,150	3.3	1,449	3.6	1,915	4.1	1,945	3.8
Small firm workers.....	236	0.7	473	1.2	380	0.8	342	0.7
Casual workers.....	...	...	...	...	487	1.0	505	1.0
Nonhazardous, etc., workers....	1,713	4.9	1,469	3.7	1,046	2.2	813	1.6
Per cent covered.....	41.2		67.4		75.2		81.5	

Source: Totaled from figures by states compiled from census data for the years given, after closely comparing the occupational listings with the coverage provisions of the several laws (cf. Tables 4 and 5 below).

^a Figures as of census of 1910.

^b Less unpaid family workers.

^c Adapted from data in the United States Civil Service Commission's *Official Register of the United States*.

^d But of eligible employees the per cents covered were 41.2, 67.4, 75.2, and 81.5 respectively.

“eligible” employees has been inserted which corresponds to Hookstadt’s category of “employees,” but excludes from the state figures employees of water transport firms, and includes in the national totals the corresponding employees of noncompensation states.

It appears from Table 3 that the number of those to whom workmen’s compensation laws apply doubled between 1915 and 1920, increased about 25 per cent during the twenties, and increased about 10 per cent during the thirties. In these three periods the number of laws in effect increased from twenty-four in 1915 to forty-two in 1920, to forty-seven in 1930, and to forty-nine in 1940. Not only did the 1940 total of workers covered include more than two and a half times the 1915 total, but the proportion of eligible employees covered in 1940 (80.9 per cent) was almost double the proportion covered in 1915 (41.2 per cent). The proportion excluded by the state laws, varying but little in the earlier years despite the mounting list of new laws, declined over a fifth during the last decade. It was in the “other” group, including principally the exempted nonhazardous and public employments, that most of this decline occurred. The number of states without laws decreased from twenty-five in 1915 to eight in 1920, to four in 1930, and to two in 1940. During all this period workers engaged in interstate rail transportation remained under employers’ liability, but marine workers finally secured coverage in 1927 with the passage of the Federal Longshoremen’s Act.¹⁵

Four principal variables were involved in these changes. Increase in population, bolstered by a rising proportion of gainful workers, should have produced a higher coverage by over four million, even had no other changes occurred. New laws added over five million workers in the years of the first World War, nearly two million in the twenties, and nearly seven hundred thousand in the thirties. Amendments broadening coverage had a more modest effect, reaching five hundred thousand in the first period, over seven hundred thousand in the second period, and over six hundred thousand in the most recent period. Occupational shifts accounted for the balance of the increases. The

¹⁵ Many rail employees have preferred to remain under employers’ liability because of the low amount limitations under workmen’s compensation (see Chapter IV, pp. 74–76 ff). This is particularly true of the transportation employees who, when injured, are likely to be very severely injured. Their powerful organizations have resisted efforts to place them under workmen’s compensation.

downward trend in the proportion of self-employed was an important factor in each period. Had this proportion remained constant, the number of employees would have been smaller by over three million in 1940. The leveling off of agricultural employment limited the effect of the exclusion of farm labor. The plight of the railroads, accompanied by a lowered volume of employment in this industry, lessened the proportion outside of compensation. The recent rise in federal employment has increased coverage directly.

One occupational shift, if it may be called that, was particularly significant in the more recent years. A high level of unemployment manifested itself in 1930, and the 1940 figures show a considerable increase in unemployment. Obviously unemployed workers are not subject to industrial hazards and therefore are not covered. Unemployment accordingly acted as a brake on the expanding scope of workmen's compensation laws. During the decade preceding the second World War the increase in unemployment restricted widening of coverage to the extent of nearly four million workers. The still higher unemployment of the middle thirties was an important factor in Swen Kjaer's estimate that barely 40 per cent of the gainful workers were under workmen's compensation.¹⁶

TYPES OF COVERAGE

The several laws differ in their method of application, and this circumstance should be taken into account in measuring coverage. The laws provide three general types of coverage: (a) compulsory, applying to all included employments regardless of the desires of employers or employees; (b) elective, applying to all included employments in which employers and employees have chosen to accept the act, but subjecting them to constraints unless they do so; and (c) voluntary, applying to employments outside

¹⁶ Marshall Dawson, *Problems of Workmen's Compensation Administration*, U. S. Bureau of Labor Statistics Bulletin No. 672 (1940), pp. 32 f. But note Dawson's peculiar interpretation of the expression "gainfully employed." This expression is usually regarded as synonymous with the work force, regardless of employment status. Dawson assumes that it includes only the employed portion, and, applying Kjaer's percentage, estimates coverage at 17,000,000. Indications are that the laws applied to no total within 5,000,000 of this figure during the past decade.

the planned scope of the act, but in which employers have signified a desire to be covered.

Compulsory coverage is more commonly applied to public than to private employments. Only seventeen compensation acts compel private employments to come under the law, but thirty-two such acts compulsorily apply to public employments. Compulsory acts were at first avoided for fear they might be declared unconstitutional.¹⁷ Although their constitutionality was firmly established by 1917, no tendency to provide compulsory coverage has appeared. Only four acts originally elective in form had been amended to apply compulsorily by 1940. New legislation, framed with one eye on a model statute and the other on prevailing attitudes in competing commonwealths, has generally given the employer the opportunity to reject the compensation principle. In 1913 four of the twenty then existing compensation laws covered private employments compulsorily. On January 1, 1920, ten of the laws by that time adopted were compulsory. In 1940, seventeen of the forty-nine laws applicable in the United States proper were compulsory.

Two common types of constraint have been employed to induce the principals concerned to elect, where coverage is elective. The principal inducement is abrogation of the common-law defenses where the employer rejects the law. Employers have generally preferred the limited compensation provided by the law to the undefined liability which would exist in the absence of the defenses.¹⁸ Except when abrogation of the defenses is absolute, the employer retains them, as qualified by law, if the employee rejects the compensation act. Under a second constraint, election is presumed unless the parties concerned have rejected the act by explicit notice before an injury has occurred. In twenty-three states election by the employer is presumed. Except in Kentucky, acceptance by the employee is presumed by all elective acts. Given both types of constraint, coverage becomes rather quasi-compulsory than truly elective.¹⁹

¹⁷ The original New York law was so held by the New York Court of Appeals (*Ives v. South Buffalo Railway Co.*, 210 N. Y. 271, 1911).

¹⁸ This fear is confined to particular cases in which a liability claim might prove more costly than a compensation claim. The over-all cost of compensation may be higher, although insurance rates for either coverage are generally the same.

¹⁹ The laws of New Jersey and Pennsylvania absolutely abrogate the common-law defenses regardless of election or nonelection by the employer.

Less pressure is exerted to induce public corporations to elect compensation in those states which have not adopted compulsory coverage of public employments. The defenses of municipalities are abrogated in seven of the twelve states concerned, but election is not presumed in two of them—Kentucky and West Virginia. Without the presumptive constraint, coverage seems as nearly optional as semicompulsory. In three states, Delaware, Rhode Island, and Vermont, abrogation of common-law defenses does not apply to public bodies. Massachusetts does not use this weapon to coerce municipalities, and West Virginia avoids it when the state is involved. While the proportion of accepting communities varies widely in these states, it is safe to say that less than half of the employees concerned are under compensation.²⁰ Three states, Alabama, Missouri, and Tennessee, specifically exclude municipal and similar employees, but provide for voluntary coverage by affirmative action. The Texas act makes no mention of public employments. A separate New Hampshire act authorizes compensation of state employees, and many of its subdivisions have chosen voluntarily to be covered.

Bearing in mind that the laws of several states apply compulsorily to some employments and electively to others, one may attempt to estimate the proportion included in each. A careful analysis of public employments in many states, and of nonhazardous employments in Illinois, is required for this purpose.²¹ After due adjustments for these differences, it appears that of those covered by state laws, about 13,926,000, or 53.6 per cent, were included electively in 1940, and about 12,056,000, or 46.4 per cent, were included compulsorily. It will be contended that all of those included electively were not actually covered. That is certainly true, but in view of the unlimited liability of rejecting employers, the number not covered is probably not substantial.²² There is likewise a margin of noncompliance even where compulsory acts obtain, but this margin is also probably not substantial. The coverage totals given in Table 3 are relatively conservative at any

²⁰ E. O. Stene, "The Application of State Workmen's Compensation Laws to Public Employees and Officers," *Minnesota Law Review*, XVII (1933), 162 ff.

²¹ The analysis of public employments was based on the quarterly reports now issued by the Department of Commerce, Bureau of the Census.

²² Satisfactory information about the number of employees affected by non-election of the acts cannot be obtained. The state officials concerned generally retain data only on the number of employers rejecting the act.

rate, for many employers outside the act choose voluntarily to be covered.

The difference between applicable and actual coverage may be estimated for states which make insurance the act of election. The law of Massachusetts was elective until 1943, and the employer signified election by taking out compensation insurance. His payrolls are subjected to audit by his insurance carrier, and total audited payroll figures are released periodically by the Massachusetts Rating and Inspection Bureau. The data are in policy year form, but can be adjusted to a fiscal year basis.²³ As a part of the compensation process, weekly wages of injured workers are reported to the state industrial accident department, until 1939 on a fiscal year basis. Average annual earnings can be estimated from the wage data, and the payroll figures may then be divided, giving the total number of workers covered.²⁴

The 1930 census indicated that 1,272,000 workers were under the Massachusetts act. For the fiscal year ending June 30, 1930, 1,183,000 workers appear to have been insured. Insurance is not required of local government units, which then employed about 75,000 eligible individuals. The bulk of these workers, although covered, were probably not insured. If we add 50,000 uninsured workers to 1,183,000 private employees insured, we get an approximate actual coverage of 1,233,000. A few thousand individuals were also covered on a per capita basis. This comparison suggests that the difference between applicable and actual coverage—apparently about 2 per cent—is inconsiderable.

This does not mean that all eligible employers accepted the act. Voluntary coverage of excluded workers was permitted in Massachusetts, and while the amount of such coverage was probably not large, this would increase the discount for nonelection. A few fairly large concerns in the state were known to prefer to operate outside the compensation act before it became compulsory.²⁵ The

²³ For a full discussion of the concept "policy year" and the method by which data secured on that basis may be adjusted, see below pp. 241-242.

²⁴ The simplest method, multiplication by 52, is inaccurate because the state does not count weeks of unemployment in excess of two. Accordingly the multiplier used here has been derived by weighting the indications of the industrial censuses—manufacturing, business, electrical industries, etc.—with regard to annual average earnings.

²⁵ See for example the statement of an official of Gratton and Knight, manufacturers of leather products at Worcester, Mass., found in W. F. Dodd. *Administration of Workmen's Compensation* (1936), p. 559.

amount of nonelection probably is influenced by the course of business, increasing in periods of depression. The Colorado commission pointed to the tendency to increased nonacceptance a few years ago.²⁶ Coverage estimates by years for Massachusetts taken in conjunction with data on noninsured accidents suggest a similar tendency there.²⁷ The principal increase in noninsured accidents for included employments was in trade. Apparently the small retailer when hard pressed feels obliged to reject the compensation act.

A wave of rejections is sometimes induced by drastic upward revision of benefit scales. The greatly liberalized 1937 act in Pennsylvania had that effect. A study by the Pennsylvania Department of Labor and Industry indicated that about 300,000 workers (about one-eighth of the number estimated to be under the act) were affected by these rejections.²⁸ A large proportion of them were miners employed by the distressed coal industry.

COVERAGE BY STATES

The analysis underlying Table 3 and the discussion of the measurement of compulsory and elective coverage depend upon information respecting coverage by states. The essential figures for the four years are presented in Table 4. The method of computation is consistent throughout, except for casual workers and the unemployed, for whom no figures by states are available for the early years. By reference to these data one may trace the location of the changes and the extent to which various sections shared in them. The upward trend of both number and per cent covered is generally observable. Of the forty-five jurisdictions which had laws in 1930, thirty-two attained their highest per cent of coverage in 1940, and twenty-eight their highest number covered. A still better showing would have been made had it not been for the high level of unemployment in 1940. Only nine

²⁶ *Twelfth Report of the Colorado Industrial Commission for the Biennium Dec. 1, 1930 to Nov. 30, 1932* (1933).

²⁷ Samuel B. Horovitz listed several concerns which rejected the Massachusetts act during the depression, in remarks addressed to the 1938 meeting of the International Association of Industrial Accident Boards and Commissions (U. S. Department of Labor, Division of Labor Standards, Bulletin No. 24, 1939, p. 174).

²⁸ U. S. Department of Labor, Division of Labor Standards, Bulletin No. 36 (1940), p. 37.

TABLE 4
EXPANDING SCOPE OF WORKMEN'S COMPENSATION BY STATES

States	Jan. 1, 1915		Jan. 1, 1920		April 1, 1930		April 1, 1940	
	Covered (thousands)	Per cent	Covered (thousands)	Per cent	Covered (thousands)	Per cent	Covered (thousands)	Per cent
Ala.....	No Law	No Law	208	52.6	283	56.6	297	59.4
Ariz.....	43	72.7	66	71.7	83	73.2	73	75.9
Ark.....	No Law	No Law	No Law	No Law	No Law	No Law	No Law	No Law
Calif.....	580	77.5	901	82.4	1,589	90.4	1,771	91.5
Colo.....	No Law	No Law	165	71.0	192	78.1	191	83.5
Conn.....	335	84.0	455	89.6	467	87.2	537	91.6
Del.....	No Law	No Law	50	75.3	53	75.1	62	79.1
D. C.....	No Law	No Law	No Law	No Law	108	79.9	113	80.2
Fla.....	No Law	No Law	No Law	No Law	No Law	No Law	359	71.3
Ga.....	No Law	No Law	No Law	No Law	349	54.5	427	61.3
Idaho....	No Law	No Law	60	73.0	64	70.5	66	75.4
Ill.....	922	58.4	1,219	61.9	1,739	77.8	2,069	93.9
Ind.....	No Law	No Law	642	85.7	708	84.9	724	88.1
Iowa.....	255	61.2	315	64.9	387	73.6	374	77.1
Kansas...	116	40.3	135	39.9	166	43.1	137	42.6
Ky.....	No Law	No Law	314	72.3	368	76.9	387	81.1
La.....	173	45.5	172	43.9	287	64.5	244	53.0
Maine....	No Law	No Law	178	80.7	161	76.8	163	79.2
Md.....	182	48.9	240	53.8	315	63.7	387	71.3
Mass.....	1,098	87.1	1,343	90.3	1,272	90.6	1,190	92.7
Mich.....	575	82.3	986	90.9	1,222	90.8	1,324	93.0
Minn.....	366	78.2	448	81.7	460	78.4	463	82.7
Miss.....	No Law	No Law	No Law	No Law	No Law	No Law	No Law	No Law
Mo.....	No Law	No Law	No Law	No Law	678	75.4	641	76.9
Mont.....	No Law	No Law	57	52.4	78	68.3	56	56.3
Nebr.....	122	60.8	185	77.4	201	74.0	175	78.9
Nevada..	24	76.2	19	74.8	20	74.8	22	83.9
N. H.....	85	59.7	88	58.0	86	60.1	105	76.5
N. J.....	831	99.8	1,078	99.7	1,274	98.3	1,276	98.3
N. Mex...	No Law	No Law	24	37.0	30	38.6	37	50.3
N. Y.....	1,784	59.5	3,100	88.3	3,706	91.1	3,686	92.6
N. C.....	No Law	No Law	No Law	No Law	422	69.4	571	75.8
N. Dak...	No Law	No Law	52	61.9	62	55.6	55	67.3
Ohio.....	1,009	78.5	1,485	86.1	1,615	86.9	1,597	88.9
Okla.....	No Law	No Law	169	49.9	227	50.8	182	50.2
Oregon...	87	47.4	103	49.3	154	59.3	169	64.5
Pa.....	No Law	No Law	2,534	92.3	2,480	89.6	2,383	91.0
R. I.....	170	82.4	215	89.6	198	88.2	211	92.6
S. C.....	No Law	No Law	No Law	No Law	No Law	No Law	248	62.5
S. Dak...	No Law	No Law	62	66.5	75	63.4	65	73.5
Tenn.....	No Law	No Law	198	49.3	340	65.3	373	67.3
Texas....	271	43.9	572	64.5	788	65.3	902	68.2
Utah.....	No Law	No Law	76	79.3	87	81.2	86	87.3
Vt.....	No Law	No Law	60	63.8	58	62.2	57	65.3
Va.....	No Law	No Law	314	62.8	367	67.4	479	74.9
Wash....	193	56.9	221	55.3	282	64.3	286	68.2
W. Va....	196	75.0	294	87.7	329	85.7	342	88.9
Wis.....	393	75.7	536	82.3	589	81.1	582	83.5
Wyo.....	No Law	No Law	28	59.1	31	56.0	34	63.3
Total..	9,809	68.7	19,366	70.2	24,452	80.4	25,982	83.4

states attained their peak percentage and only five their peak coverage earlier than 1930.

Some of the changes against the trend merit closer scrutiny. Massachusetts continued to cover a higher proportion of its employees, but in neither 1930 nor 1940 did its law apply to as many workers as in 1920. Declining employment opportunities are the principal explanation. Between 1930 and 1940, for example, the increase in unemployment was greater than the increase in the work force. The same was true in Rhode Island and Vermont, and in Pennsylvania and West Virginia. The Pennsylvania figures indicate not only a severe incidence of unemployment on its heavy and extractive industries, but larger exclusions for farm hands and domestics. The reduced employment opportunities in Kansas and Washington were also complicated by increases in employment of farm labor.

The range of per cent covered is considerable—from 40.7 per cent in Kansas to 98.3 per cent in New Jersey. Only six states cover less than 60 per cent of their eligible employees, however, and only eighteen cover less than 75 per cent. The broadest coverages are generally enjoyed in the leading industrial states. The eleven states with a coverage of 85 per cent or better are all industrial in character. The increasingly industrialized southeastern states do not share this tendency. A high numerical exclusion is a principal factor in the Carolinas, Georgia, and Alabama. The same is true of Vermont. Elsewhere the lower coverages are largely confined to states with laws applying only to hazardous pursuits. In several of these states, notably Kansas and Oklahoma, the situation is complicated by the high proportion of the work force engaged in agriculture.

INDICATIONS OF CENSUS OF 1940

The scope of the state laws, as indicated chiefly by the census of 1940, is presented in Table 5.²⁹ The unemployed, both those seeking work and those on emergency work, listed in column (2), are of course not coverable. Column (3) contains five groups of employed persons who are not eligible for coverage by state laws: (a) unpaid family workers, (b) employers and self-employing

²⁹ Indications of industrial censuses enter into the calculation of the effect of numerical and nonhazardous exemptions.

TABLE 5

APPLICATION OF WORKMEN'S COMPENSATION LAWS IN MARCH, 1940

State	(1) Total labor force	(2) Unem- ployed <i>(Figures are in thousands.)</i>	(3) Ineligible em- ployees	(4) Eligible em- ployees	(5) Excluded em- ployees	Per cent of eligible employees excluded				
						(6) Hired farm workers	(7) Domes- tics	(8) Casual workers	(9) Small firm employees	(10) other exclu- sions
Ala.....	1,017	133	385	501	203	13.3	13.8	1.3	6.8	5.4
Ariz.....	180	33	50	97	23	13.3	6.2	2.9	0.6	1.0
Ark.....	679	104	307	267	No law	No law	No law	No law	No law	No law
Calif.....	2,948	432	581	1,936	165	2.3	4.6	1.6	...	...
Colo.....	421	76	117	229	38	8.5	5.1	2.6	0.3	...
Conn.....	770	93	91	586	49	...	...	1.3	7.1	...
Del.....	114	13	23	79	16	6.1	8.1	1.9	1.8	3.0
D. C.....	344	40	162	141	28	0.1	18.0	1.7	...	...
Fla.....	787	113	171	504	145	12.1	13.1	2.3	1.3	...
Ga.....	1,226	130	398	697	270	14.7	14.8	1.4	5.5	2.3
Idaho...	191	35	68	88	22	17.2	4.0	3.5	...	...
Ill.....	3,361	519	638	2,203	134	...	4.3	1.8	...	...
Ind.....	1,331	185	325	822	98	4.8	4.6	2.5	...	...
Iowa....	958	100	373	485	111	13.1	6.2	3.6	...	...
Kansas..	670	87	262	321	184	7.3	6.3	4.5	2.1	37.1
Ky.....	999	157	365	477	90	10.1	7.9	...	0.9	...
La.....	884	119	305	460	216	13.3	14.0	2.3	...	17.3
Maine...	330	54	70	206	43	5.1	6.9	5.7	3.2	...
Md.....	767	81	144	542	156	5.4	7.7	2.3	...	13.2
Mass....	1,844	328	232	1,284	94	1.2	4.5	1.2	...	0.4
Mich....	2,126	312	389	1,425	100	2.8	4.2	...	...	...
Minn....	1,101	174	367	560	97	8.8	6.3	2.2	...	...
Miss....	808	93	440	276	No law	No law	No law	No law	No law	No law
Mo.....	1,521	236	451	834	193	6.6	6.3	2.6	0.7	7.0
Mont....	225	43	82	100	44	15.1	4.0	2.7	...	21.9
Nebr....	501	70	209	222	47	10.5	6.7	3.9	...	...
Nevada..	48	7	14	26	4	10.1	3.0	3.1	...	...
N. H....	207	32	37	137	32	3.9	5.9	2.7	2.2	8.8
N. J....	1,857	303	257	1,297	22	...	...	1.7	...	...
N. Mex..	178	41	64	73	36	17.5	7.5	5.6	5.3	13.9
N. Y....	5,962	1,016	966	3,981	295	1.7	5.7	...	...	...
N. C....	1,334	143	438	753	182	10.0	10.2	1.7	2.3	...
N. Dak..	236	37	116	82	27	20.3	8.4	4.1	...	...
Ohio....	2,766	439	530	1,797	200	...	5.0	1.8	4.3	...
Okla....	805	154	289	362	180	9.3	7.8	...	0.4	32.2
Oregon..	453	66	125	263	93	7.9	4.5	...	...	23.2
Pa.....	3,986	765	604	2,617	235	2.0	5.0	2.0	...	...
R. I....	322	56	38	227	17	0.9	3.5	0.9	1.4	0.7
S. C....	731	83	250	397	149	17.6	13.4	1.6	4.9	...
S. Dak...	240	37	114	89	23	15.3	6.7	4.5	...	...
Tenn....	1,072	139	379	554	181	9.7	11.2	2.4	2.0	7.3
Texas...	2,455	338	793	1,323	421	13.2	10.4	2.8	0.2	5.1
Utah....	181	34	48	99	13	5.7	2.7	3.7	0.6	...
Vt.....	141	17	36	88	30	...	8.6	2.7	21.9	1.6
Va.....	1,031	109	282	640	161	9.8	9.4	1.7	4.1	...
Wash....	717	115	182	419	133	5.8	4.2	...	...	21.9
W. Va...	635	123	127	385	43	3.7	5.6	1.7	...	...
Wis.....	1,228	171	360	697	115	7.8	5.2	2.1	1.4	...
Wyo....	100	15	32	54	20	16.8	3.6	2.5	...	13.8
Total	52,789	8,000	13,086	31,704	5,178	5.0	6.2	1.6	1.1	2.6

persons, (c) railroad workers engaged in interstate transportation, (d) employees engaged in water transportation, some of whom are covered by the United States Longshoremen's Act, and (e) employees of the federal government, largely covered by the United States Civil Compensation Act. The remainders obtained after subtracting entries in columns (2) and (3) from those in column (1) are assumed to be eligible for coverage, and are listed in column (4). The next column is the sum of computed exclusions, determined by applying census indications to the terms of the several laws in the light of their interpretation by responsible authorities. The remaining columns state in percentile terms the effect of each of the principal restrictions.

The exclusion of domestic service bars from 2.7 per cent of eligible employees in Utah to 18.0 per cent of employees in the District of Columbia. More than half of the states bar from 5 to 10 per cent of employees by this provision. A principal factor in the high figure for the District of Columbia is its nonindustrial (and nonagricultural) character, resulting in a low proportion of eligible employees. In the District of Columbia, however, and in the South generally, the servant classes are found in larger numbers. All of the states excluding 10 per cent or more of eligible employees because they are domestics are located south of the Mason-Dixon line and east of the Mississippi (except a part of Louisiana).

Farm laborers are also excluded in large numbers, the per cent of eligible employees barred by the agricultural exemption ranging from 0.6 per cent in the District of Columbia to 33.8 per cent in North Dakota. The large industrial states, even where barring farm employees, exclude thereby only a relatively small proportion of eligible employees. The semi-industrial states of the Midwest and Southeast tend to exclude from 10 to 20 per cent of eligible employees. Elsewhere the proportion barred tends to run over 20 per cent and in New Mexico and the Dakotas exceeds 25 per cent.

The effect of the exclusion of casual workers was measured by a count of two census categories—operatives in not-specified industries and services, and general, not-specified laborers.³⁰ In general, the limiting effect is less severe and more concentrated.

³⁰ See the discussion of casual workers in Woytinsky's *Labor in the United States*, pp. 26 and 119.

The range is from 0.9 per cent of eligible employees in Rhode Island to 5.7 per cent of eligible employees in Maine. Relatively high percentages are found in most of the great grain-growing states.

The numerical exemption has been dealt with principally by reference to industrial censuses. The average size of establishments and size groups have constituted the most important original data. The size group indications were interpolated in deriving the final estimates. The twenty-four states with numerical exemptions exclude from 0.2 per cent of eligible employees in Texas to 21.9 per cent of eligible employees in Vermont. The very high figure for Vermont is due in part to the high exemption (employers of less than eleven), but principally to the lack of an agricultural exclusion. Connecticut, because it covers domestics and farm hands unless working for employers of less than five, bars the second highest per cent (7.1 per cent) by its numerical exemptions. The Ohio act, applicable to agriculture but not to employers of less than three, exempts 4.2 per cent of its eligible employees. For other jurisdictions the height of the exclusion can readily be related to the exemption and to the prevailing size of establishments. The high numerical exemptions of Alabama (employers of less than sixteen) and Georgia (employers of less than ten) result in exclusion of 6.8 per cent and 5.5 per cent respectively. The low exemption in Oklahoma (employers of less than two) is, nevertheless, somewhat more restrictive (0.4 per cent) than the higher exemption of Texas (employers of less than three, excluding 0.2 per cent) because of a difference in distribution of size of establishments.

The large entries in column (10) are for those states which exempt nonhazardous employments. The exclusions in these states range from 13.9 per cent of eligible employees in New Mexico to 37.1 per cent of eligible employees in Kansas. This range is somewhat misleading, measuring more than the force of this exemption since seven of these states partially exclude public employments. The range for nonhazardous exemption alone is from 12.2 per cent in Wyoming to 29.0 per cent in Kansas.³¹ The

³¹ The percentages excluded by nonhazardous exemptions alone for those states which also exclude some public employees are as follows: Kansas, 29.0%; Maryland, 13.7%; New Mexico, 12.5%; Oklahoma, 20.7%; Oregon, 21.2%; Washington, 20.1%; and Wyoming, 12.2%.

factors affecting the force of these exemptions are the lists of employments covered, the existence or lack of discretionary power residing in the commission or courts, and the industrial character of the state. The last factor must be related to the force of political expediency in preparing the lists. In Wyoming, for example, the exclusion is relatively low because the most powerful employing groups—farmers and stock raisers—have secured their exemption directly through the agricultural exclusion rather than by avoiding listing. Where it exists, the nonhazardous exemption, as indicated by the range, is very restrictive.

Exemptions of public employees, where complete, bar from 5.1 per cent of eligible employees in Texas to 8.8 per cent of eligible employees in New Hampshire. An important element affecting the ratio of public employees to eligible employees is the size of the state. Where the exemption is only partial its effect is determined principally by its nature and extent. Exempting non-manual workers employed by the state excludes only 0.4 per cent of eligible employees in Massachusetts. The Vermont provision excluding employees earning over \$2000 bars 1.6 per cent of eligible employees. The Delaware provision including only certain named municipalities excludes 3.0 per cent of eligible employees.

CHAPTER III

COMPENSABILITY OF INDUSTRIAL INJURIES

IT IS NOT ENOUGH to count the number of employees to whom our workmen's compensation laws apply, nor even to consider the relative likelihood of coverage as indicated by the status of coverage, whether voluntary, elective, or compulsory. The several acts differ not only in employments covered, but also in injuries covered. Three principal types of limitation are commonly found in the laws: (a) injuries disabling workers for less than a specified number of days are rendered noncompensable by establishing a waiting period before compensation payments begin; (b) various provisions have been made to assure that there is a causal relation between the employment and the injury (subject to interpretation by the courts); and (c) certain injuries, notably diseases, are expressly included or excluded. The limiting effect of these provisions is considerable.

THE WAITING PERIOD AND COVERAGE

Except for Oregon, all American compensation statutes include a waiting period requirement that must be satisfied if any injury is to be compensable. The purpose of this requirement appears to be twofold: (a) to exclude minor injuries, the cost of which can be borne by the worker, and the cost of insuring which is out of proportion to the benefits which would be disbursed, and (b) to minimize the danger of fraudulent claims. The most commonly provided waiting period, one week, obtained in thirty-four jurisdictions in 1940. Nine states provided a shorter period, which in seven of them was three days. Three states provided a longer period, two of them requiring two weeks. Waiting periods do not apply to medical benefits.

In operation, waiting periods exclude a substantial number of injuries from benefits. The American Accident Table indicates that nearly half (47.1 per cent) of industrial injuries cause dis-

ability lasting a week or less.¹ This is perhaps a better indication than the reports of those states which purport to include all tabulable injuries, for accident reporting is not as complete for the waiting period cases as for those which are compensable. Thus in Massachusetts for the five year period ending June 30, 1938, about 33 per cent of all cases reported were not compensable because of the waiting week.

The proportion of days lost which are excluded is obviously much smaller. If we inflate the Massachusetts figures by reference to the American Accident Table we can estimate that about one-sixth (16.5 per cent) of the days lost due to industrial injuries are for cases causing disability of seven days or less. The longer waiting periods are naturally much more restrictive. A wait of a fortnight excludes nearly two-thirds (65.6 per cent) of all industrial injuries and nearly one half (45.9 per cent) of the days lost. A three day wait, on the other hand, excludes only one-fourth (25.4 per cent) of the injuries and less than 4 per cent of the days lost.²

In Table 6 the original and the 1940 waiting periods contained in the several statutes are presented. By July 1, 1940, thirty-two had amended their waiting period requirements by inserting a clause which provided for compensation for that period also if the disability persisted beyond a specified time. Such a proviso has commonly been referred to as "retroactive" because benefits may be claimed retroactively for the waiting period if the injury persists beyond this secondary period. The period fixed in these retroactive clauses has also undergone considerable liberalization. It averaged 44.9 days for the five states concerned on January 1, 1915, but in 1940 averaged only 31.2 days.

When a waiting period provision is thus amended it has the effect of dividing potential claimants into three classes: (a) those who are disabled less than the prescribed number of days will receive no compensation; (b) those whose time loss is greater than the waiting period but not great enough to bring into play the retroactive provision will draw compensation from the expiration of the waiting period; (c) those who remain so long unable to

¹ For a description of the nature and uses of this table see Chapter X, pp. 195-200.

² For a related discussion of the limiting effect of waiting periods see Chapter IX, pp. 181-183.

TABLE 6
WAITING PERIOD PROVISIONS, ORIGINAL AND 1940 LAWS

State	Waiting period provided by original act	1940 act	Retroactive provision, if any, in original act	1940 act
Alabama	2 weeks	2 weeks	4 weeks	4 weeks
Arizona	2 weeks	1 week	No provision	2 weeks
California	2 weeks	1 week	No provision	No provision
Colorado	3 weeks	10 days	No provision	No provision
Connecticut	2 weeks	1 week	No provision	Longer than 4 wks.
Delaware	2 weeks	1 week	No provision	4 weeks
Dist. of Col.	1 week	1 week	Longer than 7 wks.	Longer than 7 wks.
Florida	2 weeks	4 days	Longer than 4 wks.	No provision
Georgia	2 weeks	1 week	Longer than 4 wks.	No provision
Idaho	1 week	1 week	No provision	4-7 weeks
Illinois	1 week	6 days	No provision	Longer than 30 days
Indiana	2 weeks	1 week	No provision	No provision
Iowa	2 weeks	2 weeks	No provision	4-7 weeks
Kansas	2 weeks	1 week	No provision	No provision
Kentucky	2 weeks	1 week	No provision	Longer than 4 wks.
Louisiana	2 weeks	1 week	No provision	6 weeks
Maine	2 weeks	1 week	No provision	No provision
Maryland	2 weeks	3 days	No provision	No provision
Massachusetts	2 weeks	1 week	No provision	2 weeks
Michigan	2 weeks	1 week	No provision	6 weeks
Minnesota	2 weeks	1 week	No provision	4 weeks
Missouri	3 days	3 days	Longer than 4 wks.	Longer than 4 wks.
Montana	2 weeks	1 week	No provision	3 weeks
Nebraska	2 weeks	1 week	No provision	6 weeks
Nevada	2 weeks	1 week	No provision	1 week
New Hampshire	2 weeks	1 week	No provision	1 week
New Jersey	2 weeks	1 week	No provision	Longer than 7 wks.
New Mexico	3 weeks	1 week	No provision	No provision
New York	2 weeks	1 week	No provision	5 weeks
North Carolina	1 week	1 week	Longer than 4 wks.	Longer than 4 wks.
North Dakota	1 week	1 week	No provision	Longer than 7 days
Ohio	1 week	1 week	No provision	No provision
Oklahoma	2 weeks	5 days	No provision	No provision
Oregon	none	none	No waiting period	No waiting period
Pennsylvania	2 weeks	1 week	No provision	No provision
Rhode Island	2 weeks	3 days	No provision	Longer than 2 wks.
South Carolina	1 week	3 days	Longer than 4 wks.	Longer than 2 wks.
South Dakota	2 weeks	1 week	8 weeks	6 weeks
Tennessee	2 weeks	1 week	6 weeks	6 weeks
Texas	1 week	1 week	No provision	4 weeks
U. S. Civil	15 days	3 days	No provision	No provision
U. S. Longshoremen	1 week	1 week	Longer than 7 wks.	Longer than 7 wks.
Utah	10 days	3 days	No provision	No provision
Vermont	2 weeks	1 week	No provision	No provision
Virginia	2 weeks	1 week	Longer than 6 wks.	Longer than 6 wks.
Washington	none	3 days	No provision	No provision
W. Virginia	1 week	1 week	No provision	Longer than 3 wks.
Wisconsin	1 week	3 days	No provision	Longer than 10 days
Wyoming	10 days	1 week	No provision	Longer than 15 days

work that the waiting period becomes inapplicable to them will draw compensation for the full duration of their disability (until some maximum period or amount limitation becomes effective). Each of these classes is affected differently by a change in the length of the waiting period. If it is shortened, some who would have hitherto been ineligible for compensation may now draw it. All whose injuries would formerly have placed them in the second class, feel the change as an additional benefit. Injured workers of the third class receive no additional benefit, but a smaller proportion of their compensation is deferred to the time set by the retroactive clause.

These effects may be observed concretely by referring to the actual experience in one of the states, correcting for underreporting by reference to the American Accident Table. Thus Massachusetts reduced its waiting period from fourteen days to ten days in 1917, and to a week in 1923. By a 1924 law the period was made retroactive if the disability persisted beyond four weeks, and this period was recently shortened (chapter 382, Acts of 1937) to two weeks. During the five years ending June 30, 1939, 33.6 per cent of the temporary disability cases in the state resulted in disability lasting a week or less. Adjusting this percentage for underreporting we may estimate that 47 per cent of the temporarily injured could receive no compensation. Using the adjusted total, about 11 per cent of the cases produced disability lasting from one to two weeks and were compensable. Roughly half of them would not have been so before 1923, and none of them would have been so before 1917. Nearly a fifth of the cases produced disability lasting from two to four weeks. This group was entitled to three days of benefit which they could not have drawn had their injuries occurred before 1923, and to an additional four days of benefit which they could not have drawn had their injuries occurred before 1917. Under the amended retroactive clause such individuals are now eligible for a further week of benefit. The remaining 23 per cent drew benefit for from one to two weeks which they would not have drawn before the adoption of the retroactive clause. Shortening the period fixed in this clause does not affect the number eligible for compensation, but does alter decidedly the proportion of injured workers who fall in the second or third class respectively. If we may judge the future accident experience of Massachusetts from that of the selected five years,

more than a fifth of the injured will shift from the second to the third class.

The proportion of industrial injuries not covered, or only partially covered because of the waiting period, in the country as a whole is considerable. This proportion may be estimated by analyzing the indications of the American Accident Table in the light of prevailing waiting periods and periods after which compensation is payable from the date of disability. The percentages excluded or discounted by the several provisions if weighted (for coverage) yield an average that pictures the country-wide situation. Use of the Accident Table assumes a common injury severity, but in the absence of complete and comparable statistics, this assumption must be made.³ The average proportion of temporary total injuries excluded by the waiting periods appears to be 44 per cent, and the average proportion compensated but receiving no benefits for the waiting period itself, about 45 per cent. In other words, barely 11 per cent of temporary total cases are unaffected by the waiting period. This follows naturally from the fact that the overwhelming proportion of the injuries are of brief duration.

Assuming an average time loss of twenty days for temporary total disabilities, the 95,388 temporary cases in the American Accident Table may be held to have occasioned a loss of over 1,900,000 days.⁴ On this assumption the tendency of waiting periods to limit compensation may be estimated and a weighted average percentage for the country computed. For those jurisdictions with a flat waiting period this requires only the elimination of time loss caused by noncompensable cases and the subtraction of the waiting period for the remaining cases. For the other jurisdictions the effect of the retroactive feature must also be taken into account. It appears that about 15 per cent of the days lost are not covered because the waiting period makes the cases uncompensable, while an additional 14 per cent of days lost are not covered although the cases are partially compensable. Thus, although eliminating an average of 44 per cent of temporary total cases, and limiting compensation for an additional 45

³ In view of the offsetting nature of the error in this assumption, the over-all error may well be within the margin of error of the Accident Table.

⁴ The study by Kossoris and Kjaer yielded an average of 21 days for 1938 and 18 days for 1939 (see their "Industrial Injuries in the United States during 1939," *Monthly Labor Review*, vol. LI, July, 1940, p. 102).

per cent of them, the waiting periods by themselves render non-compensable less than 30 per cent of the time loss.

THE INJURY AND THE EMPLOYMENT

The liability of an employer under a compensation law is often denied because, for one reason or another, the claimant is held not to have been *industrially* injured. All American compensation acts contain some provision intended to assure a causal relation between the injury and the employment. The most common arrangement, prevailing in forty-one jurisdictions, is to specify that the injury must "arise out of *and* in the course of the employment." The Utah act uses the conjunction "or," thus avoiding the double requirement. In the Wisconsin law expressions are used that are roughly equivalent to "arising out of" in the more liberal sense of the phrase.⁵ Four states have used only the other phrase, "in the course of the employment."⁶ This procedure seems to assume that an injury occurring while one is working results from one's work. Certainly the phrase "arising out of" is designed to cover direct analysis of the causal connection between the injury and the employment. The second phrase, "in the course of the employment," covers rather the time, place, and circumstances in which the injury occurred.

When does an injury take place "in the course of employment"? A Georgia court has observed that it does so "when it occurs within the period of the employment, at a place where the employee may reasonably be in the performance of his duties, and while he is fulfilling those duties or engaged in doing something incidental thereto."⁷ This is a satisfactory definition, including the points of time, place, and circumstances, but it suggests numerous questions that might lead to litigation. Does the period of employment include the time during which one is on the way to work or putting on work clothes or preparing tools? May the employee reasonably be on the street, in the washroom, or at the employees' cafeteria? Is the employee engaged in activities incidental to his duties while conversing with a fellow employee while waiting for further material, or while getting a drink, or while

⁵ "Growing out of or incidental to the employment."

⁶ North Dakota, Pennsylvania, Texas, and Washington.

⁷ *New Amsterdam, etc., Co. v. Summerall*, 118 S.E. 786.

helping a fellow employee who is in difficulty? The answers to questions such as these will depend in no small measure on the strictness with which one interprets the Georgia pronouncement. One may insist that the injured party must have been working, and on the employer's premises, and between the summoning and terminating whistles. Or one may require only that the individual have been doing a permitted act in a proper manner at an authorized place, and may relax the time limits to give reasonable time for ingress, egress, and so forth. There are many degrees of liberality between these extreme interpretations.

Two legislatures have specifically excluded accidents occurring while on the way to and from work.⁸ Generally speaking, such accidents are not covered before the worker reaches the premises or after he leaves them. Employees riding to work in special buses furnished by the employer, however, are frequently covered. The employer's premises may be very extensive, and it may be some time after he has left his workbench before an employee is off the premises. In such cases the deciding issue is likely to be the prevailing practice or the permitted way of approaching or leaving the place of work. Many employees don special garb upon arriving at the work place. Others because of the nature of their work like to tidy up before leaving. Even from the beginning of the compensation movement, the more liberal courts have been inclined to include such activities in the period of employment.⁹

Accidents sometimes occur as a result of one form or another of horseplay. In the three and a half year period ending December 31, 1938, the Massachusetts Industrial Accident Department received reports of 19 cases of "wrestling, sparring, and horseplay." As Clarence Hobbs has shrewdly observed, there "are two points of view in this matter: the one that this has nothing to do with the employment; the other, that it is a more or less inevitable incident of the bringing of employees together."¹⁰ In such cases both commissions and courts are more likely to act in favor of the victim than of the aggressor. There is an increasing tendency to include in employment such incidents as rest, refreshment, and communication (when permitted). Such acts of favor as at-

⁸ Kansas and New Mexico.

⁹ See, for example, *Terlecki v. Strauss*, 85 N.J.L. 454.

¹⁰ C. W. Hobbs, *Workmen's Compensation Insurance* (1939), p. 206.

tempted rescues, though personally motivated, rouse a lively sympathy which inclines commissions and courts to favorable action.

Where the double requirement is present one must also inquire whether the injury "arose out of the employment." This phrase may be interpreted to mean little more than "incidental to the employment," but often is interpreted to exclude injuries to which the employment offers no special exposure. "The causative danger," says an often quoted decision, "must be peculiar to the work and not common to the neighborhood. It must be incidental to the character of the business."¹¹ There is a considerable area between these extremes, and the lines followed in many jurisdictions are obscured by numerous apparent inconsistencies. It is clear that a causal connection between the employment and the injury should be established. The California act reinforces the double requirement by holding that the accident satisfying it must be the proximate cause of the injury or death. This is probably more than is generally asked by most commissions and courts. Yet it is less restrictive than the orthodox interpretation quoted above. "There is nothing in the theory of workmen's compensation," remarked F. H. Bohlen, "which requires that the accident from which an employee suffers, or by which he is killed, should in advance be recognizable as . . . of a sort peculiarly apt to occur in his particular employment."¹² Indeed, the notion of accident types proper to particular industries strongly connotes the opposite theory of negligence.¹³

Natural causes of injuries have raised important problems for the commissions and courts. In the three and a half years ending December 31, 1938, 68 cases of cold and frostbite and 117 cases of heat prostration and sunstroke were reported to the Massachusetts Industrial Accident Department. In the same period six industrial injuries involving lightning were reported. The prevalent practice is to compensate such injuries only where unusual exposure is established. Heat prostrations often occur to individuals when not working, but this is less likely to be true of sun-

¹¹ *McNicol's Case*, 102 N.E. 697 (1913).

¹² U. S. Bureau of Labor Statistics Bulletin No. 273 (1920), p. 27.

¹³ Thus one might argue that if one has received an injury of a nature not "peculiarly apt to occur in his particular employment," it is due not to his employment, but to some personal factor, probably involving negligence on his part.

stroke or frostbite. Of course, no special exposure to lightning can be argued in most cases.

Episodes of violence also present problems. Even when involving coemployees, liability is often not conceded because the issue is considered personal rather than industrial. Assaults by outside parties are usually handled under the third party rule. The employer, however, must usually accept responsibility for injuries suffered during strikes.

The volume of litigation involving these phrases is considerable. Dodd notes that the New York cases for the period 1914–1930 filled thirty-two pages.¹⁴ Years ago F. H. Bohlen argued that the Pennsylvania system—the single requirement, “in course of employment”—saved litigation and eliminated narrow and technical distinctions.¹⁵ The single requirement certainly seems more liberal, but some of the Pennsylvania decisions have expanded the force of the single phrase considerably.¹⁶ Washington courts dealing with the same phrase have interpreted it literally, allowing claims bearing no causal relation to the employment whatever.¹⁷ Such a practice shows more liberality than justice. A sounder procedure is the Wisconsin rule that the injury must be one “growing out of or incidental to the employment.” This milder causal requirement nevertheless excludes the unrelated injury. A presumptive rule can be effectively used to soften the causal requirement where “course of employment” has been established. The New York Court of Appeals has so held when no evidence was offered to deny industrial causation.¹⁸ Placing the burden of proof on the employer when course of employment has been shown seems abundantly fair.

¹⁴ W. F. Dodd, *Administration of Workmen's Compensation* (1936), p. 682.

¹⁵ U. S. Bureau of Labor Statistics Bulletin No. 273 (1920), p. 27.

¹⁶ See, for example, *Shoffler v. Lehigh Valley Coal Co.*, 290 Pa. 483 (1927). Course of employment is defined as excluding acts “contrary to the positive orders of the employer.” This rule was largely rewritten by the more liberal decision in *Dickey v. Pittsburgh & Lake Erie R.R. Co.*, 297 Pa. 172 (1929).

¹⁷ U. S. Bureau of Labor Statistics Bulletin No. 273 (1920), pp. 43 f. Perhaps decisions of this character led to the implied rebuke in the Annual Report of the Washington Department of Labor and Industries for 1932, pp. 10–12.

¹⁸ *Norris v. N. Y. Central R.R. Co.*, 246 N. Y. 313 (1927).

INJURIES INVOLVING MISCONDUCT

Nearly all states have included in their statutes a provision excluding from or reducing compensation for injuries resulting from misconduct. In addition to "willful misconduct," most states exclude self-inflicted injuries and those resulting from intoxication, and some states exclude or otherwise penalize accidents caused or aggravated by refusal to use safety appliances or to submit to competent treatment. Violation of law and breach of regulations are also dealt with in a number of statutes. The present status of these provisions is set forth in Table 7. Their apparent purpose is to assure the industrial causation of compensated injuries. In so far as this purpose is achieved there can be no quarrel with these restrictions, but some of them appear rather to be probing the question of fault. To exclude self-inflicted injuries is understandable; to exclude those involving refusal to observe regulations or to wear safety appliances is quite another matter. Now and then even where the aim is clear and defensible, patient examination of the phrasing reveals the shadow of the law of negligence.

Only eight states have no explicit exclusion of self-inflicted injuries, and even they cover this contingency by other means.¹⁹ In Massachusetts and Michigan, for example, such injuries are regarded as "willful misconduct." Elsewhere they are properly held not to have "arisen out of employment." Suicide is the most aggravated form of self-inflicted injury, and is seldom covered. The Massachusetts law specifies that the misconduct exclusion does not apply to dependents in case the injured dies, but a special clause covers the contingency of suicide. This is covered only if, "due to the injury, the employee was of such unsoundness of mind as to make him irresponsible for his act of suicide." Intent to injure another is less commonly dealt with by specific exclusion, but is usually held not to have "arisen out of employment." Twenty laws contain a specific exclusion.²⁰

Fourteen states have avoided mention of intoxication, but generally where it can be shown to be causally related to an injury

¹⁹ Connecticut, Illinois, Massachusetts, Michigan, Montana, Nebraska, New Hampshire, and Wyoming.

²⁰ Alabama, Delaware, District of Columbia, Florida, Georgia, Idaho, Louisiana, Maine, Maryland, Nevada, New York, South Carolina, Texas, Vermont, and Virginia.

TABLE 7

RESTRICTIVE PROVISIONS OF AMERICAN WORKMEN'S COMPENSATION LAWS,
JANUARY, 1941

	Excluding injuries if involving						Excluding injuries unless		Limiting compensation for hernias	
	willful misconduct	intention to injure	intoxication	refusal to use safety appliances	violation of laws, regulations	refusal to submit to treatment	other	arising out of employment		in course of employment
Ala.....	×	×	×	×	×	...	...	×	×	×
Ariz.....	...	×	...	...	...	×	...	×	×	×
Ark.....	...	×	×	...	...	...	...	×	×	×
Calif....	^a	×	×	...	...	×	...	×	×	...
Colo.....	...	×	...	...	...	...	...	×	×	×
Conn....	×	...	×	...	...	...	waiver	×	×	×
Del.....	...	×	×	×	...	...	recklessness	×	×	...
D. C....	...	×	×	...	...	...	...	×	×	...
Fla.....	...	×	×	×	×	...	...	×	×	×
Ga.....	×	×	×	×	×	×	3d party	×	×	×
Idaho...	...	×	×	...	...	...	...	×	×	×
Ill.....	...	...	...	...	...	...	...	×	×	×
Ind.....	×	×	×	×	×	...	...	×	×	...
Iowa....	...	×	×	...	...	...	...	×	×	...
Kansas..	...	×	×	×	...	...	...	×	×	^b
Ky.....	×	×	×	^b	...	...	...	×	×	×
La.....	...	×	×	×	×	...	...	×	×	...
Maine...	...	×	×	...	...	...	waiver	×	×	...
Md.....	×	×	×	...	×	...	waiver	×	×	×
Mass....	^d	...	...	...	...	...	waiver	×	×	...
Mich....	×	...	...	...	...	...	...	×	×	×
Minn....	...	×	×	...	...	...	3d party	×	×	...
Miss....	...	...	...	...	...	...	...	...	...	...
Mo.....	×	×	...	...	...	×	...	×	×	×
Mont....	...	...	...	...	...	...	...	×	×	×
Nebr....	...	...	×	...	...	...	^e	×	×	...
Nevada..	...	×	×	^g	...	×	...	×	×	...
N. H....	×	...	×	...	×	...	...	×	×	...
N. J....	...	×	×	...	...	...	recklessness	×	×	×
N. Mex..	...	×	×	^a	...	...	...	×	×	^b
N. Y....	...	×	×	...	...	...	...	×	×	...
N. C....	...	×	×	^b	^b	...	...	×	×	×
N. Dak..	...	×	×	...	...	...	waiver	...	×	...
Ohio....	...	×	...	...	...	...	...	×	×	...
Okla....	...	×	×	×	...	...	death	×	×	×
Oregon..	...	×	...	...	...	...	...	×	×	×
Pa.....	...	×	...	...	×	×	3d party	...	×	×
R. I....	...	×	×	...	...	...	...	×	×	×
S. C....	...	×	×	^b	^b	×	...	×	×	×
S. Dak...	×	×	×	×	...	...	...	×	×	...

TABLE 7 (Continued)

	Excluding injuries if involving							Excluding injuries unless		Limiting compensation for hernias
	willful misconduct	intention to injure	intoxication	refusal to use safety appliances	violation of laws, regulations	refusal to submit to treatment	other	arising out of employment	in course of employment	
Tenn....	×	×	×	×	×	×	...
Texas...	...	×	×	l	...	×	×
Utah....	...	×	...	c	...	j	...	k	k	...
Vt.....	...	×	×	×	×	×	×
Va.....	×	×	×	×	×	×	×	×
Wash....	...	×	...	b	×	...	...	...	×	×
W. Va...	×	×	×	×	×	...	waiver	×	×	×
Wis.....	...	×	...	o	...	×	waiver	× ^l	...	...
Wyo.....	m	×	×	×

- a Including injuries but compensating them only 50%.
- b Injuries on way to or from work not in course of employment.
- c Including injuries but reducing compensation 15%.
- d Does not apply to dependency compensation in fatal cases.
- e Including injuries but reducing compensation by extent of aggravation due to refusal.
- f Excluding injuries due to recklessness or willful negligence.
- g Including injuries but reducing compensation by 25%.
- h Including injuries but reducing compensation by 10%.
- i Excluding injuries due to acts of God, or to third parties.
- j Compensation reduced if treatment not taken within 48 hours.
- k Including injuries if either arising out of or in course of employment.
- l Specifically, "growing out of or incidental to the employment."
- m Excluding injuries due to "culpable negligence," or to a third party.

that is taken into account.²¹ The phrasing of specific exclusions is often too broad. The Nevada law excludes injuries occurring "while intoxicated," the Texas law "while in state of intoxication," and the Vermont law "by or during his intoxication." By contrast, North Dakota condemns only "voluntary intoxication," and Maine only if without the employer's knowledge. The statutes commonly include words conveying a causal significance, such as "due to," "resulting from," or "primarily or proximately caused by" intoxication.

Injuries due to "willful misconduct," variously defined, are excluded by the laws of fourteen states.²² California adopts the less drastic expedient of reducing compensation in these cases by 50 per cent. In the three New England states of Connecticut, Massachusetts, and New Hampshire, the phrase is "serious and

²¹ The fourteen are Arizona, Colorado, Illinois, Massachusetts, Michigan, Missouri, Montana, Ohio, Oregon, Pennsylvania, Utah, Washington, Wisconsin, and Wyoming.

²² Alabama, Connecticut, Georgia, Indiana, Kentucky, Maryland, Massachusetts, Michigan, Missouri, New Hampshire, South Dakota, Tennessee, Virginia, and West Virginia.

willful misconduct," and has a broad application. The Massachusetts exclusion is inapplicable to fatal cases, the needs of the dependents being held to overbalance the conduct of the injured.

Alabama and New Hampshire deny coverage to those injured while violating a law, Pennsylvania if while committing a felony, and Washington if while committing a crime. Except where such actions are done at the express orders of the employer, explicit exclusion seems hardly necessary. A more positive requirement is that shared by Alabama, Delaware, Florida, Georgia, Indiana, South Dakota, and Virginia: that the injury must not result from failure to perform a statutory duty. A breach of regulations promulgated by the employer removes an injury from coverage in Alabama, Florida, and Maryland. If the regulations are approved by the appropriate state authority, the same is also true in Georgia, Virginia, and West Virginia. The Carolinas, while also insisting on approval, penalize the offenders by reducing compensation 10 per cent.

Where an employee refuses to use a safety appliance provided by his employer he is not covered against subsequent injury in eleven states.²³ If its use is required by law, in Oklahoma, or by the Commission, in West Virginia, subsequent injury is not covered. A common but less drastic procedure is to reduce compensation in such cases. A 10 per cent reduction is provided in the Carolinas and Washington. The laws of Kentucky, Utah, and Wisconsin contain a 15 per cent penalty. The Nevada law orders a 25 per cent reduction, the New Mexico law reductions up to 50 per cent.

Eight states refuse coverage to injuries involving refusal to submit to competent medical treatment.²⁴ A fairer arrangement is that in Nebraska, where the aggravation of the injury due to such refusal is noncompensable. The importance of competent medical care is beyond dispute. One wishes that the statutes involved offered more effective safeguards to the purpose and impartial character of this requirement. One is tempted more particularly to inquire whether authorities in states with statutory limits to the duration and amount of medical benefit have ever thought of the

²³ Alabama, Delaware, Florida, Georgia, Indiana, Kansas, Louisiana, South Dakota, Tennessee, Vermont, and Virginia.

²⁴ Arizona, California, Georgia, Missouri, Nevada, Pennsylvania, South Carolina, Wisconsin.

alarming cost of incapacity resulting from the shutting off of competent medical care. Farsighted employers and insurance carriers have often disregarded these limits in their own interest.

Interesting modifications of the principle of liability without fault are found in a few laws. Accidents resulting from recklessness are not covered in three states, while those involving "willful" or "culpable" negligence are barred in Nebraska and Wyoming. Delaware, whose statute boldly asserts that its coverage is furnished "regardless of the question of negligence," nevertheless bars injuries resulting "from deliberate and reckless indifference to danger." New Jersey and Nebraska use the phrase "reckless indifference to safety." From a social viewpoint, it is not a question of approving or disapproving recklessness or "culpable negligence," whatever the latter may mean; rather it is a question whether denial of compensation is the remedy for these admittedly bad practices.

Of special interest is the growing concern over cases of hernia, reflected in special provisions for compensation in twenty-eight laws.²⁵ Statistics indicate that claims involving hernias have been increasing not only relatively, but absolutely, in a period of declining accident volume. In the three years ending June 30, 1937, 3513 cases of hernia were reported to the Massachusetts Industrial Accident Department. The corresponding figure for the period ending June 30, 1921, was 2525, and for 1927-1929, 3498. The relative situation is indicated by increases from 1.4 per cent of accidents reported in the first period to 1.9 per cent in the second period, and 3.3 per cent in the most recent period. A similar trend could be shown generally. Cases of hernia may be induced industrially, but may also result from other strains or be only partially the result of industrial strain. Hence over the past two decades an increasing tendency to require either special demonstration of industrial causation, to require willingness to submit to operation, or to limit compensation has appeared in American compensation statutes.

It is difficult to measure the effect of the several provisions affecting legal liability for injuries. In the three and one half years ending December 31, 1938, the Massachusetts Industrial Accident Department reported 709 insured fatalities, but only 628 compensated fatalities. The remaining eighty-one claims resulted

²⁵ See Table 7, pp. 40-4.

in no award. Presumably many of them were cases for which the employer was not legally liable for reasons similar to those under consideration. Also many other claims presumably were not made because of such matters. In any event, similar data cannot be offered for most jurisdictions. The prevailing tendency is to publish reports only on compensable cases. Naturally one cannot generalize in a matter like this from the situation in one state to that in others having different laws and different accident experiences.

One may take comfort in the finding of Professor Ray A. Brown that there is a growing tendency to interpret these and related provisions liberally.²⁶ Similarly one may be impressed by Dawson's judgment, based on first hand discussions with numerous Commissioners, that in practice few of these provisions are rigidly applied.²⁷ To some extent the liberalization may be shown from decisions, statutory changes, and changes in regulations. In general, however, this is not a matter capable of precise measurement. As Professor R. H. Blanchard has said regarding nonelection, we may say regarding these provisions that their effect is probably not substantial, but satisfactory information on the point is not obtainable.²⁸

In so far as they concern themselves with human fault, it is well that the effect is not substantial. After all, the basic tenet of the compensation movement is liability without fault. Many of the provisions which seem concerned with fault perhaps have the praiseworthy motive of accident prevention. Accident prevention, however, as we shall point out later, is largely a function of industrial discipline.²⁹ As American industry is organized this is primarily the responsibility of management. Alert foremen do not permit men to remain at work while intoxicated, nor to discard safety appliances, nor to break safety regulations. The tendency to effective industrial discipline is weakened, not strengthened, when accidents involving breaches of discipline are rendered uncompensable.

But, if it is desired to put additional teeth into industrial disci-

²⁶ " 'Arising Out of and in the Course of the Employment' in Workmen's Compensation Laws," *Wisconsin Law Review*, VII (1931-32), 134-146, 217-260, and VIII (1932-33), 15-36, 67-90.

²⁷ U. S. Bureau of Labor Statistics Bulletin No. 672 (1940), p. 49.

²⁸ *Workmen's Compensation in the United States* (1926), p. 24.

²⁹ See below, Chapter XIX, pp. 346-348.

pline, elimination of compensation is less satisfactory than reduction of compensation. The latter achieves the purpose without denying bread to innocent dependents and without dulling the interest of supervisors in effective discipline.

OCCUPATIONAL DISEASES

The several states have proceeded with more hesitancy in the matter of compensating occupational diseases than in compensating industrial accidents. In 1915, only Massachusetts was providing for diseases not accidentally induced. Only six jurisdictions compensated slowly developing diseases by 1920,³⁰ and only fourteen jurisdictions by 1930.³¹ The depression and the New Deal gave impetus to the movement for occupational disease compensation, and on July 1, 1940, twenty-six of the forty-nine jurisdictions had made express provisions for diseases other than those resulting from accidents.

This is a better showing than appears at first blush. As Table 8 shows, the twenty-six jurisdictions include all of the large industrial states and many of the semi-industrial states. A tabulation by reference to the coverage estimates for 1940 shows 22,260,000 or over 80 per cent, of the covered workers to be under one or the other of these twenty-six acts. But there are great differences in breadth of coverage between these jurisdictions. There are four general types of coverage of occupational diseases: (a) accidental, covering diseases if resulting from an accidental injury, (b) specific, covering one disease or disease group, or covering diseases in only a single industry group; (c) schedule, covering such diseases as are listed in the statute; and (d) blanket, covering all diseases proximately caused by the employment.

Virtually all laws cover diseases resulting from accidental injuries. The laws of New Jersey, Ohio, and West Virginia do not specifically so state, but they have generally been so interpreted.³² At present all three offer additional protection to occupational diseases. In twenty-three jurisdictions diseases are covered only if resulting from accidental injuries. This status is brought about

³⁰ California, Connecticut, Massachusetts, North Dakota, Wisconsin, and U. S. Civil Compensation Act.

³¹ The additional acts were those of the District of Columbia, Illinois, Minnesota, Nebraska, New Jersey, New York, Ohio, and the U. S. Longshoremen.

³² Dodd, *Administration*, p. 763.

TABLE 8

STATUS OF OCCUPATIONAL DISEASE COMPENSATION IN THE UNITED STATES, 1940

Cover diseases only if resulting from accident	Cover a specific disease hazard, or the hazard of a specific industry group	Cover all listed occupational diseases	Cover all diseases resulting from employment
Alabama	Kentucky	Delaware	California
Arizona	Nebraska	Idaho	Connecticut
Colorado	West Virginia	Maryland	Dist. of Columbia
Florida		Michigan	Illinois
Georgia		Minnesota	Indiana
Iowa		New Jersey	Massachusetts
Kansas		North Carolina	Missouri
Louisiana		Pennsylvania	New York
Maine		Rhode Island	North Dakota
Montana		Washington	Ohio
Nevada			Wisconsin
New Hampshire			U. S. Civil Act
New Mexico			U. S. Longshoremen's Act
Oklahoma			
Oregon			
S. Carolina			
S. Dakota			
Tennessee			
Texas			
Utah			
Vermont			
Virginia			
Wyoming			

in several ways. The law may not mention disease, and accordingly may have been interpreted as inapplicable to disease.³³ Or it may so define the term "accident" or "injury" as by inference to exclude disease.³⁴ Or it may specifically exclude diseases unless accidentally caused.³⁵ The Florida and Oklahoma laws achieve the same result by specifically including such diseases as are accidentally caused.

These twenty-three jurisdictions are not in general populous or largely industrial in character, and only 5,142,000, or about 19 per cent, of covered workers reside in them.

How much protection against disease is enjoyed by these workers? Available indications are necessarily rough, for the

³³ Colorado, Kansas, Nevada, New Hampshire, and New Mexico.

³⁴ Louisiana, Montana, Oregon, and Texas.

³⁵ Alabama, Arizona, Georgia, Iowa, South Carolina, South Dakota, Tennessee, Utah, Vermont, Virginia, and Wyoming.

hazards vary widely from jurisdiction to jurisdiction. At a time when the Pennsylvania law included no provision regarding disease a commission studying the desirability of such a provision found that forty-eight different diseases had been compensated at one time or another on the ground that they resulted from an accident.³⁶ Commissioner Wilcox of Wisconsin has mentioned several ailments which are usually compensated even in states which do not include occupational diseases, and has estimated that they produce from 30 to 40 per cent of the total cost of occupational disease claims in Wisconsin.³⁷

Appraising these indications is rendered doubly difficult by the uncertainty as to the degree of liberality of the commissions and courts concerned. The North Carolina act originally covered only "injury by accident," but the state's highest court held that this phrase barred only injuries produced by "design or expectation of the workman."³⁸ The Oklahoma law includes diseases only if accidentally caused, yet an Oklahoma court held a progressively acquired disease to be compensable because "on a definite and specified date he (the claimant) went to work as usual and after working a short time became suddenly ill and was unable to work further."³⁹ More often the line of accidental causation has been drawn more sharply. The difficulty of drawing it may be noted by considering the case of an anthrax victim. Employed at a tannery, he feels a soreness in his face and notes a swelling about the nose. The anthrax bacillus may have entered the blood stream directly through abraded skin or may have entered through the nostril. If he can prove that he scratched his face the injury will be held to have resulted from an accident. If not, it lacked a traumatic character, and compensation may well be denied in the jurisdictions under consideration.

Specific coverage is accorded by the laws of Kentucky, Nebraska, and West Virginia. Kentucky's act covers only disease resulting from noxious gases encountered in mines, limiting thereby both the disease group and the industry group. The Nebraska act applies only to metal smelting and refining and

³⁶ Pennsylvania, Commission on Compensation for Occupational Diseases, *Occupational Disease Compensation* (1933), pp. 42-44.

³⁷ F. M. Wilcox, "The 'Schedule' Fraud in Occupational Disease Compensation," *American Labor Legislation Review*, XXIV (1934), 122.

³⁸ *McNeely v. Carolina Asbestos Co.*, 206 N. C. 568 (1934).

³⁹ *Johnson Oil Refining Co. v. Gutherie*, 167 Okla. 6 (1933).

battery manufacturing. The West Virginia act does not directly limit coverage by industry, but includes only silicosis, which is confined to mines, foundries, and other establishments with a dust hazard. These three laws apply to 867,000 workers, or about 3 per cent of all covered in the United States. But if we include only the workers to whom the specific limits apply, the provisions concerned apply to only about 374,000 workers or about 1.3 per cent of all covered in the United States.

Schedules of covered occupational diseases are likely to include most diseases occurring with sufficient frequency or in such a manner as to engage the attention of legislators. Ten laws contained such schedules in 1940, and these laws apply to about 7,068,000 workers, or over 25 per cent of those covered in the United States.⁴⁰ The schedules vary greatly in diseases listed, evidence to be adduced, and other details. A table showing covered diseases in the several jurisdictions appears in Mr. Hobbs's volume on workmen's compensation insurance.⁴¹ This shows admirably the legal status of particular diseases, but unfortunately cannot show the relative breadth of coverage of the laws. Two other factors must be taken into account in attempting that task. The evidential requirements of the laws must be weighed and the exposure to disease in the several states must be determined. The former can be rather simply accomplished; the latter requires medical surveys of a kind that, although recently more commonly available, are not yet available for all of the states concerned.

One evidential procedure is to establish presumption as to cause by a second column in the schedule, listing the processes in which the disease is presumed to be "occupationally caused." This arrangement obtains as to scheduled diseases in eight jurisdictions.⁴² Where the description is sufficiently broad, and all processes are included in which a substantial hazard is involved, it is fair to place the burden of proof on the worker for cases not falling within the description. Usually the descriptions are

⁴⁰ Delaware, Idaho, Maryland, Michigan, Minnesota, New Jersey, North Carolina, Pennsylvania, Rhode Island, Washington. Ohio and New York retain schedules but compensate other diseases also. Schedules of covered diseases in the laws of Arkansas and Utah became effective in 1941.

⁴¹ C. W. Hobbs, *Workmen's Compensation Insurance* (1939), Table VII, pp. 232 ff.

⁴² Idaho, Maryland, Michigan, Minnesota, New York, Ohio, Pennsylvania, and Wyoming.

broad, as, for example, in the following passage from the New York act: "Carbon monoxide poisoning—any process involving direct exposure to carbon monoxide in buildings, sheds, or enclosed places."⁴³ On the other hand, the descriptions sometimes consist in the mention of a specific occupation, as in the following passage from the Minnesota act: "Subcutaneous cellulitis of the hand (beat hand)—mining."⁴⁴ The ailment concerned may be confined (or largely so) to miners. In other cases the Minnesota descriptions are generally as broad as those of the New York act.

Elsewhere the causative angle is stressed, but less specifically. The North Carolina act contains the following interesting proviso: "Occupational diseases caused by chemicals shall be deemed to be due to exposure of an employee to the chemicals herein mentioned only when, as a part of the employment, such employee is exposed to such chemicals in such form and quantity, and used with such frequency as to cause the occupational disease mentioned in connection with such chemical."⁴⁵

The principal weakness of the schedules is their failure to include ailments until they become widely known and hence become the subject of legislative action. Again and again compensation has been denied to victims of genuinely occupational hazards because general knowledge has not stimulated public pressure to include the affliction. The fate of the New Jersey victims of radium poisoning is only one of the most dramatic examples. If the schedule were handled administratively,—at the instance of a medical advisory committee, for example,—it would probably be more complete and up-to-date.

Blanket coverage is becoming more common, and in 1940 applied to over half the covered workers in the United States. Thirteen acts, applying to 14,120,000 workers, cover all diseases arising out of and in the course of employment.⁴⁶ This has come about in various ways. The Massachusetts act employing the

⁴³ New York state workmen's compensation law, par. 3., sec. 2, subsection (22), quoted in W. R. Schneider's *Complete Compilation of Workmen's Compensation Laws*, III (1939), 2479.

⁴⁴ Minnesota act, par. 4327, subsection (9), quoted in W. R. Schneider's *Complete Compilation of American Workmen's Compensation Laws*, III (1939), 1782.

⁴⁵ North Carolina Public Laws, chap. 123 (1935).

⁴⁶ California, Connecticut, District of Columbia, Illinois, Indiana, Massachusetts, Missouri, New York, North Dakota, Ohio, Wisconsin, U. S. Civil Compensation Act, and U. S. Longshoremen's Act.

words "personal injury" was early interpreted as including occupational diseases. The Wisconsin act uses the words "accident or disease." In New York in 1935, and in Ohio in 1939, acts which originally covered scheduled diseases were amended, not to strike out the schedules, but to cover also "any other occupational disease." The apparent equivalence in breadth of coverage of the twelve acts is offset by other statutory provisions. The status of preëxisting disease and the requirements of exposure differ. The term "occupational disease" is more guardedly defined in some jurisdictions than others, and however defined is susceptible of various shadings of interpretation. At the present time coverage of diseases appears to be broadest in Massachusetts and Wisconsin, in both of which states the disease hazard has long been recognized by legislators, commissions, and courts.

Blanket coverage has often been opposed by insurance carriers, and has been warmly resisted by the Association of Casualty and Surety Executives. The burden of their complaint is that blanket coverage is too indefinite, that frequently undeserving claimants are able to circumvent the vague provisions, and that the cost is therefore both uncertain and high. The events of the thirties lend some force to this complaint. Both commissioners and judges have been inclined to listen too sympathetically to pleas of unemployed workers claiming compensation for all types of injury. The effect on the cost of disease claims in Wisconsin has been admitted.⁴⁷ One doubts, nevertheless, the wisdom of deciding this issue on the basis of depressional tendencies in the period before social security. More adequate provision for unemployment and superannuation have already tended to reduce the volume of doubtful injury claims.

One attack on blanket coverage holds that it tends to increase litigation and to lead to contesting of claims that would be conceded under a schedule system. The litigation and resulting delays in Massachusetts are cited.⁴⁸ If this argument is valid, the criticism applies rather to the type of blanket provision than to the principle of general coverage. The advantage of definiteness

⁴⁷ U. S. Department of Labor, Division of Labor Standards, Bulletin No. 17 (1938), p. 53. But note the speaker's (H. A. Nelson, Director of the Workmen's Compensation Department of Wisconsin) insistence on the importance of the depressional factor.

⁴⁸ American Public Health Association, *Occupational Disease Legislation* (1931), p. 63.

certainly inhering in the schedule system can be retained without sacrificing general coverage. In New York and Ohio the listed diseases are handled under the unequivocal terms of the schedules, while those not listed are handled under the blanket amendment. There is no way of avoiding a margin of indefiniteness except by ruling out some deserving claimants.

Any comparison of the several provisions for occupational disease should take account of additional statutory provisions affecting coverage. The laws of nine states put disease cases in which the disability represents aggravation rather than contraction in a special category. Six laws specify that in cases of aggravation compensation shall not exceed the extent of aggravation.⁴⁹ Three laws simply order reduced compensation in such cases, apparently leaving the size of the reduction to the discretion of the commission.⁵⁰ The intent in either case is to relieve industry of the burden of compensating disability not industrially caused. However praiseworthy the motive, accurate apportionment has proved difficult in practice, and this explains the more general tendency to ignore preëxisting conditions.

Another attempt to isolate and deny coverage of nonindustrial disease is made in the form of exposure requirements. Unless the disability occurs within some specified period after the last exposure to the hazard, the disease is declared noncompensable. In Delaware and New Jersey this period is five months. A common requirement is one year, which obtains in ten states.⁵¹ The laws of Nebraska, Rhode Island, and Wisconsin allow a lapse of two years. For many diseases a one year requirement is adequate; that is, if industrially contracted, disability should have occurred within that time. Dust diseases are generally slower of contraction, and quite commonly special extension of the time lag is permitted for them. Ohio and Idaho allow a two year lapse for silicosis, and four states allow a three year lapse for silicosis and asbestosis.⁵² Pennsylvania compensates disability only if occurring within a year, but compensates death if occurring within

⁴⁹ California, Connecticut, Delaware, Idaho, North Dakota, and Washington. The Connecticut act altogether excludes ailments resulting from aggravation of venereal disease.

⁵⁰ Maryland, Michigan, and Rhode Island.

⁵¹ Idaho, Illinois, Indiana, Maryland, Michigan, Minnesota, New York, Ohio, Pennsylvania, and West Virginia.

⁵² Illinois, Indiana, Maryland, and North Carolina.

three years of the last exposure. North Carolina stresses the filing of a claim rather than disability, allowing lapse of a year prior to filing.

Other special arrangements are also frequently made with regard to dust diseases, many of them of a restrictive character. Four states allow no compensation for silicosis where only partial disability has resulted.⁵³ A maximum compensation for silicosis lower than that for other injuries, implying less complete coverage of this hazard, is provided by four laws.⁵⁴ The West Virginia act sets no limit to the amount of compensation for third-stage silicosis, but limits compensation for the first stage to \$500, and for the second stage to \$1000. The Maryland act, although not thus safeguarding other claims, provides that silicotics may not be compensated beyond the period of "average expectancy" of work. Initial limits of \$500 with increments of \$50 a month as a safeguard against accrued liabilities were provided by the laws of Maryland, Michigan, and New York. Special exposure safeguards to avoid compensation for silicosis contracted in other states are found in four laws.⁵⁵ Nondisabled silicotics may waive compensation in Idaho, and may waive full compensation in Maryland if the Medical Board approves. Idaho and Wisconsin offer an offsetting protection to the worker—a special compensation for discharge because of nondisabling silicosis.

Admittedly, silicosis and the related dust diseases are the principal industrial disease hazards in many jurisdictions. High dust counts are generally more prevalent than any single high chemical count. In those jurisdictions where silicosis is a problem it has generally produced more time loss than any other single disease. It must be conceded, too, that the separation of non-industrial tubercular ailments from industrial dust diseases is a difficult task. The prevalence of these diseases, and their sometimes dubious origin, have engendered a panicky state among legislators, insurance carriers, and rating organizations, and it was in this atmosphere of panic that the above strictures regarding silicosis were conceived. In the long run they should prove both unnecessary and inexpedient. Preventive measures are the most satisfying weapon with which to avoid excessive costs, and

⁵³ Maryland, Michigan, New York, and Pennsylvania.

⁵⁴ Idaho, Michigan, New York, and Pennsylvania.

⁵⁵ Idaho, North Carolina, Pennsylvania, and Washington.

these are likely to be taken most effectively when the employers must pay an adequate benefit to every deserving claimant.

The trend toward a broader coverage of occupational diseases is likely to continue for some time. Many states which have yet to provide compensation for nonaccidental diseases have undertaken investigations of the subject, or surveys of the exposure to various disease hazards. Eight of these states require reporting of occupational diseases regardless of compensability.⁵⁶ In time this interest will probably ripen into one form or another of coverage of nonaccidental disease. As the myth of incalculable and excessive cost is gradually shown to be such, a principal barrier to general coverage will be removed. In the meantime two developments may hasten the latter trend. A national health insurance act, paralleling the Social Security Act, may be passed. If not, perhaps Dawson's suggestion of federal aid to states providing general coverage may be acted upon.⁵⁷ Certainly the traditional distinction between accident and disease is losing force and should be ended. Workmen's compensation should mean liability without fault for any injury industrially caused.

REJECTION OF COMPENSATION RIGHTS

Where the compensation act is elective to the employee he may reject coverage and lose the protection of the act. Ordinarily the number of rejections by workers is very small. Except in Kentucky, rejection must take the form of explicit notice to the appropriate public authority. The same result is sometimes achieved in the case of physically defective persons by permitting them to waive their compensation rights, usually for injuries attributable to or related to the defect. Six laws permit waivers for some physical defects.

Nonwaiver provisions are found generally in other statutes, but in elective acts the force of a nonwaiver provision is weakened. The right to waive compensation rights is severely limited in four of the six jurisdictions allowing waivers. Idaho and Maryland allow waivers only by those suffering from nondisabling sili-

⁵⁶ Alabama, Arizona, Georgia, Kansas, Maine, New Hampshire, New Mexico, and Oregon.

⁵⁷ Marshall Dawson, *Problems of Workmen's Compensation Administration*, U. S. Bureau of Labor Statistics Bulletin No. 672 (1940), p. 69.

cosis. Ohio allows the blind to waive, and Wisconsin, the blind and the epileptic. The scope of a Massachusetts provision permitting waivers is broader, but the right to waive is closely guarded, and few waivers are approved. The party seeking a waiver must submit to competent medical examination and secure the approval of the full board. The claims of dependents in case of a fatal injury are not affected. By far the commonest allowed cause for waiver in Massachusetts is hernia. Other common ailments are varicocele, epilepsy, and crippled limbs.

Connecticut, the other state with a waiver proviso, has safeguarded the privilege less effectively, and grants waivers in much larger volume. The Connecticut proviso, originally adopted in 1917, was substantially altered in 1927 to include fatal injuries and to apply whenever the injury was "attributable in any material degree to such physical defect." A medical examination is required, but any Commissioner may approve a petition for waiver. In the average year Connecticut commissioners grant some 5000 waivers. Compare this with approval of eighty-five waivers in Massachusetts in the three and one-half year period ending December, 1930. As Dodd has shrewdly observed, there would appear to be more use for waivers in Massachusetts than in Connecticut, where the employer is expressly relieved of liability for preëxisting disease and prior injuries resulting in loss or loss of use of a member. The Massachusetts act makes the employer liable in these cases, although relieving him of the additional burden of loss of a second eye, arm, hand, or foot.⁵⁸ The number of individuals holding waivers at a given time is not determinable from the figures on waivers granted, for they are taken out only once for each change of employment. In 1937, Commissioner Donohue thought some 75,000 residents in Connecticut might be involved.⁵⁹ This is a substantial figure, representing over 13 per cent of the number estimated to be under the act.

Although possible rejection by the employed would seem a more dangerous expedient than waiver for physical defect, the number of rejections appears to have been small. Unfortunately little is known about the motivation of employees electing not to

⁵⁸ Dodd, *Administration*, p. 669.

⁵⁹ U. S. Department of Labor, Division of Labor Standards, Bulletin No. 17 (1938), p. 98.

be covered. A Georgia official admitted, however, that he advised an epileptic to reject the act to secure employment, because the law allowed no waivers.⁶⁰ Such rejection was, of course, absolute, whereas waiver would have applied only to injuries attributable to the defect. The Arizona act, although compulsory for the employer, is elective for the worker. Some years ago an Arizona official complained that some employers, unable otherwise to escape the act, were hiring only workers who would agree to reject it. In the period 1925–1931 he noted 1153 rejections, of which 967 resulted from such pressure. He sought a corrective for this practice that would “not take away the workman’s right to reject.”⁶¹ If we assume that the 967 rejections represented some 600 individuals, that would exclude about 0.75 per cent of the number estimated to be under the Arizona act.⁶²

⁶⁰ U. S. Bureau of Labor Statistics Bulletin No. 564 (1932), p. 268.

⁶¹ *Ibid.*, p. 267.

⁶² The assumption of 600 individuals is based on the likelihood of some turnover, in which case individuals concerned might have made more than one rejection.

SUMMARY OF PART I

NONE of the state workmen's compensation laws covers all of the employments within its reach. Of forty-eight laws, forty-six exclude domestics and forty-two exclude farm hands. These exclusions bar about 1,870,000 and 1,810,000 workers respectively. Nine laws cover only listed employments of a hazardous nature, and thereby exclude about 534,000 workers. Some 345,000 employees of small firms are barred by numerical exemptions found in twenty-four laws. About 509,000 casual workers are excluded by provisions of forty-one laws. Public employees are altogether excluded by six states, and partially so by fourteen others; these provisions exclude some 279,000 workers. The pattern of exclusions has been shaped by political expediency rather than sound principle. Few of the excluded employees are following callings with an exceptionally low hazard, and if they were, this would only mean that coverage would be less costly. Rural employees are not less deserving than urban employees, nor are those working at home more secure than those working in factories. Neither hazard nor status vary with size of firm. Public employees are neither more secure in this regard nor less seriously affected than private employees. Universal coverage of all in a dependent employment status is highly desirable but probably can be brought about only gradually, except at considerable sacrifice of benefit levels.

With the passing years the number under workmen's compensation laws in this country has steadily increased. As of March, 1940, American laws applied to about 27,165,000 workers, about 53 per cent of the nation's work force, and about 82 per cent of those who could be covered. In 1930, about 25,277,000 were under compensation; in 1920, only about 20,100,000; and in 1915, only about 10,275,000. The proportion of eligible employees covered has risen from 41 per cent in 1915 to 67 per cent in 1920, 75 per cent in 1930, and 82 per cent in 1940. These increases have resulted from new laws, amendments to existing laws, increases in population (absolute increases in coverage), and

occupational shifts. Of the increase of nearly 17,500,000 between January, 1915, and March, 1940, new laws appear to have added over 7,000,000, and amendments nearly 2,000,000. Population increase appears to have accounted for 4,000,000 more, and occupational shifts for over 3,000,000. During the thirties unemployment seriously retarded the expansion of coverage of the acts, but the recent expansion of employment has sharply reversed this trend. Nearly all of the states have shared the trend to broader coverage. In the exceptional states, declining employment opportunities or occupational shifts have more than offset the statutory liberalization. In 1940 the proportion included ranged from 42.6 per cent in Kansas to 98.3 per cent in New Jersey, and averaged 83.4 per cent. Only four state laws apply to less than 60 per cent of eligible employees, and only eighteen to less than 75 per cent. The broadest coverages are found in leading industrial states, but the newly industrialized southeast has not shared this tendency, principally because of high numerical exclusions. The narrowest coverages are found in agricultural states with laws applying only to "hazardous" callings.

Of the fifty acts applicable in the United States proper, seventeen apply compulsorily to private employments and thirty-two compulsorily to public employments. The elective acts subject employers rejecting the act to abrogation of common-law defenses, and quite generally presume election in the absence of explicit notice to the contrary. Thirty-three acts apply electively to private employments, and ten to public employments. Elsewhere coverage of public employments is either purely voluntary or altogether unprovided. There is a small margin of non-compliance with compulsory acts, and a probably somewhat larger but indeterminate margin of nonelection in elective jurisdictions. Massachusetts data suggest that in 1930, when this state's law was elective, actual coverage differed from applicable coverage by less than 2 per cent. Business depressions, slumps of distressed industries, or sharp increases in benefits and costs tend to widen the margin. Following the 1937 revision of the benefit scale in Pennsylvania, employers of an eighth of the state's covered workers rejected the act. Of 27,400,000 workers under compensation acts, about 13,940,000, or 51 per cent, are included electively, and about 13,460,000, or 49 per cent, compulsorily. This nearly even balance results principally from the greater (average)

coverage of the compulsory states, but also from the wider scope of compulsory coverage of public employments.

The several acts differ not only in employments covered, but also in injuries covered. Injuries causing loss of employment for less than a specified number of days are barred by a waiting period before benefits are claimable. Except for Oregon, all American statutes contain a waiting period to exclude minor injuries and minimize fraudulent claims. Nearly three-quarters of the states provide a waiting period of one week, nine states a shorter, and three a longer period. In 1915 the bulk of the laws required a waiting period of two weeks. At that time five states had a retroactive proviso directing payment of benefit for the waiting period if the injury persisted beyond a specified number of weeks. In 1940 over two-thirds of the laws so specified and the average period (weighted for coverage) was 31.2 days. The closest possible estimate for the country as a whole suggests that 44 per cent of temporary injuries are barred altogether by the waiting periods, while another 45 per cent are compensated, but not for the waiting period. The effect on the proportion of time loss compensated is less restrictive. About 15 per cent of days lost seem to represent injuries not lasting out the waiting period, and an additional 14 per cent are not covered, although the cases are partially compensable.

Various provisions of the compensation laws are intended to assure that claims are successful only when the injury was industrially caused. The commonest practice, prevailing in forty-one jurisdictions, is to specify that the injury must "arise out of and in the course of the employment." Elsewhere only one—usually the latter—of the phrases is required. The phrase "course of employment" is concerned with the time, place, and circumstances of the injury. Troublesome questions have arisen over the precise activities which fall within the phrase. There is an increasing tendency to include such incidents as preparation for work or for leaving, rest, refreshment, and communication (if permitted). The phrase "arising out of employment" is often interpreted as applying only to circumstances representing unusual exposure to the hazard, and if so strongly connotes the old theory of negligence. An opposing tendency is appearing toward softening the causal requirement where "course of employment" has been shown by placing the burden of proof on the employer

to show that the injury did not "arise out of the employment."

Quite generally, states have strengthened these requirements by further provisions barring various kinds of misconduct. All but eight laws explicitly exclude self-inflicted injuries, and all but fourteen exclude those attributable to intoxication. Less common provisions exclude injuries caused by "willful misconduct," violation of laws or safety regulations, "willful negligence," refusal to submit to proper medical treatment, and so forth. About 11 per cent of industrial fatalities reported in Massachusetts are not compensated, usually because there is no liability under provisions of this character. The experience and the laws differ, however, and an indeterminate number of individuals press no claim because of doubts as to liability. A careful study by Roy A. Brown produced only one definite conclusion about the trend of decisions: that a growing tendency toward liberal interpretation is manifest. Insofar as the provisions concern themselves with human fault this tendency must be regarded as sound, for it reinforces the basic tenet of workmen's compensation: liability without fault.

The several states have proceeded with more hesitancy in the matter of compensating diseases than in compensating accidents. Originally none of the laws provided specifically for disease compensation, but this gap has been closing at an increasingly rapid rate and in 1940 twenty-six of the forty-nine jurisdictions expressly provided for diseases. Because all the large industrial states have done so, 22,260,000 workers, or over 81 per cent of covered workers, are under one or another of the twenty-six acts. Other workers are covered only for disease resulting from accidental injury. About 3 per cent of covered workers reside in three states which assure compensation of only one disease group, or disease in only one industry group. About 26 per cent of covered workers reside in ten states which compensate a list of diseases. Six of them establish the occupational character of the disease by a generally broad description of processes in which the injured must have been engaged. A serious weakness of the lists is their tendency to obsolescence as changes in industrial processes alter the exposure to disease hazards. Coverage of all diseases, whether or not specifically mentioned, is provided by twelve acts applying to 52 per cent of covered workers. Evidence of the cost of general coverage is conflicting, high costs being

confined to the unusual period of the depression. The indefinite character of general coverage, sometimes a cause of undue litigation, has been offset in New York and Ohio by listing clearly certain occupational diseases and covering others under a blanket phrase.

Differences in breadth of coverage of disease reflect not only the types of disease, but also differences in definition of disease and in the limits of industrial responsibility. Nine states attempt to isolate aggravation of preëxisting disease. Exposure requirements found in fifteen laws aim at assuring the industrial character of the disease. Generally, where covered, dust diseases are permitted a longer lapse after the most recent exposure. Offsetting this tendency, dust diseases are commonly subjected to a less generous benefit scale to offset fears regarding cost.

Employees suffering from nondisabling silicosis are permitted to waive compensation (or a part thereof) in two jurisdictions. Waivers for some or all physical defects are allowed in four other jurisdictions, but, except in Connecticut, the provision is carefully guarded and few are approved. In all states where the worker may elect not to come under compensation, a more serious effect may be produced by rejection. A waiver is for injury attributable to the defect, while rejection is outright. The Arizona act is compulsory for the employer, elective for the worker, and a few employers there have sometimes sought to escape liability by forcing workers, as a condition of employment, to reject the act. There is little evidence available regarding motives for rejections in elective states, but administrative officials report comparatively few rejections.

PART II
THE BENEFIT SCALE
1915-1940

INTRODUCTORY NOTE

AS ALREADY STATED, the aim of a workmen's compensation law is to replace the occasionally exorbitant but always uncertain indemnity for industrial accidents in civil actions by a uniform, certain, but limited compensation.¹ The benefit scale is the test of a compensation law. The protection it affords must eventually be judged by comparison with the probable amount recoverable through civil action. Clearly the victims of non-serious injuries are generally better off under any compensation scale, for without it they rarely sought or recovered anything by civil action. There was too great danger that a suit might be won at the cost of one's job.

The issue turns on whether substantial numbers of claimants in serious cases are unduly restricted by the limits of the compensation scale. A skillful lawyer playing on the natural sympathies of jurymen with a seriously injured person often wins a very substantial verdict. The limits of such a settlement are only those imposed by the judicial concept of what is reasonable. No verdict will be held unreasonable which covers the entire cost of the injury. The evidence is overwhelming, on the other hand, that many victims of serious industrial injuries secured no settlement, or accepted ridiculously inadequate settlements in the precompensation period. This was because negligence of the employer or his agents could not be clearly established, or because the worker was financially unable to secure adequate counsel, or because he feared the cost and uncertainty of protracted litigation. The definite scale provided by workmen's compensation laws reduced uncertainty to a minimum, but definiteness implies limits. No compensation law provides *full* indemnification of the loss sustained by any injured workman. How severe are the limits to compensation for the several degrees of disability? Compensation benefits are more assured and uniform, but are they adequate?

The early workmen's compensation laws of the several states

¹ See Introduction, pp. xx-xxi.

were little more than a triumph for the compensation principle. Fears of excessive costs, of possible competitive disadvantages relative to neighboring states, and of opposition from certain groups forced innumerable compromises, particularly in benefit provisions. Many advocates of the new legislation were so far from satisfied with the benefit standards that they joined immediately in the struggle for higher standards that is still in progress. As will be shown, no important feature of the benefit scales in the original laws has failed to be revised by a large number, in most cases the great majority, of the states. Are the present standards adequate as a result of these revisions? Have the increases in benefits kept pace with increases in wages and prices?

The early benefits were not only inadequate, but generally formulated without sufficient study of the nature of the losses they sought in part to indemnify. Industrial injuries may be divided into four principal categories of extent of disability: cases of death, permanent total disability, permanent partial disability, and temporary disability.² The nature of the loss sustained in each of these categories differs sharply from the others. These differences were in few cases recognized, and in no case completely taken account of by the early compensation laws. For certain degrees of disability, notably permanent partial disability, the scale of compensation provided by most laws bore no relation whatever to the nature of the loss sustained. Have the revisions of the early scales resulted in more rational, as well as more adequate, provisions? Have the laws adopted more recently indicated a closer study of the nature of the losses to be compensated?

Another significant weakness of many of the early compensation acts was their failure to provide for medical benefits.³ As knowledge of the rehabilitation of injured workers has increased, the relation between proper medical care and the probable cost of compensation has become increasingly manifest. Amendments to these early laws have ordered medical payments, usually subject to certain limits, and laws passed subsequently have included medical benefit provisions. Do the present provisions for med-

² Some laws distinguish between temporary total and temporary partial disability. If closely defined, temporary partial disability is not a principal category. As often defined, it occurs within permanent partial disability.

³ See Table 19, pp. 160-161.

ical benefits answer the needs of injured workers? Are the limits to medical payments (still found in most laws) sufficiently flexible, and are they rational?

These questions can be answered only after a twofold analysis. The nature of the loss sustained in each type of industrial injury must be determined, and a standard provision for each loss agreed upon. Then the benefit provisions in the early laws must be studied in the light of these standards, and the improvements from time to time noted. This twofold analysis is undertaken in Part II, testing the benefit scale at four points in time: January 1, 1915, January 1, 1920, January 1, 1930, and July 1, 1940. The results are indicative, but should be compared with the results of another type of analysis presented in Part III.

CHAPTER IV

COMPENSATION FOR DEATH

NATURE OF THE LOSS

SOCIALLY CONSIDERED, a fatal industrial injury occasions a loss that equals the productive capacity of the victim for the period he would otherwise have continued working, minus the probable cost of his maintenance during this period. The net social loss is, therefore, less than in corresponding cases of permanent total disability, by the expected personal consumption. The incidence of the loss differs from that resulting from other types of injury in that it bears upon dependents alone, and continues only during dependency. Fully to indemnify the loss in a fatal case requires a benefit equal to the amount of wage loss less the probable cost of the deceased's maintenance, and subject to deductions as dependents cease to be such. Logically, the amount of both the initial and subsequent deductions should vary with size of family and age and relationship of dependents. A husband and father of three scarcely consumes as much as 50 per cent of his earnings. Seldom, unless his income is considerably above average, does he consume much more than 25 per cent of his earnings. A childless husband may and probably does consume rather more than 50 per cent of his earnings. The duration of the award should be conditioned only by the facts of dependency. Unless she remarries, death alone is likely to terminate dependency of a widow. A child is surely dependent while compelled to attend school (usually until his sixteenth year), and may reasonably be compensated until he graduates from high school (average age about eighteen).

EXISTING SCALES OF DEATH BENEFITS

Present American compensation statutes (see Table 9) provide death benefits that generally fall far short of these standards. Twenty-three laws offer a flat rate of compensation—the same

rate to a childless widow as to a widowed mother.¹ In many of these states the rate is the same as for temporary disability, although the reasoning used to justify disability rates cannot apply to fatal cases. Thirty-six jurisdictions limit compensation by the familiar device of a weekly (or monthly) maximum.² Limitations affecting the duration of death benefits are more serious. In thirty-one states payments cease after a specified number of weeks (or months or years), usually amounting to six or seven years.³ Twenty-three laws expressly limit the total compensation that may be paid, thereby generally further restricting the duration of benefits.⁴ The several combinations of these arbitrary limitations tend to establish awards related in no way to losses suffered.

THE WEEKLY INSTALLMENTS

Four states proportion the payments not to earnings, but to dependence alone.⁵ Under such a system dependents of higher-paid victims may suffer an impairment of living standards. In the remaining jurisdictions which have regard to dependency, previous earnings as well are taken into account.⁶ Thus a childless widow draws 25 per cent of the deceased's earnings in Delaware, but more generally 35 per cent. A lone child orphaned by an industrial accident receives compensation ranging from 15

¹ California, Colorado, Connecticut, Georgia, Indiana, Iowa, Kansas, Kentucky, Maine, Maryland, Michigan, Missouri, Nebraska, North Carolina, Ohio, Rhode Island, South Carolina, Texas, Tennessee, Utah, Virginia, Wisconsin.

² Alabama, California, Colorado, Connecticut, Delaware, District of Columbia, Florida, Georgia, Idaho, Indiana, Iowa, Kansas, Kentucky, Louisiana, Maine, Maryland, Michigan, Minnesota, Missouri, Montana, Nebraska, Nevada, New Jersey, New Mexico, New York, North Carolina, North Dakota, Ohio, Pennsylvania, Rhode Island, South Carolina, Tennessee, Texas, Utah, Virginia, Wisconsin.

³ Alabama, Colorado, Connecticut, Delaware, Florida, Georgia, Idaho, Indiana, Iowa, Kentucky, Louisiana, Maine, Maryland, Massachusetts, Michigan, Minnesota, Missouri, Montana, Nebraska, New Jersey, New Mexico, North Carolina, Ohio, Pennsylvania, Rhode Island, South Carolina, Tennessee, Texas, Utah, Vermont, Virginia.

⁴ Alabama, California, Colorado, District of Columbia, Florida, Georgia, Indiana, Kansas, Kentucky, Maine, Maryland, Massachusetts, Minnesota, New Hampshire, North Carolina, North Dakota, Ohio, South Carolina, South Dakota, Utah, Vermont, Virginia, Wyoming.

⁵ Oregon, Washington, West Virginia, and Wyoming.

⁶ Alabama, Arizona, Delaware, District of Columbia, Florida, Idaho, Louisiana, Minnesota, Montana, Nevada, New Jersey, New Mexico, New York, North Dakota, Pennsylvania, and Vermont.

TABLE 9

SCALE OF COMPENSATION FOR DEATH, ORIGINAL AND 1940 LAWS (PART I)

	Per cent of wage paid as compensation		Weekly compensation		Weekly compensation	
	Original	1940	Original maximum	1940 maximum	Original minimum	1940 minimum
Ala.....	20-60	25-65	\$12.00-15.00 ^a	\$15.00-18.00 ^a	\$5.00 ^b	\$5.00 ^b
Ariz.....	°	15-66.7	...	...	...	...
Ark.....	15-65	15-65	20.00	20.00	7.00	7.00
Calif.....	65	65	...	25.00	...	6.41
Colo.....	50	50	8.00	14.00	...	5.00
Conn.....	50	50	10.00	25.00	5.00	7.00
Del.....	15-60	15-60	3.00-12.00 ^d	4.50-18.00 ^e	1.20-4.80 ^d	1.50-6.00 ^e
D. C.....	15-66.7	15-66.7	5.63-25.00 ^f	5.63-25.00 ^f	1.80-8.00 ^f	1.80-8.00 ^f
Fla.....	35-60	35-70	18.00	18.00	4.00	6.00 ^b
Ga.....	42.5	42.5	10.00	...	5.00	...
Idaho.....	25-55	10-55	12.00	12.00	6.00 ^b	8.00 ^g
Ill.....	50	...	...	22.00	...	7.50
Ind.....	50	55	12.00 ^h	16.50	5.00 ^b	8.80 ^b
Iowa.....	50	60	10.00	15.00	5.00	6.00
Kansas.....	...	...	...	18.00	...	...
Ky.....	65	65	12.00	12.00	5.00	5.00
La.....	25-50	32.5-65	10.00	20.00	3.00	3.00 ^b
Maine.....	50	66.7	10.00	18.00	4.00	6.00
Md.....	50	66.7	...	18.00	...	8.00 ^b
Mass.....	50	i	10.00	j	4.00	j

Mich.....	50	66.7	10.00	18.00	4.00	7.00
Minn.....	25-60	30-66.7	10.00	20.00	6.00	8.00 ^b
Mo.....	66.7	66.7	20.00	20.00	6.00	6.00
Mont.....	50	30-66.7 ^k	10.00	15-21	6.00	8.00
Nebr.....	50	66.7	10.00	15.00	5.00	6.00 ^b
Nevada.....	50	10-66.7	13.85	2.77-18.46 ^l	4.62	...
N. H.....	...	...	...	...	...	...
N. J.....	35-60	35-60	10.00	20.00	5.00	10.00 ^b
N. Mex.....	15-60	20-60	16.00	18.00	...	5.00 ^m
N. Y.....	30-66.7	15-66.7	15.39	5.23-23.08 ⁿ	...	...
N. C.....	60	60	18.00	18.00	7.00	7.00
N. Dak.....	25-66.7	10-66.7	7.50-20.00	3.00-20.00 ^o	4.50-12.00	1.80-12.00*
Ohio.....	66.7	66.7	...	18.75	...	...
Okla.....	No compensation in fatal cases.....					
Oregon.....	p	q	p	q	...	...

a Stated maximum subject to increase of \$1 for each of three children.

b Or actual wages, if less than the stated amount.

c By implication, 50%, since legal figure was multiplied by one half daily earnings.

d Basic wage not more than \$20 nor less than \$8.

e Basic wage not more than \$30 nor less than \$10.

f Basic wage not more than \$37.50 nor less than \$12.

g \$6 if no surviving widow and not more than 1 dependent minor. In no case more than actual wages.

h Basic wage not more than \$24, nor less than \$10.

i 66.7% to total dependents if no widow survives, subject to maximum of \$10, minimum \$4.

j Widow receives \$10 weekly, if childless, \$2 additional for each child, total not to exceed \$16, without regard to previous earnings of deceased.

k 50-66.7% as regards "beneficiaries," defined as widow or widower and children under 16.

l Monthly earnings deemed not over \$120.

m But if widow or dependent child survives, not less than \$10.

n Monthly earnings deemed not over \$150.

o Weekly wages deemed not more than \$30 nor less than \$18.

p \$15 monthly to an orphaned child; \$30 monthly to a dependent mate, \$5 additional for each child under 16, total not to exceed \$50 monthly.

q \$30 monthly to a dependent widow or widower, \$8 for each additional child.

TABLE 9 (Continued)

	Per cent of wage paid as compensation		Weekly compensation		Weekly compensation	
	Original	1940	Original maximum	1940 maximum	Original minimum	1940 minimum
Pa.....	25-60	15-66 $\frac{2}{3}$	\$5.00-12.00 ^r	\$3.72-18.00 ^a	\$2.50-6.00 ^m	\$2.78-12.00 ^e
R. I.....	50	50	10.00	16.00 ^t	4.00	8.00
S. C.....	50	60	25.00	25.00	5.00	5.00
S. Dak.....	50	50 ^u	...	...	...	...
Tenn.....	20-50	50	11.00	16.00	5.00 ^b	5.00 ^b
Texas.....	60	60	15.00	20.00	5.00	7.00
Utah.....	55	60	15.00	16.00-24.00 ^v	...	...
Vt.....	33 $\frac{1}{3}$ -45	15-50	11.25	...	1.00-1.67	0.75-2.25 ^w
Va.....	50	55	10.00	16.00	5.00	6.00
Wash.....	x	y	x	y	...	...
W. Va.....	x	x	x	x	...	...
Wis.....	65	70 ^u	...	15.00	...	10.00
Wyo.....	...	...	...	aa	...	...

^r Basic wage not more than \$20, nor less than \$10.

^s Weekly wage deemed not over \$27, nor under \$15.

^t If survived by widow and three or more children; \$14 if widow has smaller number of children; \$10 if no widow or child survives.

^u If paid in installments at intervals similar to paydays.

^v \$16 if childless, 10 per cent additional for each child up to five.

^w Weekly wage deemed not under \$5.

^x \$20 monthly for a dependent mate, \$5 for each child, total not to exceed \$35 monthly.

^y \$35-\$75 monthly as follows: \$35 for wife, \$12.50 for youngest child, \$7.50 for second youngest, \$5 for each additional child.

^z \$30 monthly to a dependent, \$5 for each additional child.

^{aa} \$50 monthly to dependent mate, till \$3000 has been paid; \$180 yearly for each child, till \$5000 has been paid.

TABLE 9

SCALE OF COMPENSATION FOR DEATH, ORIGINAL AND 1940 LAWS (PART II)

	Maximum duration compensable		Maximum amount compensable	
	Original act	1940 act	Original act	1940 act
	(weeks)	(weeks)		
Ala.....	300	300	\$5000	...
Ariz.....	...	...	4000 ^a	...
Ark.....	...	450	...	\$7000
Calif.....	...	...	5000 ^b	6000 ^b
Colo.....	312	312	2500	4375
Conn.....	312	312	...	...
Del.....	270 ^c	285 ^c	...	...
D. C.....	^d	^d	7500	7500
Fla.....	350	350	5000	5000
Ga.....	300	300	4000	...
Idaho.....	400 ^e	400 ^e	...	...
Ill.....	...	...	3500 ^f	5500 ^f
Ind.....	300	300	5000	5000
Iowa.....	300	300	...	...
Kansas.....	...	...	3600 ^b	4000 ^b
Ky.....	335	400	4000	4800
La.....	300	300	...	...
Maine.....	300	300	3000	4000
Md.....	416	416	4250	5000
Mass.....	300	400 ^k	...	6400 ^h
Mich.....	300	300	...	...
Minn.....	300	ⁱ	...	7500
Mo.....	...	...	^j	^j
Mont.....	400	400	...	...
Nebr.....	433	325	...	...
Nevada.....	433	^d	5000	...
N. H.....	...	...	3000 ^k	5400 ^k
N. J.....	300	300 ^o	...	...
N. Mex.....	300	300	...	...
N. Y.....	^d	^d	...	...
N. C.....	350	350	6000	...
N. Dak.....	^d	^d	...	15,000 ^k
Ohio.....	312	416	3750	...
Okla.....	.....	No compensation in fatal cases.....		
Ore.....	^l	^d	...	...
Pa.....	300	300 ^o	...	...
R. I.....	300	500	...	...
S. C.....	350	350	5500	6000
S. Dak.....	...	...	3000 ^b	3000 ^b
Tenn.....	400	400	...	5000

TABLE 9 (continued)

	Maximum duration compensable		Maximum amount compensable	
	Original act	1940 act	Original act	1940 act
	(weeks)	(weeks)		
Texas.....	360	360	...	...
Utah.....	312	312	4500	7500
Vt.....	260	260	3500	3500
Va.....	300	300	4000	5000
Wash.....	1	1	...	...
W. Va.....	1	1	...	...
Wis.....	...	m	n	n
Wyo.....	...	...	2000 ^o	8000

a 2400 times one-half daily earnings.

b Three years' earnings, not to exceed stated amount.

c But payments to dependent children less than 16 years of age to continue until 16th birthday.

d During widowhood of mate, and until dependent children are 18 years of age.

e Compensation of an incapacitated dependent child to continue for 400 weeks after his 18th birthday, or until married.

f Four years' earnings, not to exceed the stated amount.

g But if no widow survives, total dependents may draw two-thirds of deceased's previous earnings, not more than \$10 nor less than \$4 weekly for 500 weeks, total not to exceed \$4000.

h But dependent children may continue to draw compensation until 16 years of age.

i No maximum duration if widow or children survive, but limit of 300 weeks for other dependents.

j Three hundred times 66⅓% of the deceased's weekly earnings.

k 150 times previous weekly earnings, not to exceed stated amount.

l During widowhood of dependent mate, and until dependent children are 16 years of age.

m 280 to 1000 weeks, depending on deceased's age.

n Not more than 4 years' earnings.

o \$1000 to dependent mate, \$60 in respect of each year any dependent child is less than 16, total for all children not to exceed \$1000.

per cent in New York to 45 per cent in Minnesota, with 25 per cent the most usual provision. A surviving widow with three dependent children most often receives 65 per cent or 66⅔ per cent, but draws as little as 45 per cent in Vermont. One-half of the states retain the flat percentage of earnings, regardless of dependence. The most generous provision—66⅔ per cent—is also the most common, and two-thirds of these states pay 60 per cent or more. Under such provisions, a lone dependent is probably overcompensated, except in Georgia, which has a rate of 42½ per cent. A family of four surviving is certainly undercompensated if under a law providing payment of a flat percentage of less than 65 per cent of previous earnings.

An inflexible weekly maximum compensation is specified in twenty-seven acts.⁷ It is as low as \$12 in Idaho and Kentucky, and as high as \$25 in California and South Carolina. The cen-

⁷ California, Colorado, Connecticut, Florida, Georgia, Idaho, Indiana, Iowa, Kentucky, Louisiana, Maine, Maryland, Michigan, Minnesota, Missouri, Nebraska, New Jersey, New Mexico, New York, North Carolina, Ohio, Rhode Island, South Carolina, Tennessee, Texas, Virginia, and Wisconsin.

tral tendency hovers about \$18, but higher rates in many of the populous, industrial commonwealths bring the weighted average up to \$19.30. Eight jurisdictions provide maxima that vary with the number of dependents. Five laws accomplish this by fixing not the maximum compensation, as such, but the maximum basic wage to which a varying rate of compensation is applied.⁸ In the District of Columbia, for example, the maximum basic wage is \$37.50, and the rate of compensation varies from 15 per cent (lone orphaned child) to 66 $\frac{2}{3}$ per cent (widow and mother of four or more). A lone orphaned child may draw no more than \$5.63 weekly, therefore, and no family, however large, may receive more than \$25 weekly. The laws of Alabama, Montana, and Utah contain a weekly maximum compensation but it is made subject to increments for each of a specified number of dependent children.

Thirty-one jurisdictions have provided a minimum weekly compensation. Two principal differences between the several laws form a basis for classifying the minimums. Four laws, in setting maximum and minimum, fix a range of basic wages to which the scheduled rates of compensation apply, rather than absolute limits.⁹ In ten jurisdictions the law directs that actual wages be paid if these are less than the stated minimum.¹⁰ Eighteen states have fixed a definite figure below which the weekly compensation may not fall.¹¹ The minimum weekly compensation to a widow and mother of three children ranges from \$3 (or actual wages) in Louisiana to \$13 in Illinois, and averages \$7.63 (provisional) and \$7.43 (definite) respectively.

The relative position of workers under the different types of minimum may be gathered by computing the probable award in a given case, in several states. Assume that a stock girl employed at \$6.75 weekly by a five-and-ten chain establishment falls down a flight of steps and is fatally injured. It develops that she has been the sole support of a mother, widowed two months before the accident. In Maryland a dependent may claim 66 $\frac{2}{3}$ per

⁸ Delaware, District of Columbia, Nevada, North Dakota, and Pennsylvania.

⁹ Delaware, District of Columbia, North Dakota, and Pennsylvania.

¹⁰ Alabama, Florida, Idaho, Indiana, Louisiana, Maryland, Minnesota, Nebraska, New Jersey, and Tennessee.

¹¹ California, Colorado, Connecticut, Delaware, Iowa, Kentucky, Maine, Michigan, Missouri, Montana, New Mexico, North Carolina, Rhode Island, South Carolina, Texas, Vermont, Virginia, and Wisconsin.

cent of previous earnings weekly. This would be only \$4.50 weekly, and since the law directs that the full weekly wage be paid if the compensation is less than \$8.00 weekly, the mother will be paid \$6.75. Had the accident occurred in Connecticut, which has a definite minimum, the mother would be paid \$7 weekly. Further possibilities are introduced by taking into account the situation in states which fix not the minimum itself, but the minimum basic wage. In the District of Columbia a dependent mother is entitled to 25 per cent of a minimum of \$12 weekly.¹² In the case assumed, the mother would therefore receive \$3 weekly. The Pennsylvania act contains a basic wage minimum of \$15 weekly, and pays 40 per cent of previous earnings to a totally dependent mother. This would have amounted to \$6 weekly in the assumed case.

THE TOTAL AWARD

Six states compensate the widow until death or remarriage, and the child until of age to work.¹³ In eight others the law contains such a provision, subject to a specific maximum amount which the total compensation must not exceed.¹⁴ New York is the only large industrial state which has placed no arbitrary limit on time or amount of death benefits. Four states compensate dependent children until sixteen years of age, notwithstanding durational restrictions.¹⁵ Remarriage does not invariably terminate compensation payments even to a widow, although fifteen laws have so provided.¹⁶ Nine laws order payments of varying amounts, usually in a lump sum, to widows upon remarrying.¹⁷ Two ad-

¹² Until 1939 the basic wage minimum of the District of Columbia was subject to an actual wage proviso.

¹³ Arizona, Nevada, New York, Oregon, Washington, and West Virginia. See footnote 17 below for additional compensation on remarriage provided in Arizona, Nevada, New York, and Washington acts.

¹⁴ California, District of Columbia, Kansas, New Hampshire, North Dakota, South Dakota, Wisconsin, and Wyoming; but note that North Dakota and the District of Columbia provided additional compensation on remarriage (see footnote 17).

¹⁵ Delaware, Massachusetts, New Jersey, and Pennsylvania.

¹⁶ Colorado, Florida, Indiana, Kentucky, Maine, Maryland, Massachusetts, Minnesota, North Carolina, Ohio, South Carolina, Tennessee, Utah, Vermont, and Virginia.

¹⁷ Arizona, District of Columbia, Maryland, Nevada, New York, North Dakota, Pennsylvania, Utah, and Washington.

ditional laws order such payments, subject to the condition that there are no other eligible dependents.¹⁸ The most common provision calls for payment of a lump sum equal to two years' benefits. The basis for this arrangement is the fear that absolute cessation of compensation might discourage remarriage without preventing the relationship associated with it.

More commonly the duration of death benefits is limited, either to a specific period or by the device of a stated maximum total compensation. Twelve states employ both types of limitation.¹⁹ The periods fixed range from 260 weeks in Vermont to 500 weeks in Rhode Island. In all but two of the laws concerned the specified duration is measured from the date of injury. The laws of California and Connecticut measure the period from the date of death.²⁰ Easily the commonest period is 300 weeks—less than six years. Only one-fourth of the periods are longer than seven years. Young children and middle-aged widows are the principal sufferers from the brevity of the periods. The former are frequently cut off while still in grammar school. The latter, usually unable to remarry, will probably exhaust claims to benefit long before entitled to an old-age pension.

The maximum total compensation varies from \$3500 in Vermont to \$15,000 in North Dakota. The modal limitation is \$5000, and North Dakota alone specifies an amount greater than \$8000. No comparison of the maximums should be made without taking into account whether or not the amount is subject to deduction for any disability payments made during the time between the occurrence of the accident and death. Of the twenty-three laws which specify a maximum total compensation for death, only eight apply the amount to death alone, with no regard to prior disability.²¹ In eight of the states which limit both period and amount, the figure for total compensation is sufficiently low to curtail the stated maximum period for all awards within a few dollars of the weekly maximum.²² Ohio, for exam-

¹⁸ Colorado and Minnesota.

¹⁹ Colorado, Florida, Indiana, Kentucky, Maine, Maryland, Massachusetts, South Carolina, Tennessee, Utah, Vermont, and Virginia.

²⁰ California if death occurs within 12 months, and Connecticut if death occurs within 2 years, of the injury.

²¹ Maine, Maryland, Massachusetts, North Dakota, Utah, Vermont, Virginia, and Wyoming.

²² Florida, Kentucky, Maine, Maryland, North Carolina, Ohio, South Carolina, and Tennessee.

ple, pays up to \$18.75 weekly for 416 weeks, the total not to exceed \$6500. Thus anyone awarded more than \$15.62 a week would be unable to draw benefit for the full 416 weeks. If awarded \$16, one would receive the 6500th dollar during the 407th week; if \$17, during the 383rd week; if \$18, during the 362nd week; and if \$18.75, during the 347th week.

DEVELOPMENT OF DEATH BENEFIT SCALE, 1915-1940

The workmen's compensation laws now operating in forty-seven states and the District of Columbia were drafted independently over a period of some thirty years. The general situation with regard to dependency compensation in fatal cases has been in a state of gradual change as early laws were amended and states

TABLE 10
DEVELOPMENT OF SCALE OF COMPENSATION FOR DEATH, 1915-1940

I. Rate of Compensation									
Year	Number of compensation acts with a basic rate ^a of								Weighted average
	under 50%	50%	55%	60%	62.5%	65%	66.7%	70%	
1915	0	12	0	2	0	2	2	0	53.1 per cent
1920	1	12	4	9	0	4	3	0	60.8 per cent
1930	2	8	3	5	1	8	8	0	61.2 per cent
1940	1	8	4	7	1	7	10	2	61.1 per cent

II. Maximum Weekly Compensation									
Year	Number of compensation acts providing a weekly maximum ^b of							Weighted average	
	any amount	less than \$11.00	\$11.00-13.99	\$14.00-16.99	\$17.00-19.99	\$20.00-22.99	\$23.00 and over		
1915	12	9	2	1	0	0	0	\$11.38	
1920	29	4	8	13	3	1	0	13.71	
1930	33	0	4	11	9	8	1	18.28	
1940	36	0	2	9	12	9	4	19.38	

III. Minimum Weekly Compensation (Part 1)									
Year	Number of compensation acts providing a definite minimum ^b weekly compensation of							Weighted average	
	any amount	less than \$5.00	\$5.00-5.99	\$6.00-6.99	\$7.00-7.99	\$8.00-9.99	\$10.00 and over		
1915	8	5	3	0	0	0	0	\$4.27	
1920	17	4	7	4	1	0	1	5.44	
1930	17	2	3	5	4	2	1	6.93	
1940	22	1	4	5	6	2	4	7.46	

TABLE 10 (continued)

III. Minimum Weekly Compensation (Part 2)								Weighted average
Number of compensation acts providing for actual wages if less than minimum, or a minimum ^b weekly compensation of								
Year	any amount	less than \$5.00	\$5.00- 5.99	\$6.00- 6.99	\$7.00- 7.99	\$8.00- 9.99	\$10.00 and over	
1915	3	0	2	1	0	0	0	\$5.30
1920	9	1	2	6	0	0	0	5.76
1930	13	2	3	4	1	2	1	7.10
1940	10	1	2	2	0	4	1	7.63

IV. Duration of Compensation						Weighted average
Number of compensation acts providing a limit of						
Year	any period	less than 300 weeks	300 to 399 wks.	400 to 499 weeks	500 weeks	
1915	13	0	10	2	1	352.2
1920	27	3	18	5	1	337.9
1930	27	2	19	6	0	335.3
1940	31	2	21	6	2	365.4

V. Maximum Total Compensation							Weighted average
Number of compensation acts providing a maximum of							
Year	any amount	\$3000- 3999	\$4000- 4999	\$5000- 5999	\$6000- 6999	\$7000 and over	
1915	9	4	3	2	0	0	\$3829
1920	19	7	7	5	0	0	4396
1930	22	5	5	6	3	3	5585
1940	23	2	5	7	4	5	5935

^a States with a sliding scale are counted at the rate they pay for a widow with three children.

^b States with a minimum proportioned to dependency are included at the level for a widow and three children.

without such laws adopted them. The development of the dependency compensation scale is presented in Table 10. A frequency distribution of the several jurisdictions with regard to the principal features of the scale is given for each of four years. The years are 1915 (24 laws), 1920 (42 laws), 1930 (47 laws), and 1940 (50 laws). For each year and for each principal feature an average, weighted for number of persons covered, is listed. In each case those jurisdictions with laws in effect on January 1st were counted, except in 1940, when July 1st was selected. Later changes are ignored in Table 10 because the purpose of this study is to assay the adequacy of workmen's compensation with reference to normal conditions. The production crisis incident to the Second World War may be dated in this country from July 1, 1940.

THE 1915 SCALE

Unsatisfactory though the present scale of compensation for death may be, the benefits provided by early American compensation laws were much less adequate. The minimum scale recommended by the Conference of Commissioners on Compensation for Industrial Accidents, held at Chicago in 1910, was hardly calculated to encourage generous provisions. For death a benefit equal to 60 per cent of wage loss was suggested, subject to a maximum of \$10 weekly and a minimum of \$4 weekly, and to continue for 300 weeks.²³ Legislators seem to have gravitated toward this minimum scale, partly because of exaggerated fears of the cost burden on employers—especially small employers—and partly because of concern over the possibility that industries in noncompensation states might gain a decided competitive advantage.

Of the thirteen states which, on January 1, 1915, had specified a weekly maximum death benefit, nine had fixed it at \$10.²⁴ Twelve laws provided a minimum weekly compensation, three with an actual wage proviso, and nine a definite minimum.²⁵ Seven of the minimums were more generous than the recommendation by the Commissioners. The average was \$4.60 weekly, and the commonest minimum, \$5 weekly. Seven of the thirteen states directly limiting duration of compensation for death provided a maximum of 300 weeks, and three others a maximum of 312 weeks.²⁶ The laws were less generous than the recommendation in fixing the rate of compensation. A flat rate of compensation was established in fourteen states, and nine of them provided payment of 50 per cent of wage loss.²⁷ Only Texas selected the recommended rate of 60 per cent, but four states fixed

²³ Conference of Commissioners on Compensation for Industrial Accidents, *Proceedings*, pp. 31-302 and Appendix D (November, 1910).

²⁴ \$10: Connecticut, Iowa, Louisiana, Massachusetts, Michigan, Minnesota, Nebraska, New Jersey, and Rhode Island. \$13.85: California and Nevada. \$15.39: New York. \$15: Texas.

²⁵ Provisional: Minnesota, Nebraska, and New Jersey. Definite: California, Connecticut, Iowa, Louisiana, Massachusetts, Michigan, Nevada, Rhode Island, and Texas.

²⁶ 300 weeks: Iowa, Louisiana, Michigan, Minnesota, Nebraska, New Jersey, and Rhode Island. 312 weeks: Connecticut, Ohio, and Maryland.

²⁷ Arizona, Connecticut, Illinois, Iowa, Maryland, Michigan, Nebraska, Nevada, and Rhode Island.

a higher rate.²⁸ Four laws established a graduated rate of compensation giving consideration to dependence as well as previous earnings.²⁹ Minnesota and New Jersey allowed as high as 60 per cent of wage loss, and New York up to 66⅔ per cent, but only the latter provided more than 50 per cent of wage loss for a widow and mother of three.

Not all of the states followed the recommended pattern for a system of death benefits. Nine laws provided a maximum total compensation, the amounts specified ranging from \$3000 to \$5000, and averaging less than \$4000.³⁰ Five laws limited the total compensation to the less specific amount of three or four years' earnings, and those of Kansas and New Hampshire made no provision for payment except in a lump sum.³¹ In Oregon, West Virginia, and Washington a system of monthly pensions was established, the amount varying with dependency and bearing no relation to previous earnings.

REVISION AND ADDITIONAL LAWS

1915-1920 During the five years that followed, prices, living costs, and wages rose sharply under the pressure resulting from the wartime emergency. The provisions of the early compensation acts became progressively less adequate, and this accentuated the struggle for improved compensation standards. A wave of amendments and new legislation followed. The most frequent changes in benefits increased the rate of compensation and the weekly maximum and minimum. Seven states amended their laws to increase the statutory percentage of past earnings, eight to increase the weekly maximum, and five to increase the weekly minimum.³² California and Wisconsin provided weekly minimums for the first time, while a Louisiana amendment intro-

²⁸ California and Wisconsin, 65%; Massachusetts and Ohio, 66⅔%.

²⁹ Louisiana, Minnesota, New Jersey, and New York.

³⁰ Arizona, California, Illinois, Kansas, Maryland, Massachusetts, Nevada, New Hampshire, and Ohio.

³¹ California, Kansas, and New Hampshire, three years' earnings; Illinois and Wisconsin, four years' earnings.

³² Illinois, Iowa, Louisiana, Michigan, Minnesota, Nebraska, and Nevada provided a higher rate of compensation; Connecticut, Iowa, Louisiana, Michigan, Minnesota, Nebraska, Nevada, and New Jersey, a higher maximum weekly benefit; and Iowa, Michigan, Minnesota, Nebraska, and New Jersey, a higher minimum weekly benefit.

duced an actual wage proviso. Fifteen of eighteen new laws adopted the system of weekly installments in some ratio to past earnings, and eight of them set the percentage above the prevailing level.³³ Twelve of the fifteen new laws containing such a provision established a weekly maximum higher than the 1915 average.³⁴ Meanwhile fourteen new laws included a minimum weekly compensation, five with, and nine without, an actual wage proviso.³⁵ Three of the provisional minimums and eight of the definite minimums were above the 1915 level.

On January 1, 1920, thirty-three compensation laws provided installments proportioned to past earnings varying from 45 per cent to $66\frac{2}{3}$ per cent and averaging (weighted for coverage) 60.8 per cent. The weighted average at the beginning of 1915 had been 53.1 per cent. Twenty-nine laws contained a maximum weekly death benefit ranging from \$10.00 in three jurisdictions to \$20.83 in California. The weighted average was \$13.71, compared with the 1915 average of \$11.38. Twenty-six compensation acts contained a minimum weekly death benefit, nine directing that actual wages be paid if less than the stated minimum. The definite minimums ranged from \$2.25 in Vermont to \$12 in North Dakota, and averaged \$5.44, compared with the 1915 average of \$4.27. The provisional minimums ranged from \$3 in Louisiana to \$7.20 in New Mexico, and averaged \$5.76, compared with \$5.30 in 1915.

The increases in maximum and minimum weekly compensation did not, however, match the increases in living costs and weekly earnings. The minimums quite generally applied to a very much smaller proportion of cases than in 1915, and set standards that, in terms of purchasing power, were almost universally lower.³⁶

³³ Alabama, Colorado, Delaware, *Idaho*, *Indiana*, *Kentucky*, *Maine*, Montana, *New Mexico*, *North Dakota*, *Pennsylvania*, Tennessee, *Utah*, Vermont, and Virginia. The italicized states established ratios above the 1915 level.

³⁴ Alabama, Colorado, Delaware, *Idaho*, *Indiana*, *Kentucky*, *Maine*, Montana, *New Mexico*, *North Dakota*, *Pennsylvania*, and *Utah* set higher maximums; Colorado, Tennessee and Virginia, lower maximums.

³⁵ Alabama, *Idaho*, *Montana*, *New Mexico*, and Tennessee, with actual wage proviso. *Colorado*, *Delaware*, *Indiana*, *Kentucky*, *Maine*, *North Dakota*, *Pennsylvania*, Vermont, and *Virginia*, with specific minimum. The italicized states set minimums above the 1915 level.

³⁶ In Massachusetts eight workers fatally injured during the fiscal year 1914-15 received wages of \$6 weekly or less, and their dependents may therefore have benefited by the minimum weekly death benefit provided. These were 2.2% of the fatal cases. The same information is not available for the fiscal year 1919-20,

The higher rates, and to a lesser extent the higher maximums, resulted in weekly benefits to dependents of lower-paid workers which were more generous both in dollars and in buying power. Families of higher-paid workers were less fortunate. Since awards to them were certain to be restricted by the weekly maximums, and since these had not risen generally as much as weekly earnings, the weekly benefit in these brackets was likely to be higher in dollars but not in purchasing power. It represented a smaller proportion of wage loss, and a much smaller "real" compensation. The higher percentages paid had little effect on this group other than to increase the number comprising it.

It must also be borne in mind that these higher standards were not adopted in all states. At the beginning of 1920 eleven states were compensating a widow with three dependent children to the extent of only 50 per cent of the deceased's wage loss, four states were restricting the weekly benefit to a maximum of \$10, and five states retained a minimum weekly benefit of less than \$5.³⁷ Standards which had proved inadequate in 1915 were clearly very much more so in 1920. During the fiscal year 1914-15 the \$10 weekly maximum provided by the Massachusetts Workmen's Compensation Act applied to 36.5 per cent of the fatally injured. It applied to about 90 per cent during the fiscal year 1919-20.³⁸

Revisions affecting duration were both less common and less generous in this five-year period. Only Nebraska and Ohio increased the number of weeks during which death benefits might be drawn. Nevada struck out this provision, but California added a maximum period of 240 weeks. Illinois, Kansas, and Ohio amended their laws to increase the maximum total compen-

but by a comparison of similar data for all cases, fatal and nonfatal, an estimate may be made. On the assumption that fatal cases experienced the same trend, it is doubtful whether one fatally injured worker earned as little as \$6.

³⁷ 50% of past earnings: Alabama, Arizona, Colorado, Connecticut, Delaware, Maryland, New Jersey, Rhode Island, South Dakota, Tennessee, and Virginia; maximum per week, \$10: Colorado, Massachusetts, Rhode Island, and Virginia; minimum per week, \$5 or less: California, Louisiana, Massachusetts, Rhode Island, and Vermont.

³⁸ *Fifth Annual Report of the Industrial Accident Board . . . July 1, 1916 to June 30, 1917*, [Massachusetts] Public Document No. 105 of 1917, p. 52. Table on this page shows per cent for 1914-15. Per cent for 1919-20 estimated by author after analysis of over-all figures and projection of trends of earlier complete data by degree of severity.

sation. Nebraska and Nevada deleted this restriction. Fourteen new laws included a maximum duration, and ten a maximum total death benefit.³⁹

The net effect of these changes in duration and total compensation was unfavorable. The proportion of jurisdictions limiting compensation to a specific period increased, and the limits set in the new laws were generally lower than the 1915 level.⁴⁰ Accordingly, the weighted average declined from 352 weeks to 338 weeks. While the proportion of laws including a maximum total compensation increased, the weighted average rose from \$3829 to \$4396, or about 15 per cent. This increase, however, must be appraised in the light of changes in wages and living costs. Between 1915 and 1920 the cost of living rose approximately 95 per cent, and averaged 70 per cent higher during the twenties than in 1915.⁴¹ Allowing for this, the modest increase of 15 per cent in average maximum award appears to represent a decrease of approximately a third in purchasing power.

How does the larger average award compare with the enlarged earning capacity? In 1920, annual and full-time weekly earnings of industrial workers averaged more than double those in 1915.⁴² It may be argued that increases in benefits cannot be fitted to earnings levels in peak years. As a matter of fact, however, full-time weekly earnings in the following decade averaged only 8 per cent lower than in 1920, and annual earnings only 6 per cent lower.⁴³ We conclude that in purchasing power and in relation to earning capacity the provisions limiting total compensation were clearly less satisfactory in 1920 than in 1915.

The restrictive effect of the total maximums in 1920 was greater than in 1915, as shown by the relative movements of the weekly maximums and the total maximums. In 1915 only two of the

³⁹ Both: Alabama, Colorado, Indiana, Kentucky, Maine, Utah, Vermont, and Virginia. Duration: Delaware, Idaho, Montana, New Mexico, Pennsylvania, and Tennessee. Total compensation: South Dakota and Wyoming.

⁴⁰ Thirteen of 23 jurisdictions (57%) had a durational limit in 1915; 27 of 41 (66%) in 1920. Eleven of the 14 new laws including a maximum duration specified a period shorter than the 1915 average.

⁴¹ *Handbook of Labor Statistics*, U. S. Bureau of Labor Statistics Bulletin No. 694 (1941).

⁴² Paul H. Douglass, *Real Wages in the United States, 1890-1926* (1930), p. 211, and Table 147 adjacent to p. 391.

⁴³ *Ibid.*, p. 211, for weekly earnings. For annual earnings see Spurgeon Bell's *Productivity, Wages, and National Income* (1940), p. 239.

eight states with a maximum total compensation had provided a weekly maximum as well. When functioning together, the two types of maximum establish an effective duration of benefits to dependents of fatally injured workers to whom the weekly maximum would apply; namely, the quotient obtained by dividing the total by the weekly maximum. The effective duration in Massachusetts in 1915 was 400 weeks; in Nevada, 361.3 weeks. The corresponding durations for dependents of lower-paid victims were 500 weeks and 433 weeks (100 months) respectively. By 1920, a weekly and a total maximum were found in twelve compensation acts.⁴⁴ The twofold limitation acted to establish an effective duration shorter than the specified duration in four states.⁴⁵ In Maine the effective duration was 233.3 weeks; in Ohio, 333.3 weeks. Wisconsin, which had no formal time limitation, provided in this manner an effective duration of 341.8 weeks for dependents of higher-paid fatally injured workers. The differences between the effective and specific limits ranged from 1.7 weeks in Kentucky to 100 weeks in Massachusetts.

The greatest loss to the compensation principle during this period was the provision in the Oklahoma act, passed in 1915, that the law should not apply to accidental injuries that resulted in death. The constitution of the state, in article XXIII, section 7, prohibits the legislature from limiting the amount recoverable for death resulting from a wrongful act. Since the essence of the compensation principle is a clear basis for awards, this prohibition obviously ruled out compensation for death from any industrial accident involving a wrongful act. Oklahoma legislators were unhappily left in no doubt as to the probable fate of the law if left applicable to fatal injuries. The earlier Kentucky law (1914) had been declared unconstitutional because of an exactly analogous provision of the Kentucky constitution. An amendment to the Oklahoma constitution was proposed in a joint resolution of the state legislature, but the amendment did not carry until 1941, and the statute to this day excludes fatal accidents. Dependents of fatally injured workers in Oklahoma, therefore, are obliged to sue at common law in an effort to obtain indemnification.

⁴⁴ Alabama, California, Colorado, Indiana, Kentucky, Maine, Massachusetts, Ohio, Utah, Vermont, Virginia, Wisconsin.

⁴⁵ Kentucky, Maine, Massachusetts, and Ohio.

1920-1930 The decade of the twenties witnessed a gradual improvement in workmen's compensation benefit levels. The tempo of amendments slackened, however, in a period of comparative stability. New legislation came less frequently, since all but six of the states had passed compensation acts by 1920. Although weekly earnings of industrial workers did not regain the peak level of 1920, after a sharp decline during the 1921 depression they recovered, and averaged only 5 per cent below that level in the seven-year period 1923-1929. Living costs averaged 14 per cent lower during this period, so real earnings averaged 10 per cent higher.⁴⁶ In this situation the struggle for higher compensation standards took on a new aspect. What had been a race between benefits and earnings became a struggle for more adequate and more consistent provisions. Not only did the weighted average wage-loss ratio and weekly maximum and minimum continue to rise, but the weighted average maximum total compensation rose about 27 per cent. Only the average duration suffered a further decline.

Amendments to seven laws raised the rate of compensation.⁴⁷ The newly adopted laws of the District of Columbia and Missouri provided a rate of compensation higher than the 1920 level. South Dakota amended its law to proportion benefits to earnings, while Massachusetts abandoned the wage-loss ratio for a straight weekly pension based on dependence.⁴⁸ The legislative trend was toward a benefit of 65 to 66 $\frac{2}{3}$ per cent of the earnings of the deceased, when survived by a widow and three children. By the end of the decade the 66 $\frac{2}{3}$ per cent rate was nearly as common as the 50 per cent rate, which had originally been almost universal.

Further protection to low-paid workers was afforded by increases in the minimum weekly compensation set forth in amendments to eight laws.⁴⁹ The new fixed pension system of Massachusetts limited the application of its minimum to cases where no widow survived. Maryland added a weekly minimum with an actual wage proviso to its system of compensation, and the new

⁴⁶ Based on data contained in Bell, *Productivity*, pp. 236-237.

⁴⁷ Arizona, Louisiana, Maine, Maryland, Michigan, Minnesota, and Pennsylvania.

⁴⁸ Except in fatal cases in which no dependent widow (or widower) survives. The old rate (66 $\frac{2}{3}$ %), maximum (\$10), and minimum (\$4), were retained for application to such cases.

⁴⁹ Indiana, Minnesota, Montana, New Jersey, Pennsylvania, Rhode Island, Texas, and Virginia.

laws of Georgia and the District of Columbia contained similar provisions. The Missouri and North Carolina acts included a definite weekly minimum. On January 1, 1930, twenty-nine compensation acts contained a minimum weekly death benefit, fourteen with and fifteen without an actual wage proviso. The weighted average definite minimum had risen from \$5.44 in 1920 to \$6.93, and the weighted provisional minimum had advanced from \$5.76 in 1920 to \$7.10. The modal provision, which in 1920 had been \$5, was now \$6.

Amendments by nineteen states and the new laws of the District of Columbia and Missouri provided for a maximum weekly compensation higher than had prevailed in 1920.⁵⁰ Massachusetts abandoned this limitation. The modal maximum in 1915 had been \$10, and in 1920, \$15. By 1930 maximums of \$15, \$18, and \$20 were almost equally common, and the weighted average had risen to \$18.28 weekly. A bright feature of the new increases was a growing tendency to adjust simultaneously the maximum total compensation, if any. Six laws containing a total maximum were amended to provide a higher weekly maximum, and only one (Indiana) failed to provide a compensating increase in the total maximum.⁵¹

The new law affecting workers resident in the District of Columbia and longshoremen throughout the country, while containing no specific durational limit, did not avoid an effective duration for awards approaching the weekly maximum. Kansas and Maryland, by adding a weekly maximum, and Minnesota and North Dakota, by adding a total maximum, joined the group of states with an effective durational limit. Of these four states only Maryland had a specific period limitation, and the period provided—416 weeks—was substantially longer than the period during which benefits might be drawn by those eligible for the weekly maximum.

1930–1940 The economic character of this period necessarily led to a change of emphasis in new legislation and amendments affecting compensation benefit scales. During a period of severe eco-

⁵⁰ Colorado, Connecticut, Indiana, Kansas, Louisiana, Maine, Maryland, Michigan, Montana, Nevada, New Jersey, New York, Ohio, Pennsylvania, Rhode Island, Tennessee, Texas, Virginia, and Wisconsin.

⁵¹ Colorado, Indiana, Maine, Ohio, Virginia, and Wisconsin.

conomic retrenchment one is apt to struggle to protect existing standards rather than for higher standards. Such increases as were secured came at the very outset in 1930 or in the recovery years 1935–1937. Interest in the weekly benefit continued keen, but shifted from the maximum weekly compensation to the rate of compensation, particularly its methods of computation. Increases in the weekly maximum are hardly worth fighting for when wage rates and earnings are at so low an ebb that few persons are eligible even for the current maximum. Seven such increases occurred, but none during the lean years 1931–1934.⁵² Of greater significance were four amendments increasing the rate of compensation, one by South Carolina, which had just two years earlier (1935) adopted a workmen's compensation law.⁵³

During the depression years an old controversy arose in a new and acute form: how to compute past weekly earnings in a period of widespread underemployment?⁵⁴ This controversy was of special moment in fatal cases. If the phrase "average earnings" means actual earnings at whatever rate of employment, then dependents of workers fatally injured while much part-time unemployment prevails will often suffer a considerable impairment of living standards. Compensation of future earning capacity on the basis of past part-time earnings is scarcely compensation when, as in the case of death benefits, the compensation is likely to continue for several years. Eight states had already specified a minimum work-week in terms of which average earnings were to be computed.⁵⁵ Now, Kansas and Idaho amended their laws to add a minimum work-week. During the years 1932–1934 important decisions in six states established full-time earnings, with or without a minimum work-week, as the basis for computing compensation.⁵⁶ Thus the Minnesota Supreme Court awarded dependents of a workman killed while employed three hours daily

⁵² Alabama, California, Colorado, Montana, Pennsylvania, Rhode Island, and Virginia.

⁵³ Alabama, Montana, South Carolina, Virginia.

⁵⁴ See the discussions on this point in the United States Bureau of Labor Statistics Bulletin No. 577 (1933), pp. 61ff, and in the United States Department of Labor, Division of Labor Standards, Bulletin No. 2 (1935), pp. 192 ff. See also below, pp. 143–144.

⁵⁵ California, Delaware, District of Columbia, Illinois, New York, Oregon, South Dakota, and Texas.

⁵⁶ Michigan (1932), New Hampshire (1932), New Jersey (1932), Utah (1933), Minnesota (1934), Pennsylvania (1934).

compensation on the basis of earnings for an eight hour day.⁵⁷

The controversy regarding computation of average weekly earnings was most heated in those states in which the minimum weekly compensation was subject to an actual wage proviso. A definite minimum constituted a considerable protection against inhumanly low standards of compensation to dependents of injured part-time employees. It is noteworthy, therefore, that the balance between the two types of minimum was altered in favor of the definite minimum during this period. Delaware, Iowa, and Montana amended their laws, abandoning the actual wage proviso, and the new South Carolina act contained the definite minimum. The Georgia act was amended, eliminating its minimum weekly compensation altogether, and a new provision for a weekly minimum by New Mexico was in the definite form. On the other hand, Indiana amended its provision to direct payment of full wages if less than the minimum, and Florida, upon entering the compensation fold in 1934, included a similar provision. As of July 1, 1940, thirty-one laws contained a minimum weekly compensation, and only ten of them were subject to an actual wage proviso. The weighted average definite minimum rose from \$6.93 to \$7.46 weekly.⁵⁸ The shift to a definite minimum by several states with low provisional minimums helps explain the increase from \$7.10 weekly to \$7.63 weekly in the weighted average provisional minimum.

Provisions governing total compensation were liberalized somewhat between 1930 and 1940, the weighted average period limitation rising from 335.3 weeks to 365.4 weeks, while the average amount limitation advanced from \$5585 to \$5935. New laws adopted in Florida and South Carolina allowed death benefits to continue for 350 weeks. A Rhode Island amendment raised the time limit from 300 to 500 weeks, and California abandoned this feature. In Massachusetts an amendment relaxed the durational limit by providing that dependent children must be compensated until eighteen years of age. Increases in the maximum total compensation for death were provided by amendments to nine laws.⁵⁹ The South Carolina act provided a maximum above the prevailing level, the Florida act slightly below that level.

⁵⁷ *Lee v. Villard Consolidated School District*, 257 NW 90 (1934).

⁵⁸ An increase in the minimum was provided by amendments to the laws of Connecticut, Delaware, Idaho, Montana, Vermont, and Wisconsin.

⁵⁹ Alabama, Colorado, Illinois, Massachusetts, New Hampshire, South Carolina, Utah, Virginia, and Wyoming.

The position of beneficiaries eligible for the maximum weekly compensation also improved slightly during this period. Until 1939, California dependents eligible for the weekly maximum were subject to an effective duration of 200 weeks. An upward adjustment of the maximum total compensation then raised this to 240 weeks. All of the new laws limited both the total and weekly compensation, but the effective durations thereby created were longer than the average prevailing in 1929. Thirteen states now have an effective duration of death benefits, four in the absence of any specified duration, and nine shorter than the stated limit.⁶⁰ The difference between the effective and stated limits is as little as 1.7 weeks in Kentucky, but in four states it is from seventy to ninety weeks, and in three states, more than one hundred weeks.

The struggle for higher standards of compensation for death is likely to continue until the numerous inconsistencies in existing statutes have been eliminated. The principal goals of the advocates of higher standards are: (a) a compensation proportioned to dependence as well as to previous earnings, (b) a pension for the entire period of dependency to both widows and children, (c) a weekly benefit based on past earnings, computed on the basis of full-time employment and limited only by ratio to such earnings, and (d) a definite minimum weekly benefit. In defense of the last two goals it may well be urged that the usual strictures with regard to them have no force when applied to compensation for death. The dead do not malingering. The burden of the suggested changes would be slight, for the proportion of fatal cases is small. There seems little reason for believing that the industrial system is not in a position to meet in full the cost of fatal industrial injuries.

⁶⁰ Those without a specific duration are California (240 weeks), the District of Columbia (300 weeks), Kansas (222.2 weeks), and North Dakota (750 weeks).

Those with a specific duration and an effective duration for beneficiaries eligible for the weekly maximum are Florida (350 weeks, 272.2 weeks), Illinois (417 weeks, 250 weeks), Kentucky (335 weeks, 333.3 weeks), Maine (300 weeks, 222.2 weeks), Maryland (416 weeks, 272.2 weeks), North Carolina (350 weeks, 333.3 weeks), Ohio, 416 weeks, 346.7 weeks), South Carolina (350 weeks, 240 weeks), and Tennessee (400 weeks, 312.5 weeks).

CHAPTER V

COMPENSATION FOR PERMANENT TOTAL DISABILITY

A NONFATAL INDUSTRIAL INJURY involves an economic loss to the injured worker as well as to his dependents, if any. Because he survives, at the outset this loss depends in no way on whether he has dependents, or how many, or in what relation they stand to him. It is the discount for the cost of the deceased's support, varying as it does with size of family, that makes a graduated scale of compensation logical in fatal cases. The direct loss attributable to disability is the loss of earning capacity by the injured for the period of disability. Where the injury is permanent, the question of dependents may eventually present itself, but in a different light. As the years pass, the obligation of an injured father to dependent minors will gradually diminish and eventually disappear. A system of allowances for dependent children, claims for which would be extinguished as they attained a specified age, can be justified to meet this situation. For permanent total cases, a basic rate of 70 per cent of past weekly earnings might be set up, with allowances of 10 per cent for each of three children. When an injury is temporary, or partial, or both, it is difficult fully to indemnify the loss of earning capacity without encouraging malingering. This danger does not exist when the injury is both permanent and total. There is, accordingly, no sound reason why compensation for this degree of disability should not total 100 per cent of net past earnings (perhaps subject to appropriate discounts as his children attained a specified age) for the balance of the injured's life.

EXISTING SCALES OF PERMANENT TOTAL DISABILITY COMPENSATION

No American statute, however, provides for full indemnification of wage loss in permanent total disability cases. Sixteen jurisdictions pay the legal rate of compensation for the balance of the

TABLE 11
SCALE OF COMPENSATION FOR TOTAL DISABILITY, ORIGINAL AND 1940 LAWS
(PART I)

	Per cent of wage paid as compensation		Maximum weekly compensation		Minimum weekly compensation	
	Original act	1940 act	Original act	1940 act	Original act	1940 act
Ala.....	50-60 ^a	55-65 ^a	\$12.00	\$18.00	\$5.00 ^b	\$5.00 ^b
Ariz.....	50	65	...	...	...	...
Ark.....	65	65	20.00	20.00	7.00	7.00
Calif.....	65	65	20.83	25.00	4.17	6.50
Colo.....	50	50	8.00	14.00	5.00 ^b	5.00
Conn.....	50	50	10.00	25.00	5.00	7.00
Del.....	50	50	10.00	15.00	4.00 ^b	5.00 ^b
D. C.....	66.7	66.7	25.00	25.00	8.00 ^b	8.00 ^b
Fla.....	50-60 ^a	50-60 ^a	18.00	18.00	4.00 ^b	6.00 ^b
Ga.....	50	50	12.00	20.00	4.00 ^b	4.00 ^b
Idaho.....	55	55 ^c	12.00	16.00	6.00 ^d	6-8.00 ^e
Ill.....	50	50-65 ^f	12.00	20.00	5.00	7.50
Ind.....	55	55	13.20 ^g	16.50 ^h	5.50 ⁱ	8.80 ^j
Iowa.....	50	60	10.00	15.00	5.00 ^b	6.00 ^b
Kansas....	50	60	15.00	18.00	6.00	6.00
Ky.....	65	65	12.00	15.00	5.00	5.00
La.....	50	65	10.00	20.00	3.00 ^b	3.00 ^b
Maine.....	50	66.7	10.00	18.00	4.00	6.00
Md.....	50	66.7	12.00	20.00	5.00 ^b	8.00 ^b
Mass.....	50	66.7	10.00	18.00	4.00	9.00 ^k
Mich.....	50	66.7	10.00	18.00	4.00	7.00
Minn.....	50	66.7	10.00	20.00	6.00 ^b	8.00 ^b
Mo.....	66.7	66.7	20.00	20.00	6.00 ^b	6.00 ^d
Mont.....	50	50-66.7 ^l	10.00	15-21.00 ^k	6.00 ^b	8.00
Nebr.....	50	66.7	10.00	15.00	5.00 ^b	6.00 ^b
Nevada....	50	60	13.85 ^m	16.62 ⁿ	4.62 ^o	6.92 ^p
N. H.....	50	50	10.00	18.00	...	7.00
N. J.....	50	66.7	10.00	20.00	5.00 ^b	10.00 ^b
N. Mex....	50	60	10.00	18.00	5.00 ^b	10.00 ^b
N. Y.....	66.7	66.7	15.00	25.00	5.00 ^b	8.00 ^o
N. C.....	60	60	18.00	18.00	7.00	7.00
N. Dak....	66.7	66.7	20.00	20.00	6.00 ^b	6.00 ^b
Ohio.....	66.7	66.7	12.00	18.75	5.00 ^b	8.00 ^b
Okla.....	50	66.7	10.00	18.00	6.00 ^b	8.00
Oregon....	r	s	...	t	...	6.98 ^u
Pa.....	50	66.7	10.00	18.00	5.00 ^b	9.00 ^v
R. I.....	50	50	10.00	20.00	4.00	8.00
S. C.....	50	60	25.00	25.00	5.00	5.00
S. Dak....	50	50	12.00	15.00	6.00	7.50 ^d
Tenn.....	50	50	11.00	16.00	5.00 ^b	5.00 ^b
Texas.....	60	60	15.00	20.00	5.00	7.00
Utah.....	55	60	12.00	16.00	7.00	7.00 ^d

TABLE 11 (continued)

	Per cent of wage paid as compensation		Maximum weekly compensation		Minimum weekly compensation	
	Original act	1940 act	Original act	1940 act	Original act	1940 act
U. S. Civil.	w	66.7	...	26.92 ^x	...	13.46 ^y
Vt.	50	50	12.50	15.00	3.00 ^b	7.00
Va.	50	55	10.00	16.00	5.00	6.00
Wash.	r	r	...	...	...	...
W. Va.	50	66.7	8.00	16.00	4.00	8.00
Wis.	65	70	...	21.00	...	7.35
Wyo.	r	r	...	...	...	...

^a Allowances of 5% for each of two dependent minors (less than 18 years).

^b Or actual wages if less than the minimum.

^c 60% if married, plus 5% for each child.

^d If temporary, actual wages when lower than the minimum.

^e \$8 if with dependent children.

^f Allowances of 5% each for 3 or more dependent children.

^g Stated as maximum basic wage of \$24 weekly. This times 55% = \$13.20.

^h Stated as maximum basic wage of \$30 weekly, which times 55% = \$16.50.

ⁱ Stated as minimum wage of \$10, of which 55% = \$5.50.

^j Stated as minimum wage of \$15, of which 55% = \$8.80. In case actual wage is less, injured will be paid his wage.

^k Or actual wages if less than \$9, but in no case less than \$7.

^l 50% up to \$15 if with no dependents, to 66.7% up to \$21 if with 5 dependents.

^m Stated as a monthly maximum of \$60.

ⁿ Stated as a monthly maximum of \$72; if permanent, monthly maximum is \$60.

^o Stated as a monthly minimum of \$20.

^p Stated as a monthly minimum of \$30.

^q Or actual wages if lower than \$8; if permanent, \$15 or actual wages if less than \$15.

^r Payments not proportioned to earnings, but in form of monthly pension fixed by number of dependents.

^s If temporary, 40b% to 66.7% of past earnings, depending on number of dependents.

^t If temporary, subject to a monthly maximum of \$90.

^u If temporary, subject to a monthly minimum of \$30, or actual wages if less than minimum.

^v Or actual wages if less than \$9, but in no case less than \$5.

^w Injured received full wages during disability for not to exceed one year.

^x Stated as a monthly maximum of \$116.66.

^y Stated as a monthly minimum of \$58.33, or actual wages if less than minimum.

worker's life, and five offer a reduced rate for life at the expiration of a specified period during which the legal rate may be claimed.¹ This latter practice has, perhaps, a purpose similar to that indicated for the system of dependent allowances outlined above. But since the reductions take place after a specific period regardless of alterations in the extent of dependency, this practice is not well suited to that purpose. The rate of compensation is most commonly 66 2/3 per cent of past average earnings. A higher rate is paid only in Wisconsin, although in three states a higher rate is paid in cases involving a large number of dependents.² This means that even in the most generous states the permanently incapacitated worker and his family must expect to suffer a per-

¹ Arizona, Colorado, District of Columbia, Maryland, Minnesota, Nevada, New York, North Dakota, Ohio, Oregon, Utah, Washington, West Virginia, Wisconsin, and the federal acts covering civil employees and longshoremen. Reduced compensation is provided in California, Idaho, Missouri, Nebraska, and New Jersey.

² Florida, Idaho, and Utah.

TABLE 11
SCALE OF COMPENSATION FOR TOTAL DISABILITY, ORIGINAL AND 1940 LAWS
(PART II)

	Maximum duration compensable		Maximum amount compensable	
	Original act	1940 act	Original act	1940 act
Alabama	300 weeks ^a	300 weeks ^a	\$5,000 ^b	...
Arizona . . . . .	...	100 months ^c	4,000	...
Arkansas	450 weeks	450 weeks	7,000	\$7,000
California	240 weeks ^d	240 weeks ^d	e	f
Colorado . . . . .	...	...	...	...
Connecticut	520 weeks	520 weeks	...	...
Delaware	270 weeks ^g	475 weeks	4,000	4,000
Dist. of Col. . . . .	...	...	7,500	7,500
Florida	350 weeks	350 weeks	5,000	5,000
Georgia	350 weeks	350 weeks	5,000	7,000
Idaho	400 weeks ^b	400 weeks ⁱ	...	...
Illinois . . . . .	...	...	3,500 ^j	5,500 ^j
Indiana	500 weeks	500 weeks	5,000	5,000
Iowa	300 weeks ^k	300 weeks ^k	...	...
Kansas	8 years	8 years	...	...
Kentucky	8 years	10 years	5,000	7,500
Louisiana	300 weeks ^k	300 weeks ^k	...	...
Maine	500 weeks	500 weeks	3,000	6,000
Maryland	6 years ^o	6 years ^o	3,750 ^l	3,750 ^m
Massachusetts	500 weeks	500 weeks ⁿ	3,000	4,500 ^a
Michigan	500 weeks	500 weeks	4,000	9,000
Minnesota	300 weeks ^k	300 weeks ^o	...	10,000 ^o
Missouri	400 weeks ^p	400 weeks ^p	...	...
Montana	300 weeks ^k	300 weeks ^q	...	...
Nebraska	300 weeks ^r	300 weeks ^s	...	...
Nevada	100 months	100 months	5,000	7,200 ^t
New Hampshire	300 weeks	300 weeks	...	...
New Jersey	300 weeks ^k	300 weeks ^k	...	...
New Mexico	520 weeks	550 weeks	...	...
New York . . . . .	...	...	3,500	5,000 ^u
North Carolina	400 weeks	400 weeks	6,000	6,000
North Dakota . . . . .	...	...	...	15,000
Ohio	6 years ^o	6 years ^o	3,750 ^u	3,750 ^u
Oklahoma	300 weeks ^q	300 weeks ^q	...	...
Oregon . . . . .	...	...	...	...
Pennsylvania	500 weeks	500 weeks	4,000	7,500
Rhode Island	500 weeks	1,000 weeks	5,000	10,000
South Carolina	500 weeks	500 weeks	5,500	6,000
South Dakota	6 years ^o	...	3,000	3,000
Tennessee	300 weeks ^a	300 weeks ^a	5,000	5,000
Texas	400 weeks	401 weeks	...	...
U. S. Civil	1 year	...	...	...

TABLE 11 (continued)

	Maximum duration compensable		Maximum amount compensable	
	Original act	1940 act	Original act	1940 act
Utah.....	6 years	6 years ^e	4,500	6,250
Vermont.....	260 weeks	260 weeks	325 ^a	4,000
Virginia.....	500 weeks	500 weeks	4,000	6,000
Washington.....	...	...	...	...
West Virginia.....	26 weeks ^e	52 weeks ^v	...	...
Wisconsin.....	...	...	...	...
Wyoming.....	...	...	3,000	8,000

^a But if permanent, for 400 weeks at regular rates and for 150 additional weeks at \$5, or actual wages if less than \$5.

^b If permanent; if temporary, not limited to a specific amount.

^c If temporary: if permanent, during disability.

^d If permanent, compensation thereafter at 40% of earnings at time of injury.

^e If temporary, not to exceed three years' earnings nor \$5000.

^f If temporary, not to exceed three years' earnings nor \$6000.

^g But injured may thereafter draw benefit of 20% of his average earnings until disability ends or he has drawn \$4000 of benefit.

^h But after receiving normal rate for 400 weeks, one may claim \$6 a week for the remaining period of disability, subject to an actual wage proviso if temporary.

ⁱ But after receiving normal rate of compensation for 400 weeks, one may claim \$6 a week thereafter, \$8 if with dependent children.

^j But for permanent disability, at regular rates until a death benefit has been paid, thereafter an annual pension of from 8% to 12% of total previous payments.

^k If permanent, 400 weeks.

^l If permanent, up to \$5000.

^m If permanent, up to \$6000.

ⁿ Thereafter, if permanent, at 50% of earnings at time of injury.

^o Does not apply if temporary.

^p If permanent, 300 weeks at regular rates, thereafter 25% of earnings at time of injury.

^q If permanent, 500 weeks.

^r But after receiving normal rate for 300 weeks, injured may claim 40% of his average weekly earning during balance of his disability.

^s Same as note *r* except that subsequent percentage is 45%.

^t Does not apply if permanent. If there are nonalien dependents, \$10 a month additional is allowed.

^u Does not apply if permanent.

^v But Commission was given authority to increase this period up to 26 additional weeks. If permanent, during disability.

manent impairment of their earlier living standard. The extent of impairment cannot be determined by consulting the rate of compensation only. The weekly compensation is subject to a maximum in forty-four jurisdictions, and the total benefits that may be drawn are limited to a maximum amount by nineteen laws. Twenty-eight states pay no compensation after the expiration of a specified period.

Logically, compensation for permanent total disability should exceed that for death by the amount needed to support the injured worker. This ideal is approached in states which graduate death benefits but not disability benefits with reference to dependency. In contrast to fatal dependency compensation, the overwhelming proportion of laws provide a flat rate of compensation for permanent total disability. Two states, while retaining the flat per cent, provide a higher rate of compensation for permanent total dis-

ability than for death.³ Elsewhere the basic difference between the types of loss to be compensated are ignored in formulating the rate of compensation. Thirty-eight jurisdictions pay a flat rate of compensation ranging from 50 per cent to 70 per cent and averaging 63.9 per cent.⁴ Six states pay additional percentages of past earnings for dependents (usually dependent children). Alabama and Florida pay 5 per cent of past earnings for each of two children, Illinois for each of three, Utah for each of five, and Idaho for each of an unspecified number. The Montana scale varies from 50 to 66 $\frac{2}{3}$ per cent, the highest percentage being paid where there are six major dependents.

The weekly benefit is subject to a fixed maximum in forty-four jurisdictions.⁵ The amounts vary from \$13.85 in Nevada to \$25.00 in California, New York, South Carolina, and the District of Columbia. The commonest maximums are \$18 and \$20 weekly. A maximum basic wage is specified in five of these laws, but this makes no essential difference in the absence of a graduated scale of compensation. Four states, while specifying a maximum weekly benefit, provide for increments for each of a given number of dependents.⁶ In general, weekly maximums vary little from those in the death benefit scale.

In thirty-nine jurisdictions the compensation act contains a minimum weekly compensation designed to protect the injured and his family against a standard lower than subsistence. The weekly minimum is, therefore, not quite so common as the weekly maximum. Twenty-four states have fixed a definite minimum payable whenever the computed compensation is lower than the specified amount.⁷ These amounts vary widely, the Colorado minimum being \$5, that of Wisconsin, \$14. The most common figure is \$7 weekly. The Illinois minimum, while otherwise definite, varies with the number of minor dependents. In nineteen jurisdictions the purpose of the minimum weekly compensation is confused by concern over the possibility of malingering, and the amount fixed is accordingly made subject to an actual wage proviso.⁸ The number of such laws is larger than the number of those employing the provisional minimum in fatal cases. The provisional minimums range from \$3 in Louisiana to \$15 in New

³ Georgia and New Jersey.

⁶ Alabama, Idaho, Illinois, and Montana.

⁴ See Table 11, part I, pp. 90-91.

⁷ See Table 11, part I, pp. 90-91.

⁵ See Table 11, part I, pp. 90-91.

⁸ *Ibid.*

York, the modal amount being \$8. When one considers the large number of able-bodied American workers who are unable to find steady employment much of the time, the fear that permanently incapacitated workers may malingering becomes incomprehensible.

Life compensation is more commonly afforded victims of permanent total disability than claimants in fatal cases. Twenty-one laws set no time limit to the period during which compensation payments for permanent total disability may be drawn.⁹ The full legal rate of compensation is paid for only a limited period in five of the states which offer compensation for life. These periods vary from 240 weeks in California to 400 weeks in Idaho and New Jersey.¹⁰ The reduced compensation that is then paid for the balance of the injured's life is sometimes a straight pension expressed in dollars, and sometimes a reduced percentage of weekly earnings.¹¹ Compensation for this degree of disability ends after a specified period in twenty-six states, and after an additional period of reduced compensation in two states.¹² The periods are generally somewhat longer than those provided for death benefits. The shortest is 260 weeks (Vermont), the longest, 1000 weeks (Rhode Island), and the most common, 500 weeks (seven states). The average specific duration (weighted for coverage) is 433 weeks, compared with the weighted average of 365 weeks for fatal cases.

A maximum total compensation for permanent total disability is specified in nineteen laws. The maximums vary from \$3000 in South Dakota to \$15,000 in North Dakota. Six states stop payments when \$6000 has been paid. The weighted average is \$6816, compared with \$5935 in fatal cases, and four fewer jurisdictions have such a restriction for permanent total disability. In nine of the laws the maximums are low enough to establish effective durations shorter than the periods specified.¹³ In six jurisdictions whose laws contain no specific duration an effective dura-

⁹ See above, p. 91, note 1.

¹⁰ But claimants must submit to rehabilitation to be eligible for this reduced compensation in New Jersey.

¹¹ \$6 weekly in Idaho (\$8 if having dependent children), but elsewhere a percentage of past earnings, such as 40% in California.

¹² See Table 11, part II. Alabama and Tennessee have provided for reduced compensation after 400 weeks for an additional 150 weeks.

¹³ Delaware (267 weeks), Florida (278 weeks), Indiana (303 weeks), Kentucky (400 weeks), Maine (333 weeks), North Carolina (333 weeks), Rhode Island (500 weeks), South Carolina (240 weeks), and Tennessee (312 weeks).

tion is set up by the operation of a weekly and a total maximum.¹⁴ The differences between the effective and the specific limits are much more marked in this part of the scale than for fatal injuries. This is because the periods fixed for permanent total disability generally exceed those fixed for death. But regardless of the cause, the maximums do much to offset the apparently greater generosity of the benefit scale for injuries resulting in permanent total disability.

It is, at any rate, all too easy to overestimate the difference between the scale of compensation for death and that for permanent total disability. The principal differences consist in the longer period during which benefits may be claimed and the less general tendency to limit total compensation. As a matter of fact, however, survivorship of those permanently disabled is not characteristically lengthy. If the injury does not, the enforced inactivity often does, cause premature death. After an interval that is often all too short, such fatality acts to extinguish the claim of the victim and his dependents.

STATUTORY DEFINITION OF PERMANENT TOTAL DISABILITY

Where the law clearly distinguishes between temporary and permanent total disability, certain statutory presumptions are usually set up by which the condition of permanent total disability may be established. Commonly the burden of proof is shifted to the employer's shoulders if the presumed conditions are found. The statutory presumptions of the several laws are presented in Table 12. The most commonly presumed condition is total blindness, which is defined as permanent total disability in all laws listing statutory presumptions. Loss, or loss of use, of both hands is so defined in thirty-nine laws, and loss, or loss of use, of both feet in thirty-three laws. Mention of loss, or loss of use, of both arms or both legs is somewhat less general, but is covered by implication in mentioning loss of both hands or both feet. Including implied coverage, forty-six laws do define loss or loss of use of both arms, and forty-one, loss or loss of use of both legs. Loss of one hand and one foot is specifically mentioned in seven laws, and

¹⁴ District of Columbia and Longshoremen's Acts (300 weeks), Maryland (300 weeks), Minnesota (500 weeks), North Dakota (750 weeks), and South Dakota (200 weeks).

TABLE 12

STATUTORY PRESUMPTIONS OF PERMANENT TOTAL DISABILITY, 1940

(In other cases, determinate at the discretion of the compensation authority)

	Both eyes	Both arms	Both legs	Both hands	Both feet	One arm and one leg	One hand and one foot	Paralysis (spinal)	Imbecility (concussion)	Other
Ala.....	*	*	...	...	...	...	...	*	*	...
Ariz.....	*	...	...	*	*	...	...	*	*	...
Ark.....	*	*	*	*	...	a	a	...	...	ab
Calif.....	*	...	...	*	...	...	...	*	*	...
Colo.....	*	*	*	*	*	a	a	...	...	a
Conn.....	*	...	...	*	*	...	*	*	*	...
Del.....	*	*	*	*	*	...	...	*	*	...
D. C.....	*	*	*	*	*	a	a	...	...	a
Fla.....	*	*	*	*	*	a	a	...	...	ab
Ga.....	*	*	*	*	*	a	a	...	...	a
Idaho.....	*	...	...	*	*	...	*	*	*	...
Ill.....	*	*	*	*	*	a	a	...	...	a
Ind.....	*	...	...	*	*	...	a	...	...	a
Iowa.....	*	*	*	*	*	a	a	...	...	a
Kansas.....	*	*	*	*	*	...	...	*	*	b
Ky.....	*	...	...	*	*	...	*	*	*	...
La.....	*	...	...	*	*	...	*	...	...	...
Maine.....	*	...	...	*	*	...	*	*	*	...
Md.....	*	*	*	*	*	a	a	...	...	a
Mass.....	*	*	*	*	*	...	...	*	*	b
Mich.....	*	*	*	*	*	a	a	...	...	a
Minn.....	*	*	*	...	...	...	...	*	*	...
Mo.....	*	...	...	*	...	...	...	*	*	...
Mont.....	*	*	*	*	*	a	a	...	...	ab
Nebr.....	*	*	*	*	*	a	a	*	*	a
Nevada.....	*	*	*	...	...	*	...	...	...	...
N. H.....	Undefined	...	...	...	...	...	...	...	...	...
N. J.....	*	*	...	*	*	a	a	...	...	a
N. Mex.....	*	*	*	*	*	a	a	...	...	a
N. Y.....	*	*	*	*	*	a	a	...	...	a
N. C.....	*	*	*	*	...	...	...	...	...	...
N. Dak.....	Undefined	...	...	...	...	...	...	...	...	...
Ohio.....	*	*	*	*	*	a	a	...	...	a
Okla.....	*	...	*	*	*	a	a	...	...	ab
Oregon.....	*	...	...	*	*	...	*	*	...	...
Pa.....	*	*	*	*	*	...	...	...	...	b
R. I.....	*	...	...	*	...	...	...	*	*	...
S. C.....	*	*	*	*	...	...	...	...	...	...
S. Dak.....	*	*	*	*	*	a	a	*	*	a
Tenn.....	*	*	*	...	...	...	...	*	*	...
Texas.....	*	...	...	*	*	...	*	*	...	...
Utah.....	*	*	...	*	*	a	a	...	...	a
Vt.....	*	...	...	*	*	...	a	*	*	...
Va.....	*	*	*	*	*	a	a	...	...	a
Wash.....	*	*	*	...	...	*	...	*	...	...
W. Va.....	*	...	...	*	...	...	...	*	...	...
Wis.....	*	*	*	...	...	*	...	...	...	...
Wyo.....	*	*	*	...	...	...	...	*	...	...
U. S. Long-shoremen	...	...	...	...	...	...	...	...	...	...
U. S. Civil	...	...	...	...	...	...	...	...	...	...

a Or any two thereof, such as one hand and one foot, or one eye and one arm, etc.
 b Presumptions apply in the absence of proof to the contrary.

loss of one arm and one leg in three laws. Loss of "any two thereof," covering these situations by implication is held to constitute permanent total disability in twenty-one laws.

Specific recognition of injuries not directly affecting these members is less general. Many cases of total incapacity result from spinal injuries and skull fractures, and often such incapacity is permanent. Spinal injuries frequently produce paralysis, while skull fractures may result in imbecility. Paralysis is specifically held to constitute permanent total disability in twenty-two laws, and imbecility in seventeen laws.

In other cases existence of permanent total disability is determined from the medical evidence. One cannot conclude from Table 12, therefore, that a specific condition is not recognized in a particular state as involving permanent total disability because its law is not listed as presuming this. Absence of statutory presumption simply leaves the burden of proof on the injured's shoulders. Statutory presumption has the advantage not only of reducing litigation, but also of encouraging maximum effort to resume normal functioning. It is a mistake to expect permanently incapacitated workers to exert that maximum effort when it appears likely to curtail their compensation.

EARLY STANDARDS OF PERMANENT TOTAL DISABILITY COMPENSATION

If present provisions for compensating this degree of disability are more generous than those governing fatal injuries, such was not originally the case. A comparison of provisions in the original laws of California, Massachusetts, Nevada, Washington, and Wisconsin, all passed in 1911 (see Tables 9 and 11), proves that legislators then saw virtually no difference between the losses sustained in fatal and in permanent total injuries. Nor were the differences in most other early laws considerable. Illinois provided a sharply reduced compensation after receiving an amount equal to a death benefit, and Kansas and New Jersey added two years to benefits. A brief experience was sufficient to prove the need for more adequate recognition of the difference in loss. As early as 1914 the Joint Survey Commission was observing a "growing demand in the different states . . . for extending the compensation period in cases of total disability so as to cover the

lifetime of the unfortunate victim.”¹⁵ As Table 13 makes clear, this movement had already had some effect as early as January 1, 1915. At that time seven of the twenty-three existing laws set no time limit to disability compensation, while only six set no time limit to fatal compensation. The most common limit for permanent total disability was 400 weeks (five laws). The average (weighted for coverage) was 352 weeks for death and 478 weeks for permanent total disability. Although only six jurisdictions limited total compensation for permanent total disability, nine did so in the case of death. The weighted average for death was \$3829; the average for permanently incapacitated workers was \$3910.

In other respects the 1915 scale of compensation for permanent total disability was generally less generous than the scale for death. A maximum weekly compensation was more commonly imposed, but ranged both lower and higher than for death. Whereas only twelve compensation acts specified a statutory limit of 50 per cent of past weekly earnings for death, fifteen acts specified this rate for permanent total disability. The number providing a higher statutory rate was the same for both degrees of disability.

At this early date, what was the situation of the permanently incapacitated worker in the principal jurisdictions? In California, after nearly five years (240 weeks) of benefits at the statutory rate (65 per cent), a reduced rate (40 per cent) was paid until death. Compensation was based on three years' earnings, which were presumed not to exceed \$5000, nor to be less than \$1000. Weekly installments for the period of full compensation, therefore, ranged from \$4.17 to \$20.83. Illinois claimants were paid an amount equal to the total death benefit (up to \$3500) in weekly installments covering an eight-year period. Weekly installments were at the rate of 50 per cent of past weekly earnings, plus 5 per cent for each of three children, and ranged from \$5 to \$12. Subsequently they were paid 8 per cent of the total death benefit each year (not less than \$10 per month). New York claimants were not limited in duration or total amount, but weekly installments of two-thirds past weekly earnings were subject to a

¹⁵ Report of the Commission of the American Federation of Labor and the National Civic Federation to Study Operation of State Workmen's Compensation Laws, Senate Document No. 419, 63rd Congress, 2nd Session, pp. 39-40.

minimum of \$5 and a maximum of \$15. In Massachusetts, the rate of weekly installments was the same, but the limits (\$4 and \$10) were lower. Benefits could be drawn only for 500 weeks, and ceased after \$4000 had been paid. Claimants eligible for the weekly maximum accordingly exhausted title to benefit after 400 weeks. In Texas the rate of compensation was lower (60 per cent) but the weekly limits were the same as in New York. Benefits ceased after 400 weeks, but there was no amount limitation.

TABLE 13
DEVELOPMENT OF SCALE OF COMPENSATION FOR PERMANENT
TOTAL DISABILITY 1915-1940

I. Rate of Compensation									
Number of compensation acts compensating permanent total disability at a rate of									
	any per- centage	50%	55%	60%	62½%	65%	66⅔%	over 66⅔%	Weighted average
Jan. 1, 1915	21	15	0	1	0	2	3	0	57.9%
Jan. 1, 1920	38	14	4	9	0	4	7	0	62.3%
Jan. 1, 1930	41	11	2	6	1	6	14	1	63.8%
July 1, 1940	44	8	3	7	1	6	15	4	63.9%

II. Minimum Weekly Compensation									
Number of compensation acts providing									
	any amount	less than \$5.00	(a) definite minimum of					\$11.00 and over	Weighted average
			\$5.00- 5.99	\$6.00- 6.99	\$7.00- 7.99	\$8.00- 8.99	\$9.00- 10.99		
Jan. 1, 1915	12	7	4	1	0	0	0	0	\$4.53
Jan. 1, 1920	19	1	7	6	4	0	0	1	6.30
Jan. 1, 1930	22	1	2	8	6	4	0	1	7.52
July 1, 1940	23	0	3	6	7	3	1	2	8.15
	any amount	less than \$11.00	(b) provisional minimum of					\$23.00 and over	Weighted average
			\$11.00- 13.99	\$14.00- 16.99	\$17.00- 19.99	\$20.00- 22.99	\$23.00- 22.99		
Jan. 1, 1915	6	0	5	1	0	0	0	0	5.13
Jan. 1, 1920	17	2	6	8	0	1	0	0	5.67
Jan. 1, 1930	18	2	5	3	1	5	1	1	7.20
July 1, 1940	20	2	3	4	1	6	3	1	8.15

III. Maximum Weekly Compensation								
Number of compensation acts providing a maximum of								
	any amount	less than \$11.00	\$11.00- 13.99	\$14.00- 16.99	\$17.00- 19.99	\$20.00- 22.99	\$23.00 and over	Weighted average
Jan. 1, 1915	19	11	4	3	0	1	0	\$12.23
Jan. 1, 1920	37	3	14	16	2	2	0	14.08
Jan. 1, 1930	40	0	4	17	9	8	2	19.30
July 1, 1940	43	0	1	13	13	11	5	19.98

TABLE 13 (continued)

IV. Duration of Compensation								
Number of compensation acts limiting compensation at legal rate to								
	any period	less than 300 weeks	from 300- 399 weeks	from 400- 499 weeks	from 500- 599 weeks	600 weeks or over	Number not limiting duration	Weighted average
Jan. 1, 1915	16	1	2	9	4	0	7	477.6
Jan. 1, 1920	30	3	2	13	10	1	12	476.1
Jan. 1, 1930	30	3	4	11	11	1	14	475.5
July 1, 1940	25	1	3	9	11	1	22	468.3

V. Maximum Total Compensation									
Number of compensation acts limiting total compensation to									
	any amount	\$3,000- 3,999	\$4,000- 4,999	\$5,000- 5,999	\$6,000- 6,999	\$7,000- 7,999	\$8,000 & over	Number not limiting total	Weighted average
Jan. 1, 1915	6	1	3	2	0	0	0	17	\$3,910
Jan. 1, 1920	16	1	6	8	1	0	0	27	4,680
Jan. 1, 1930	19	1	4	6	3	1	4	23	6,036
July 1, 1940	19	1	2	3	5	4	4	28	6,816

Washington and Oregon used a life pension system based on need rather than past earnings. Thus Washington claimants were paid \$20 a month if childless, and \$5 additional for each of three children.

DEVELOPMENT OF PERMANENT TOTAL DISABILITY COMPENSATION SCALES, 1915-1940

1915-1920. Since 1915, benefits for permanently disabled workers have been increased relatively more than death benefits. The period of the first World War brought the first substantial wave of amendments and new legislation. In the years 1917 to 1919 nine states raised the rate of permanent total disability compensation.¹⁶ Six of these states simultaneously raised the weekly maximum, as did four states which retained the existing rate of compensation.¹⁷ In the three states which raised the rate but not the maximum the gain was largely illusory, for this simply in-

¹⁶ Illinois, Iowa, Kansas, Louisiana, Michigan, Minnesota, Nebraska, Nevada, and New Jersey.

¹⁷ Iowa, Louisiana, Michigan, Minnesota, Nebraska, and New Jersey raised the weekly maximum as well as the statutory rate of compensation. Connecticut, Massachusetts, Rhode Island, and West Virginia raised the weekly maximum, thus relieving somewhat the increased restrictive effect produced by wartime rises in wage levels.

creased the restrictive effect of the maximum. The rapid rise in weekly earnings, due principally to higher wage rates but also to shifts to better-paying employments and longer working schedules, had already increased sharply the proportion of claimants eligible for the weekly maximum.¹⁸ Of the eighteen new laws adopted in this period ten specified a higher rate of compensation, and eight a higher weekly maximum, than had prevailed in 1915.¹⁹ The net effect of these changes was a rise in the average rate of compensation from 57.9 per cent to 62.3 per cent, and in the average weekly maximum from \$12.23 to \$14.08.

The minimum weekly compensation was also the subject of considerable revision. Provisional minimums were increased in four states.²⁰ The hitherto definite minimum of Louisiana was made provisional. Ten states enacting workmen's compensation laws adopted provisional minimums, five above and five below the 1915 level.²¹ The average provisional minimum, which had been \$5.13 in 1915, was \$5.67 in 1920. Definite minimums were raised in five states, and higher than formerly prevailing minimums were provided by all of the seven new laws containing a definite minimum.²² The average accordingly rose from \$4.53 in 1915 to \$6.30 in 1920.

In general, then, there was a considerable advance in the weekly scale of compensation for permanent total disability. It did not take place in all jurisdictions, nor did the increases generally match the increases in wages and living costs. This latter circumstance was of special significance to workers whose compensation for years to come was being determined. In the long run, on the other hand, the gains would appear greater as prices and wages declined from their wartime peaks.²³

¹⁸ See the discussion of relative wage and compensation movements, above, p. 82 and below, pp. 152-153.

¹⁹ Higher rates: Alabama, Idaho, Indiana, Kentucky, Louisiana, Maine, North Dakota, Pennsylvania, South Dakota, and Utah. Higher weekly maximums: Alabama, Delaware, Indiana, Louisiana, Maine, North Dakota, Oklahoma, and Utah.

²⁰ Iowa, Minnesota, Nebraska, and New Jersey.

²¹ Above 1915 level: Montana, New Mexico, North Dakota, Oklahoma, and Pennsylvania. Below 1915 level: Alabama, Colorado, Delaware, Tennessee, and Vermont.

²² Amendments: Massachusetts, Michigan, Nevada, Rhode Island, and West Virginia. New Laws: Idaho, Indiana, Kentucky, Maine, South Dakota, Utah, and Virginia.

²³ See the analysis of these relationships with reference to changes in the death benefit scale, above, pp. 80-82.

Upward revision of durational limits and total awards was less general, and the new legislation was, on the whole, less generous in this regard. The principal gain by amendment was the abandonment by Maryland and Nevada of their durational limits. Texas lengthened the period during which benefits might be drawn, but Minnesota reduced it. Of the new laws, those of Colorado, North Dakota, and Wyoming imposed no time limit, while six states provided limits higher than the 1915 average.²⁴ The number of jurisdictions without a time limit rose from eight to twelve, but the average existing limit declined slightly from 477.6 weeks to 476.1 weeks.

Nevada abandoned provision for a maximum total award, and Rhode Island, which had hitherto lacked such a provision, adopted one. Only two states, Michigan and Maryland, increased their maximum total awards in this period. Seven of the new laws avoided a maximum total award, and six adopted maximums higher than the 1915 average.²⁵ The average maximum rose from the 1915 level of \$3910 to \$4680.

Because of the gloomier outlook for total compensation, some of the gains in weekly compensation must be considered illusory. A higher weekly compensation, unless matched by a higher total award, acted to limit the period during which benefits might be drawn. An amendment to the Massachusetts act increased the weekly maximum from \$10 to \$16, but the maximum total award remained \$4000. All workers earning over \$24 (the rate of compensation being $66\frac{2}{3}$ per cent) could, therefore, draw benefits for only 250 weeks. In 1915 the effective duration of payment to workers eligible for the weekly maximum in this Commonwealth had been 400 weeks.

1920-1930

The status of permanently incapacitated workers improved substantially during the twenties. Eleven laws were amended to provide a higher rate of compensation.²⁶ Two of the new laws provided a rate higher than had prevailed in 1920.²⁷ The

²⁴ Connecticut, Indiana, Maine, New Mexico, Oklahoma, and Pennsylvania.

²⁶ Unlimited: Colorado, Idaho, Montana, New Mexico, North Dakota, Oklahoma, and Utah. Higher limits than 1915 average: Alabama, Indiana, Kentucky, Pennsylvania, Tennessee, and Wyoming.

²⁰ Arizona, Idaho, Louisiana, Maine, Maryland, Michigan, Montana, New Mexico, Oklahoma, Pennsylvania, and West Virginia.

²⁷ The District of Columbia and Missouri.

weighted average was thus raised from 62.3 per cent to 63.8 per cent of past earnings. Of the forty-one laws which in 1930 proportioned compensation for permanent total disability to past earnings, fourteen specified a rate of $66\frac{2}{3}$ per cent. Eleven retained the 50 per cent rate, but all except thirteen specified a rate of 60 per cent or better.

It was the maximum weekly compensation which was most commonly revised, receiving increases in the amendments to thirty laws.²⁸ A maximum higher than the 1920 average was provided in three of the new laws.²⁹ The weighted average, which had been \$14.08 in 1920, rose to \$19.30. Of the forty laws with a maximum weekly compensation, sixteen paid up to \$20 or more per week, and only two contained maximums lower than \$15. A significant indication of the growing awareness of the relationship between the several elements in the benefit scale was the relative movement of the rates and maximums. Failure to raise the weekly maximum when raising the rate of compensation increases the restrictiveness of the maximum. Only Oklahoma, of the eleven states which raised the rate of compensation in this decade, failed to raise the weekly maximum as well. In general the relative changes were such as to alter the restrictiveness of the maximum favorably, if at all.

There was much less adjustment of the weekly minimum than of the maximum. Amendments increasing provisional minimums were passed in five states, and increasing definite minimums in six states.³⁰ Two of the new laws specified a provisional minimum, one higher and the other lower than the 1920 average.³¹ The remaining two new laws provided a definite minimum higher than the 1920 average.³² Amendments to two laws added an actual wage proviso, while amendments to three laws abandoned such a proviso.³³ The balance was accordingly tipped slightly in favor of

²⁸ California, Colorado, Connecticut, Idaho, Illinois, Indiana, Kansas, Kentucky, Louisiana, Maine, Maryland, Massachusetts, Michigan, Minnesota, Montana, New Hampshire, New Jersey, New Mexico, New York, Ohio, Pennsylvania, Rhode Island, South Dakota, Tennessee, Texas, Utah, Vermont, Virginia, West Virginia, and Wisconsin.

²⁹ The District of Columbia, Missouri, and North Carolina.

³⁰ Provisional: Maryland, Minnesota, New Jersey, Pennsylvania, and Vermont. Definite: Indiana, Illinois, South Dakota, Texas, Virginia, and West Virginia.

³¹ The District of Columbia (higher) and Georgia (lower).

³² Missouri and North Carolina.

³³ Becoming provisional: New York and Massachusetts. Becoming definite: Iowa, Montana, and New Mexico.

the definite minimum. At the beginning of 1930, eighteen of the forty laws with a weekly minimum contained an actual wage proviso. The average provisional minimum was \$7.20. Seven of these minimums became effective at \$8 or more, but seven offered no protection whatever above \$5. The remaining twenty-two laws provided a definite minimum averaging \$7.52. Only three of them became effective at \$5 or less, and six became effective at \$8 or more.

There were very few changes in period limitations. New Mexico and Wisconsin amended their laws to increase the length of the period during which permanent total disability was compensable. Minnesota abandoned this limitation, but Montana, which had hitherto paid a reduced compensation for life after 400 weeks, now raised the limit to 500 weeks and abandoned the subsequent payments. The new laws of Georgia and North Carolina included definite maximum periods shorter than the 1920 average. The new District of Columbia law avoided this limitation, while the Missouri act softened it by providing a reduced compensation for life at the expiration of the period. At the beginning of 1930, thirty of the forty-four laws limited duration of compensation for permanent total disability, though five provided for subsequent reduced payments. The average durational limit (weighted for coverage) was 475.5 weeks.

Changes in the maximum award were somewhat more common. Increases resulted from amendments to seven laws, and the three new laws adopting this feature specified limits higher than the 1920 average.³⁴ Arizona abandoned this limitation, and Minnesota and North Dakota, which had not used it hitherto, added very liberal limits (\$10,000 and \$15,000, respectively). Effective durations were set up in Minnesota and North Dakota as a result of adoption of a maximum award. At the weekly maximum, Minnesota claimants might draw benefits for 500 weeks, and North Dakota claimants for 750 weeks.

Although there was a more general recognition of the relationship between the weekly and over-all maximums, three states raised their weekly maximum but made no adjustment in the over-all maximum.³⁵ Kentucky and Virginia, while adjusting both maximums, made a smaller adjustment in the over-all maximum.

³⁴ Increases: Kentucky, Maine, Massachusetts, Michigan, Pennsylvania, Virginia, and Wyoming. New laws: The District of Columbia, Georgia, and North Carolina.

³⁵ Indiana, Maryland, and Vermont.

In all five jurisdictions the effective duration for all workers eligible (or nearly so) for the weekly maximum was reduced. The effective duration at the weekly maximum was reduced from 378.8 weeks to 303.0 weeks in Indiana; from 416.7 weeks to 277.8 weeks in Maryland; and from 320.0 weeks to 266.7 weeks in Vermont. Smaller reductions took effect in Kentucky and Virginia: from 416.7 weeks to 400 weeks, and from 400.0 weeks to 375.0 weeks, respectively.

1930-1940

Changes in the rate of compensation and the weekly maximum were much less frequent in the thirties than in the twenties, partly because of a shift of interest concerning the weekly compensation to the weekly minimum and the method of computing past weekly earnings. Interest in more adequate protection of existing standards was to be expected in a period of widespread unemployment and part-time employment. Nevertheless six laws were amended to increase the rate of compensation, and eleven to increase the weekly maximum.⁸⁶ All three new laws included both features, the maximums above the 1930 level, but two of the rates below the 1930 level.⁸⁷ The weighted average rate of compensation increased fractionally to 63.9 per cent. The weighted average maximum weekly compensation increased from \$19.30 to \$19.98.

Interest in the weekly minimum was less centered in the level than in the balance between the provisional and definite types. Three laws with an actual wage proviso attempted to satisfy the clamor for protection of standards of workers eligible for the minimum by raising the minimum.⁸⁸ Because of the actual wage proviso, this action furnished no protection to those who stood in greatest need of it. A worker who had suffered frequent spells of unemployment in the base period would draw for years a compensation based on his earnings in that particular year. The new Florida law contained a provisional minimum of \$6. Three laws made basic changes in their actual wage provisos. Colorado deleted this clause, while Massachusetts and Pennsylvania modified it to narrow its scope. The Massachusetts proviso, effective at \$9,

⁸⁶ Rate: Alabama, New Mexico, Pennsylvania, Virginia, Wisconsin, and Utah. Maximum: Alabama, Connecticut, Georgia, Illinois, Maryland, New Hampshire, New Mexico, Pennsylvania, Rhode Island, Virginia, and Wisconsin.

⁸⁷ Below the 1930 level: Florida and South Carolina.

⁸⁸ New York, Ohio, and Vermont.

was bolstered by an absolute floor at \$7. The Pennsylvania proviso was made effective only between \$9 and \$5.

Five laws with definite minimums raised them.³⁹ The new laws of Arkansas and South Carolina contained a definite minimum, the former above and the latter below the 1930 average. New Hampshire, which had hitherto denied its claimants this protection, adopted a minimum of the definite type. Indiana and Iowa, however, amended hitherto definite minimums to add an actual wage proviso. In 1940, twenty-three states had a definite weekly minimum averaging \$8.15. Twenty jurisdictions had a provisional weekly minimum, two with a definite floor at a lower point, and the provisional minimums also averaged \$8.15. Improvements in the method of computing past earnings further bolstered the lower end of the permanent total disability scale.⁴⁰ On balance, the situation of low-paid workers improved materially in this decade.

Only Kentucky and Rhode Island raised their durational limits in this period. The new laws contained a maximum duration, that of South Carolina being above, and those of Arkansas and Florida below, the 1930 level. Massachusetts and Wisconsin abandoned durational limits in permanent total disability cases, although the former reduced the rate of compensation after \$4500 had been received.

This latter arrangement involved abandonment of the maximum award as well, in which Massachusetts was joined by Alabama. The new laws contained a maximum award, however, those of Arkansas and South Carolina being above, and that of Florida below, the 1930 level. Increases in the maximum were adopted in six states.⁴¹ No law containing both a weekly and over-all maximum was amended in only one of these particulars, and only in Pennsylvania was the upward adjustment of the over-all maximum less than corresponding. In that state the effective duration at the weekly maximum declined from 433.3 weeks to 416.7 weeks. Inclusion of both a weekly and an over-all maximum in the new laws set up effective durations in the three states concerned. At the weekly maximum, Arkansas claimants may draw benefits for only 350 weeks instead of the 450 weeks specifically provided. The specified duration in Florida is 350 weeks, the effective dura-

³⁹California, Connecticut, Idaho, New Mexico, and Wisconsin.

⁴⁰See above, pp. 86-87.

⁴¹Georgia, Kentucky, Maryland, Rhode Island, Virginia, and Wyoming.

tion at the weekly maximum, 277.7 weeks. The specific duration in South Carolina is 500 weeks, the effective duration at the weekly maximum, only 240 weeks.

At present, California claimants are receiving 65 per cent of past weekly earnings for 240 weeks, and 40 per cent thereafter. During the period of full compensation weekly payments may range from \$6.50 to \$25.00. Washington retains the much less common life pension, paying \$35.00 monthly to single claimants, \$40.00 to childless couples, \$12.50 additional for one child, \$7.50 for a second, and \$5 each for others under sixteen years of age. Illinois continues to pay at the statutory rate until the appropriate benefit for death has been paid (\$5500 if married and having three children), and then pays an annual pension of 8 per cent (12 per cent for specific injuries) of the death benefit in monthly installments of not less than \$10 per month. New York claimants are limited in neither amount nor duration, but weekly payments at $66\frac{2}{3}$ per cent of past earnings cannot exceed \$25 nor, if less than \$15, be less than actual past earnings. When the Massachusetts Industrial Accident Department has ruled that total disability is permanent, weekly installments amounting to $66\frac{2}{3}$ per cent of past earnings, not to exceed \$18, are paid until \$4500 has been received. The weekly minimum is \$9 or actual wages, but in no case less than \$7. After \$4500 has been received the rate of compensation is reduced to 50 per cent of past earnings. North Carolina claimants are paid 60 per cent of past earnings each week, to range from \$7 to \$18. Payments cease after 400 weeks or when \$6000 has been paid. In Texas, the rate is the same but the weekly maximum is \$20 and there is no maximum award. The maximum duration is 401 weeks.

These widely differing arrangements in several widely scattered large industrial states are difficult to explain on any logical basis. The principle of permanent compensation, partially recognized in California, Illinois, and Massachusetts, is completely recognized only in New York and Washington. The principle of need, partially recognized from the beginning in Illinois, and covertly recognized by subsequent reductions of compensation in California and Massachusetts, is completely adhered to throughout only in Washington.⁴² The framers of the New York law did not

⁴² For the relation of subsequent reduced payments to dependence see above, p. 89.

hesitate to pay permanent compensation, yet, apparently concerned over the danger of malingering, made the weekly minimum subject to an actual wage proviso. Washington alone fails to relate compensation in any way to past earnings, but even in the other selected industrial states there is little agreement about the precise relationship between compensation and earnings. California and Illinois pay 65 per cent, Massachusetts and New York $66\frac{2}{3}$ per cent, North Carolina and Texas 60 per cent, of past earnings. The weekly maximum is \$18.00 in Massachusetts and North Carolina, \$20.00 in Texas, \$16.50–\$22.00 in Illinois, and \$25.00 in California and New York.

These are large states with considerable numbers of covered workers. In some lesser states much lower standards obtain. Yet since 1915 standards of permanent total disability compensation have improved more than standards of fatal compensation. At present, counting states with a sliding scale at the rate for a widow and three children, the average rate in fatal cases is 61.1 per cent, but in permanent total cases is 63.9 per cent. The average weekly maximum is \$19.38 in fatal cases, \$19.98 in permanent total cases. The provisional minimums average \$7.63 and \$8.15 respectively; the definite minimums \$7.46 and \$8.15 respectively. Where found, durational limits to death benefits average 365.4 weeks, to permanent total disability benefits, 468.3 weeks. The maximum awards for death average \$5935, for permanent total disability, \$6816. While thirty-one states limit duration and twenty-three limit total amount of death benefits, only twenty-five limit duration and nineteen total amount of permanent total disability benefits. Only in one respect is the general situation with regard to permanent total cases less satisfactory than for fatal cases. The provisional minimum, which is employed in only ten states for fatal compensation, is in effect in twenty states for permanent total compensation.

The proportion of fatal cases is small, generally not much over one-half of one per cent. The proportion of cases resulting in permanent total disability is still smaller, generally less than one-twentieth of one per cent. American industry can afford to compensate these unfortunates adequately. Anything less than two-thirds of past earnings protected by a definite floor at \$8 weekly for the lifetime of the claimant is clearly inadequate.

CHAPTER VI

COMPENSATION FOR PERMANENT PARTIAL DISABILITY

NATURE OF THE LOSS SUSTAINED

PERMANENT partial disability takes two principal forms. One involves cases in which amputations occur, either at the time of injury or subsequently because of the injury. As with the similar but much less common amputations involving total disability, such cases are commonly referred to as specific injuries because the disability is readily traceable to a specific area of the body. Specific injuries include not only amputations, but also cases in which members have become paralyzed or the use of them has become impaired or been lost. The second form of permanent partial disability involves nonspecific cases, which, although springing from injuries to specific parts of the body, are more far-reaching and more variable in their effects on ability to work. Among the more common non-specific injuries producing permanent disability are the more serious fractures, particularly of the skull and vertebrae, and back sprains.

The economic loss due to permanent partial disability is more complex than that for any other degree of disability. All permanent partial cases occasion a period of variable length during which total disability is experienced. This is commonly referred to as the "healing period." Aside from disfigurement, many permanent partial cases involve no observable disability subsequent to healing. Such is often the case with the loss of a phalange of a finger, or even an entire finger, in a machine accident. When one has been performing work requiring great dexterity, on the other hand, loss of even a single phalange or finger may reduce one's earning capacity permanently. In more serious cases involving the loss of a hand or arm, or a foot or leg, some permanent impairment of earning capacity is assured. In cases of sprain or concussion, as well as cases in which impairment of function rather than loss of member has occurred, partial incapacity will

result, but the extent of incapacity will vary greatly from time to time.

Ideally, compensation for permanent partial disability would include total disability compensation during the healing period, and subsequent payments based on the extent of the loss of earning capacity. In practice the latter part of this procedure runs into serious if not insurmountable difficulties. The will to recover as much as possible of one's former earning capacity is likely to be weakened by the threat of a corresponding reduction of one's compensation. Comparisons of present with past earning capacity are obscured by the tendency of wage levels to fluctuate with changing economic conditions. A more workable procedure is to determine the partial disability compensation near the time of injury on the basis of evidence of the extent of disability.

EXISTING METHODS OF COMPENSATING PERMANENT PARTIAL DISABILITY

Even this procedure has appeared too complex to an overwhelming majority of the states. They have adopted the extremely simple device of a compensation schedule for specific injuries based on the type of injury. A specific number of weeks of compensation is awarded for loss of an index finger, a longer period for a thumb, a much longer period for a hand, and a still longer period for an arm. The schedule is generally applied rigidly, without regard to occupation or age. Nearly half of the states apply it to the exclusion of all other compensation payments, reducing the number of weeks where compensation has been paid during the healing period. This system certainly has the charm of administrative simplicity, but unfortunately the compensation bears little relation to the loss sustained.

This logical relation becomes somewhat closer in those states which provide two types of compensation: total disability payments during the healing period, and specific payments for each injury type in addition.¹ It becomes still closer in the three states which provide for partial disability compensation subsequent to scheduled payments for specific injuries.² In Massachusetts, for

¹ See Table 15, pp. 116-117.

² Maine, Massachusetts, Rhode Island. In Maine the scheduled payments are discounted for total disability payments during the healing period. In Rhode Island subsequent partial disability payments are subject to an over-all limitation of 300 weeks.

TABLE 14

SCALE OF COMPENSATION FOR PARTIAL DISABILITY, ORIGINAL AND 1940 LAWS
(PART I)

	Per cent of earnings		Weekly maximum		Weekly minimum	
	Original law	1940 law	Original law	1940 law	Original law	1940 law
Ala.....	50 ^a	55 ^a	\$12.00 ^b	\$15.00 ^b	\$5.00 ^c	\$5.00 ^c
Ariz.....	50	55	...	...	...	...
Ark.....	65	65	20.00	20.00	7.00	7.00
Calif.....	65	65	20.83 ^d	25.00 ^e	4.17 ^d	6.50 ^e
Colo.....	50	50	8.00	14.00	5.00 ^f	5.00 ^g
Conn.....	50	50	12.00	25.00	5.00 ^g	7.00 ^g
Del.....	50	50	10.00	15.00	5.00 ^f	5.00 ^f
D. C. ^h	66.7	66.7	25.00	25.00	8.00 ^c	8.00 ^e
Fla.....	50 ^a	50 ^a	18.00	18.00	4.00 ^c	6.00 ^c
Ga.....	50	50	12.00	20.00	4.00 ^c	4.00 ^c
Idaho.....	55	55	12.00	16.00	6.00	...
Ill.....	50	50 ⁱ	12.00	15.00 ⁱ	5.00 ^g	7.50 ⁱ
Ind.....	50	55	j	k	j	l
Iowa.....	^m	60	10.00	15.00	5.00	6.00 ^o
Kansas.....	50	60	12.00	18.00	3.00	...
Ky.....	65	65	12.00 ⁿ	12.00 ⁿ	5.00 ^g	5.00 ^g
La.....	50	65	10.00	20.00	...	3.00 ^c
Maine.....	50	66.7	10.00	18.00	6.00 ^g	6.00 ^g
Md.....	50	66.7	12.00	18.00	...	8.00 ^f
Mass.....	50	66.7 ^o	10.00	18.00 ^c	4.00 ^g	...
Mich.....	50	66.7	10.00	18.00	4.00	7.00 ^g
Minn.....	50	66.7	10.00	20.00	6.00	8.00 ^f
Mo.....	66.7	66.7	20.00	20.00	6.00	6.00
Mont.....	50	50 ^p	12.50 ^q	15.00 ^r	6.00 ^g	8.00 ^g
Nebr.....	50	66.7	10.00	15.00	5.00 ^f	6.00 ^f
Nevada.....	50	50	9.23 ^s	13.85 ^t	4.62 ^t	6.92 ^t
N. H.....	50	50	10.00	18.00	...	8.00 ^u
N. J.....	^m	66.7	...	20.00	5.00 ^c	10.00 ^c
N. Mex.....	^m	60	...	18.00	6.00 ^c	10.00 ^c
N. Y.....	66.7	66.7	15.00	25.00	5.00 ^c	8.00 ^c
N. C.....	60	60	18.00	18.00	7.00 ^g	7.00 ^g
N. Dak.....	66.7	66.7	20.00	20.00	6.00 ^f	6.00 ^g
Ohio.....	66.7	66.7	12.00	18.75	...	...
Okla.....	50	66.7	10.00	18.00	6.00 ^c	8.00 ^c
Oregon.....	^m	^v	...	...	...	...
Pa.....	50	66.7	10.00	15.00 ^w	6.00 ^f	9.00 ^x
R. I.....	50	50	10.00	13.00 ^y	4.00 ^g	8.00 ^g
S. C.....	50	60	25.00	25.00	5.00 ^g	5.00 ^g
S. Dak.....	50	55 ^z	12.00	15.00	6.50 ^f	7.50 ^f
Tenn.....	50	50	11.00	16.00	6.00 ^f	5.00 ^f

TABLE 14 (Continued)

	Per cent of earnings		Weekly maximum		Weekly minimum	
	Original law	1940 law	Original law	1940 law	Original law	1940 law
Texas.....	60	60	\$15.00	\$20.00	\$5.00 ^e	\$7.00 ^e
U. S. Civil...	100	66.7	12.00	26.92	...	...
Utah.....	55	60	12.00	16.00	...	...
Vt.....	50	50	10.00	15.00	...	7.00 ^f
Va.....	50	55	10.00	16.00	5.00 ^f	6.00 ^f
Wash.....	^l	^h	...	...	...	...
W. Va.....	50	66.7	6.00	16.00	3.00	8.00 ^u
Wis.....	65	70	...	^{aa}	4.69	^{bb}
Wyo.....	^{aa}	^{cc}	...	...	...	...

^a Plus 5% for each of two dependent children.

^b Plus \$1 for each of three dependent children.

^c Or actual wage if less than minimum; minimum does not apply to nonlisted injuries.

^d In computing earnings, weekly wage shall not be considered more than \$32.05, nor less than \$6.41.

^e In computing earnings, weekly wage shall not be considered more than \$38.46 nor less than \$10.00.

^f Or actual wage if less than minimum.

^g Does not apply to nonlisted injuries.

^h This law applies both to longshoremen and harbor workers throughout the country and to the District of Columbia.

ⁱ Subject to increments for dependent children as follows: 5% for each of three dependent children; and up to \$22 and not less than \$14 if parent of four dependent children.

^j In computing earnings, weekly wage shall not be considered more than \$24 nor less than \$10.

^k In computing earnings, weekly wage shall not be considered more than \$30 nor less than \$16, unless wage is less than 55 per cent of \$16.

^l Compensation in proportion to the extent of disability as determined by the Commission.

^m But for nonlisted injuries, this maximum must be multiplied by the per cent of disability.

ⁿ Does not apply to nonlisted injuries; for them, weekly payments may not be less than \$3, but duration must be shortened to a corresponding degree.

^o Does not apply to scheduled payments, which are \$10 weekly in all cases.

^p But increments are made for each of five dependents as specified, up to 66.7%.

^q But for nonlisted injuries, \$6.25.

^r Subject to increments for each of five dependents as specified, up to \$21.

^s Stated as monthly maximum of \$40 and minimum of \$20.

^t Stated as monthly maximum of \$60 and minimum of \$30 for specific injuries. Payments for non-listed injuries are unprotected by a minimum, but subject to a monthly maximum of \$40.

^u Does not apply to compensation of specific injuries.

^v \$25 is awarded for each "degree" of disability from 2 "degrees" to 96, in addition to any necessary payments for temporary total disability.

^w For nonlisted injuries, but \$18 for specific injuries.

^x Or actual wages if less than \$9, but in no case less than \$5.

^y For nonlisted injuries, but \$20 for specific injuries.

^z If specific, scheduled payments ranging from \$600 to \$3000; otherwise a sum not to exceed \$2400 based on extent of disability as indicated by comparison with schedule.

^{aa} If specific, scheduled payments up to \$1500; otherwise a sum based on extent of disability as indicated by comparison with schedule.

^{bb} In computing earnings, weekly wage is not considered to be more than \$30 nor less than \$20.

^{cc} If specific, scheduled payments ranging from \$150 to \$2500; otherwise a sum based on extent of disability as indicated by comparison with schedule.

example, one who has lost the sight of an eye receives compensation for the healing period, then scheduled payments of \$10 for fifty weeks. Subsequently, if his earning capacity is impaired, he is entitled to two-thirds of the loss of earning capacity. The practical difficulties involved in this third step have already been pointed out, but the writer believes this system is preferable to the rigid schedule.

The closest approach to logically sound compensation of perma-

TABLE 14

SCALE OF COMPENSATION FOR PARTIAL DISABILITY, ORIGINAL AND 1940 LAWS
(PART II)

	Maximum duration		Maximum amount	
	Original law	1940 law	Original law	1940 law
Alabama.....	300 weeks	400 weeks	\$5000	...
Arizona.....	...	...	4000	...
Arkansas.....	450 weeks	450 weeks	7000	\$7000
California.....	^a	^b	...	...
Colorado.....	...	...	2080	...
Conn.....	312 weeks	520 weeks	...	...
Delaware.....	270 weeks	285 weeks	...	...
Dist. of Col. ^o.....	...	...	7500	7500
Florida.....	350 weeks	350 weeks	5000	5000
Georgia.....	300 weeks	300 weeks	5000	5000
Idaho.....	150 weeks	150 weeks	...	...
Illinois.....	8 years	8 years	...	...
Indiana.....	300 weeks	500 weeks	5000	5000
Iowa.....	...	...	...	...
Kansas.....	8 years	8 years	...	...
Kentucky.....	335 weeks ^d	...	4000	4000
Louisiana.....	400 weeks	400 weeks	...	...
Maine.....	300 weeks	300 weeks	...	...
Maryland.....	...	...	3000	3750
Massachusetts.....	500 weeks	...	...	4500
Michigan.....	300 weeks	500 weeks	...	9000
Minnesota.....	300 weeks	450 weeks	...	...
Missouri.....	40 weeks ^e	400 weeks	...	...
Montana.....	150 weeks ^f	500 weeks	...	...
Nebraska.....	300 weeks	300 weeks	...	...
Nevada.....	60 months	60 months	2400	...
New Hampshire....	300 weeks	300 weeks	...	...
New Jersey.....	^a	500 weeks ^g	...	...
New Mexico.....	^a	...	...	...
New York.....	...	...	...	...
North Carolina....	300 weeks	300 weeks	6000	6000
North Dakota.....	^h	450 weeks	...	...
Ohio.....	...	...	3750	4000
Oklahoma.....	300 weeks	300 weeks	...	...
Oregon.....	...	...	...	...
Pennsylvania.....	300 weeks	300 weeks	...	...
Rhode Island.....	300 weeks	300 weeks	...	...
S. Carolina.....	300 weeks	300 weeks	5500	6000
S. Dakota.....	6 years	6 years	...	...
Tennessee.....	300 weeks	400 weeks	...	...

TABLE 14 (Continued)

	Maximum duration		Maximum amount	
	Original law	1940 law	Original law	1940 law
Texas.....	300 weeks	300 weeks	...	...
U. S. Civil.....	1 year	...	...	...
Utah.....	6 years	6 years	4500	5000
Vermont.....	260 weeks	260 weeks	...	...
Virginia.....	300 weeks	300 weeks	4000	6000
Washington.....	...	...	...	2400 ^b
W. Virginia.....	...	i	...	...
Wisconsin.....	...	1000 weeks	j	...
Wyoming.....	...	...	k	i

^a Duration is proportioned to the extent of disability as determined by the Commission.

^b Up to 240 weeks of full compensation depending on extent of disability, taking account of age and occupation. If injury involves more than 60% of permanent total disability, a life pension up to 40% of past earnings is paid, the amount depending on the extent of disability.

^c This law applies both to longshoremen and harbor workers throughout the country and to the District of Columbia.

^d This maximum duration is reduced if weekly compensation would otherwise work out to be less than \$3.

^e For nonlisted permanent partial disability; but for temporary partial disability, compensation may continue for 100 weeks.

^f If permanent; 50 weeks, if temporary partial.

^g Extent of disability expressed as a per cent of permanent total disability, and compensation paid for 5.2 weeks for each 1% of disability.

^h For nonlisted injuries; up to \$3000 for certain specific injuries.

ⁱ Extent of disability expressed as a per cent of permanent total disability, and compensation paid for four weeks for each 1% of disability. If injury involves 85% or more disability, duration is unlimited.

^j Total compensation not to exceed four years' earnings, average annual earnings not considered over \$750.

^k Payments for certain specific injuries may be as high as \$1500; payments for nonlisted injuries are based on extent of disability as indicated by comparison with the schedule for specific injuries.

^l Payments for specific injuries range from \$150 to \$2500; payments for nonlisted injuries are based on extent of disability as indicated by comparison with the schedule for specific injuries.

ment partial disability has been worked out in California. In this state a medical appraisal of the extent of disability is made soon after the injury and a per cent of total disability is computed. Partial disability payments based on this computed percentage are made for periods varying with the age and occupation of the injured worker.³ Although the claim is commonly made that this system is administratively impracticable, California has successfully applied it for more than twenty years.

EARLY BENEFIT PROVISIONS FOR PERMANENT PARTIAL DISABILITY

Of the three alternative bases of compensating partial disability—loss of earning power, flat-rate disability schedules, and dis-

³ For a more detailed analysis of the California system see below, pp. 125-127.

E. L. Bowers appraises the California plan in chap. iv of *Is It Safe to Work?* (1930).

TABLE 15

ORIGINAL AND 1940 PROVISIONS FOR COMPENSATING PRINCIPAL "SPECIFIC INJURIES"¹

Nature of Schedule			Weeks of Compensation							
			Loss of Arm		Loss of Leg		Loss of Eye		Loss of Hearing	
			Original act	1940 act	Original act	1940 act	Original act	1940 act	Original act	1940 act
Ala....	Excl. ^a	Excl.	200	200	175	175	100	100	150	150
Ariz....	None	Add'l	...	260	...	217	...	130	...	260
Ark....	No law	No law								
Calif...	None	^b	...	^b	...	^b	...	^b	...	^b
Colo....	Excl.	Add'l	208	208	208	208	139	139	139	139
Conn...	Excl.	Add'l	208	225	182	208	104	208	156	156
Del....	Excl.	Excl.	194	194	194	194	113	113	None	None
D. C. °	Add'l ^d	Add'l ^d	280	280	248	248	140	140	200	200
Fla.....	Excl.	Excl.	200	200	175	175	100	100	150	150
Ga.....	Add'l	Add'l	200	200	175	175	100	100	150	150
Idaho..	Add'l	Add'l	200	240	180	180	100 ^e	140	None	150
Ill.....	None	Add'l	...	225	...	190	...	120	None	125
Ind.....	Excl.	Excl.	200	250	175	200	100	150	None	200
Iowa...	Excl.	Excl.	200	225	175	200	100	100	None	150
Kansas.	None	Add'l	...	210	...	200	...	110	...	100
Ky.....	Excl.	Excl.	200	200	200	200	None	110	None	100
La.....	Excl.	Excl.	200	200	175	175	100	100	None	None
Maine.	^f	^f	150	150	150	150	100	100	None	None
Md....	Excl.	Add'l	200	200	175	175	100	100	None	100
Mass...	^g	^g	50	75 ^h	50	75 ^h	50	75 ^h	None	None
Mich...	Excl.	Excl.	200	200	175	175	100	100	None	None
Minn...	Excl.	Add'l	200	200	175	200	100	100	None	156
Miss...	No law	No law								
Mo.....	Add'l	Excl.	232	232 ^h	207	207	118	118	168	168
Mont...	Excl.	Excl.	200	200	180	200	100 ^e	120	None	120
Nebr...	Excl.	Add'l	225	225	215	215	125	125	None	100
Nevada	Excl.	Add'l	217	260 ^h	195	217	108	130	None	260
N. H....	None	Add'l	...	170	...	170	...	100	...	170
N. J....	Add'l	Add'l	200	230	175	175	100	100	None	160
N. Mex.	Excl.	Add'l	150 ^h	180	140	180	100 ^e	110 ^e	135	135
N. Y....	Add'l ^d	Add'l ^d	280	280	248	248	108	140	None	150
N. C....	Excl.	Excl.	200	200	175	175	100	100	150	150
N. Dak.	ⁱ	Excl.	ⁱ	234	ⁱ	234	ⁱ	100	ⁱ	156
Ohio...	None	Add'l	...	215	...	190	...	125	...	None
Okla....	Excl.	Excl.	250	250	175	175	100	100	None	None
Oregon.	Excl.	Add'l	416	208	381	191	173	87	416	208
Pa.....	Excl.	Excl.	215	215	215	215	125	125	None	100
R. I....	^g	^g	50	100	50	100	50	80	None	None
S. C....	Excl.	Excl.	200	200	175	175	100	100	150	150
S. Dak..	Add'l	Add'l	200	200	150	160	100	100	None	None

TABLE 15 (Continued)

Nature of Schedule			Weeks of Compensation							
			Loss of Arm		Loss of Leg		Loss of Eye		Loss of Hearing	
Original act	1940 act	Original act	1940 act	Original act	1940 act	Original act	1940 act	Original act	1940 act	
Tenn...	Excl.	Excl.	200	200	175	175	100	100	150	150
Texas...	"	Excl.	50	200	50	200	50	100	None	150
Utah...	Add'l	Add'l	200	200	180	180	100 ^e	120	None	None
Vt.....	Add'l	Add'l	175	170	175	170	100	100	None	170
Va.....	Excl.	Excl.	200	200	175	175	100	100	None	None
Wash..	None	Excl.	...	^k	...	^k	...	^k	...	^k
W. Va..	None	Excl.	...	240	...	240	...	132	...	None
Wis....	None	Add'l	...	500	...	500	...	275	...	333
Wyo....	None	Add'l	...	^l	...	^l	...	^l	...	None

^a There are seven general situations described under the heading "Nature of Schedule." "Exclusive" schedules are those the payments under which represent the entire compensation, with no attempt to differentiate the healing period, the permanent impairment, and any subsequent loss of earning capacity. "Additional" schedules show only the number of weekly installments for permanent impairment, and these are paid in addition to compensation for total disability during the healing period. The expression "plus temporary total and temporary partial compensation" indicates that the scheduled payments are in addition to compensation for subsequent loss of earning capacity as well as total disability payments during the healing period. The expression "plus temporary partial compensation," on the other hand, signifies additional payments only for subsequent loss of earning capacity. The California schedule is more complicated, the disability being expressed as a per cent of permanent total disability and the several injuries rated for disability as to age and occupation. This was the original intent in North Dakota, but, as indicated, the Commission has done no more than rate each specific injury as a per cent of permanent total disability (see note "h"). In Washington and Wyoming the schedules are expressed in dollar amounts rather than number of weeks. The Washington awards are exclusive, those of Wyoming in addition to compensation for the healing period.

^b Each injury has been rated for per cent of permanent total disability on a scale graduated for age and occupation. The standard man is a common laborer, aged 39. For loss of a major arm he would receive 240 weeks of compensation, the same for a leg, 80 weeks for an eye, and 160 weeks for total deafness.

^c This law applies both to Longshoremen and Harbor Workers and to the District of Columbia.

^d The scheduled numbers of weeks are larger, but include by implication total disability payments during the healing period. If this period exceeds a stated amount for each injury (arm, 32 weeks; leg, 40 weeks; eye, 40 weeks), additional payments will be made for total disability. Since this results in essentially the same compensation status as under "additional schedules," these schedules are so listed.

^e Further compensation if involving enucleation.

^f Plus temporary partial compensation.

^g Plus temporary total and temporary partial compensation.

^h For major (usually right) member.

ⁱ In lieu of all other compensation.

^j Law includes no schedule, but directs Commission to compensate partial injuries on basis of percentage of permanent total disability, as follows: one per cent—5.2 weeks, ten per cent—52 weeks, 20 per cent—104 weeks, etc., up to 90 per cent—468 weeks.

^k Not in weeks, but in dollar amounts as follows: arm or leg, \$3000; eye, \$1080, but if involving enucleation, \$1440; and deafness, \$2280.

^l Not in weeks, but in dollar amounts as follows: arm or leg, \$2500; eye, \$2200.

ability evaluations adjusted for age and occupation—only the first two are found in the original wave of legislation. During the years 1911 to 1913 the system of rating loss of earning power easily predominated. Subsequently, influenced in part by doubts about the effects on the will to recover and in part by the difficulty of relating earning capacity at one wage level to earning capacity at the level prevailing at the time of injury, the overwhelming majority of the states adopted a flat-rate disability schedule.

New Jersey was the first state to adopt this expedient, the only

completely original element in American compensation scales. Apparently the idea was derived from the prevailing practice in private accidental and health insurance of paying specific sums for accidental dismemberment. The New Jersey schedule contained, instead of a specified amount, a specified number of weeks of compensation. At any given level of compensation, however (at the weekly maximum, for instance), the number of weeks could be translated to a number of dollars. Nevada and Massachusetts also adopted schedules in 1911, the latter being much less detailed than, and not altogether on the same basis as, the New Jersey schedule.⁴ In 1912 Michigan followed the New Jersey schedule, and Rhode Island followed the Massachusetts plan. The new laws adopted in 1913, with the exception of the West Virginia law, included schedules, six of them modeled after the New Jersey schedule and one (Texas) after the Massachusetts plan. During this same year amendments to the Illinois and Ohio acts added schedules similar to that of New Jersey. By the end of 1913, therefore, fourteen laws contained partial disability schedules, while six used exclusively the system of rating loss of earning capacity. This latter system was used in the remaining states for non-listed injuries.

The commissions investigating the need for workmen's compensation in this period adopted an increasingly strong defensive tone in referring to scheduled payments for partial disability. Even the usually carefully considered report of the United States Employer's Liability and Workmen's Compensation Commission read as follows: "In dealing with this class of injuries the law should be so framed as to say to the injured man, 'True, you have lost an arm, and for a considerable period of time (!) it will be difficult for you to engage in the labor to which you have been accustomed, or to acquire the ability to do other work; but one-armed men are not necessarily drones, and it is your duty to again become a self-supporting member of society as soon as you can do so. In the meantime you are to be taken care of.'"⁵ This is certainly an accurate description of the extent of compensation provided in the schedules. It seems unlikely, however, that a one-armed man will ever be able to resume his old job, or earn at manual labor any-

⁴ For a description of the Massachusetts plan for compensating specific permanent partial injuries, see below, pp. 120-121.

⁵ Cited by I. M. Rubinow, in *Social Insurance* (1915), p. 194.

thing like his former pay. Justifications such as this appear to be thinly disguised rationalizations of the desire for administrative simplicity.

On January 1, 1915, there were seventeen states using schedules of compensation for specific injuries. Nine states made these payments to the exclusion of any other payments for such injuries, thus making no distinction between total disability (during the healing period) and partial disability.⁶ By multiplying the number of weeks by the weekly limits one can compute for any of these jurisdictions what Rubinow has called the "price list for

TABLE 16
COMPUTED VALUE OF SCHEDULE PAYMENTS IN MICHIGAN, 1915

Loss, or loss of use of	Number of weeks compensated	Range of total compensation ^a	Per cent of disability ^b	Per cent of compensation for permanent total disability ^c
Both arms.....	500	\$2000-4000 ^d	100	...
Arm.....	200	800-2000	75	40-50
Hand.....	150	600-1500	50	30-37½
Leg.....	175	700-1750	75	35-43¾
Foot.....	125	500-1250	40	25-31¼
Eye.....	100	400-1000	30	20-25
Thumb.....	60	240- 600	10	12-15
Index finger.....	35	140- 350	5	7-8¾
Middle finger.....	30	120- 300	5	6-7½
Ring finger.....	20	80- 200	5	4-5
Little finger.....	15	60- 150	5	3-3¾
Great toe.....	30	120- 300	5	6-7½
Other toe.....	10	40- 100	0	2-2½
Both ears.....	none	none	50	0

^a Weekly maximum, \$10; weekly minimum, \$4.

^b According to scale of American Standards Association.

^c Computed by placing compensation for each injury over that for permanent total disability.

^d Because expressly limited to \$4000.

certain irreplaceable parts of the human machine."⁷ The largest industrial state involved was Michigan. The results of such computations for that state are set forth in Table 16. The loser of an arm might be paid as little as \$800, and in no case could receive more than \$2000. Payments for a leg and foot were less

⁶ Connecticut, Iowa, Louisiana, Maryland, Michigan, Minnesota, Nebraska, Oregon, and Wisconsin.

⁷ Rubinow, *Social Insurance*, p. 194.

generous than for arm and hand.⁸ An eye was valued at from \$400 to \$1000, but loss of hearing, even though industrially caused, was not listed. Other injuries, usually called "minor" permanent cases, were compensated at sharply varying amounts. A little finger was held worth but one-sixth as much as a thumb. The differences were accounted for only in the roughest manner, as is shown in the final columns of the table. Although loss of an arm is adjudged by the American Standards Association to constitute 75 per cent of permanent total disability, compensation for an arm was normally 40 per cent of permanent total compensation, and was in no case more than 50 per cent. Loss of hearing, considered 50 per cent of permanent total disability, was compensable only to the extent that loss of earning capacity could be shown. On the other hand, 12 to 15 per cent of permanent total compensation was paid for loss of a thumb, although this loss is rated only 10 per cent of permanent total disability. There really are differences between the fingers in their bearing on earning capacity, a fact which the American Standards Association estimates do not show because measurement of injury severity is the object. But these differences appear to have been grossly exaggerated in the Michigan Compensation scale.

Five of the laws effective on January 1, 1915, provided scheduled payments for these injuries in addition to payments for temporary total disability during the healing period.⁹ For the healing period, then, compensation in these jurisdictions was on a reasonable basis. It might be supposed that the limits would be generally less generous because of the added compensation for the healing period, but such was not the case. For loss of an arm, for example, scheduled payments continued as long in Illinois as in Michigan (200 weeks), in Nevada (217 weeks) as in Nebraska (215 weeks), and in New York (280 weeks) as in any state except Oregon (416 weeks).¹⁰ The Massachusetts plan, otherwise resembling that of these five states, allowed subsequent compen-

⁸ See the discussion of this below, pp. 121-122.

⁹ Illinois, Nevada, New Jersey, New York, and Ohio.

¹⁰ The New York provision, like the provisions in the subsequent law for the District of Columbia and for longshoremen, is technically an "exclusive" provision, but practically an "additional" provision. 312 weeks are paid for loss of an arm, but additional payments for temporary total disability in excess of 32 weeks are allowed. In effect, this arrangement is essentially the same as providing 280 weeks for partial disability and additional payments for temporary disability. It is so treated in the tables and discussion.

sation for demonstrated loss of earning capacity. Rhode Island and Texas also followed this plan. The scheduled payments in these three states were naturally for much shorter periods. For loss of an arm an injured worker received scheduled payments for 50 weeks, or if a major arm, 75 weeks. In addition, of course, he received total disability payments during the healing period, which in arm cases usually lasts nearly a year; and compensation for subsequent loss of earning capacity until payments under all the provisions had been received for 300 weeks (500 weeks in Massachusetts). Average compensation on the Massachusetts plan was perhaps slightly less generous than the average in states making additional payments for total disability, and rather more generous than the average in states which made scheduled payments only for specific injuries. But permanent partial compensation appears to be more equitably distributed under this plan than in either of the two groups of states.

An interesting feature of the schedules is the tendency to pay more generously for loss of upper than of lower limbs. The Michigan schedule provided 200 weeks of compensation for an arm, but only 175 weeks for a leg; 150 weeks for a hand, but only 125 weeks for a foot; 60 weeks for a thumb and 35 weeks for an index finger, but only 30 weeks for a great toe. This reflects a belief that loss of an upper limb is more serious than loss of a lower limb. Plausible though this appears, it is not borne out by the evidence. The healing period is longer and the eventual earning capacity lower in cases involving loss of a foot or leg than in cases involving loss of a hand or arm.¹¹ A misleading circumstance is the tendency to think about relative usefulness of upper and lower limbs in terms of factory operations. A machine operative having only one leg is assuredly less handicapped than if one-armed. But machine operatives hardly ever lose a leg. Three-fourths of permanent injuries to the foot and leg take place in mining, lumbering, construction, or transportation.¹² In these industries loss of a foot or leg is virtually a bar

¹¹ Bowers in *Is it Safe to Work?*, p. 44, reports the following healing periods: hand, 32 weeks; arm, 43 weeks; foot, 45 weeks; leg, 64 weeks. See also, for the earlier period, U. S. Bureau of Labor Statistics Bulletin No. 275 (1920), pp. 79-81.

¹² See mimeographed release of the Bureau of Research and Information, Pennsylvania Department of Labor and Industry, "Statistics of Industrial Injuries in 1941" (1942). An independent tabulation by the author of Massachusetts cases in the two years ending June, 1936, generally confirms the Pennsylvania findings.

to reëmployment. Accordingly a much larger proportion of workers who have lost a foot or leg must learn a new employment, and this fact limits sharply their eventual earning capacity. Yet under flat-rate disability schedules they never receive more, and generally receive less, compensation than victims of arm and hand losses.

In general, the 1915 partial disability scale for nonlisted injuries closely resembled the total disability scale, but was less generous in several particulars than the scale for permanent total disability. The rate of compensation was the same as for permanent total disability in all states, although it represented a percentage of *the difference in earning capacity* rather than a percentage of *past earnings*. In only three states did the weekly maximum differ from that for permanent total disability.¹³ The principal difference in the two scales lay in the complete absence of a weekly minimum from most of the partial disability scales. The schedules were subject to a weekly minimum except in Louisiana, Maryland, Ohio, and Oregon; but only four states provided a minimum for nonlisted injuries. Those of California, Iowa, and New Jersey were the same as for permanent total disability. The New York minimum, although effective at the same level, was provisional, whereas the permanent total minimum was definite. Complete absence of a minimum from other laws, justified on the ground that inclusion of a minimum would encourage malingering, meant a permanent reduction in the living standard of many severely injured workers. Inclusion of an actual wage proviso in this part of the scale would have given ample protection against malingering.

Limits to the duration of nonlisted partial disability compensation were generally shorter than for permanent total disability, though generally longer than for any specific injuries. The difference from the permanent total limit was greatest in Oregon (eight years compared with unlimited), but was nearly as great in Nebraska, which limited full compensation to 300 weeks in both cases but paid a subsequent reduced compensation until death for permanent total disability. Among states which limited duration of compensation for both degrees of disability,

¹³ Kansas, \$12.00 instead of \$15.00; Nevada, \$40.00 (monthly) instead of \$60.00; and Wisconsin, \$9.38, although specifying no maximum for permanent total disability.

TABLE 17
DEVELOPMENT OF SCALE OF COMPENSATION FOR PERMANENT PARTIAL
DISABILITY, 1915-1940

I. Specific Injuries					
	Number of compensation acts	Number containing a schedule for specific injuries		Weighted average* number of weeks for loss of arm	
		Exclusive	Additional	Exclusive	Additional
Jan. 1, 1915	24	9	5	241.8	200.0
Jan. 1, 1920	42	22	11	244.6	202.9
Jan. 1, 1930	47	16	21	245.6	218.0
July 1, 1940	49	20	21	237.2	236.1

II. Rate of Compensation and Weekly Maximum				
	Number of compensation acts		Weighted averages*	
	Proportioning compensation to past earnings	Containing a weekly maximum	Compensation rate	Weekly maximum
Jan. 1, 1915	19	19	57.6%	\$11.86
Jan. 1, 1920	36	36	59.7%	13.38
Jan. 1, 1930	39	40	63.3%	17.99
July 1, 1940	43	44	64.4%	19.57

III. Minimum Weekly Compensation					
	Number of laws containing a			Weighted averages*	
	Weekly minimum	Definite minimum	Provisional minimum	Definite minimum	Provisional minimum
Jan. 1, 1915	16 ^a	11	5	\$4.98	\$4.98
Jan. 1, 1920	32 ^b	16	16	5.17	5.60
Jan. 1, 1930	34 ^c	18	16	8.00	5.38
July 1, 1940	38 ^d	20	18	8.30	7.83

IV. Maximum Duration and Amount (Unlisted Disability)					
	Number of laws containing a		Weighted averages*		
	Maximum duration	Maximum amount	Maximum duration	Maximum amount	
Jan. 1, 1915	13	5	385.5 wks	\$3338	
Jan. 1, 1920	28	9	342.7 wks	3720	
Jan. 1, 1930	29	11	333.8 wks	4120	
July 1, 1940	28	11	327.3 wks	4380	

^a Only four applied to nonlisted disabilities.
^b Only sixteen applied to nonlisted disabilities.
^c Only eighteen applied to nonlisted disabilities.
^d Only nineteen applied to nonlisted disabilities.
 * Averages weighted for number of persons covered.

Connecticut had the sharpest difference (6 years compared with 10 years), and Minnesota and Texas the smallest (300 weeks, 400 weeks). Maximum awards were uncommon for either degree of disability, but where they existed they were generally less generous for permanent partial disability. Ohio and Washington, which set no limit to total compensation of permanent total disability, limited compensation of permanent partial disability to \$3750 and \$1500 respectively. Maryland and Nevada, which limited permanent total compensation to \$5000, limited permanent partial compensation to \$3000 and \$2400 respectively. Massachusetts and Michigan had no specific maximum permanent partial award, although limiting permanent total awards to \$4000. Effective maximums can be computed for either state by multiplying the maximum duration by the weekly maximum. The effective maximums were \$5000 for Massachusetts and \$3000 for Michigan.

Partial disability compensation had already assumed its present characteristics as early as 1915. Compensation of cases involving amputation or loss of use of a specific member was generally provided by a disability schedule, relating the economic loss in no way to age or occupation, and evidencing no study of the relative losses between one member and another. Compensation in states which had provided no schedule, and of nonlisted injuries in all states, was determined after a comparison of current earnings with earnings before the injury. Although this involved a continuous running comparison of current with pre-injury earnings which was subject to serious error when large wage fluctuations occurred, compensation payments were probably more equitably distributed under this system. A serious lack was the absence from most laws of a minimum weekly compensation for nonlisted disability.

REVISIONS AND ADDITIONAL LAWS, 1915-1940

1915-1920 The wave of new legislation and of amendments to existing legislation in this period changed in no material degree the essential characteristics of permanent partial disability compensation. Amendments to the Texas and West Virginia laws provided a flat-rate schedule exclusive of any other compensation. Twelve of the new laws adopted such a schedule, and

four adopted a schedule allowing additional payments during the healing period.¹⁴ The Maine schedule allowed no additional payments for total disability, but did provide for subsequent compensation for difference in earning capacity. The schedule system was more firmly established than ever, twenty-two states employing the system exclusively and eleven compensating total disability as well. Three states also compensated for difference in earning capacity. Only five states had altogether avoided the flat-rate schedule.¹⁵

The most important change in the method of compensating partial disability in this period took place in California. The law was amended in 1917 to provide that "in determining the percentages of permanent disability, account shall be taken of the nature of the physical injury or disfigurement, the occupation of the injured employee, and his age at the time of such injury, consideration being given to the diminished ability of such injured employee to compete in an open labor market."¹⁶ Compensation was to be paid for periods varying with the determined percentages of disability up to 60 per cent, allowing four weeks for each 1 per cent of disability. For a 60 per cent disability, then, one would draw compensation for 240 weeks. For more serious disabilities a subsequent life pension (after 240 weeks), varying with per cent of disability up to 40 per cent of past earnings, was provided.¹⁷ The Industrial Accident Commission was permitted to "prepare, adopt, and from time to time amend, a schedule for the determination of the percentages of permanent disabilities" giving proper weight to injury, age, and occupation.¹⁸

These changes arose out of "a casual argument over the relative hardships which the loss of a thumb would bring to a printer and a day laborer."¹⁹ Subsequent investigations developed the concept of a "standard man," aged thirty-nine because this was the average age of California workers, and employed as an unskilled worker. If he lost his major arm at the shoulder, he was assumed to have sustained a disability equivalent to 60 per cent of perma-

¹⁴ Alabama, Colorado, Delaware, Indiana, Kentucky, Montana, New Mexico, North Dakota, Oklahoma, Pennsylvania, Tennessee, and Virginia.

¹⁵ Arizona, California, New Hampshire, Washington, and Wyoming.

¹⁶ California, Acts of 1917, chap. 586, sec. 9, subsection (7).

¹⁷ *Ibid.*, subsection (5).

¹⁸ *Ibid.*, subsection (11).

¹⁹ Bowers, *Is It Safe to Work?*, p. 51.

ment total disability. A comprehensive study of about 1300 occupations was undertaken, including the effects of about three hundred types of injury on ability to ply these occupations. The occupations were eventually grouped in fifty-two classes based upon similarity of required functions, and a maximum of seventeen occupational variations for the same injury.²⁰

Equally significant were the variations for age. These might have been based on either of two assumptions: (a) that a younger man should receive more benefits because he will be handicapped longer; or (b) that an older man should receive more benefits because he has lower recuperative powers.²¹ Impressed by the argument that compensation and rehabilitation were closely related, the California commission acted on the second assumption. Adaptability became the basic factor to be considered in relating disability to age. The judgments of some twenty-five experts were asked on the slope of the adaptability curve, and A. W. Whitney was asked to evaluate them and prepare final estimates. He assumed that adaptability was complete at age fifteen and was gone entirely at age seventy-five, that a 10 per cent disability at age fifteen would correspond to a 17.5 per cent disability at age seventy-five, and that the values for the intermediate ages might be determined by linear interpolation.²² A complete disability schedule was prepared, combining the rating of injuries by occupation and age, running to some 75 pages. Ultimately the commission took over the entire work of administering permanent partial settlements because of the complexity of the schedule.

One may quarrel with particular features of the California schedule. Bowers has pointed out inconsistencies in the occupational ratings and a basic error in the assumption of linear decrease in adaptability with advancing age.²³ These imperfections notwithstanding, permanent partial injuries are probably more equitably rated in California than in any other jurisdiction. This does not mean that the California scale is more generous than most, for the average award is lower than in many other states.

²⁰ *Ibid.*, pp. 52-57.

²¹ W. J. French, *The Age Factor in the Computation of Compensation for Permanent Disability*, U. S. Bureau of Labor Statistics Bulletin No. 511 (1930), p. 291.

²² *Ibid.*, p. 293.

²³ Bowers, *Is It Safe to Work?*, pp. 98-102; 106-110. But his general comment on the California system is highly favorable.

Equity, not generosity, is the distinguishing trait of the California scale. Equity, it would appear, is more difficult to obtain than generosity. As Bowers shrewdly observes, the desired generosity in California can now be secured with "one stroke of the legislative pen."²⁴

In duration of payments for partial disability there was little change in the war years. Only three amendments increased the number of weeks in the schedules, and as many of the new schedules set limits below the 1915 level as above it. Connecticut, Michigan, and Nevada raised the duration for nonlisted injuries, while Louisiana lowered the duration, and Massachusetts abandoned this limit. All of the thirteen new laws limiting duration of compensation for nonlisted injuries set limits below the 1915 level. As for the over-all maximum, Nevada abandoned this feature, while Massachusetts adopted it. Washington increased its maximum from \$1500 to \$2000. Four of the new laws established a maximum award, Utah's above, and those of Colorado, Kentucky, and Wyoming below, the 1915 level.

Greater improvement took place in the general situation with regard to weekly compensation. Six states increased the rates above the 1915 average.²⁵ Ten of the new laws, however, set a rate of only 50 per cent of past earnings.²⁶ Ten states amended their laws to raise the maximum weekly compensation.²⁷ Kansas abandoned this limit, while Wisconsin added a maximum well above the 1915 average. Six of the new laws contained weekly maximums above, and eight below, the 1915 average.²⁸ As a result of these changes the weighted average rate of compensation rose from 57.6 per cent to 59.7 per cent, and the weighted average weekly maximum rose from \$11.86 to \$13.38. There was little improvement in the minimum weekly compensation. By 1920, thirty-two laws contained a minimum, but nineteen applied only to specific injuries, while one applied only to nonlisted injuries.

²⁴ *Ibid.*, p. 59.

²⁵ Amendments: Illinois, Kansas, Louisiana, Michigan, Minnesota, Nebraska. New laws: Alabama, Kentucky, Maine, North Dakota, Pennsylvania, and Utah.

²⁶ Colorado, Delaware, Indiana, Montana, New Mexico, Oklahoma, South Dakota, Tennessee, Vermont, and Virginia.

²⁷ Connecticut, Illinois, Iowa, Louisiana, Massachusetts, Michigan, Minnesota, Nebraska, Nevada, and West Virginia.

²⁸ Above: Alabama, Delaware, Maine, North Dakota, Oklahoma, and Utah. Below: Kentucky, Montana, New Mexico, Pennsylvania, South Dakota, Tennessee, Vermont, and Virginia.

Half of them were provisional and half were definite. For non-listed injuries a provisional minimum is only reasonable, but where a member has been lost it seems like a cut-rate device in relation to Rubinow's "price list for irreplaceable parts of the human body."

1920-1930 At the beginning of this decade interest in the rating of permanent partial disability was keen, and in 1921 the International Association of Industrial Accident Boards and Commissions asked its Committee on Statistics and Compensation Insurance Cost to investigate the question.²⁹ This Committee presented reports to the next two annual meetings of the Accident Commissioners, and the following principles were agreed upon:

1. The schedule of permanent partial disability compensation shall be for compensation to be paid after compensation has been paid for temporary disability, either total or partial . . .

2. Compensation for permanent total disability shall be valued on the basis of total disability for life . . .

3. Compensation for permanent partial disability shall be valued as percentage of permanent total disability . . .

4. The permanent-disability schedule shall be one designed to measure loss of earning capacity . . .

5. The permanent disability schedule shall be based upon the principle of variable, rather than fixed factors. The variable factors to be taken into account shall be (1) nature of injury and (2) age of injured employee . . .

6. When the permanent disability is of a character that peculiarly and exceptionally unfits the employee for the performance of the occupation in which he was experienced, the benefits shall be increased to compensate for the excessive handicap to such a degree as may be determined by the Commission, but not more than 25 per cent of the scheduled allowances.³⁰

The first two principles represented approval of the status existing in a sizeable minority of jurisdictions. The third and fifth principles represented a tremendous concession to the California system, although with certain reservations. As indicated in the sixth principle, the Committee took a different view of the significance of occupation, calling for variations only in extreme cases. The reports made clear, moreover, that the relationship of age and disability was not linear and continuous. Instead,

²⁹ U. S. Bureau of Labor Statistics Bulletin No. 304 (1922), pp. 139-40.

³⁰ For texts of the reports and the discussions see U. S. Bureau of Labor Statistics Bulletin No. 333 (1923), pp. 70-149, and Bulletin No. 359 (1924), pp. 16-49, 132-138. The sixth point was not presented until the 1923 meeting, and the fifth point was not accepted until the 1923 meeting.

six age groups were described: 15 to 25, 25 to 30, 30 to 40, 40 to 50, 50 to 60, and over 60; and differing degrees of stability in age-disability relationship were imputed to them. During the first and third periods, little change in adaptability was estimated (about $\frac{1}{2}$ per cent per year for loss of an arm) due to the experimental character of the early years and to the high level of employability during the thirties. A more rapid rate of change (about 1 per cent per year) was estimated for the second and fourth periods, due to insecure attachment in the late twenties and to hiring discrimination in the forties. Stepping up of this discrimination and loss of recuperative power were reflected in an even higher estimate (about $1\frac{1}{2}$ per cent per year) for the fifties. A much lower estimate for the sixties (about $\frac{1}{2}$ per cent per year) indicated a conclusion that in the higher age group a year or two more or less made little difference, hiring discrimination having attained a peak of intensity, and recuperative power having ebbed badly.

For loss of any member, then, a broken line curve of disability rating was postulated. In cases of loss of an arm, for example, 40 per cent (of permanent total disability) was assumed at age fifteen, 45 per cent at twenty-five, 50 per cent at thirty, 55 per cent at forty, 65 per cent at fifty, 80 per cent at sixty and 85 per cent at seventy or over.³¹ Results of case study analyses in Ohio, while not precisely confirming these estimates, supported its basic tenet: that the rate of change fluctuated over the working life.³²

The only basic change resulting from the reports of this Committee was an amendment to the Wisconsin law in 1923 tying compensation of major permanent partial cases to the permanent total scale and introducing a modified form of age variation.³³ The existing permanent total scale already contained age variation, but it was based on life expectancy (compensation declining with advancing age) instead of on prospect of reemployment. Up to age thirty, 1000 weeks of compensation were awarded, but thereafter 18 weeks were subtracted for each year until seventy, at which age 280 weeks were awarded. In tying

³¹ U. S. Bureau of Labor Statistics Bulletin No. 333 (1923), pp. 77-79.

³² Bowers, *Is It Safe to Work?*, pp. 97-102.

³³ "Major permanent partial" cases were defined as including loss of an arm, hand, leg, foot, eye, both ears, palm, thumb, all fingers, or great toe. Loss of lesser members constituted "minor permanent partial cases."

the major permanent scale to this scale the opposite type of age variation was also introduced by providing for graduation above and below thirty years of age. Loss of an arm was held to constitute 50 per cent of permanent total disability at age thirty. For each year under thirty, $\frac{2}{3}$ per cent was subtracted until 40 per cent was reached. For each year over thirty, $\frac{7}{8}$ per cent was added until 85 per cent was reached. Adjustments in proportion to these were set up for the other major specific injuries. Thus at fifteen years of age loss of an arm constituted 40 per cent disability and 400 weeks were awarded. At thirty it constituted 50 per cent disability and 500 weeks were awarded. At fifty it was $67\frac{1}{2}$ per cent disability and 432 weeks; and at seventy, 85 per cent disability and 238 weeks.³⁴ A detailed schedule was published to make benefit determinations easy.

The operation of two opposite principles affecting the slope of age variations produced some curious results in the detailed Wisconsin schedule. Subtraction of eighteen weeks from the base for each year above thirty represented a 1.8 per cent discount, which more than offset the $\frac{7}{8}$ per cent increase in the disability rating above age thirty. Accordingly, awards sloped downward with advancing age, though much less steeply than in cases of permanent total disability. Below age thirty the base of 1000 weeks remained constant, and the lower disability percentages produced smaller awards. Thus awards for a given injury increased with age until thirty, and thereafter declined.

Offsetting the Wisconsin amendment was an Arizona amendment including a flat-rate schedule for the first time, but of the "additional" type. The only general result of the action of the International Association of Industrial Accident Boards and Commissions was a drift toward acceptance of the principle that the permanent partial disability schedule should include payments for permanent disability only, and not be subject to discounts for prior temporary disability. During the twenties the number of jurisdictions with scheduled payments in addition to temporary disability payments rose from eleven to twenty-one. On the other hand, the number subtracting for temporary compensation declined from twenty-two to sixteen. These changes resulted from amendments to seven laws changing their schedules in this regard, inclusion of the recommended provision in three of the

³⁴ See Wisconsin Statutes of 1923, chap. 328, p. 17.

four new laws, and adoption of an "additional" schedule by Arizona.³⁵ The balance had shifted in this period from favoring subtraction of temporary compensation (twenty-two states as against eleven) to favoring scheduled payments in addition to temporary payments (twenty-one as against sixteen). This shift represented an increase in generosity, to be sure, but more important, it represented a step in the direction of more equitable compensation of permanent partial injuries.

There were few increases in the number of weekly payments scheduled, and only three general increases. General increases were provided in amendments to the laws of Connecticut, Illinois, and Rhode Island. Total loss of hearing was for the first time included in the schedules of Idaho, Maryland, Montana, New York, and North Dakota. The number of weekly payments was increased by Idaho for loss of hearing; by Minnesota for loss of a hand, a leg, or a foot; by Montana and West Virginia for loss of a leg; by New Jersey for loss of an arm or a hand; and by New York and Pennsylvania for loss of an eye. Except for these changes, improvement in the schedules was confined to the weekly compensation.

Eight states increased the rate of compensation for permanent partial disability in this period.³⁶ Three of the new laws set a rate of compensation above the 1920 average and one below it.³⁷ Iowa, which had hitherto proportioned compensation of nonlisted injuries to specific injuries, now adopted a rate of 60 per cent of wage loss. The net effect of these changes was to raise the average rate of compensation from 59.7 per cent to 63.3 per cent. The weekly maximum was raised by amendments to eighteen laws.³⁸ Weekly maximums higher than the 1920 average were provided by three of the four new laws.³⁹ Accordingly, the average weekly maximum rose from \$13.38 to \$17.99.

³⁵ Amendments: Colorado, Maryland, Minnesota, Nebraska, New Mexico, North Dakota, and Virginia. New laws: District of Columbia, Georgia, and Missouri. The new North Carolina law included a schedule discounted for temporary disability payments.

³⁶ Arizona, Louisiana, Maine, Michigan, New Mexico, Oklahoma, Pennsylvania, and West Virginia.

³⁷ Above: District of Columbia, Missouri, and North Carolina. Below: Georgia.

³⁸ Connecticut, Illinois, Kentucky, Louisiana, Maine, Maryland, Massachusetts, Michigan, Minnesota, Montana, New Hampshire, New Mexico, Ohio, Pennsylvania, South Dakota, Tennessee, Texas, and Virginia.

³⁹ District of Columbia, Missouri, and North Carolina.

The situation with regard to the weekly minimum, however, was by no means so generally improved. No amendments making general the application of the weekly minimum were passed, and, of the new laws, only those of the District of Columbia and Missouri applied to partial disability compensation other than for specific injuries. The balance between the definite and the provisional minimum was only slightly disturbed. Montana and New Mexico changed over to the definite minimum, while Maryland adopted for the first time a minimum of the provisional type. The District of Columbia and Georgia adopted provisional minimums, Missouri and North Carolina definite minimums. The net effect was a change from the equal balance prevailing in 1920 to the barest possible difference in favor of the definite minimum.

In the maximum duration and award for nonlisted injuries, few changes of any kind occurred during the twenties. Arizona abandoned its maximum award, replacing it with a maximum duration of 60 months (260 weeks). Nevada reduced its maximum duration from 100 months (433 weeks) to 60 months (260 weeks). New Jersey and Montana increased their maximum duration to 500 weeks. The new laws of Georgia and North Carolina included a durational limit of 300 weeks. Massachusetts increased its maximum award from \$4000 to \$4500, and Washington provided an increase from \$2000 to \$3000. The new laws of the District of Columbia and North Carolina included maximum awards of \$7500 and \$6000, respectively. The net effect of these changes was to lower the average duration slightly from 342.7 weeks to 333.8 weeks, and to raise the average award from \$3720 to \$4120.

1930-1940 Interest in a more scientific permanent partial disability schedule had been waning during the later twenties, and reached a low ebb during the depression decade. Those who remained interested were shocked in 1931 when Wisconsin abandoned its elaborate 1923 schedule for a flat-rate schedule calling for roughly the same average award. In 1937 the last state with no schedule of any kind, New Hampshire, adopted a flat-rate schedule for specific injuries. This left California alone in making an effort to relate the award at the time of injury to the probable loss sustained. The Federal Civil Employees Act, employing no schedule, eventually approached such an award by the

administratively complex procedure of comparing current with former wages. The three-fold plan still operated in Massachusetts, and with modifications in Maine and Rhode Island. Elsewhere compensation of specific injuries was rigid for partial disability, and the trend to additional payments for temporary total disability slowed perceptibly. North Dakota and Virginia amended their laws to exclude any other compensation for specific injuries. The newly adopted flat-rate schedules of New Hampshire and Wisconsin also provided additional payments for the healing period. The new laws of Florida and South Carolina excluded payments except as provided in the schedule, but the Arkansas schedule allowed additional temporary disability payments. Otherwise the general characteristics of the schedules remained unchanged.

Only Ohio provided a general increase in the number of weekly payments, and this was offset by a general reduction in duration by Oregon. In 1937 the Pennsylvania law was generally revised upward, but this action was rescinded in 1939, except for the addition of loss of hearing to the schedule. Idaho increased the number of weekly payments for loss of an arm or hand or hearing. New Mexico increased the number of weekly payments for loss of an arm or leg. Connecticut increased the number of weekly payments for loss of an eye, and Rhode Island for loss of a foot. Illinois added loss of hearing to its schedule. Other changes in compensation for specific injuries were confined to the weekly compensation.

The rate of compensation for permanent partial disability was increased in eight states.⁴⁰ The new Arkansas law provided a rate more generous than the 1930 average, but fourteen jurisdictions had a statutory rate of $66\frac{2}{3}$ per cent of the loss of earning capacity, six of 65 per cent, and eight of 60 per cent. Nine states still retained the 50 per cent rate. During the thirties twelve states increased the weekly maximum, and the maximums of Arkansas and South Carolina were above the 1930 average.⁴¹ Massachusetts abandoned the maximum, minimum, and statutory

⁴⁰ Alabama, Indiana, Maryland, Montana, New Mexico, Pennsylvania, Virginia, and Wisconsin.

⁴¹ The amendments were made by Alabama, Colorado, Connecticut, Georgia, Illinois, Montana, New Hampshire, New Mexico, Pennsylvania, Rhode Island, Vermont, and Virginia.

rate for specific injuries in favor of a flat compensation of \$10 per week.

As was true of fatal and permanent total disabilities, interest in the minimum weekly compensation for permanent partial disability was keen in this period. The general minimums of California and New Mexico were increased, and the minimums provided in the new laws of Arkansas and Florida applied to all permanent partial cases. Five states increased weekly minimums applying only to specific injuries.⁴² New Hampshire adopted a minimum for specific injuries, as did South Carolina. The balance between provisional and definite minimums changed slightly in favor of the definite form in this period. Indiana changed its general minimum from the definite to the provisional form, but the specific minimum of Colorado was changed from the provisional to the definite form. Of the newly adopted minimums, three were definite and one provisional. While retaining an actual wage proviso at \$9 weekly, Pennsylvania added a definite floor at \$5 to its minimum for specific injuries.

Changes in maximum duration were more common, in maximum award less common, than in the preceding decade. Six states increased the maximum duration in this period.⁴³ Nevada abandoned this limitation, and North Dakota added a limit of 450 weeks, well above the 1930 average. The new laws contained this feature, the Arkansas limit being above, and the Florida and South Carolina limits below, the 1930 average. The average accordingly rose from 333.8 weeks to 350.3 weeks. Georgia, which had not hitherto limited the maximum award, added a maximum of \$5000. The Wyoming limit for scheduled cases was raised from \$1500 to \$2500. The new laws contained a maximum award, in each case above the 1930 average. The average rose from \$4120 to \$4380.

FEATURES INTENDED TO REINFORCE THE PERMANENT DISABILITY SCALE

Another form assumed by permanent partial disability is the disfiguring effect of the injury. If serious and permanent and visible it may be covered under one or another of the disfigure-

⁴² Connecticut, Pennsylvania, Rhode Island, Vermont, and Wisconsin.

⁴³ Alabama, Idaho, Indiana, Louisiana, Minnesota, and Rhode Island.

ment provisions found in thirty-one workmen's compensation laws.⁴⁴ A common requirement is that the disfigurement involve either the face or head, and in some jurisdictions where this is not in the law any other disfigurement is held to have no effect on earning capacity and hence not to be coverable. The South Carolina law includes bodily disfigurement, and the New York law some disfigurements of the neck.⁴⁵ The limits of compensation vary widely both in amount and application. Three states set limits of \$500 "in addition to all other compensation."⁴⁶ The generous Oklahoma maximum of \$3000 is subject to a proviso that it "shall not be in addition to the other compensation provided in this section, but shall be taken into consideration in fixing the compensation otherwise provided."⁴⁷ In the California permanent disability schedule disfigurements are classified as slight, moderate, and severe, but this appears to be an unwise refinement. There is no escape in so variable a matter from leaving considerable discretion to those who pass on the evidence.

An important difference in application of these provisions is in regard to the question of earning capacity. Five laws contain a specific requirement that earning capacity be threatened, and in many other jurisdictions more general provisions have been so interpreted.⁴⁸ At the other extreme, compensation for facial or head disfigurement in New York state may be awarded in addition to compensation for loss of earning capacity. Dawson, commenting on this difference, makes a dramatic comparison of the situation of an actor and a miner, each having suffered a shattered face. He concludes that the miner would receive nothing under the earning capacity rule, while the actor might even

⁴⁴ Arizona, Arkansas, California, Colorado, Connecticut, District of Columbia, Florida, Idaho, Illinois, Indiana, Kentucky, Louisiana, Maryland, Minnesota, Missouri, Nevada, New Mexico, New York, North Carolina, North Dakota, Ohio, Oklahoma, Pennsylvania, South Carolina, South Dakota, Texas, Utah, Virginia, Wisconsin, Wyoming, and the Longshoremen's Act. Hobbs notes that the Nebraska courts have recognized disfigurement as grounds for compensation (C. W. Hobbs, *Workmen's Compensation Insurance*, 1939, p. 262, note 1).

⁴⁵ But the New York provision is so weighted with obscure medical terms as to be incomprehensible to a typical worker. See the citation in Marshall Dawson's *Problems of Workmen's Compensation Administration*, U. S. Bureau of Labor Statistics Bulletin No. 672 (1940), p. 75, note 6.

⁴⁶ Colorado, Florida, and Wyoming.

⁴⁷ Oklahoma Statutes, 1931, sec. 13356, subsection 3.

⁴⁸ The laws of Arkansas, Idaho, North Dakota, Oklahoma, and Wyoming contain such a specific requirement.

claim permanent total compensation. It is doubtful that serious facial disfigurement would have no effect on the employment prospects even of a miner. The cases under the earning capacity rule witnessed by the writer have reflected a considerable liberality in applying the rule. But whatever the merits of the illustrative comparison, there is much to say for Dawson's stand that disfigurement might well be considered compensable on its own account. There is little doubt that it frequently influences the settlements in damage suits growing out of accidental injuries.

SECOND INJURIES

Although early advocates of workmen's compensation were deeply concerned about restoring injured workmen to their former jobs, they appear not to have anticipated one serious barrier to reemployment of permanently injured workers. Loss of one member is generally defined as permanent partial disability, loss of two important members as permanent total disability. If a worker already able to see with but one eye sustains an injury causing loss of vision in the good eye, he is permanently and totally incapacitated. Should his employer be required to compensate him as such, even though he can hardly be held responsible, in any sense, for total loss of vision? If so, are employers likely to hire workers who have lost the use of an eye, an arm, a hand, a leg, or a foot?

One attempt to meet this situation was an amendment calling for subtraction from the permanent total award of an earlier award for partial disability, thus making the employer only responsible for the difference in disability before and after the second injury. Such a provision is found in ten laws.⁴⁹ However fair this may seem, it did not remove the barrier to employment of physically handicapped workers. For one thing, not all such handicaps are industrially caused, and for those that are not, no discount for prior compensation can be made. More important is the fact that in these cases the whole does not equal the

⁴⁹ If in same concern: Delaware, Georgia, Indiana, Virginia, and West Virginia. Even if in a different concern: Kansas, Kentucky, Maryland, Nevada, and Wyoming. But Colorado and Missouri seem to achieve the same purpose with a special scale of compensation for second injuries. The Missouri scale allows payment up to two-thirds of the permanent total level. An Iowa provision allows extra compensation for a second eye.

sum of its parts. Loss of an eye is 30 per cent of total incapacity; loss of two eyes not 60 per cent, but 100 per cent of incapacity, according to the severity scale of the American Standards Association. Similarly, loss of an eye entitles a Virginia worker to 100 weeks of compensation, loss of both eyes not to 200 weeks, but 300 weeks of compensation. The Virginia employer rehiring a worker who has lost an eye, although eligible for the discount for prior compensation, must still pay twice as much compensation if the second eye is lost. It is not a question of considering whether this is a hardship to the employer, but of protecting the worker against hiring discriminations in an essentially free labor market.

Influenced by this line of reasoning, and in some cases pressed to do so by handicapped workers, eight laws have provided for compensation for second injuries just as if no prior injury had occurred.⁵⁰ As noted in the previous chapter, four laws allow a general waiver for physical handicap.⁵¹ These provisions may achieve the limited purpose of overcoming hiring discriminations, but they fail to meet the equally pressing need for adequate compensation. Four laws make no provision except one preventing pyramiding of weekly compensation for successive injuries with concurrent disability intervals.⁵² Four laws do not advert to the contingency, and this appears to leave the question of the employer's compensation liability for judicial determination.⁵³

The once-injured worker is entitled not only to protection against hiring discrimination, but to fair compensation if again injured. Four laws with exclusive state funds seek to offer this double protection by charging the employer only for compensation of the second injury as such, paying any additional compensation out of surplus funds.⁵⁴ This amounts to eventual spread of the cost over the entire covered payroll. Fourteen states have established "second injury funds" out of which to pay the balance of compensation above the amount fairly attributable

⁵⁰ Arizona, Connecticut, Florida, Montana, Nebraska, South Dakota, Tennessee, and Texas.

⁵¹ See the appraisal of these provisions in Chapter III, pp. 53-54.

⁵² Maine, Michigan, Oklahoma, and Rhode Island.

⁵³ Louisiana, New Hampshire, Pennsylvania, and Vermont. The Federal Civil Compensation Act contains no second injury provision either, but the problems of hiring discrimination and compensation are not encountered in administering this law.

⁵⁴ North Dakota, Ohio, Washington, and West Virginia.

to the second injury. Ten of these laws secure the funds from payments required in fatal cases in which there are no surviving dependents.⁵⁵ The Idaho law assesses instead all awards for specific injuries (2 per cent). Wisconsin employers are required to pay into the second injury fund \$150 for each specific injury. The New Jersey fund has its source in a yearly assessment of 1 per cent of total compensation, payable by all insurers (including self-insurers) except when the fund exceeds \$200,000. In 1933 the California provision for a second injury fund was declared unconstitutional on technical grounds.⁵⁶ Whatever the merits of the arrangements by which they are accumulated, second injury funds appear admirably suited to provide the double protection required by the handicapped worker.⁵⁷

COMMUTATION OF NONLISTED DISABILITIES

All of the laws contain provisions for commuting installment payments to a lump sum, generally at a specified rate of discount and frequently with specific suggestions on mortality rating.⁵⁸ These provisions apply to all injuries, but are generally more widely used for permanent partial disability than for the other degrees of disability. Where the compensation liability is clearly defined, as in the case of specific injuries, the benefits secured are not adversely affected. In many cases involving nonlisted disability the compensation liability is not so clear, and a vigorous contest between employer (or insurance carrier) and employee may result in a compromise settlement by lump sum.

It may be said, in the employer's defense, that industrial causation is often less clear in cases of nonlisted disability, that claims are sometimes fraudulently made, and that some claimants are suffering more from hypochondria than industrial injury. On the other hand, workers with a genuine claim for nonlisted disability have as much right to adequate compensation as those for

⁵⁵ Arkansas, District of Columbia, Illinois, Massachusetts, Minnesota, New York, North Carolina, South Carolina, Utah, and the longshoremen's act. For recent expansion of this type of fund see below, pp. 386-387.

⁵⁶ *People v. Standard Oil of California*, 23 Pacific (2nd) 86 (1933).

⁵⁷ For a discussion of the adequacy of the financial arrangements for second injury funds see *Proceedings of the Casualty Actuarial Society* (1938), vol. XXIV, part II, pp. 252-255.

⁵⁸ For a detailed analysis of procedure in lump sum settlements see W. F. Dodd, *Administration of Workmen's Compensation* (1936), 719-736.

whom benefits have been written into the law. The suspicion persists, nevertheless, that employers and insurance carriers are more than usually anxious to have nonlisted cases commuted, and that compromise settlements are made the more readily because injured workers are overly impressed by the possibility of securing cash in amounts substantially larger than the familiar installments. It is easy to see how the atmosphere of a damage suit can be introduced into such compromise settlements, the very atmosphere from which workmen's compensation was designed to provide escape. This whole question requires patient investigation of the extent of commutation, the expedients used to safeguard it, and possible measures to overcome the dangers involved.

Compensation of permanent partial disability so far is both unscientific and generally inadequate. Every sacrifice appears to have been made for the sake of administrative simplicity. The weekly compensation has been raised generally, but the present periods of compensation for "irreplaceable parts of the human body" bear a very close resemblance to the early allowances. The only considerable gain has been in the separation in many jurisdictions of temporary total disability from permanent partial disability. Progress in construction of disability schedules will come slowly, however, for the simplicity of the flat-rate schedule has attractions for both workers and insurers. Not only are standards inadequate, but they are sometimes circumvented in reaching compromise settlements, wherein usually inadequate protection is offered the already injured worker. As will be shown in Part III, there is a good cause for concern about the proportion of wage loss compensated in cases of permanent partial disability.⁵⁹ It illustrates graphically that we have not yet completely effected escape from the shadow of liability insurance.

⁵⁹ See Chapter XI, pp. 216-217.

CHAPTER VII

COMPENSATION FOR TEMPORARY DISABILITY

THE OVERWHELMING MAJORITY of industrial injuries result in only temporary disability. Over 95 per cent of the cases in the American Accident Table are temporary cases. According to Kossoris and Kjaer, over 94 per cent of the industrial injuries estimated to have taken place in the United States in 1940 were temporary injuries. In terms of the losses sustained, temporary injuries do not bulk so large. The estimated time lost due to the 1940 injuries was 233,840,000 man-days, of which 41,912,000 man-days, or not quite 18 per cent, resulted from temporary disability.¹

Temporary losses are of three broad types. An injury of very brief duration occasions a loss so slight that it can easily be borne by the worker, and the cost of compensating it would be disproportionately high. Injuries of medium duration (say one week or one month) burden the worker unduly if he must shoulder them alone, but a substantial part of the loss can be borne by him. Injuries of long duration occasion losses so severe that few, if any, workers can bear them, and the larger proportion of these losses should be compensated. Full indemnification for the loss sustained is clearly impracticable in temporary disability cases, for it would tend to induce malingering. It is important, nevertheless, to fix a compensation sufficient to enable the injured worker and his dependents to tide over the disability period without further outside aid and without physical or moral deterioration.²

The following four types of limitation have commonly been applied to indemnification for temporary disability: (a) A waiting period must elapse before an injured worker is eligible for benefit. Those whose disability does not outlast the waiting

¹ "Industrial Injuries in the United States during 1940," *Monthly Labor Review*, LIII (August, 1941), 327.

² For a more complete statement regarding this see below, pp. 143-146.

period will receive no compensation. Others will receive compensation only for subsequent loss of time unless the law provides, as it should, for compensating the loss of time during the waiting period in cases of prolonged disability. (b) The weekly compensation is limited to a percentage of past earnings that is regarded as the normal rate of compensation. This percentage is exceeded only if it amounts to a sum less than the amount that is regarded as essential to tide the worker over the period of disability. Even in such an event the worker is often prevented from receiving more than his average earnings in the past. (c) The weekly compensation is subject to a maximum amount. (d) The total compensation which may be drawn is usually limited to a specific number of weeks, and often to a specific amount.

EXISTING SCALE OF BENEFITS

The scale for temporary disability more accurately reflects the nature of the loss sustained than that for any other degree of disability. There are many reasons for this. The loss in temporary cases is simple of apprehension and easy to measure. The durational restrictions which, as we have seen, curtail benefits most sharply in permanent and fatal cases have little effect on the temporarily injured. Only about 1 per cent of temporary cases and only about 15 per cent of days lost by those temporarily injured involve disability outlasting a year.³ Since the average durational limit exceeds seven years, and few laws specify limits shorter than 300 weeks, it can be seen that only a tiny fraction of one per cent of the temporarily injured exhaust their claims to benefits before able to work.

The limiting effect of the waiting period on coverage has already been discussed.⁴ It remains to consider its effect on benefit payments. The Oregon law still contains no waiting period. Sixteen laws provide an absolute waiting period for which no

³ Judging from distributions of temporarily injured workers in Massachusetts, New York, and Wisconsin. The Massachusetts distribution was independently tabulated for the fiscal period July, 1934, to June, 1936, with the consent of the Department of Industrial Accidents. New York data were taken from Special Bulletin No. 202, New York State Department of Labor, *Cost of Compensation, Two Years, 1936 and 1937*. Wisconsin data were contained in a mimeographed release, "Industrial Accident Statistics, 1937," issued by the Wisconsin Industrial Commission (1938).

⁴ See Chapter III, pp. 30-35.

compensation may be drawn.⁵ Thirty-three laws include a retroactive proviso by the terms of which those suffering prolonged disability will be compensated even for the waiting period. The average duration of the absolute waiting periods is somewhat shorter (6.1 days) than that of the periods which do not apply in cases of prolonged disability (7.0 days). For both the modal period is one week, which seems too long a period if unrelieved by a retroactive proviso. A good case can be made for an absolute waiting period of three days. There is then less danger that hospitalized workers or their employers will be influenced in fixing the date of discharge by the possibility of securing some, or of paying no, compensation.⁶

A waiting period longer than one week works too great a hardship on the typical worker, whether or not relieved by a retroactive proviso. At the present time one state provides a ten day and one a two week period.⁷ These periods eliminate too large a proportion of temporary injuries and result in too severe reductions of compensation in many other cases. The average waiting period (weighted for coverage) is 6.8 days and the average interval before the period is compensable is 31.2 days. The most common provision is a waiting period of one week, retroactive after four weeks of disability. Such a provision is well adapted to the three degrees of temporary disability described above.⁸

Two reasons have commonly been urged for payment of only a percentage of past earnings. It has been observed in connection with all forms of social insurance that payment of the full wage, or even approximately the full wage, is likely to produce some malingering. Clearly there is great danger of this in temporary injury cases. It is also possible that payment of the full wage might prove to be overcompensation. One cannot be certain that the worker would have been employed for the full period of his disability had the accident not occurred, nor that, if so employed, he would have continued to receive the same pay.

⁵ California, Colorado, Florida, Georgia, Indiana, Kansas, Maine, Maryland, New Mexico, Ohio, Oklahoma, Pennsylvania, U. S. Civil, Utah, Vermont, and Washington.

⁶ See the discussion of the danger of such competition in W. F. Dodd's *Administration of Workmen's Compensation* (1936), pp. 623-624.

⁷ Colorado, 10 days; Iowa, 2 weeks. The Alabama law was amended in 1940 to reduce its waiting period from 2 weeks to 1 week.

⁸ See above, p. 31; cf. Chapter III, pp. 33-34.

These considerations have universally established a rate below full earnings, and it has devolved upon legislators to fix this point sufficiently high to enable the injured worker and his dependents to tide over the period of disability without further outside aid, and without suffering physical or moral deterioration.

At the present time only in three states is the normal rate of compensation as high as 70 per cent of past earnings.⁹ Sixteen states pay 66⅔ per cent, six pay 65 per cent, eight pay 60 per cent, and three pay 55 per cent, while eight still retain the 50 per cent rate which originally prevailed. The weighted average is 63.6 per cent. As will be clearly demonstrated in the next chapter, the normal rate of compensation may be properly evaluated only after considering it in relation to the other features of the benefit scale. A rate of 66⅔ per cent subject to a flat one-week waiting period requires an injured worker to bear one-half his wage loss if disabled four weeks. If eligible for the weekly maximum he must bear more than half his wage loss, so the height of the maximum is a material consideration.¹⁰

The normal rate of compensation must also be considered in relation to the method of computing past earnings.¹¹ There are three general results in terms of which prevailing methods of computing past earnings may be classified. Laws which divide earnings for a year by 50 or 52, or for some shorter interval by the number of weeks, make no allowance for unemployment, partial or total. Laws which accept the wage at the time of the injury, or subtract weeks during which the worker was not employed, eliminate total unemployment from the wage base, but may be compensating for a part-time wage. Laws which specify that a full-time wage shall be the base, or that average daily earnings shall be multiplied by the number of days in a normal, full-time work-week, eliminate both total and partial unemployment from the wage base. Unemployment spells are ignored in five laws, and, except as commissions may act, in two additional laws.¹²

⁹ Idaho, Utah, and Wisconsin. The first two states pay as high a rate only when there are dependent children.

¹⁰ For a full development of these relationships and their effect on compensation see Chapter IX, pp. 183-184.

¹¹ See the report on this problem in U. S. Department of Labor, Division of Labor Standards, Bulletin No. 4 (1936), pp. 92 ff.

¹² Colorado, Connecticut, New Mexico, Rhode Island, and West Virginia. In North Dakota and Vermont no statutory protection is offered, but wages are computed "as the commission sees fit."

In six laws¹³ such spells are recognized only where they persist for more than seven consecutive days. Six laws, by accepting the wage at the time of injury, appear to exclude total unemployment, and the Massachusetts law has been interpreted as excluding weeks not worked.¹⁴ The remaining laws, by one formula or another, seek to compensate on the basis of normal full-time earnings.

Only one of the states which proportion temporary disability compensation to past earnings has refrained from limiting the amount of the weekly (or monthly) installment.¹⁵ Since compensation insurance rates proportion the cost to the payroll, no actuarial considerations require discrimination against a high-paid worker.¹⁶ It was originally contended that a maximum is needed as an offset to the weekly minimums established in most states. The latter were adopted to protect low-paid workers against the threat, genuine in their case, of inhumanly low living standards. As a matter of fact, however, the discount for the effect of the weekly maximum far exceeds the premium resulting from the weekly minimum.¹⁷ This is because prevailing maximums apply to a much larger proportion of the injured workers than prevailing minimums.

The average weekly maximum (weighted for coverage) is \$20.13. The modal maximum is \$18, prevailing in eleven jurisdictions. Ten jurisdictions pay as high as \$20, four as high as \$25. Four jurisdictions retain a maximum as low as \$16, six as low as \$15; while Colorado pays no more than \$14 weekly. These weekly maximums must be considered in relation to the prevailing normal rate of compensation. The low maximum of \$14 weekly in Colorado applies, nevertheless, only to workers

¹³ Alabama, Indiana, North Carolina, South Carolina, Tennessee, and Virginia.

¹⁴ Maine, Georgia, Louisiana, Montana, Nevada, and Ohio. The Massachusetts decision was reached in the case of *In re Bartoni*, 114 N.K. 663.

¹⁵ Arizona, Washington and Wyoming pay a monthly pension that varies with dependence but not with earnings.

¹⁶ See Gregory C. Kelly's article, "An Adequate Weekly Maximum," U. S. Bureau of Labor Statistics Bulletin No. 333 (1923), pp. 287 ff., and A. H. Mowbray's article, "Legal Limits of Weekly Compensation and Their Bearing on Ratemaking for Workmen's Compensation Insurance," Proceedings of the Casualty Actuarial Society (1923), vol. IX, part II, pp. 208 ff.

¹⁷ In Massachusetts during the policy year 1935 increased compensation to those eligible for the minimum amounted to 0.7% of total wage loss; reduced compensation to those eligible for the maximum to 4.9% of total wage loss. See the discussion of this in Chapter XI, p. 218.

earning \$28 or more weekly, because compensation installments in that state are normally 50 per cent of past earnings. The more generous maximum of Virginia actually applies to lower-paid workers, for $66\frac{2}{3}$ per cent of any wage over \$24 would amount to more than \$16. At the other extreme, New York pays $66\frac{2}{3}$ per cent of past earnings but no more than \$25, the maximum therefore applying only to those earning \$37.50 or over. In general, the weekly maximums are so low as to be too severely restrictive. The degree of restrictiveness varies with wage levels, and the value of the maximum with living costs.¹⁸

As in the case of the weekly maximum, only Arizona has failed to set a minimum weekly compensation. The purpose of the minimum is to protect the injured worker from subjection to inhumanly low living standards. Twenty-five of the minimums are provisional, that is, they apply only to workers whose actual wage is not lower. It is assumed that malingering will surely occur if a worker may receive more while not working than he averaged while at work. The extent of this danger must be considered in relation to the method by which the weekly wage is computed. If a full-time wage is approximated, then the assumption appears valid, and a provisional minimum not only is justifiable, but is preferable to a flat minimum for temporary disability. Indeed, the actual wage proviso will be found in this case to apply to a very small proportion of cases. In New York, for example, the minimum of \$8 or actual wages applied to 5.4 per cent of the cases in 1937, but the actual wages proviso to but 1.3 per cent. Thirteen jurisdictions with a provisional minimum have established a method of computing the weekly wage that has the essential result of approximating a full-time wage.¹⁹

On the other hand, if weeks of partial or total unemployment are included in the "average" of weekly earnings, the resulting "actual wage" may be inhumanly low, and payment of a larger compensation would not necessarily induce malingering. The proper basis for comparison in weighing the danger of malingering is the amount which the injured would earn if at work, presumably full-time. Nine states with a weekly minimum provisional for temporary total disability offer inadequate protection

¹⁸ These relationships are discussed above, pp. 80-81, and below, pp. 152-153.

¹⁹ Delaware, District of Columbia, Florida, Maryland, Minnesota, Missouri, Nebraska, New Jersey, New York, Oklahoma, Oregon, South Dakota, and Utah.

in this regard. North Dakota and Vermont leave this matter to the discretion of the commission. Accepting the wage at the time of injury, Georgia, Louisiana, and Ohio eliminate spells of total unemployment, but may use a part-time wage. Alabama, Indiana, and Tennessee exclude spells of total unemployment only when they exceed seven consecutive days. The New Mexico law appears not to offer even this slight protection.²⁰ Massachusetts and Pennsylvania have taken a middle ground in this matter. Each has a minimum of \$9 weekly, subject to an actual wage proviso that does not apply below \$7 weekly in Massachusetts, or \$5 weekly in Pennsylvania.

Nineteen states provide a flat minimum weekly compensation, ranging from \$5.00 to \$13.00 and averaging \$7.59. This compares with a range from \$3.00 to \$10.00 and an average of \$7.87 for the provisional minimums. The higher flat minimums may in some cases encourage malingering. The lower flat minimums not only avoid this danger, but may have a depressing influence on living standards. This latter danger may be minimized by arranging for computing a full-time wage. Of the states with flat minimums lower than \$7.50, seven have specified that the average weekly wage shall be a full-time wage, two exclude spells of unemployment altogether, three if they exceed seven consecutive days, while three offer no protection in this regard except the definite minimum.²¹

Thirty-eight jurisdictions limit temporary disability payments to a specified period. The weighted average of these limitations is 393 weeks, and the modal limitation is 300 weeks (9 states). A limit of 500 weeks is almost as common (7 states). Obviously this restriction is relatively unimportant, for only a fraction of one per cent of temporary cases produce disability outlasting such limits, and only a very small percentage of days lost result from temporary injuries of so great severity. Three states limit temporary benefits to five years or less, and one of them to one year, subject to a discretionary extension of half a year.²² This last

²⁰ See the discussion of the method of computing wages, above, pp. 143-144.

²¹ Full-time wage: California, Idaho, Kansas, Kentucky, Michigan, Texas, and Wisconsin. Eliminating periods of total employment: altogether—Maine and Nevada; if exceeding seven consecutive days—North Carolina, South Carolina, and Virginia. Offering no protection: Colorado, Connecticut, and Rhode Island.

²² Vermont, 260 weeks; California, 240 weeks; West Virginia, 52 weeks plus additional weeks up to 26 at the discretion of the commission.

limitation cuts much more deeply into the case load, and is far too severely restrictive.

Nineteen jurisdictions limit temporary disability payments to a specified amount. The range is from \$3,000 to \$10,000, and the weighted average is \$5,381. Although these limitations are generally more restrictive than the period limitation, they also apply to a very small proportion of cases. Taken in conjunction with a weekly maximum, a maximum total compensation sets up an effective maximum duration for all those eligible for the weekly maximum.²³ In South Carolina, for example, the \$6,000 total maximum and \$25 weekly maximum limit the number of installments to 240. The South Dakota limits of \$3,000 and \$15 set up an effective maximum duration of 200 weeks. Even these periods are substantially longer than the overwhelming proportion of temporary disabilities persist. Five jurisdictions limit neither the amount nor the duration of temporary compensation.²⁴

DEVELOPMENT OF THE TEMPORARY DISABILITY SCALE

An analysis of the development of temporary disability provisions as detailed as that made for the other degrees of disability is unnecessary. Most laws contain three, rather than four, injury scales: death, total disability, and partial disability. The differences between permanent total and temporary total provisions are not material except in duration of benefits, and, as has been pointed out, durational restrictions apply to an insignificant proportion of temporary cases. Listing the changes in provisions for temporary total disability would, therefore, be largely repetitious. Only those changes which did not apply to total disability in general will be stressed in the following paragraphs. The general progress of temporary total disability provisions, on the other hand, is set forth in Table 18 and will be described.

THE WAITING PERIOD AND BENEFITS

An overwhelming proportion of the laws in force on January 1, 1915, containing a two-week waiting period. The United States Civil Compensation Act contained a fifteen-day waiting period. At the other extreme, Oregon and Washington awarded compen-

²³ This tendency has already been discussed extensively, beginning above, p. 75.

²⁴ Colorado, Oregon, U. S. Civil Employees, Washington, and Wisconsin.

TABLE 18
DEVELOPMENT OF SCALE OF COMPENSATION FOR TEMPORARY TOTAL
DISABILITY, 1915-1940

I. WAITING PERIOD						
Number of compensation acts	Number containing a		Weighted averages*			
	waiting period	retroactive proviso	Flat waiting period	Retroactive waiting period	Period before retroactive	
			(days)	(days)	(days)	
Jan. 1, 1915	24	21	5	10.8	11.6	44.9
Jan. 1, 1920	42	41	19	8.7	10.4	35.9
Jan. 1, 1930	47	46	28	6.4	7.5	35.4
July 1, 1940	49	48	32	6.1	7.0	31.2

II. RATE OF COMPENSATION AND WEEKLY MAXIMUM				
	Number of compensation acts		Weighted averages*	
	proportioning compensation to past earnings	containing a weekly maximum	Compensation rate	Weekly maximum
Jan. 1, 1915	21	19	57.9%	\$12.23
Jan. 1, 1920	38	37	62.3%	14.38
Jan. 1, 1930	42	41	63.6%	19.34
July 1, 1940	45	44	63.7%	20.13

III. MINIMUM WEEKLY COMPENSATION					
	Number of laws containing a			Weighted average*	
	weekly minimum	definite minimum	provisional minimum	Definite minimum	Provisional minimum
Jan. 1, 1915	18	12	6	\$4.48	\$5.00
Jan. 1, 1920	36	17	19	6.08	5.65
Jan. 1, 1930	39	16	23	7.59	7.19
July 1, 1940	42	18	24	7.59	7.87

IV. MAXIMUM DURATION AND AMOUNT				
	Number of laws containing a		Weighted averages*	
	maximum duration	maximum amount	Maximum duration	Maximum amount
Jan. 1, 1915	18	8	388.4	\$3189
Jan. 1, 1920	33	18	372.2	4006
Jan. 1, 1930	35	22	392.3	5282
July 1, 1940	36	25	392.5	5381

* Averages weighted for number of persons covered.

sation from the date of injury. Four states began compensation payments after a week of disability.²⁵ These early waiting periods were relaxed for prolonged disability in only five states.²⁶ The weighted average waiting time in 1915 was 10.8 days for laws without, and 11.6 days for laws with, a retroactive proviso. The weighted average period of disability after which the retroactive proviso took effect was 44.9 days.

Very substantial revision of those early provisions took place during the next five years. Eleven laws were amended to shorten the waiting period.²⁷ The Washington law was amended to include a waiting period with a retroactive proviso. The periods were rendered compensable if disability was prolonged by retroactive provisos inserted in five laws.²⁸ Amendments to the laws of Connecticut, Louisiana, and Nevada shortened the period after which the retroactive proviso became effective. The new legislation was, on the whole, more generous in this matter than the earlier laws had been. Of eighteen new laws, only six included a two-week waiting period, while seven included a retroactive proviso.²⁹ On January 1, 1920, only the Oregon law contained no waiting period, but half of the forty-two remaining laws provided a waiting period of one week. The average flat waiting period declined from 10.8 to 8.7 days, while the average of those with a retroactive proviso declined from 11.6 to 10.4 days. Nineteen laws contained a retroactive proviso, the average period specified being 35.9 days, well below the 1915 average of 44.9 days.

Improvement in these provisions continued during the twenties. Amendments to twelve laws reduced the length of the waiting period, while amendments to four laws reduced the length of the period after which the waiting period became compensable.³⁰

²⁵ Ohio, Texas, West Virginia, and Wisconsin.

²⁶ Arizona, 2 weeks; Michigan, Nebraska, and Nevada, 8 weeks; Wisconsin, 4 weeks.

²⁷ California, Connecticut, Kansas, Louisiana, Massachusetts, Michigan, Minnesota, Nebraska, Nevada, New Jersey, and U. S. Civil Employees.

²⁸ Connecticut, Illinois, Louisiana, New York, and Rhode Island.

²⁹ Waiting period of two weeks: Alabama, Delaware, Montana, New Mexico, Tennessee, and Virginia. Included retroactive proviso: North Dakota, 1 week; Oklahoma, 3 weeks; Alabama and Delaware, 4 weeks; Wyoming, 30 days; and South Dakota and Tennessee, 6 weeks.

³⁰ Arizona, Maine, Maryland, Massachusetts, Montana, Oklahoma, Pennsylvania, Rhode Island, Tennessee, Virginia, Washington, and Wyoming. Illinois, Nevada, Wisconsin, and Wyoming amended their laws to shorten the period before the retroactive proviso became effective.

Eight laws were amended to include a retroactive proviso, but a Washington amendment deleted this feature, while reducing the waiting period to three days.³¹ Only five new laws were passed, but all provided waiting periods shorter than the 1920 average, and four included retroactive provisos. On January 1, 1930, the average flat waiting period had declined from 8.7 to 6.4 days, and the average of those with a retroactive proviso, from 10.4 to 7.5 days. Twenty-eight laws included retroactive provisos, the weighted average having fallen from 35.9 to 35.4 days.

By 1930 the number of waiting periods longer than a week had fallen to six, three of ten days and three of two weeks. The tempo of waiting period revision, therefore, naturally slackened during the thirties. Three waiting periods were shortened by amendment, and the periods from date of disability until compensation is paid were shortened by amendments to four laws.³² The new laws of Florida and South Carolina set four- and three-day waiting periods respectively. A retroactive proviso was included in the South Carolina law. These changes reduced the weighted average of flat waiting periods from 6.4 to 6.1 days; and of those subject to a retroactive proviso from 7.5 to 7.0 days. The average period after which compensation was paid from date of disability was reduced from 35.4 to 31.2 days.

In 1940, sixteen states had a flat waiting period. Judging from the weighted averages, workers in these states suffering injuries lasting less than six days were altogether uncompensated, and workers suffering more serious injuries were uncompensated for the first six days of disability. Thirty-two jurisdictions had retroactive provisos. Again judging the situation of the typical worker in terms of weighted averages, those suffering injuries lasting less than seven days were altogether uncompensated. Workers in these jurisdictions who were disabled for more than seven days but not for more than thirty-one days were without compensation for the first seven days of disability. Workers suffering injuries disabling them for more than thirty-one days were compensated from the date of injury.³³

³¹ Idaho, Iowa, Minnesota, Montana, New Hampshire, New Jersey, Texas, and Virginia.

³² Delaware, Virginia, and Wisconsin shortened the waiting period; and Massachusetts, New York, Rhode Island, and Wisconsin shortened the period from date of injury after which compensation is paid.

³³ Cf. above, pp. 141-142, also Chapter III, pp. 31-34.

In most states the waiting period provision is so stated as to apply to all disabling injuries. A retroactive proviso confines application of the waiting period to temporary disability, compensation for the waiting period in serious cases being merely postponed. But what of the scope of the waiting period in the sixteen states which have adopted no retroactive proviso? The Indiana provision applies only to temporary injuries. The laws of Georgia, Kansas, and Maine apply to "incapacity," which seems to limit the scope to total disability. Six laws use the word "disability," including thereby partial disability but not fatal injuries.³⁴ Four laws use the word "injury," which seems broad enough to include fatal injuries.³⁵

THE MINIMUM WEEKLY COMPENSATION

The principal difference between temporary and permanent total disability in regard to the weekly minimum is the somewhat greater prevalence of provisional minimums for temporary scales. In 1915 this difference had not yet appeared, six laws applying an actual wage proviso to total disability claimants, whether temporarily or permanently injured. The weighted average provisional minimum was \$5 per week. The weighted average of twelve definite minimums in 1915 was \$4.48 per week. The Idaho law, passed in 1917, was definite with reference to permanent, but provisional for temporary, disabilities. A similar arrangement was adopted by amendment to the South Dakota law in 1919. Accordingly, while the balance for permanent total disability still slightly favored the definite minimum (nineteen laws to seventeen), the opposite (seventeen laws to nineteen) was true for temporary total disability. By January 1, 1920, the weighted average provisional minimum had risen from \$5.00 to \$5.65 per week, while the average definite minimum had risen from \$4.48 to \$6.08 per week.

The disparity in application of the weekly minimum between permanent and temporary total disabilities increased during the twenties. Idaho abandoned this difference in treatment except after expiration of 400 weeks. The Utah law, however, was amended to include an actual wage proviso for temporary claimants, and the Missouri law, passed by referendum in 1925, fol-

³⁴ California, Colorado, Florida, Pennsylvania, Maryland, and Oklahoma.

³⁵ New Mexico, Ohio, Utah, and Washington.

lowed suit. The new laws of Georgia, the District of Columbia, and the Longshoremen included an actual wage proviso of general application. On January 1, 1930, the weighted average of twenty-three provisional minimums had increased from \$5.65 to \$7.19 per week. The average of sixteen definite minimums had increased from \$6.08 to \$7.59 per week.

During the thirties an amendment to the Oregon law established a monthly minimum which in temporary disability cases was made subject to an actual wage proviso. Except for this change, the temporary disability scale shared in the trend away from the provisional minimum and toward use of the full-time wage base described above.³⁶ Over the decade, the weighted average provisional minimum (twenty-four laws in 1940) rose from \$7.19 to \$7.87 per week, while the average definite minimum (eighteen laws in 1940) remained at \$7.59 per week.

RATE OF AND MAXIMUM WEEKLY COMPENSATION

Except for an amendment to the Oregon law departing from the system of pensions based on need in temporary disability cases, the rate of and maximum weekly compensation have been the same for permanent as for temporary total disability. Progress of legislation in these particulars has already been described.³⁷ The average rate of compensation (weighted for coverage) rose from 57.9 per cent to 62.3 per cent of past earnings during the war years; to 63.6 per cent during the twenties; and to 63.7 per cent during the thirties. The average weekly maximum rose from \$12.23 to \$14.38 between 1915 and 1920; to \$19.34 during the twenties; and to \$20.13 during the thirties. The higher rates of compensation represented a gain for workers in all periods, although restricted in some cases by lack of corresponding adjustment in the weekly maximum.³⁸ The increases in maximum failed to keep abreast of price increases during the first World War, but the average "real" weekly maximum rose throughout the years of peace that followed. Cost of living comparisons over long periods of time are not altogether satisfactory because of changes in buying habits. So far as we can judge the purchasing value of compensation payments from the movement of cost of

³⁶ See above, pp. 86-87, 106-107, and 134.

³⁷ See above, pp. 101, 103, and 106.

³⁸ See the discussion of this point above, pp. 81, 144-145.

living indices, it seems clear that the average "real" maximum weekly compensation increased substantially from 1915 to 1940. The national average cost of living index rose from 72.5 in 1915 to 100.2 in 1940, an increase of 38.5 per cent.³⁹ Between January 1, 1915, and July 1, 1940, we have seen, the weighted average weekly maximum rose from \$12.23 to \$20.13, an increase of 64.6 per cent.⁴⁰

MAXIMUM DURATION AND AWARDS

The different attitude rather generally assumed toward duration of compensation for temporarily as compared with permanently incapacitated workers was already manifest by 1915. Four laws, while compensating permanent total disability for 400 weeks, would in no case compensate temporary total disability for more than 300 weeks.⁴¹ Temporarily injured workers in California and Nebraska could claim the same number of weeks of full compensation as permanently injured workers, but they were not paid the subsequent life pensions at reduced rates. In West Virginia compensation of temporary disability was sharply limited (26 weeks, subject to extension for 26 more weeks at the discretion of the commission), but in permanent total cases duration was unlimited. There were similar differences in total award as well. After receipt of a death benefit (not to exceed \$3500), temporary claims in Illinois were extinguished, but permanent total claimants were paid from 8 to 12 per cent of the death benefit as a life annuity. The Maryland act allowed no award in excess of \$3750 in temporary cases, but would allow awards up to \$5000 for permanent total disability. The Ohio total disability limit of \$3750 did not apply if the disability was permanent.

On January 1, 1915, eighteen laws limited duration of tempo-

³⁹ *Monthly Labor Review*, LI (1940), 1557, table 4, and LIV (1942), 1362, table 4. For a description of the method of computing the indices and the cautions required in using them see "The Bureau of Labor Statistics' New Index of Cost of Living," *Monthly Labor Review*, LI (1940), 367 ff.

⁴⁰ These indications are obviously not precisely comparable. The cost-of-living data refer to wage earners and lower-salaried workers in large cities. Workmen's compensation covers higher-salaried workers (and salesmen and agents working for commissions) as well, whether or not residing in large cities. But the difference in rate of increase is so much greater than the margin of error that the conclusion seems, nevertheless, quite safe.

⁴¹ Iowa, Louisiana, Minnesota, and New Jersey.

rary disability payments, the weighted average limitation being 388.4 weeks. Eight laws had a specific maximum award averaging \$3189. By January 1, 1920, the number of laws limiting duration of temporary disability payments had risen to thirty-three, and because some of the new laws set lower limits, the average limitation declined slightly to 372.2 weeks. The number of laws with a maximum award for temporary disability increased to eighteen, and the weighted average maximum to \$4006. This increase of over 25 per cent hardly compensated for the nearly 100 per cent increase in cost of living, nor for the even larger increase in industrial wages.⁴²

Six of the eighteen new laws adopted in this five-year period differentiated between permanent and temporary total disability with reference to maximum duration. The Montana and Oklahoma laws set smaller maximums for temporary disability. The Alabama and Tennessee laws limited compensation for temporary total disability to 300 weeks, limited full compensation for permanent total disability to 400 weeks, and provided subsequent reduced compensation for these permanent cases for 150 weeks. The Utah and Idaho laws provided reduced compensation for life in permanent total cases after specified periods of full compensation. During this same period the New York law was amended to waive the maximum award for total disability in permanent cases.

The Missouri law, approved in 1925, differentiated permanently from temporarily incapacitated workers. The duration of full compensation was longer for temporary claimants (400 weeks compared to 300 weeks), but subsequent reduced payments for life were made available to those permanently incapacitated. By January 1, 1930, thirty-five states were limiting the duration, and twenty-two the amount, of temporary disability compensation. The corresponding numbers for permanent total disability were thirty (duration) and nineteen (amount). The weighted average duration for those limiting temporary disability payments was 392.3 weeks; for those limiting permanent total disability payments, 475.5 weeks. The average of the twenty-two maximum awards (weighted for coverage) for temporary disability was \$5282; the average of the nineteen for permanent total disability was \$6036.

⁴² See above, p. 82.

During the following decade the average maximum duration for temporary disability rose fractionally to 393.5 weeks, and the average maximum award to \$5381. These averages compared with averages for permanent total disability of 468.3 weeks and \$6816. In 1935, Massachusetts joined those states compensating permanent total claimants at reduced rates after exhausting claim to benefits at the statutory rate. Minnesota, which had hitherto not limited the award for total disability, set a limit of \$10,000 for permanent total cases only. As a matter of fact, temporary claimants drawing the weekly maximum of \$20 for the maximum duration of 300 weeks could in no case draw more than \$6000.

On July 1, 1940, thirty-six laws contained a maximum duration, and twenty-five a maximum award, for temporary total compensation. At the same time, thirty laws contained a maximum duration, and nineteen a maximum award for permanent total compensation. Five of the thirty laws allowed subsequent reduced payments when the durational limit for permanent total disability was reached. Seven of the remaining durational limits are more generous than the corresponding limits for temporary total disability. But eighteen laws retain the same maximum duration and eighteen the same maximum amount for permanent as for temporary total disability. These limits apply to all permanent total cases, *but to only a tiny fraction* of temporary cases.⁴³ It is considerations such as these that lead inevitably to the conclusion that, in general, temporary disability is more generously compensated than any other degree of disability.

⁴³ See above, p. 141.

CHAPTER VIII

MEDICAL BENEFITS

INDUSTRIAL INJURIES not only interrupt employment, thereby resulting in wage loss, but also require medical care and treatment. There has been a strong tendency in discussing accidents and their compensation to emphasize unduly compensation of wage loss. This matter was long ago placed in its proper perspective by F. M. Williams, then on the Connecticut Workmen's Compensation Commission, in the following statement of objectives: "(a) The main object to be accomplished is the prevention of industrial accidents. This can never be entirely brought about and, therefore, in practice, our efforts are to make such accidents as few as possible. (b) Given the victim of an industrial accident, the most important factor of the problem is the restoration of such victim to his proper niche in the industrial world with the least possible impairment of earning power. (c) The actual payment of money for incapacity or loss of member, or function, while a vital necessity, is really subordinate to the two fundamental objects."¹

Medical care is required not only for the relief of suffering due to industrial injury, but to restore the earning capacity of the injured as rapidly and as completely as possible. Any avoidable disability not only represents a loss to the family concerned and to society, but may also prolong the period during which compensation must be paid. As Downey has pointed out, "avoidable disability is very often the price of insufficient medical care."² Neglected infection caused the death of eleven injured workers in Massachusetts during the six months ending December 31, 1938. Seven of these workers were suffering from cuts and two from

¹ F. M. Williams, "Should Medical Service Be Limited in Compensation Cases?" *Proceedings of the Fifth Annual Meeting of the International Association of Industrial Accident Boards and Commissions . . . 1918*, U. S. Bureau of Labor Statistics Bulletin No. 264 (1919), 152. Cf. also I. S. Falk, *Security Against Sickness* (1936), p. 296: "The purposes of workmen's compensation are: first, prevention of industrial accidents and injuries; second, the provision of medical service; and third, cash compensation."

² E. H. Downey, *Workmen's Compensation* (1924), p. 59.

bruises that would certainly have yielded to treatment had infection not been allowed to set in. Thirty-two cases involving amputation or loss of use of a limb were reported as involving infection in the same period.³ In some of these cases amputation may have been made necessary by spreading infection. Ankylosis (stiffening of joints) frequently results from failure to use appropriate operative or other procedures. Failure to treat a fracture promptly or properly may make the difference between quick, correct setting and improper setting resulting in malformation and requiring resetting. Inexpert care may be as expensive as insufficient care. Dawson observes that "compensation officers mention instances of serious harm done by bandages that were too tight, of permanent impairment of function because plaster casts were left on too long, and even of skull fractures that were overlooked until the patient died and an autopsy brought to light the unsuspected cause of his unwillingness to return to work."⁴

The wage loss due to such injuries as do not outlast the waiting period is uncompensated, but medical benefits are not subject to a waiting period. The number of persons receiving medical benefits is accordingly much larger than the number receiving compensation. During the six months ending December 31, 1938, for example, Massachusetts claimants received compensation in only 10,999 cases but received medical benefits in 53,131 cases. In 34,665 cases no time was lost from work, but medical care was required, and benefits amounting to nearly \$292,000 were awarded. In 7878 cases the time lost from work did not exceed the waiting period (seven days), yet medical benefits amounting to over \$105,000 were awarded. The medical benefits awarded in these non-compensable cases represented nearly one-third of the total medical benefits awarded.⁵

Because the need for adequate and competent medical care is closely related to the probable cost of compensation, it is unwise to seek to escape indemnifying minor medical claims by such a

³ *Six Months Report of the Department of Industrial Accidents . . . July 1, 1938 to December 31, 1938*, [Massachusetts] Public Document No. 105 of 1938, p. 9.

⁴ Marshall Dawson, *Problems of Workmen's Compensation Administration*, U. S. Bureau of Labor Statistics, Bulletin No. 672 (1940), p. 95.

⁵ *Six Months Report of the Department of Industrial Accidents . . . July 1, 1938 to December 31, 1938*, [Massachusetts] Public Document No. 105 of 1938, p. 20.

device as a waiting period. The case for indemnifying all necessary medical care is very strong. This is true even from the employer's standpoint, although in some cases involving a high degree of permanent disability he may profit from medical claim-parsing.⁶ From a social standpoint there can be no justification for cutting off medical payments except where the need is no longer bona fide. The period of convalescence is not usually precisely determinate, and this condition is complicated by the tendency of some individuals to derive a growing satisfaction from care and attendance. Indemnification for expense of healing, and even for appliances such as artificial members, should be made, but not for hypochondria.

PRESENT PROVISIONS FOR MEDICAL BENEFITS

The California law provides for unlimited medical care in broad terms. "Medical, surgical and hospital treatment, including nursing, medicines, medical and surgical supplies, crutches and apparatus, including artificial members, which is reasonably required to cure and relieve from the effects of the injury shall be provided by the employer. In the case of his neglect or refusal seasonably to do so, the employer is liable for the reasonable expenses incurred by or on behalf of the employee in providing treatment."⁷ Only twelve laws provide medical benefits unlimited either in time or amount,⁸ but thirteen laws give discretionary power to the proper authority to extend the period during which medical benefits may be paid, while ten laws give similar discretion in the amount of medical benefits.⁹

The case against limiting medical payments in deserving cases is very strong indeed. The attitude of a surgeon whose services are asked in a compensation case is in point. Surgery is not

⁶ Dawson cites several situations in which amputations are made rather with a view to minimizing the cost of benefits than to the usefulness of the remaining part of the member (*Problems*, p. 95).

⁷ California Workmen's Compensation Act, part 2, chap. 2, art. 2, par. 4600.

⁸ California, Connecticut, District of Columbia, Idaho, Illinois, Minnesota, Nebraska, New York, North Dakota, U. S. Civil, U. S. Longshoremen's Act, and Wisconsin.

⁹ Discretion to grant extension of period: Arizona, Delaware, Georgia, Kentucky, Maine, Massachusetts, Missouri, Nevada, North Carolina, Oklahoma, South Carolina, Texas, and Virginia. Discretion to grant additional amount: Delaware, Florida, Iowa, Kansas, Maine, New Jersey, Ohio, Oregon, West Virginia, and Wyoming.

carpentry, and he cannot state exactly how long the convalescence will continue. Yet, if it is a serious case, he may have no certainty of being compensated if the convalescence exceeds a stated period or requires more than a given sum for fee, medicines, apparatus, and so forth. Who can blame him if he chooses not to accept cases that may be thus interrupted? Why should the medical cost of industrial injuries revert after a brief period to a charity ward basis?

Reëxamination of medical claims by a competent authority may be a highly desirable protection against hypochondriacs and fraudulent claimants. A limit to medical service that is subject to a genuine discretion so based and so administered as to allow full compensation in all deserving cases is perhaps even preferable to unlimited medical compensation. The test of such a provision is ultimately its administration. Discretionary grants of additional medical care usually follow a hearing at which representatives of both the injured and his employer or insurance carrier are heard. As Dodd has pointed out, the value of a physician's services is rated by some employers and insurance carriers according to his competence as a witness.¹⁰ It is pleasant to be able to add that there is an increasing tendency on the part of both employers and insurance carriers to view medical compensation at once more humanely and more intelligently.

As the California wording makes clear, adequacy of medical benefits is more than a matter of the period during which benefits may be drawn, or the amount that may be drawn. The quality as well as the quantity of medical services available may vary. This variation may consist not only in the breadth of the concept of medical care, but also in the conditions under which the attending physician is chosen. Only four laws provide that the employee may freely choose a doctor at the expense of his employer or the latter's insurance carrier.¹¹ Employees may choose from a panel of physicians in two states, publicly named in New York, but named by the employer in Wisconsin. Elsewhere the employer's plea that, as the man who pays the bills, he should "naturally" have the right to choose the doctor, has been accepted. Such a

¹⁰ W. F. Dodd, *Administration of Workmen's Compensation* (1936), p. 491. See also pp. 295-303 for a critique of medical testimony.

¹¹ Massachusetts, North Dakota, Ohio, and Rhode Island. The Ohio provision does not apply to employees of self-insuring concerns. For a discussion of "self-insurance" see below, pp. 230-233.

TABLE 19

LIMITS TO MEDICAL BENEFITS PROVIDED IN ORIGINAL AND 1940 LAWS

	Maximum duration		Maximum amount	
	Original act	1940 act	Original act	1940 act
Ala.....	60 days	90 days	\$100.00	\$200.00
Ariz.....	No provision ^a	90 days ^b	No provision ^a	...
Ark.....	60 days ^c	60 days ^c	...	...
Calif.....	90 days	...	...	...
Colo.....	30 days	4 months	100.00	500.00
Conn.....	30 days	...	...	...
Del.....	14 days	30 days ^c	25.00	150.00 ^c
D. C.....	...	...	...	...
Fla.....	...	...	250.00	250.00 ^d
Ga.....	30 days	10 weeks ^c	100.00	500.00
Idaho.....	...	...	...	...
Ill.....	8 weeks	...	200.00	...
Ind.....	30 days	90 days ^e	...	...
Iowa.....	2 weeks	...	100.00	100.00 ^f
Kansas....	No provision ^a	...	No provision ^a	100.00 ^d
Ky.....	90 days	90 days ^c	100.00	200.00
La.....	...	...	100.00	250.00
Maine.....	2 weeks	30 days ^c	30.00 ^c	100.00 ^c
Md.....	...	...	150.00	500.00
Mass.....	2 weeks	2 weeks ^c	...	...
Mich.....	3 weeks	90 days	...	...
Minn.....	90 days	...	100.00 ^g	...
Mo.....	60 days	90 days ^c	250.00 ^c	750.00
Mont.....	2 weeks	6 months	50.00 ^h	500.00
Nebr.....	3 weeks	...	200.00	...
Nevada....	No provision ^a	6 months ⁱ	No provision ^a	...
N. H.....	No provision ^a	30 days	No provision ^a	...
N. J.....	2 weeks	...	50.00	100.00 ^c
N. Mex....	3 weeks	...	50.00	400.00
N. Y.....	60 days	...	...	...
N. C.....	10 weeks ^c	10 weeks ^c	...	...
N. Dak....	...	...	...	...
Ohio.....	...	...	200.00	200.00 ^c
Okla.....	15 days	60 days ^c	...	...
Oregon....	...	...	250.00	250.00 ^c
Pa.....	14 days	60 days	25.00 ^j	150.00 ^k
R. I.....	2 weeks	...	...	200.00 ^l
S. C.....	10 weeks ^c	10 weeks ^c	...	...
S. Dak....	4 weeks	20 weeks	100.00	300.00
Tenn.....	30 days	30 days ^c	100.00	200.00
Texas.....	1 week	4 weeks ^m	...	...
U. S.....	No provision	...	No provision	...
Utah.....	...	...	200.00	500.00

TABLE 19 (Continued)

	Maximum duration		Maximum amount	
	Original act	1940 act	Original act	1940 act
Vt.	14 days	2 weeks ^a	\$75.00	\$50.00
Va.	30 days ^e	60 days ^o	...	...
Wash.	No provision	... ^p	No provision	...
W. Va. ....	...	...	150.00	800.00 ^q
Wis.	90 days	...	...	...
Wyo.	No provision	...	No provision	150.00 ^r

- ^a Except in fatal cases where no dependents are left.
- ^b Additional services up to one year in all may be obtained by order of the commission.
- ^c More may be obtained by order of the Commission.
- ^d Additional amounts up to \$500 in all may be obtained by order of the commission.
- ^e More may be furnished at employer's option, and must be accepted unless commission orders otherwise.
- ^f Additional amounts up to \$400 in all may be obtained by order of the commission.
- ^g Additional amounts up to \$200 in all may be obtained by order of the commission.
- ^h Except in cases where concern or injured has hospital contract.
- ⁱ Additional services up to 18 months in all may be obtained by order of the commission.
- ^j Unless major surgical operation is needed, then \$75 is maximum.
- ^k Additional amounts may be obtained for hospitalization.
- ^l But \$50 additional may be obtained for hospital care lasting more than 14 days.
- ^m But services not to exceed 91 days may be obtained by order of the commission.
- ⁿ But if hospitalized, maximum duration is 30 days, and maximum amount \$100.
- ^o Additional services not to exceed 180 days may be obtained by order of the commission.
- ^p During disability, unless suffering permanent total disability, in which case medical compensation ceases after the award is made.
- ^q Additional amounts up to \$1600 in all may be obtained by order of the commission.
- ^r Additional amounts not to exceed \$200 for medical care and \$300 for hospital care may be obtained by court authorization.

“natural” right appears hardly consistent with the basic principles of workmen’s compensation. It is doubtful whether the employer *ultimately* pays either medical or compensation costs to any considerable extent. Under the contributory laws of Arizona, Nevada, and Washington, even in the first instance his legal duty to pay them is only partial. Under the laws of Colorado, Idaho, Montana, and Oregon injured employees may be treated in coöperative hospitals, to the maintenance of which employees contribute.

The case for free choice of a physician by the employee is stronger in its negative than its positive aspects. It seems clear that in cases where the physician represents the employer or insurance carrier there is a danger that the period of care may be curtailed, or the decision on type of care may be made with reference to shortsighted pecuniary calculations. On the other hand, collusion also may occur between employees and doctors.¹² Even more likely is the possibility that the choice of the employee may be made with little reference to the qualifications of the selectee for the treatment required. Experience with panels so far is

¹² See Falk, *Security*.

limited, but they seem well adapted to the needs of industrially injured patients for medical care.¹³

Where limits may not be relaxed except at the option of the employer or in hospitalized cases, they often work severe hardship. The maximum duration is fourteen days in Vermont (thirty days if hospitalized) and thirty days in New Hampshire and Tennessee (but, at the option of the employer, longer in the latter state). Such limits rigidly applied are completely out of keeping with present tendencies in medical benefit scales. The situation is a little more favorable in regard to maximum medical fees. Vermont employers and insurance carriers cannot be compelled to pay more than \$50, nor Pennsylvania employers and insurance carriers more than \$150 (unless hospitalized). At the other extreme, claimants in Montana and Nevada may draw medical benefits for six months, and claimants in West Virginia may draw up to \$800.¹⁴ The commonest limits are ninety days and \$200, but these limits generally may be relaxed. The commonest flat limit is \$500.

THE DEVELOPMENT OF MEDICAL BENEFIT SCALES

The development of the medical benefit scale is set forth in Table 20. Recognition of the relation of medical care to compensation was slow in coming. Of twenty-four laws in force on January 1, 1915, six failed to provide medical benefits except in fatal cases in which no dependents survived.¹⁵ Eighteen laws provided for medical benefits, but thirteen of them limited the period during which they might be drawn and ten limited the amount that might be drawn. None of these early laws failed to limit medical payments in some way, but the Minnesota law gave its commission discretionary authority to exceed its \$100 maximum. The limits in effect on January 1, 1915, were extremely restrictive. The maximum durations ranged from seven to ninety days and averaged (weighted for coverage) 43.6 days. The maximum amounts ranged from \$50.00 to \$250.00; and the weighted average was \$136.01.

¹³ See Dodd, *Administration*, pp. 445-469, 475-478.

¹⁴ But both the Nevada and West Virginia commissions may make additional awards not to exceed, in all, 18 months and \$1600.

¹⁵ Arizona, Kansas, Nevada, New Hampshire, U. S. Civil, and Washington.

TABLE 20
DEVELOPMENT OF MEDICAL BENEFIT SCALE, 1915-1940

	Number of compensation acts			Weighted averages		
	providing medical benefits ^a	limiting period	limiting amount	limiting neither period nor amount	Maximum duration (days)	Maximum amount
Jan. 1, 1915	18	13	10 ^b	0	43.6	\$136.01
Jan. 1, 1920	40	20 ^c	25 ^d	6	46.6	134.14
Jan. 1, 1930	47	26 ^e	25 ^f	12	49.2	154.65
July 1, 1940	50	24 ^e	25 ^f	12	63.0	258.12

^a In cases other than fatalities where there are no dependents.
^b But one law permitted the commission to exceed the maximum amount.
^c But seven laws accorded the commission discretion to award benefits for longer periods.
^d But seven laws permitted the commission to exceed the maximum amount.
^e But 13 laws accorded the commission discretion to award benefits for longer periods.
^f But ten laws permitted the compensation authority to exceed the maximum amount.

The ensuing five years were years during which the compensation principle was rapidly extended, and during which inclusion of medical benefits in a workmen's compensation law came to be regarded as indispensable. Some increases in existing scales occurred, and some tendency to do away with limits to medical payments appeared, but the weighted averages changed but little in this period. Four of the laws which had provided no general medical payments in 1915 were amended to provide them, leaving only the Arizona and New Hampshire laws without such provision. None of the new laws failed to provide for medical care. By this time, too, in five states existing limits were often discretionary in duration, and in six states discretionary in amount. Five laws were amended to raise the maximum duration, and five new laws contained a maximum duration higher than the 1915 average.¹⁶ Three laws were amended to abandon any period limitation, and four of the new laws contained no such limitation.¹⁷ Nine new laws contained a maximum duration lower than the 1915 average, but the weighted average rose, nevertheless, from 43.6 days to 46.6 days.¹⁸

Only the Louisiana law was amended to raise the maximum amount, but three new laws contained maximum amounts larger

¹⁶ Amendments: Iowa, Michigan, New Jersey, Rhode Island, and Texas. New laws: Alabama, Colorado, Kentucky, Oklahoma, and South Dakota.

¹⁷ Amendments: California, Connecticut, and Nebraska. New laws: Idaho, North Dakota, Utah, and Wyoming.

¹⁸ Delaware, Indiana, Maine, Montana, New Mexico, Pennsylvania, Tennessee, Vermont, and Virginia.

than the 1915 average, and three contained no amount limitation.¹⁹ Ten new laws contained maximum amounts smaller than the 1915 average, and the weighted average declined slightly from \$136.01 to \$134.14.²⁰

During the next ten years the need for medical care and its close relation to the cost of compensation became more clearly recognized. Acceptance of medical benefits as an integral part of workmen's compensation became universal when Arizona and New Hampshire adopted medical provisions. Existing limits to duration were discretionary in fourteen states, and to amount in eleven states. A considerable proportion of laws were amended to provide more generous medical payments. The weighted average duration rose from 46.6 days to 49.2 days, and the weighted average amount from \$134.14 to \$154.65. Seven laws raised their maximum durations, and ten their maximum amounts.²¹ Two laws abandoned limits altogether; three abandoned period limitations; and one gave up its amount limitation.²² The new Longshoremen's Act, subsequently made applicable to the District of Columbia, provided unlimited medical benefits. The North Carolina act avoided an amount limitation, while adopting a more than usually generous period limitation of ten weeks, with discretionary authority to exceed it. The new Missouri law set limits more generous, while the new Georgia law set limits less generous than those hitherto prevailing.

The upward trend of medical benefit scales continued with increasing tempo during the thirties. Seven laws were amended to raise their maximum durations, ten their maximum amounts.²³ Four abandoned the period limitation, one the amount limitation.²⁴ The new laws contained only one limit, those of Arkansas and

¹⁹ Higher maximums: Colorado, South Dakota, and Utah. No maximum: Indiana, North Dakota, and Virginia.

²⁰ Alabama, Delaware, Kentucky, Maine, Montana, New Mexico, Pennsylvania, Tennessee, Vermont, and Wyoming.

²¹ Duration: Colorado, Delaware, Montana, Nevada, Rhode Island, Texas, and Virginia. Amount: Colorado, Delaware, Louisiana, Maryland, Montana, New Jersey, New Mexico, South Dakota, West Virginia, and Wyoming.

²² All limits: Illinois and Minnesota. Period limit: New Jersey, New Mexico, and New York. Amount limit: Nebraska.

²³ Period limit: Alabama, Georgia, Indiana, Missouri, New Hampshire, Pennsylvania, and South Dakota. Amount limit: Alabama, Delaware, Georgia, Iowa, Kentucky, Missouri, New Mexico, Pennsylvania, South Dakota, and Tennessee.

²⁴ Period limit: Iowa, Kansas, Rhode Island, and Wisconsin. Amount limit: Oklahoma.

South Carolina having a maximum duration, and that of Florida a maximum amount. All three provisions were more generous than the 1930 average. The weighted average maximum duration rose from 49.2 days to 63.0 days, and the weighted average maximum amount from \$154.65 to \$258.12.

In general, the progress of medical benefit scales has been more rapid and more satisfying than the progress of compensation scales. This fact is reflected in the relative change in the costs of medical care and of compensation.²⁵ Between 1915 and 1940 the weighted average maximum duration rose nearly 50 per cent and the weighted average maximum amount nearly 100 per cent. The corresponding changes for fatal dependency compensation were -14 per cent and +55 per cent respectively; and for permanent total disability, -2 per cent and +74 per cent respectively. The changes were even less favorable for permanent partial disability.²⁶

Although medical benefit scales have been revised upward more sharply than compensation benefit scales, this has not produced adequate medical care in all jurisdictions, nor eliminated all abuses in this sphere. The most serious abuse is the prevalence of "contract" practice, a system under which employers and insurers commit all industrial injuries requiring medical treatment to a single physician or hospital association for a fixed periodic fee. The laws of Arizona, Nevada, and Washington permit employees to "contract out" of their state medical insurance arrangements by making direct contracts for medical services. The employer may also deduct one-half the cost from his employee's pay. The laws of Oregon, Idaho, Montana, and Utah, while containing no system of state assessments for medical aid, specifically recognize the validity of medical aid contracts with physicians and hospital associations, and permit employee contributions. Similar sections in the laws of California, Colorado, New Mexico, and Wyoming avoid only the contributory feature. The most serious aspect of "contract practice" is the temptation presented to the hospital or association to cut corners in seeking low costs. Low cost may result from mass handling of medical treatment, even though administered with complete honesty, and specialization in industrial medicine and surgery may result in better care as well as lower

²⁵ See Chapter XV, pp. 270-272.

²⁶ See the tables on the development of the scales of compensation for death, permanent total, and permanent partial disability, above, pp. 76, 100, and 123.

cost. Investigations have almost invariably indicated, however, that medical care under "contract practice" is of lower quality, often dangerously lower. The brutal fact is that it is sometimes cheaper to amputate than to restore, and that a fatal claim is often less costly than a permanent claim. "Contract practice" is unhappily not confined to the states mentioned, but is much more prevalent there, especially since 1935, when New York and West Virginia amended their medical aid provisions.²⁷

It is only fair to add that an increasing number of employers and insurance carriers provide medical care in excess of the limits specified in workmen's compensation laws. There is a growing recognition that adequate medical care tends to reduce the overall cost of compensation by minimizing the seriousness of the injury and the period of disability.

²⁷ Cf. Williams, Pierce, *The Purchase of Medical Care Through Fixed Periodic Payments* (1932).

SUMMARY OF PART II

AT THE BEGINNING of Part II certain questions were raised regarding workmen's compensation benefits. We may inquire how far the analysis presented above makes it possible to answer these questions.

How severe are the limits to compensation for the several degrees of disability? Only six states have limited neither the duration nor the amount of compensation for death, but sixteen laws have made such provision for permanent total disability. New York is the only large industrial state which has placed no arbitrary limit on time or amount of death benefits. Easily the most common maximum duration is 300 weeks (less than six years) and only one-fourth of the maximums exceed seven years. The most common maximum amount is \$5000, and only the North Dakota maximum exceeds \$8000. Limits to total compensation for permanent total disability are more generous, the most common maximum duration being 500 weeks and the most common maximum amount \$6000. In eight of the states which limit both period and amount of death benefits, and in six of those so limiting compensation of permanent total disability, the figure for total compensation is sufficiently low to curtail the stated maximum duration for all awards within a few dollars of the weekly maximum. Maximum periods and amounts, where operative, apply to all fatal and permanent total cases, and are severely restrictive. But they apply to only a tiny fraction of one per cent of temporary cases.

A maximum weekly compensation applies to fatal cases in thirty-six jurisdictions, to permanent total cases in forty-three jurisdictions, to temporary cases in forty-four jurisdictions, and to permanent partial cases in forty-six jurisdictions. The levels vary little with degree of disability. They are generally within the range from \$12 to \$25, and average about \$20. For the most part they are so low as to be severely restrictive. Given a statutory rate of $66\frac{2}{3}$ per cent and a weekly maximum of \$20, all who average over \$30 weekly must be content with less than $66\frac{2}{3}$ per cent of past earnings.

Are present standards adequate as a result of upward revision? The statutory rate of compensation has undergone a gradual but steady increase, particularly during the past decade. The nearly universal 50 per cent of past earnings has become an almost equally common 65 or $66\frac{2}{3}$ per cent. Eight states, however, still retain the 50 per cent rate. The rate of compensation must be considered in relation to the method of computing past earnings. If annual earnings are divided by 50 or 52, this makes no allowance for unemployment, partial or total. If the wage at the time is accepted, or weeks of unemployment are subtracted, spells of total unemployment are eliminated from the wage base. Laws which specify that a full-time wage shall be the base, or that average daily earnings shall be multiplied by the number of days in a normal full-time work-week, eliminate both total and partial unemployment from the wage base. There has been progress in this matter, especially during the thirties. Yet unemployment spells are ignored in five laws, and, except as the commission may act, in two additional laws, while six laws exclude them only if they exceed seven consecutive days. Six laws exclude total unemployment by accepting the wage at the time of the injury, and another by ignoring weeks not worked. Elsewhere the basis of compensation is normal full-time earnings.

A related feature of the benefit scale is the structure of the minimum weekly compensation. Fearful that malingering will surely occur if a worker can receive more while not working than while at work, many jurisdictions have provided that their weekly maximums apply only to workers whose actual wages are not lower. This is unexceptionable so long as "actual wage" means full-time wage. Twenty-three jurisdictions have a provisional minimum for temporary disability, but only nine of them fail to offer adequate assurance about the method of computing the "actual wage." Clearly the proper basis for comparison in weighing the danger of malingering is the amount which the injured would earn if at work, presumably full-time. Quite properly, statutory revision has brought about a sharp reduction in the use of the provisional minimum for permanent total disability, and an even sharper decline in its use for fatal cases.

Sixteen laws contain absolute waiting periods for which no compensation may be drawn. The most common period is a week, which seems too long if unrelaxed in cases of prolonged dis-

ability. Two laws have waiting periods longer than a week, which deny benefits to too large a proportion of injured workers.

Permanent partial disability where loss of a particular limb is not involved is covered only by a compensation liability that is not clear. A vigorous contest between employer (or insurance carrier) and employee often results in a compromise settlement by lump sum. Industrial causation is admittedly less clear in cases of nonlisted disability, claims are sometimes fraudulently made, and some claimants are suffering more from hypochondria than industrial injury. Workers with a genuine claim for nonlisted disability, nevertheless, have as clear a right to adequate compensation as those suffering from listed disability. Employers and insurance carriers seem unusually anxious to settle these cases, however, and often are quite successful in impressing workers with cash sums substantially larger than the familiar installments. There is danger that the atmosphere of the damage suit will return, and that a powerful means of "claim-paring" has been forged.

In general, compensation benefits are not yet adequate. Upward revision has not yet resulted in eliminating statutory rates of less than $66\frac{2}{3}$ per cent of past earnings, weekly maximums of less than \$25, and period or amount limitations in serious cases shorter than working-life expectancy. Safeguarding of provisional minimums, and of waiting periods in cases of prolonged disability, are not yet universal.

Have the increases kept pace with increases in wages and living costs? Over the period 1915–1940 weekly and total maximums more than kept pace with living costs. Whenever sharp rises have occurred, however, this has not been true. In the first World War the shrinkage in purchasing power exceeded one-third. A smaller shrinkage occurred during the second World War. Wage fluctuations have had a marked effect on the restrictiveness of the weekly maximum. In general, weekly maximums have been advanced hesitantly and inadequately in periods of wage increases. The contention that this is justified because peak wage levels would otherwise become the basis for permanent adjustments appears weak in view of the general persistence of the higher wage levels.

Have revisions of early scales produced a more rational and a more flexible scale? There have been improvements in these respects, but the answer on the whole is negative. One-half of

the states retain the flat percentage of earnings for fatal cases, regardless of dependence, overcompensating the lone dependent and undercompensating the large family. The provisional minimum is slowly disappearing in fatal compensation, but ten laws retain it, though certainly the dead do not mangle. The familiar offsets to malingering—avoidance of full compensation (that is, 100 per cent of past earnings), a weekly maximum, a provisional weekly minimum, and subsequent reduction in the rate of compensation—are all in use, the first two being in general use in compensation of permanent total disability. Considering the large number of able-bodied Americans who are unable to find steady employment much of the time, this fear that permanently incapacitated workers may mangle becomes incomprehensible. The hard result is that the latter and their families invariably suffer permanent impairment of the living standards to which they have been accustomed.

The most irrational systems of compensation are reserved for permanent partial disability. All, or nearly all, permanent partial cases suffer a "healing period" of total disability, some permanent disfigurement, and, if serious, some permanent impairment of earning capacity. Nearly half of the laws deduct payments during the "healing period" from the award for partial disability. Disfigurement is not widely compensated, and generally then only if facial and affecting earning capacity. Compensation for partial disability is not usually based on loss of earning capacity, perhaps because of fear that the will to recover will weaken if compensation payments are reduced as recovery occurs. All states except Massachusetts and California have adopted the extremely simple device of a compensation schedule for specific injuries, based on the type of injury. So many weeks of compensation are awarded for an arm, so many for a leg, regardless of age or occupation. This system, with its administrative simplicity, has been improved only by the gradual spread of recognition that the "healing period" should be separately compensated.

The closest approach to logically sound compensation for permanent partial disability has been worked out in California. The California scale is not more generous than most, but more flexible and more rational. A medical appraisal of the extent of disability is made soon after the injury, and a per cent of total disability computed. Payments based on this computed percentage are

made for periods varying with the age and occupation of the claimant. Although officials in other states throw up their hands at its administrative complexity, California has successfully administered this system for nearly thirty years.

A related difficulty is that encountered when a crippled worker suffers a second injury, especially when, having lost one of two limbs, he loses the second. In most laws no adequate provision has been made for this contingency. If the second injury is treated like any other permanent total case, employers will naturally be reluctant to hire workers who have lost a hand or an eye. If compensation is paid only for the limb lost in the second injury, the worker is inadequately compensated. In these cases the whole is not equal to, but exceeds, the sum of its parts. According to the severity scale of the American Standards Association, loss of one eye is 30 per cent of total incapacity, loss of both eyes, 100 per cent. Fourteen laws now provide a second injury fund, most commonly based on payments in fatal cases where there are no dependents. The employer is asked to pay only for the loss of the individual member, and the balance of a permanent total award is paid out of the second injury fund. This procedure offers the worker more adequate compensation while also protecting him against hiring discrimination.

Waiting period provisions are usually stated so as to apply to all disabling injuries, but retroactive provisos merely postpone compensation for the waiting period in serious cases. But what of the scope of the waiting period in the sixteen states which have adopted no such proviso? Only one of these laws specifically confines the waiting period to temporary injuries. Three laws use the term "incapacity," which appears to connote total disability, and six laws use the term "disability," also including thereby partial disability. Four laws use the term "injury," which is broad enough to include fatalities. Yet, except in minor injuries, a waiting period has no rational basis.

Do present provisions for medical benefits answer the needs of injured workers? Are the limits to medical payments (still found in most laws) sufficiently flexible, and are they rational? Medical care is required not only to relieve suffering due to industrial injury, but to restore the earning capacity of the injured as rapidly and completely as possible. Prevention of industrial injuries and necessary medical care are more fundamentally important than

cash compensation. Unlike compensation for wage loss, medical benefits are not subject to a waiting period, and the number of medical claims is much greater than the number of compensation claims. The importance of medical care has received ever wider recognition, and this accounts for the fact that medical benefit scales have generally been liberalized to a greater extent than compensation scales.

Only twelve laws provide medical benefits unlimited either in time or amount. But thirteen other laws give the compensation authority discretionary power to extend the maximum period in deserving cases, and ten laws give similar discretion in regard to the maximum amount. Extremely restrictive limits are still found, however, and are rigidly applied. Under them medical care reverts after a brief time to a charity ward basis. The large industrial state of Pennsylvania retains an inflexible sixty-day limit, and provides compensation in excess of \$150 only for hospitalization. In Vermont the limits of two weeks and \$50 are raised to thirty days and \$100 in hospital cases.

Medical care is not simply a question of the *quantity* of service. A growing tendency to specify that benefits include the costs of nursing, medicines, dressings, crutches, and even artificial members, is manifest, although inclusion of all these items is not yet universal. Patients are interested also in the physician who serves. Except in six states, the employer's plea that, as the man who pays the bill, he "naturally" should have the right to choose the doctor, has been accepted. *Ultimately* the employer probably shifts the greater part of the cost of industrial injuries, and in seven western states even in the first instance employees contribute toward medical benefits. Selection by the employer or insurance carrier may result in decisions made less with reference to the interests of the patient or society than to shortsighted pecuniary calculations. Attempts to "control" medical costs have sometimes taken the form of contracts for medical care on a wholesale basis for a fixed fee, and the cut rates have usually resulted in curtailed services. Free choice by the employee, on the other hand, may be exercised with little reference to the physician's qualifications for the treatment required, and may even involve collusion in fraud. Two states have experimented with panels from which the employee may choose, named publicly in New York and by the employer in Wisconsin. Experience with panels

is limited, but they seem well adapted to the medical needs of industrially injured patients.

Table 21 represents an effort to present simply, perhaps oversimply, the relative levels of benefits provided in the several workmen's compensation laws. The basic computations were made by the National Council on Compensation Insurance, with appropriate warnings that its indications are not precise because of assumptions implicit in the method of computation.¹ The New York benefit scale is taken as standard and given a value of 1000, and all other benefit scales are expressed decimally in ratio to the New York scale. The range of the resulting decimal values is, as might be expected, considerable. The Wisconsin scale has a value of 1.145 (14.5 per cent more generous than the New York scale), while at the other extreme the Vermont scale has a value of 0.578 (42.2 per cent less generous than the New York scale). A breakdown of the scales by extent of disability would show even greater disparity. Eight laws are from 90 to 99 per cent as generous as the New York law, nineteen laws from 80 to 89 per cent as generous, and fifteen laws from 70 to 79 per cent as generous. Three laws, however, are from 60 to 69 per cent as generous as the New York law. These relationships must be regarded as only roughly accurate, but they show with accuracy sufficient for our purpose the great diversity among the several states in adequacy of workmen's compensation benefits.

The final column of Table 21 makes a similar comparison for medical benefits. Here it is made clear that there is less diversity in medical benefit scales than in compensation scales. It might be added that medical benefit scales are generally more adequate than compensation scales. The range of values in this column is much narrower, ten states sharing with New York the highest value of 1.000, and Vermont having the lowest value of 0.710. The range is thus only 0.290 as compared with 0.567 for the total scale. Only seven states have medical benefit scales less than 90 per cent as generous as the New York scale.

Benefit scales have been drawn more with regard to political exigencies—the clash of contending economic groups, fears regarding interstate competitive disadvantages, and the like—than to the nature of the economic losses sustained in the several de-

¹ For the complete table and explanation prepared by the National Council on Compensation Insurance, see Appendix.

TABLE 21

COMPARATIVE BENEFIT LEVELS OF AMERICAN WORKMEN'S
COMPENSATION LAWS, 1940

Index number group	Total benefits		Medical benefits	
1.000 and over	New York Wisconsin (1.145)		California Connecticut District of Columbia Idaho Illinois	Minnesota Nebraska North Dakota New York Rhode Island Washington
0.900 to 0.999	Arizona District of Columbia Minnesota Missouri	Nevada North Dakota Rhode Island South Carolina	Alabama Arkansas Arizona Colorado Florida Georgia Indiana Iowa Kansas Kentucky Louisiana Maryland Massachusetts Michigan Missouri Montana	Nevada New Mexico North Carolina Ohio Oklahoma Oregon South Carolina South Dakota Texas Utah Virginia West Virginia Wisconsin Wyoming
0.800 to 0.899	Arkansas California Connecticut Illinois Maine Maryland Massachusetts Michigan Nebraska New Jersey	North Carolina Ohio Oklahoma Oregon Texas Utah Washington West Virginia Wyoming	Delaware New Hampshire New Jersey	Pennsylvania Tennessee
0.700 to 0.799	Alabama Florida Georgia Idaho Indiana Iowa Kansas	Kentucky Louisiana Montana New Hampshire New Mexico Pennsylvania South Dakota Virginia	Maine Vermont (0.710)	
0.600 to 0.699	Colorado Delaware	Tennessee		
0.500 to 0.599	Vermont (0.578)			

Source: Prepared from a table furnished by the National Council on Compensation Insurance.

degrees of disability. The level of benefits has risen sharply since 1915, but the increases have been uneven, and they have not brought any marked improvement in logical consistency. The factors affecting the size of weekly installments—maximum and minimum rate—have undergone greater increases than the factors affecting the total award—maximum duration and amount. As a result compensation for temporary disability, which is seldom affected by period or amount limitation, has been liberalized to a greater extent than compensation for permanent disability or death. The weekly installments were substantially higher in 1940 than in 1915, even in “real” terms, but the wartime rises in cost of living have cancelled much of this progress. Medical benefits, originally denied altogether in six jurisdictions, have now won universal acceptance and widespread recognition of their importance. In general, they have been increased to a greater extent than wage loss compensation, and are more adequate.

PART III

THE PROPORTION OF WAGE LOSS COMPENSATED

INTRODUCTORY NOTE

THOSE to whom the expression "workmen's compensation" conveys no more than a vague concept of indemnification for industrial injuries quite commonly assume that injured workers are fully indemnified for the economic losses they suffer. This is most closely approximated in medical benefits, existing legal limits to which are largely discretionary. Losses of earnings, on the other hand, are never fully compensated, nor was it ever intended that they should be. With few exceptions, American compensation laws have expressly limited payments to a stated percentage of past earnings, usually between 50 and 70 per cent. Elsewhere payments have been in fixed amounts without regard to past earnings.

The existence of statutory percentages of past earnings has led many to assume that they represent the proportion of wage loss compensated. This assumption has sometimes been made the basis of arguments against liberalizing benefit scales. Thus during legislative hearings on the 1919 amendments to the Pennsylvania Workmen's Compensation Act the proposed nominal rate of 60 per cent was again and again attacked on the ground that it would disturb the hitherto equal distribution of the loss between the employer and the employee.¹ The actual distribution of loss effected under the then prevailing rate of 50 per cent appears to have been about one-sixth of the loss borne by the employers and about five-sixths by the employees. For statutory percentages of past earnings are only one of several factors bearing on the ratio of compensation to wage loss.

As has been indicated, all of the states which relate compensation to past earnings have fixed arbitrary limits to the size of installments, or to the period over which they may be paid, or to the total amount which they may aggregate.² About half of the state laws contain all of these types of limitation. For temporary dis-

¹ E. H. Downey, "Methods of Comparing Compensation Cost," U. S. Bureau of Labor Statistics Bulletin No. 281 (1921), p. 183.

² Cf. Tables 9, 11, and 14.

abilities even such victims as are not affected by any maximum or minimum must satisfy a waiting period requirement, although this is commonly relaxed if the disability persists beyond a stated period. Where the waiting period is not thus rendered retroactive, it usually affects not only temporary, but also permanent claims.³ The several combinations of these factors establish an average rate of compensation substantially below the statutory rate. Increases in the benefit scale have changed the distribution of the losses due to industrial injuries, but even today no state provides benefits that average as much as 50 per cent of wage loss.

³ Cf. above, p. 151.

CHAPTER IX

THE NATURE OF THE PROBLEM

THE PROBLEM IN TEMPORARY CASES

ESTIMATING the wage loss is simplest in cases of temporary total disability. In such cases it is a function of a generally determinate time loss and a generally known wage. The time loss may be secured by subtracting the date of injury from the date of return to work or determined conclusion of disability.¹ The weekly wage may usually be secured from the report of the injury. The ratio of compensation to wage loss in temporary total disability cases depends principally upon three factors: (a) the length of the waiting period and the retroactive provision if any, (b) the weekly maximum compensation, and (c) the weekly minimum compensation. A limited term of benefit and an aggregate maximum compensation are frequently provided in temporary disability scales, but apply to so tiny a proportion of the cases that they may virtually be ignored.²

Not so the waiting period.³ A waiting period of one week, for example, renders uncompensable 47.1 per cent of temporary disability cases, according to the distribution in the American Accident Table.⁴ Unless accompanied by a retroactive provision, it will also curtail all compensation claims to the extent of several (three to fourteen) days' benefits. Even with a retroactive proviso that payments will be from date of injury if disability persists more than twenty-eight days, it will sharply curtail payments to an additional 35 per cent of the injured. A flat waiting period divides potential claimants into two classes: those who can claim

¹ Pin-point accuracy cannot be expected even in temporary cases, for decisions regarding termination of disability cannot be made with preciseness. Workers are sometimes importuned to return to work before cured, and in other cases may feign protracted disability because of fears of unemployment.

² See above, p. 141.

³ See the discussion of the limiting effect of the waiting period, above, pp. 30 ff.

⁴ See the discussion of the nature, construction, and uses of this table, below, pp. 195-200.

no compensation because disabled for less than the waiting period, and those who, though compensated, can draw no benefit during the waiting period. A retroactive proviso has the effect of subdividing the second of these classes. Those whose disability is protracted beyond the waiting period but not sufficiently to bring into play the retroactive clause draw compensation for all except the waiting period. Those whose disability persists for a longer time eventually draw compensation for the full duration of their disability, unless a maximum period or amount limitation becomes effective.

If we distribute the prolonged disabilities listed in the American Accident Table we can gauge the effect of this division on the proportion of time loss compensable. Judging from the average duration of temporary cases in 1940, the 93,000 temporary cases in the American Accident Table may be presumed to have occasioned loss of 1,750,000 days.⁵ As indicated in the table, the injuries falling within a one week's waiting period involved 158,527 days lost, or about one-twelfth of the estimated total. Assuming a retroactive clause effective after four weeks of disability, a further loss of 244,342 days, or about one-eighth of the estimated total, would be uncompensable. These 244,342 days represent the first seven days of disability for those claimants disabled more than a week but less than four weeks. The total discount for the waiting period, judging from the American Accident Table, would thus be nearly 21 per cent. This substantial figure will surprise some readers, who may have felt that the waiting period had little effect, since it is the serious cases for which the bulk of compensation payments are made. What they fail to take into account, however, is the overwhelming proportion of industrial injuries that are of brief duration.

In examining the limiting effect of a given waiting period it is necessary to take into account the statutory rate of compensation.⁶ The commonest provision is for payment of $66\frac{2}{3}$ per cent of past average earnings after a waiting week. Assume a disability lasting three weeks to a worker earning \$24 a week. His wage loss will total \$72 for the three weeks, his compensation \$32 for the

⁵ For the basis of this estimate, see M. D. Kossoris and S. Kjaer, "Industrial Injuries in the United States during 1940," *Monthly Labor Review*, LIII (1941), 327 ff.

⁶ See the discussion of normal (or statutory) rates of compensation, above, p. 143.

two weeks. Only $44\frac{4}{9}$ per cent of his loss, therefore, is indemnified. The difference between this latter percentage and the statutory percentage, amounting to $22\frac{2}{9}$ per cent, may be called the discount for the waiting period. This discount varies with the length of disability as well as with the statutory rate and the length of the waiting period. Had the injury to our assumed worker lasted but two weeks, the discount would have been greater ($33\frac{1}{3}$ per cent), and his compensation would have been but $33\frac{1}{3}$ per cent of his wage loss. A four weeks' disability would have involved a discount of $16\frac{2}{3}$ per cent, and the compensation would have been half the wage loss. On the other hand, had our assumed worker resided in Iowa, which pays but 60 per cent of average wages and only after a two weeks' waiting period, he would have borne all except 20 per cent of the wage loss occasioned by a three weeks' disability. At the other extreme, such a worker in Wisconsin, with a three days' waiting period (retroactive after ten days) and a rate of 70 per cent, would receive 70 per cent of the wage loss in a disability lasting three weeks.

THE WEEKLY COMPENSATION

The statutory percentage of past earnings is only one factor bearing on the ratio of weekly compensation to weekly wage. Introduction of a maximum weekly compensation adds two factors that must be considered: (a) the rate of wages and (b) the weekly maximum. A change in the level of wages will alter the proportion of compensation claimants who feel the restrictive effect of a weekly maximum. In New York, for example, injured workers receive two-thirds of their wages but only up to compensation of \$25 a week. All workers who have earned more than \$37.50 a week will receive less than two-thirds of their past weekly earnings. In 1936 the average wage of injured workers was \$21.01; in 1937 it rose to \$22.61. The proportion of workers compensated at less than two-thirds of past earnings rose accordingly from 8.8 per cent in 1936 to 9.8 per cent in 1937.⁷

The weekly maximum must be considered in relation to other

⁷ The total number of cases for which wage determinations were made was 73,814 in 1936 and 78,549 in 1937. The number found to have earned over \$37 a week was 6,521 in 1936 and 7,734 in 1937 (New York State Department of Labor, Special Bulletin No. 202, 1939, *Cost of Compensation, Two Years, 1936 and 1937*, p. 34).

provisions influencing the amount of compensation. If Jones, employed at \$30 weekly in a New Jersey textile establishment, is disabled for four weeks, his wage loss will total \$120. The waiting period in this state is one week, the compensation rate $66\frac{2}{3}$ per cent, and the weekly maximum \$20. Jones would therefore receive \$20 weekly for three weeks, or \$60, just 50 per cent of his wage loss. Were his friend Smith, employed at the same rate in a Pennsylvania rayon establishment, to suffer an injury of equal severity, he would not make out quite so well. There the waiting period and rate for compensation are the same, but the weekly maximum is only \$18. Smith's total compensation would therefore amount to but \$54, or only 45 per cent of his wage loss. Suppose Jones's foreman in the New Jersey plant, earning \$40 a week, had been disabled for four weeks. His compensation would have been the same as that of his subordinate—\$60, although his wage loss would have been $33\frac{1}{3}$ per cent greater—\$160. He would therefore have received only $37\frac{1}{2}$ per cent of his wage loss.

Unlike the other factors affecting the proportion of wage loss compensated, the minimum weekly compensation tends to result in payments above the statutory rate of compensation. The extent of this buoyant tendency depends upon the nature and level of the minimum itself and the level and range of wage payments. If the minimum is absolute its scope will vary markedly with the volume of employment. If provisional, the scope of the minimum weekly compensation will be less influenced by variations in employment. In periods of widespread unemployment the bulk of claimants eligible for the minimum weekly compensation will probably be those who have been partially unemployed. The experience of Massachusetts is indicative. During the twenty-five-year period ending June 30, 1937, slightly over 6 per cent of all claimants were eligible for the minimum, but during the last five years of this period, years of widespread unemployment, the proportion was 14 per cent.⁸

The minimums were established to protect claimants against inhumanly low standards, while maximums were originally urged to offset the minimums. Actually, however, the weekly minimums have generally affected far fewer claimants than the weekly maxi-

⁸ Based on data contained in the annual reports of the Massachusetts Department of Industrial Accidents (Public Document No. 105).

mums. Only in the first two years of the operation of the Massachusetts workmen's compensation law was the number affected by the weekly minimum higher than that affected by the weekly maximum.⁹ For the twenty-five-year period ending June 30, 1937, 6.2 per cent of claimants were eligible for the minimum, while 37.8 per cent were eligible for the maximum. While the Massachusetts act is not the most liberal of compensation laws, it is decidedly more generous than the average. At present it provides in total disability cases payment of \$9.00, or actual wages if less than \$9.00, but in no case less than \$7.00, weekly. It is instructive to observe the effect of this minimum standard on the group eligible for the minimum weekly compensation in the two-year period ending June 30, 1936. In this period 7529 claimants had past average weekly earnings of from \$1.00 to \$13.50 weekly, and were therefore affected by the minimum. About 17 per cent of this number received from 67 to 69 per cent of past weekly earnings. Approximately 36 per cent received from 70 to 79 per cent of past weekly earnings. Nearly 21 per cent received 80 to 89 per cent; nearly 7 per cent, 90 to 99 per cent; and nearly 10 per cent, 100 per cent of past weekly earnings. Nearly 9 per cent, with past weekly earnings of less than \$7, nevertheless could claim \$7 weekly, and therefore received over 100 per cent of past weekly earnings. The 7529 claimants represented about 12 per cent of the total number of claimants in the state.¹⁰

THE PROBLEM IN FATAL CASES

Compensation in fatal cases differs from that in all other cases in that it is dependency compensation. Twenty-three laws provide a flat rate of compensation regardless of number and relationship of dependents.¹¹ For the jurisdictions concerned, the problem of relating weekly compensation to past weekly earnings is the same as in temporary cases. Four laws make payments on the basis of dependency alone regardless of past earnings.¹² Because

⁹ *Ibid.*

¹⁰ The Massachusetts indications are based on the annual reports of the state's Department of Industrial Accidents (Public Document No. 105), and, for the fiscal years 1935 and 1936, on a special tabulation of all cases made possible by the Department.

¹¹ See above, p. 67.

¹² See above, p. 67.

wage determinations are not made in these jurisdictions, it is impossible to compute the proportion of wage loss compensated. Elsewhere the compensation is related both to past earnings and to number and relationship of dependents. This is achieved by graduating the statutory percentage of past earnings; for example, 15 per cent for an orphaned child, 35 per cent for a widow, and 10 per cent for each child, but no more than 66.7 per cent.

Direct comparisons between compensation and wage loss in fatal cases should be made only after due allowance for differences in dependency situations. The deceased worker may leave no dependents, in which case no compensation is payable in most jurisdictions. Twelve laws provide for payment of a flat sum into a special fund in no-dependency cases. The most common use to which such payments are put is for partial compensation for a second permanent injury resulting in permanent total disability.¹³ The deceased worker may leave relatives only partially dependent on him, in which case compensation is ordinarily correspondingly less generous. Or he may leave a family of varying size, the members of which are entirely dependent on him. Clearly the proportion of wage loss compensated will vary markedly from one to another of these several dependency situations. The fairest direct comparison of the generosity of fatal compensation with other compensation should be based on the cases in which a family of normal size (widow and two or three children) is left.

In five laws the limits to the weekly compensation for death are expressed in terms of a basic wage instead of as a definite maximum or minimum amount.¹⁴ Thus the Pennsylvania law specifies that the weekly wage shall not be deemed more than \$27 nor less than \$15. A lone orphaned child, entitled to 15 per cent of past earnings, could therefore receive no less than \$2.25 per week nor more than \$4.05 per week. A childless widow, entitled to 35 per cent of past earnings, may receive as little as \$5.25 per week or as much as \$9.45 per week. A widow with four children, entitled to 66.7 per cent of past earnings, may receive as little as \$10 or as much as \$18 per week. In jurisdictions other than these six the limits to the weekly compensation apply in the same manner as in temporary cases.

¹³ See above, pp. 136-138.

¹⁴ See above, p. 73.

THE LIMITING EFFECT OF MAXIMUM DURATION AND AWARD

It is much more difficult to compute the loss suffered in fatal (and also permanent) cases than in temporary cases. The wage data appear equally good, but the time dimension is much more difficult to measure.¹⁵ What is needed is a measure of working life expectancy, for it is through this period that the effects of the loss suffered in fatal (and permanent) cases are felt. Working-life expectancy may be regarded as a function of two variables: (a) mortality and (b) superannuation. Most of us cease to work some time before we die. Working-life expectancy is, therefore, less than life expectancy by the interval between voluntary or enforced retirement from gainful employment and death. No data are available from which to prepare a precise table of working-life expectancies comparable with the life expectancies listed in a standard mortality table. The basis for a comparable table of working-life expectancies would be employment and mortality records covering the working lives of many thousands of workers. The internal records of the Social Security Board should eventually provide such data.

In the meantime, what information is available by which to estimate working-life expectancy? Mortality statistics are available, and can be combined with data indicating the rate of superannuation. The Census of Occupations, taken as a part of the decennial census, contains a tabulation of gainful workers by age-groups, and also percentages of those living in each age-group who are gainful workers. By interpolation, one may secure percentages, year by year, from age twenty-seven to seventy-four.¹⁶ Applying these percentages to the number reported living at each age in a mortality table, one may secure a distribution of the number working at each age. By centering such a distribution, pre-

¹⁵ Even the wage data are a poorer index of wage loss in fatal (and permanent) cases than in temporary cases. This is because past earnings are an imperfect indication of future earning capacity, and the more so the longer the period for which future earning capacity is to be estimated. Nearly all compensation statutes, however, relate compensation payments to past earnings, and it is our essential aim to determine the extent to which they succeed in their declared purpose.

¹⁶ For years earlier than age twenty-seven, this can also be done, but mathematical inferences about working-life expectancy will be misleading. This is because, until age twenty-seven, the percentage employed is rising, while subsequently it declines.

TABLE 22

ESTIMATED WORKING-LIFE EXPECTANCY OF WHITE MALES IN INDUSTRIAL STATES

Age	Number working ^a	Number working centered	Cumulative number working	Working life expectancy (years)	Expectancy in wks. at 40 weeks per year
17	...	...	...	43.5 ^b	1,740
18	...	...	...	42.7 ^b	1,708
19	...	...	...	41.9 ^b	1,676
20	...	...	...	41.1 ^b	1,644
21	...	...	...	40.3 ^b	1,612
22	...	...	...	39.5 ^b	1,580
23	...	...	...	38.8 ^b	1,552
24	...	...	...	38.0 ^b	1,520
25	...	...	...	37.3 ^b	1,492
26	...	...	...	36.5 ^b	1,460
27	84,293	...	3,009,483	35.7	1,428
28	84,143	84,218	2,925,265	34.8	1,392
29	84,074	84,109	2,841,156	33.8	1,352
30	83,821	83,948	2,757,208	32.9	1,316
31	83,561	83,691	2,673,517	32.0	1,280
32	83,204	83,383	2,590,134	31.1	1,244
33	82,837	83,021	2,507,113	30.2	1,208
34	82,453	82,645	2,424,468	29.4	1,176
35	82,052	82,253	2,342,215	28.5	1,140
36	81,634	81,843	2,260,372	27.6	1,104
37	81,196	81,415	2,178,957	26.8	1,072
38	80,739	80,968	2,097,989	26.0	1,040
39	80,175	80,457	2,017,532	25.2	1,008
40	79,665	79,920	1,937,612	24.3	972
41	79,043	79,354	1,858,258	23.5	940
42	78,469	78,756	1,779,502	22.7	908
43	77,621	78,045	1,701,457	21.9	876
44	76,902	77,262	1,624,195	21.1	844
45	76,230	76,566	1,547,629	20.3	812
46	75,521	75,876	1,471,753	19.5	780
47	74,698	75,110	1,396,643	18.7	748
48	73,532	74,115	1,322,528	18.0	720
49	72,556	73,044	1,249,484	17.2	688
50	71,539	72,048	1,177,436	16.5	660
51	70,331	70,935	1,106,501	15.7	628
52	69,009	69,670	1,036,831	15.0	600
53	67,718	68,364	968,467	14.3	572
54	66,306	67,012	901,455	13.6	544
55	64,842	65,574	835,881	12.9	516
56	63,188	64,015	771,866	12.2	488

TABLE 22 (Continued)

Age	Number working ^a	Number working centered	Cumulative number working	Working life expectancy (years)	Expectancy in wks. at 40 weeks per year
57	61,415	62,302	709,564	11.6	464
58	59,395	60,405	649,159	10.9	436
59	57,337	58,366	590,793	10.3	412
60	54,997	56,167	534,626	9.7	388
61	52,638	53,818	480,808	9.1	364
62	50,090	51,364	429,444	8.6	344
63	47,312	48,701	380,743	8.0	320
64	44,488	45,900	334,843	7.5	300
65	41,577	43,033	291,810	7.0	280
66	38,544	40,061	251,749	6.5	260
67	35,903	37,224	214,525	6.0	240
68	32,450	34,177	180,348	5.6	224
69	29,340	30,895	149,453	5.1	204
70	26,259	27,800	121,653	4.6	184
71	23,159	24,709	96,944	4.2	168
72	19,972	21,566	75,378	3.8	152
73	17,247	18,610	56,768	3.3	132
74	14,266	15,757	41,011	2.9	116
75	11,582	12,924	28,087	2.4	96
76	9,166	10,374	17,713	1.9	76
77	6,775	7,971	9,742	1.4	56
78	4,397	5,586	4,156	0.9	36
79	1,957	3,177	979	0.5	20
80	0	979	0	.0	0

^a Computed by applying to the number of white males living at each age (according to the U. S. Bureau of the Census's *United States Life Tables, 1930*) the percentages employed by age in ten leading industrial states (according to the 15th Census, Population volume IV, 1930). The states, chosen on the basis of per cent of work force covered by workmen's compensation, are California, Connecticut, Illinois, Massachusetts, Michigan, New Jersey, New York, Ohio, Pennsylvania, and Rhode Island.

^b Estimated by applying to the life expectancy the percentage indicated by the ratio of working-life expectancy to life expectancy at age 27.

paring a cumulative distribution, and dividing the latter by the former, an estimate of working-life expectancy at each age may be made (see table 22).

One may quarrel with such a procedure. The mortality data are based on vital statistics covering the entire lives of the persons in the sample. The census data are a cross section of the entire work force in a particular month of a census year. Certainly it would be preferable if the two sets of data referred to the same people and the records in both cases were periodic, rather than in one case periodic and in the other cross-sectional. Yet in using mortality tables actuaries frequently make adjustments for cur-

rent indications. In so doing they always use data referring to different people, and generally apply indications of a cross section to a compilation covering life spans.¹⁷

Preparing an estimate of working-life expectancy of the type described above appears a sounder alternative than accepting a theoretical time loss such as that estimated by the American Standards Association.¹⁸ They estimated that an industrial death involved a loss of six thousand days, assuming an average age of thirty-five, an average expectancy of twenty years of work and an average work year of three hundred days. An intensive analysis of accident statistics has convinced the writer that the average age of fatally (and more especially permanently and totally) injured workers is substantially higher than thirty-five. Retirement is scarcely general at age fifty-five, nor are a majority of workers in normal times employed on the average as many as three hundred days annually. But what is more important, the dispersion of ages of fatally (and permanently) injured workers around the average covers so wide a range that the simple estimate of the American Standards Association is poorly adapted to measuring wage loss. It was, of course, not intended for such a purpose, but rather to furnish a severity weight for accident rate calculations.

In the light of these considerations, what is the limiting effect of the period and amount limitations to dependency compensation found in most laws? Only six states compensate the widow until death or remarriage, although four additional states compensate dependent children until sixteen years of age, regardless of period or amount limitations.¹⁹ In the six jurisdictions referred to payments may continue longer than the working life expectancy of the deceased worker. In the other jurisdictions the maximum periods and/or amounts operate to reduce substantially the proportion of wage loss compensated in most cases. The average maximum duration for dependency compensation is about seven

¹⁷ Note also that this procedure has been followed by L. I. Dublin and A. J. Lotka in their study of *The Money Value of a Man* (1930). See especially pp. 54-64.

¹⁸ See U. S. Bureau of Labor Statistics Bulletin No. 276 (1920), *Standardization of Industrial Accident Statistics*, pp. 73-74, for the original investigations underlying this estimate. Also U. S. Bureau of Labor Statistics Bulletin No. 667 (1940), *A Manual of Industrial Injury Statistics*, pp. 181 ff.

¹⁹ See above, p. 74.

years.²⁰ How would this limit affect the compensation of a worker aged forty who had died leaving a wife and three children? The law may be assumed to provide 30 per cent of past earnings for a widow and 10 per cent for each child under sixteen, subject to a weekly maximum of \$20 and a weekly minimum of \$7.50. The worker may be assumed to have averaged \$30 weekly. The children may be assumed to be five, eight, and eleven years of age. These assumed conditions are reasonably typical. Under them the weekly compensation would be \$18 ($\30×60 per cent) for five years, and \$15 ($\30×50 per cent) for two subsequent years.²¹ The total compensation would amount to \$6240.

The working-life expectancy of a worker at age forty is 972 weeks.²² During this period, at an average of \$30 a week, a worker would have earned \$29,160. A total compensation of \$6240 would represent 21.4 per cent of the estimated wage loss. If no period limitations operated to prevent payment at the statutory rate through the period of working-life expectancy, an additional sum of \$6252 would be paid the dependents of the deceased worker. Payments to the second child would then continue for an additional year, to the third child for four additional years, and to the widow for nearly twelve additional years. The interposition of a period limitation of seven years in a case such as we have chosen would eliminate about 21.4 per cent of the wage loss. The remaining 57.2 per cent remains uncompensated because of the application of the graduated percentage of past earnings to the particular case.

The purpose of this example is not to indicate the average proportion of wage loss compensated, but to indicate the nature of the problem. The proportion compensated would vary with age, wage, and number of dependents. Death of an older worker with the same wage and dependency situation would be compensated just as generously, although the wage loss would then be lower by the difference in working-life expectancy. Death of a better-paid worker of the same age and in the same dependency situation could not be compensated much more generously (no

²⁰ 365.4 weeks (see Table 10, p. 77).

²¹ 60 per cent, or \$18, until oldest child reached sixteen, and 50 per cent, or \$15, for the remaining two years.

²² See Table 22.

more than \$20 weekly), although the wage loss might be considerably greater. Death of a worker with a smaller family but earning the same wage and of the same age, would be compensated less generously, although the wage loss would, in that case, be the same.²³

The problem is quite similar but generally somewhat less complicated when dealing with cases of permanent total disability. Only six laws distinguish between claimants for permanent total disability compensation on the basis of number of dependents.²⁴ Such claimants are older, on the average, than fatally injured workmen. Assume that a worker of forty-five years of age earning \$30 weekly is permanently and totally incapacitated. The state in which he resides pays 65 per cent of past earnings for a period not to exceed five hundred weeks. His weekly compensation would be \$19.50, and over five hundred weeks this would amount to \$9750. His working-life expectancy, according to Table 22, is 812 weeks, and his wage loss over that period at \$30 weekly would therefore amount to \$24,360. The statutory rate of 65 per cent of past earnings of course makes 35 per cent of the wage loss uncompensable. The maximum duration makes 312 weeks of disability uncompensable, and the \$6084 which he would otherwise have drawn is 25 per cent of his wage loss. The remaining 40 per cent, or \$9750, is the compensable portion of his wage.

THE PROBLEM IN PERMANENT PARTIAL CASES

There is an additional complication when the disability is partial as well as permanent. If one accepts the method already explained for determining working-life expectancy, there remains the question of allowing for the extent of partial incapacity. In cases of dismemberment or loss of use, there seems no better procedure than to multiply the expectancy at the age of the

²³ Working-life expectancy, like life expectancy, is essentially a group concept and properly applicable only in group analysis. The simplified individual analyses here presented are, accordingly, misleading, but are used only for illustrative purposes. The pronounced skewness of the mortality curve makes the mean a poor indication of the time any given individual may be expected to live, or to continue working. In this connection, see J. B. MacLean, *Life Insurance* (6th Edition, 1945), pp. 72 ff.

²⁴ See above, p. 94.

injured by an appropriate percentage of permanent total disability. A table of such percentages, used in severity rate calculations, is found in the *Manual on Industrial-Injury Statistics*.²⁵ The material portions of it are presented in Table 23.

TABLE 23

STANDARD TIME LOSS CHARGES USED IN COMPUTING SEVERITY RATES

Loss, or loss of use of	Per cent disabled	Loss, or loss of use of	Per cent disabled
Arm, at or above elbow	75	Leg at or above knee	75
Arm, below elbow	60	Leg below knee	50
Hand	50	Foot	40
Thumb	10	Great toe, any other two toes . .	5
Any one finger	5	Two great toes	10
Any two fingers, same hand	12½	One eye	30
Any three fingers, same hand	20	Both eyes	100
Any four fingers, same hand	30	One ear	10
Thumb & one finger, same hand . .	20	Both ears	50
Thumb & two fingers, same hand . .	25		
Thumb & three fingers, same hand .	33½		
Thumb & four fingers, same hand .	40		

Source: Max D. Kossoris, *Manual on Industrial Injury Statistics* (1940), p. 183.

Loss of an arm at or above the elbow or a leg at or above the knee is rated as 75 per cent of permanent total disability. Loss of a hand is rated as 50 per cent, loss of a foot, 40 per cent of permanent total disability.²⁶ Total loss of vision is permanent total disability, but loss of one eye only is only 30 per cent thereof. Loss of hearing is rated much lower at 10 per cent for the hearing of one ear and 50 per cent for both. Loss of a thumb constitutes 10 per cent, but of any other finger only 5 per cent, of permanent total disability. Five per cent is also the rating for a great toe or any two other toes. If a worker aged thirty (working expectancy 1316 weeks) sustains the loss of a hand (50 per cent), he may be held to have lost the equivalent of 658 weeks' wages in earning capacity.

For cases not involving dismemberment or loss of use severity ratings are computed on the basis of the ratio of compensation awarded to the proper payment for permanent total disability.

²⁵ U. S. Bureau of Labor Statistics Bulletin No. 667 (1940), p. 183.

²⁶ But for a discussion of the relative severity of injuries to a hand and to a foot, see above, pp. 121-122.

This same practice can be used in estimating wage loss, the ratio being first multiplied by the working life expectancy. This procedure has one serious limitation: it assumes that compensation of permanent partial and permanent total disability are equally generous.

CHAPTER X

COMPUTING THE THEORETICAL PROPORTION OF WAGE LOSS COMPENSATED

IF AVAILABLE RECORDS do not permit such analysis as has been suggested, one may attempt a less ambitious—but also less accurate—computation. If, for example, no distribution of injuries is available, yet one desires to know approximately what proportion of wage loss is compensated under a particular benefit scale, one may use a standard distribution of injuries. If injury records are not available, wage records will also be lacking, but if the average wage is known, the distribution of wages may be estimated. Age data will also be missing in this case, but age may be ignored by assuming that all injuries occur at an average age.

DISTRIBUTION OF INJURIES

Two important accident tables have been prepared to enable those interested to work with a theoretical distribution of injuries. The Standard Accident Table was prepared by I. M. Rubinow in 1914.¹ It was used until the American Accident Table was prepared by Miss Olive Outwater in 1920.² This latter table, which is presented as Table 24, was based on tabula-

TABLE 24
AMERICAN ACCIDENT TABLE

I. General Distribution	
Fatal.....	762
Permanent total.....	62
Permanent partial.....	3,788
Major permanent partial.....	924
Minor permanent partial.....	2,864
Temporary total.....	95,388
Total accidents.....	100,000

¹ "A Standard Accident Table as a Basis for Compensation Rates," *Publications of the American Statistical Association*, XIV (1914-1915), 358-415.

² "An American Accident Table," *Proceedings of the Casualty Actuarial Society*, vol. VII (1920), part I, no. 15, pp. 57-77.

TABLE 24 (Continued)

II. Duration of Temporary Total Disability			
<i>Temporary total</i>		<i>Permanent partial</i>	
Duration	No. of cases	Duration	No. of cases
1 day	8,823	1 week or less	206
2 days	8,086	1-2 weeks	171
3 days	7,282	2-3 weeks	270
4 days	6,014	3-4 weeks	362
5 days	5,255	4-5 weeks	380
6 days	4,606	5-6 weeks	324
7 days	4,817	6-7 weeks	273
8 days	3,090	7-8 weeks	224
9 days	3,074	8-9 weeks	193
10 days	2,740	9-10 weeks	166
11 days	2,475	10-11 weeks	141
12 days	2,275	11-12 weeks	122
13 days	1,868	12-13 weeks	105
14 days	2,190	13-14 weeks	92
2-3 weeks	10,925	14-15 weeks	71
3-4 weeks	6,269	15-16 weeks	59
4-5 weeks	4,345	16-17 weeks	51
5-6 weeks	2,674	17-18 weeks	48
6-7 weeks	1,923	18-19 weeks	45
7-8 weeks	1,298	19-20 weeks	41
8-9 weeks	966	20-21 weeks	39
9-10 weeks	745	21-22 weeks	37
10-11 weeks	549	22-23 weeks	34
11-12 weeks	447	23-24 weeks	33
12-13 weeks	358	24-25 weeks	31
13-14 weeks	296	25-26 weeks	30
14-15 weeks	254	6-7 months	79
15-16 weeks	216	7-8 months	52
16-17 weeks	182	8-9 months	39
17-18 weeks	154	9-10 months	29
18-19 weeks	131	10-11 months	22
19-20 weeks	110	11-12 months	19
20-21 weeks	94	Total cases	3,788
21-22 weeks	79		
22-23 weeks	68		
23-24 weeks	56		
24-25 weeks	45		
Over 25 weeks	609		
Total cases	95,388		

III. Analysis of Permanent Partial Disability Cases

Dismemberment or loss of use	2,704
Arm	61
Hand	86
Thumb	96
One phalange of thumb	152
Index finger	301
One phalange, index finger	261
Second finger	147

TABLE 24 (Continued)

One phalange, of second finger	172	
Third finger	104	
One phalange, third finger	89	
Fourth finger	119	
One phalange, fourth finger	65	
Thumb or finger and loss of or injury to other fingers	532	
Leg	62	
Foot	43	
Great toe	37	
One phalange, great toe	16	
One phalange, of toe, not great toe	11	
One toe other than great toe	19	
One toe and loss of or injury to other toes	35	
Hearing, one ear	5	
Hearing, both ears	1	
Eye	290	
Disfigurement		50
Other permanent partial		1,034
Total cases		3,788

IV. Distribution of Fatal Cases

No dependents		174
Widow alone		177
Widow and children		253
Widow and one child	79	
Widow and two children	68	
Widow and three children	47	
Widow and four children	28	
Widow and five children	17	
Widow and six or more	14	
Orphans		26
1 orphan	13	
2 orphans	6	
3 orphans	3	
4 orphans	2	
5 or more orphans	2	
Widow and other dependents		4
Widow and one parent	2	
Widow and children with other dependents	2	
Parents and/or brothers or sisters		125
One parent	66	
Two parents	35	
One brother or sister	7	
Two brothers or sisters	2	
Three or more brothers or sisters	1	
One parent and one brother or sister	5	
One parent and two brothers or sisters	3	
One parent and three or more brothers or sisters	2	
Two parents and brothers or sisters	4	
Other dependents		3
Total cases		762

Source: Olive Outwater, "An American Accident Table," *Proceedings of the Casualty Actuarial Society*, vol. VII (1920), part I, no. 15, pp. 67-69.

tions from all those states which at the time were publishing useful injury statistics. It represents, therefore, a rounded averaging of the indications. Not all the data for any given state were equally indicative. Waiting period cases, for example, were unreported or underreported in some jurisdictions. But Miss Outwater worked competently with available indications, and her table is still extensively used, particularly in rate-making calculations. More recent tabulations would show some changes in distribution, and the great increase in disease reporting presents a serious problem. The table is also an American table, based on the experience of several states, and the experience of a particular state ordinarily differs somewhat from the national experience. In the absence of better data, however, useful estimates are made by the use of this table, as, for example, in estimating the effect of a compensation law amendment on compensation losses.

The first exhibit of the American Accident Table is the general distribution by disability group. In 100,000 cases, 762 are assumed to be fatal, and 62 permanent total. But 3788 are assumed to be permanent partial and 95,388 temporary total. Only these latter groups include over 1 per cent of injuries, and temporary total cases include over 95 per cent of them. As might be expected, however, fatal and permanent total cases bulk much larger in compensation payments and in wage loss totals than in frequency of occurrence. Sometimes a general distribution of injuries for a particular state may be available where details are lacking, and in such cases the specific information can be substituted for that in the table. Caution should be exercised in doing so for underreporting of temporary and minor permanent cases is widely prevalent.

Temporary total disability occurs not only as such alone, but also during a "healing period" in cases of permanent partial disability. The second exhibit of the American Accident Table attempts a distribution of both types of temporary total disability by duration. Nearly a tenth of temporary cases (8823) cause loss of only one shift, and nearly a half (44,883) cause loss of only one to seven days. The number of cases falls off rapidly as duration becomes longer, and only 609 cases (less than 1 per cent) cause disability lasting over twenty-five weeks. The curve is not steadily declining, but parabolic, for duration of the "healing

period" in permanent partial cases. The first entry should be discounted, for it probably includes some cases which resulted in no temporary disability whatever. The mode—380 cases, or over 10 per cent—is not reached until the fifth interval (four to five weeks). Thereafter the frequency falls off rapidly with each increase in duration. The significance of this part of the second exhibit lies in the fact that about half of the states provide for compensation of temporary total disability *in addition to* partial disability compensation in permanent partial cases.³

The third exhibit of the American Accident Table estimates the distribution of permanent partial cases by nature and location of injury. Of the 3788 cases, 2704, or 70 per cent, result in dismemberment or loss of use. Of these 2704 cases over 2000 are finger cases of one sort or another. Better than 10 per cent of cases involving loss or loss of use of a member are eye cases. Arm and leg cases are almost equally common, or better, uncommon. Hand injuries occur twice as frequently as foot injuries. The estimate for disfigurement is probably too low, for with extended coverage reporting has probably improved. The same is certainly true of "other permanent partial" cases, which include sprains, the reported number of which has shown an upward trend.⁴ The table reveals little regarding these cases, at any rate, for there is no breakdown of them to show extent of disability.

The final exhibit of the American Accident Table estimates the distribution of fatal cases by condition of dependency. This is important because so many states graduate the statutory percentage of compensation according to number and relationship of dependents.⁵ Nearly a fourth (174) of fatally injured workers are found to have left no dependents, and about the same number to have left a childless widow. A third (253) are survived by children as well as a widow, and a sixth (125) only by parents or other relatives by birth. Since 1920 the size of families has decreased, and more specifically the size of workers' families. This may have impaired the accuracy of the final exhibit.

Notwithstanding changes since the American Accident Table was prepared, and differences among the several states, it can be usefully employed in making the basic assumptions for estimating the proportion of wage loss compensated. The first three exhibits are useful in estimating the time loss, the first step in

³ See Table 15, pp. 116–117. ⁴ See below, pp. 340–343. ⁵ See above, pp. 67, 72.

estimating the wage loss. All four exhibits are helpful in estimating probable compensation.

DISTRIBUTION OF WAGES

Because workmen's compensation laws generally provide both a maximum and minimum installment, fluctuations in wages significantly affect the proportion of wage loss compensated.⁶ The statutory rate of compensation is not the effective rate of compensation. The New York law pays $66\frac{2}{3}$ per cent of past earnings, subject to a maximum of \$25 and a minimum of \$8. If the claimant has earned from \$12.00 to \$37.50 a week, then his weekly compensation will be exactly $66\frac{2}{3}$ per cent of his weekly wage. If he earns less than \$12.00 his weekly compensation will exceed the statutory percentage, while if he earns more than \$37.50 his weekly compensation will be less than the statutory percentage. The relation of the effective rate to the statutory rate depends on the statutory limits to weekly compensation and on the distribution of weekly wages.

In view of these considerations, any estimate of proportion of wage loss compensated based exclusively, so far as wages are concerned, on the average wage for the jurisdiction necessarily errs. To determine the effective as opposed to the statutory rate of weekly compensation it is necessary to estimate the dispersion of wages around the average. This is necessary not only for the purpose in hand, but also in estimating the effect on compensation losses of law amendments changing the weekly limits. Hence a Standard Wage Distribution has been prepared to assist in making such estimates. It was prepared by A. H. Mowbray from wage distributions available in several states.⁷ The assumption underlying this table, which is presented here as Table 25, is that though wage levels rise and fall, the general character of the distribution remains about the same.

The second column presents the percentages of cases that deviate from the average by the percentages listed in the first column. The fourth column is essentially a frequency deviation column, that is, the product of deviations and proportions so

⁶ See above, pp. 183-185.

⁷ A. H. Mowbray, "Legal Limits of Weekly Compensation in Their Bearing on Ratemaking for Workmen's Compensation Insurance," *Proceedings of the Casualty Actuarial Society*, vol. IX (1923), part II, no. 20, pp. 208 ff.

deviating. The third and fifth columns present respectively the data in the second and fourth columns in cumulative form. If a compensation law pays 60 per cent of weekly earnings subject to a maximum of \$18 and a minimum of \$6, then these limits become effective at \$30 and \$10 respectively. If the average wage in the jurisdiction concerned is \$20 weekly, the maximum deviation which the compensation may have from this average is \$10, or 50 per cent. From column (3) of the table it appears that 9.14 per cent of injured workers may be expected to have received wages 50 or more per cent higher than the average, while 5.75 per cent may be expected to have received wages 50 or more per cent lower than the average.

This is the same as saying that 5.75 per cent of injured workers must be compensated as if earning 50 per cent of the average wage, although they receive less than this proportion; and that 9.14 per cent must be compensated as if earning 150 per cent of the average wage, although they receive more than this proportion. What the actual deviations, for which a deviation of 50 per cent must be substituted, average is 57 per cent and 72 per cent respectively. There are accordingly differences of 7 per cent (57-50) and 22 per cent (72-50) to adjust for. Multiplying by the percentages of workers involved, one gets a correction of 40.25 (7×5.75) for the lower limit, and of 201.08 (22×9.14) for the upper limit. The difference between the corrections (for they act in opposite directions, the minimum raising and the maximum lowering the effective rate of compensation) is 160.83. Dividing by 100 we get the actual correction, 1.61; and subtracting from 100, we get the ratio of the effective rate to the statutory rate of compensation: 98.39 per cent. Multiplying this percentage by the assumed statutory rate of 60 per cent, we get an effective rate of 59.03 per cent. At the assumed average wage, this is the average rate at which past weekly earnings will be compensated, allowing for the effect of the weekly maximum and minimum. In the example chosen, the difference between the statutory and effective rates is not large, but in many cases it is large.

An actual example of computing an effective rate, using a slightly different method and introducing the necessity of interpolation, is presented in Table 26. The limits and average wage are those of North Carolina in 1940. Its law provides compen-

TABLE 25
STANDARD WAGE DISTRIBUTION

I. Less than Average				
(1) Per cent deviation from average	(2) Distribution (per cent)	(3) Cumulative form of column (2)	(4) Product of columns (1) × (2)	(5) Cumulative form of column (4)
90	.02	.02	1.80	1.80
85	.04	.06	3.40	5.20
80	.08	.14	6.40	11.60
75	.18	.32	13.50	25.10
70	.33	.65	23.10	48.20
65	.59	1.24	38.36	86.55
60	.96	2.20	57.60	144.15
55	1.46	3.66	80.30	224.45
50	2.09	5.75	104.50	328.95
45	2.81	8.56	126.45	455.40
40	3.58	12.14	143.20	598.60
35	4.34	16.48	151.90	750.50
30	5.04	21.52	151.20	901.70
25	5.61	27.13	140.25	1,041.95
20	6.02	33.15	120.40	1,162.35
15	6.24	39.39	93.60	1,255.95
10	6.29	45.68	62.90	1,318.85
5	6.17	51.85	30.85	1,349.70
II. Greater than Average				
170	.04	.04	6.80	6.80
160	.02	.06	3.20	10.00
155	.02	.08	3.10	13.10
150	.03	.11	4.50	17.60
145	.03	.14	4.35	21.95
140	.04	.18	5.60	27.55
135	.05	.23	6.75	34.30
130	.06	.29	7.80	42.10
125	.08	.37	10.00	52.10
120	.10	.47	12.00	64.10
115	.12	.59	13.80	77.90
110	.15	.74	16.50	94.40
105	.18	.92	18.90	113.30
100	.22	1.14	22.00	135.30
95	.28	1.42	26.60	161.90
90	.34	1.76	30.60	192.50
85	.42	2.18	35.70	228.50
80	.51	2.69	40.30	269.00
75	.63	3.32	47.25	316.25
70	.77	4.09	53.90	370.15

TABLE 25 (Continued)

(1) Per cent deviation from average	(2) Distribution (per cent)	(3) Cumulative form of column (2)	(4) Product of columns (1) × (2)	(5) Cumulative form of column (4)
65	.93	5.02	60.45	430.60
60	1.13	6.15	67.80	498.40
55	1.36	7.51	74.80	573.20
50	1.63	9.14	81.50	654.70
45	1.95	11.09	87.75	742.45
40	2.30	13.39	92.00	834.45
35	2.70	16.09	94.50	928.95
30	3.14	19.23	94.20	1,023.15
25	3.62	22.85	90.50	1,113.65
20	4.12	26.97	82.40	1,196.05
15	4.62	31.59	69.30	1,265.35
10	5.10	36.69	51.00	1,316.35
5	5.55	42.24	27.75	1,344.10

Source: A. H. Mowbray, "Legal Limits to Weekly Compensation in Their Bearing on Ratemaking for Workmen's Compensation Insurance," *Proceedings of the Casualty Actuarial Society*, vol. IX (1923), part II, no. 20, pp. 220-221.

TABLE 26

COMPUTATION OF EFFECTIVE RATE OF COMPENSATION*

North Carolina, 1940	
Average wage: \$17.75	Statutory rate: 60 per cent
Limits: \$7.00 and \$18.00	Effective at \$11.67 and \$30.00
(a) \$11.67 represents a 34.25 per cent deviation from \$17.75	
(b) \$30.00 represents a 69.01 per cent deviation from \$17.75	
1. 34.25% - 30.00% = 4.25%	1. 69.01% - 65.00% = 4.01%
2. 4.25% ÷ 5 = 0.850%	2. 4.01% ÷ 5 = 0.805%
3. (Col. 3) 21.52%	3. (Col. 3) 5.02%
4. (Col. 5) 901.70	4. (Col. 5) 430.60
5. (Col. 2) 5.04% × 0.850% = 4.28%	5. (Col. 2) 0.93% × 0.805% = 0.75%
6. (Col. 4) 151.20% × 0.850% = 128.52%	6. (Col. 4) 60.45% × 0.805% = 48.66%
7. 21.52% - 4.28% = 17.24%	7. 5.02% - 0.75% = 4.27%
8. 901.70% - 128.52% = 773.18%	8. 430.60% - 48.66% = 381.94%
9. 34.25% × 17.24% = 590.47%	9. 69.01% × 4.27% = 294.67%
10. 773.18% - 590.47% = 182.71%	10. 381.94% - 294.67% = 87.27%
Effect of lower limit = 182.71%	Effect of upper limit = 87.27%
182.71% - 87.27% = 95.44% ÷ 100 = 0.95 = Net effect	
100 + 0.95 = 100.95 Ratio of effective to statutory rate of compensation	
100.95 × .60 = 60.57 Effective rate of compensation	

* Based on method developed by A. H. Mowbray, *op. cit.*, Appendix C, pp. 240-241.

sation at the rate of 60 per cent of past weekly earnings, not to exceed \$18 nor be less than \$7. At 60 per cent of earnings, a \$7.00 minimum becomes effective at \$11.67, and an \$18.00 maximum at \$30.00. The lower effective limit is 34.25 per cent below, and the upper effective limit 69.01 per cent above, the average wage. Computing from the 30 and 65 per cent levels in the Standard Wage Distribution, one must interpolate for 4.25 per cent (34.25–30.00) and 4.01 per cent (69.01–65.00), respectively. Dividing by the interval, five, one gets adjustments of 0.850 and 0.805 respectively. The percentages at the chosen level (column 3, Table 25) are 21.52 per cent below the average and 5.02 per cent above the average. The corresponding entries in column (5) of Table 25 are 901.70 and 430.60 respectively. Multiplying the percentages for the chosen levels by the adjustment factors we get 4.28 and 128.52 for the lower limit, and 0.75 and 48.66 for the upper limit. Subtracting these adjustments, we get 17.24 and 773.18 for the lower limit, and 4.27 and 381.94 for the upper limit. Multiplying the deviation (34.25) by the first product (17.24) and subtracting we get the effect of the lower limit: 182.71. A corresponding operation produces the effect of the upper limit: 87.27. The minimum having the greater effect, the net effect of the limits is positive: + 95.44, or dividing by 100, 0.95. Adding this to 100 we get the per cent ratio of the effective to the statutory rate of compensation: 100.95 per cent. Multiplying this percentage by 60 per cent, we get an effective rate of 60.57 per cent for North Carolina in 1940.

If one follows this adaptation of Mowbray's solution faithfully it provides a sure method of estimating the effective rate of compensation. Mowbray's interest was rather in computing an adjustment factor for payrolls to which insurance rates might then be fairly applied. But, as he pointed out, "the ratio of the adjusted payroll to the actual total payroll will be the same as the ratio of the effective compensation rate to the nominal statutory rate."⁸ This means that only one additional step (multiplication by the statutory rate) is required to secure the effective rate of compensation itself. Mowbray tested his calculations and found that the error (difference between estimated ratio and actual ratio) was very small, only in two cases exceeding 1½ per cent.⁹

⁸ Mowbray, "Legal Limits," pp. 221–222.

⁹ *Ibid.*, Appendix B.

Combining the two processes indicated in the accident and wage tables, one can derive an estimated proportion of wage loss compensated. The number of weeks lost is obtained from the accident table, and the number of weeks of compensation by applying the distributions in the accident table to the compensation scale. The average wage may be used as the multiplier in computing the total wage loss, and as the multiplicand in computing the average weekly compensation. The multiplier in this latter operation is the effective rate of compensation. The estimated total compensation is the product of the estimated number of weeks of compensation and the average weekly compensation. When divided by the estimated total wage loss, it yields an estimated proportion of wage loss compensated. The validity of the estimate will depend on (a) the extent to which the actual distribution of injuries deviates from the distribution in the accident table, and (b) the extent to which commissioners depart from literal application of the benefit scale. Useful indications can, nevertheless, be obtained and useful comparisons made on the basis of such estimates. Indeed, no comparisons between laws can be fairly made except where a common loss experience is used in computing the proportion of wage loss compensated.¹⁰

An example of such a computation of the proportion of wage loss compensated is presented in Table 27. The important southeastern industrial state of North Carolina is again the subject of analysis. The average weekly wage of \$17.75 has been multiplied by the already computed effective rate of compensation (60.57 per cent) to yield an average weekly compensation of \$10.75. Weeks lost have been estimated from the distributions in the American Accident Table. In permanent total and fatal cases, the standard time loss charge has been accepted as a rough estimate of working life expectancy at average age of injury.¹¹ Judging from Table 22, 1000 weeks is a conservative estimate. In permanent partial cases, all injuries involving loss or loss of use of a member have been rated on the basis of per cent of permanent total disability, using 1000 weeks as multiplicand. Injuries involving disfigurement or nonlisted disability have been

¹⁰ See E. H. Downey, "Methods of Comparing Compensation Cost," U. S. Bureau of Labor Statistics Bulletin No. 281 (1921), pp. 183 ff. To do otherwise is to fail to eliminate other variables than the comparative generosity of the scales.

¹¹ See the comments below on age distributions, pp. 207-210.

ignored because there is no adequate way of estimating their distribution or average time loss. Temporary injuries are given an over-all loss in weeks based on an assumed average loss of twenty days.¹²

Weeks compensated have been estimated in the main by strict application of the benefit scale provided by the North Carolina Workmen's Compensation Act. The distributions in the American Accident Table were used for this purpose. In fatal cases this was relatively simple, because the state uses a flat rate of compensation in dependency cases. It was only necessary to separate the no-dependent cases, payments for which, after commutation, are placed in the state's second injury fund (or, up to 50 per cent, turned over to nearest of kin). In temporary total cases the principal problem was estimating the effect of the waiting period. The law provides that injuries causing disability for less than a week shall not be compensated, and that injuries causing disability not in excess of four weeks, shall not be compensated for the first week of disability. From the American Accident Table one can estimate that 22,647 weeks will be uncompensated by reason of the exclusion, and 34,062 weeks because of loss of a week's benefits. The scale for permanent disability (except dismemberment and nonlisted partial disability, which cases are not included in the table) is very simply applied in estimating weeks compensated.

The results are striking. Because of the durational limits, compensation for permanent disability and death proves much less generous than compensation of temporary disability. The severer limit for death (350 weeks as compared with 400) and the no-dependent cases make the proportion of compensation to wage loss lowest in fatal cases. Only 19.6 per cent of wage loss is indemnified in fatal cases. In permanent disability cases the percentages are 24.2 per cent if disability is total and 24.4 per cent if partial. Temporary disability seldom persists long enough to bring into play durational limits, but compensation is denied those not disabled for as much as a week, and a week's compensation is omitted unless disability lasts longer than four weeks. The rate in temporary cases is 47.7 per cent, indicating a discount

¹² This is a rounding of the averages for recent years as reported by M. D. Kossoris and Swen Kjaer in their article "Industrial Injuries in the United States during 1940," *Monthly Labor Review*, LIII (1941), 327 ff.

of 12.9 per cent (60.6, effective rate, minus 47.7) for the waiting period.

Table 27 presupposes a distribution of injuries in North Carolina similar to that in the American Accident Table, and makes no

TABLE 27
PROPORTION OF WAGE LOSS COMPENSATED IN
NORTH CAROLINA, 1940 (THEORETICAL)

(1) Extent of disability	(2) Estimated weeks lost	(3) Estimated wage loss ^a	(4) Estimated weeks com- pensated	(5) Estimated compensa- tion ^b	(6) Per cent compensated
Fatal.....	762,000 ^c	\$13,525,500	205,800 ^d	\$2,647,350 ^e	19.6
Permanent total.....	62,000 ^c	1,100,500	24,800 ^d	266,600	24.2
Permanent partial....	338,000 ^f	5,999,500	136,380 ^d	1,466,085	24.4
Temporary.....	271,430 ^g	4,817,883	213,867 ^h	2,298,970	47.7
Total.....	1,433,430	25,443,383	580,847	6,713,805	26.4

^a Computed by multiplying number of weeks lost by average weekly wage (\$17.75 during six months ending June 30, 1940).

^b Computed by multiplying number of weeks compensated by average weekly compensation (\$10.75, product of average wage and effective rate of compensation).

^c Assuming an average working life expectancy of 1000 weeks.

^d Based on the number of weeks provided for each degree of disability in the benefit scale.

^e Includes \$435,000 for payments to second injury fund in no dependency cases.

^f Computed by multiplying per cent of permanent total disability by 1000 weeks in dismemberment (or loss of use) cases. Other cases excluded.

^g Assuming an average loss of 20 days per case.

^h Eliminating waiting period cases, and subtracting a week for all cases not exceeding 4 weeks in duration.

allowance for discretion of commissioners in applying the benefit scale. It is, in spite of these assumptions, a useful indication of the proportion of wage loss suffered by injured workers recoverable under such a benefit scale. The North Carolina law is neither the most nor the least generous law in the land, but is relatively near the center of the distribution. This makes the indications of Table 27 all the more significant. Of course, full compensation should not be taken as the standard by which to evaluate the computed percentages of wage loss compensated. If two-thirds of past earnings may be considered a reasonable yet adequate rate of compensation, it is not pleasant to reflect that an average American compensation law indemnifies only a little over one-quarter of the wage loss sustained by injured workers.

DISTRIBUTION OF INJURIES BY AGE

The reader will have observed that average working-life expectancy was assumed in the above computations, and that no attempt was made to distribute injuries by age. The study of

CHAPTER XI

THE MASSACHUSETTS EXPERIENCE, 1935-1936

THROUGH THE COÖPERATION of the Massachusetts Rating and Inspection Bureau and the Massachusetts Department of Industrial Accidents it has been possible to make a thorough analysis of the proportion of wage loss compensated in Massachusetts, using the actual records for the policy year 1935.¹ Individual case reports are sent to the Bureau for all fatal, permanent total, and major permanent partial cases, and for all other cases not closed. Supplementing these reports with those made to the Massachusetts Department of Industrial Accidents and the reports by classification to the Rating Bureau, the writer has obtained a nearly complete picture of all tabulable insured (and hence covered) injuries in this period. Data regarding date of injury and termination of disability were used to determine time loss in temporary cases. Reëmployment experience records were used in measuring loss of earning capacity in permanent partial cases. Time loss in fatal and permanent cases was estimated, with the help of Table 22, from the age reports on injury forms. Wage loss was computed by multiplying time losses by wages as reported on injury forms. Compensation was taken from individual case records, or estimated from a comparison of records by classification and industry in possession of the Rating Bureau and Department of Industrial Accidents. The principal findings resulting from these computations appear in Tables 29 to 33.

Table 29 is a master table indicating the general situation with regard to proportion of wage loss compensated in this state. The 178 fatalities occasioned a wage loss estimated from age and wage data to amount to \$4,085,000. Incurred losses on these cases amounted to \$602,521, or 14.8 per cent of the wage loss. The thirteen permanent total cases occasioned an estimated wage loss of \$207,000, of which 75.4 per cent was paid or reserved for future payment. Four hundred forty-three major permanent

¹ For discussion of the concept of "policy-year" see below, pp. 241-242.

injuries in the fiscal year 1930, only 18.0 per cent in the fiscal year 1933, but 18.8 per cent in the fiscal year 1937. With the exception of those aged thirty-three to forty-two (and this group includes the war generation of the first World War, which may account for the unusual fluctuations) the next several groups exhibit an opposite type of fluctuation. This may indicate merely greater ability to hold a job in a period of widespread unemployment. Beginning with the age group fifty-three to fifty-seven, there again appears a tendency to a decline in proportion of total injuries in the fiscal year 1933, and an increase in the fiscal year 1937.

A single age distribution has one further weakness: that age varies with extent of disability. Generally the average age of fatally injured workers is higher than that of temporarily injured workers, and the average age in permanent total cases is still higher. This is due primarily to the fact that, while less often injured, older workers have lower recuperative powers than younger workers. Clearly, if age distributions of injured workers are subject to fluctuations with economic changes, and to variations with extent of disability, as well as to variations from state to state, little is gained by constructing a "typical" distribution. Unless age and wage indications can be combined, use of an average age will serve as well in calculations such as those above.

partial claimants will recover, when reserved payments have been completed, \$1,090,304, or 32.4 per cent of an estimated wage loss of \$3,219,000. Minor permanent partial claimants fared somewhat better, being awarded \$297,876, or 39.2 per cent of an estimated wage loss of \$760,000. Temporarily injured workers sustained a wage loss estimated at \$3,823,000, of which \$2,098,987,

TABLE 29

PROPORTION OF WAGE LOSS COMPENSATED IN MASSACHUSETTS
(POLICY YEAR 1935)

Extent of disability	Number of cases	Estimated wage loss ^a	Compensation paid or reserved ^b	Per cent compensated
Fatal.....	178	\$ 4,085,000	\$ 602,521	14.8
Permanent total.....	13	207,000	138,488	75.4
Major permanent.....	443	3,219,000	1,090,304	32.4
Minor permanent.....	724	760,000	297,876	39.2
Temporary.....	19,262	3,823,000	2,098,987	54.9
Total.....	20,620	\$12,067,000	\$4,180,469	34.6

^a From an analysis of individual case reports of serious and other open cases furnished by the Massachusetts Rating and Inspection Bureau, and for other cases estimated from reports filed with the Massachusetts Department of Industrial Accidents. In temporary cases, estimate is based on weekly wage and dates of injury and reemployment, or termination of disability. In fatal or permanent total cases it is based on weekly wage, and on working-life expectancy as indicated in Table 22. In partial disability cases working-life expectancy was multiplied by per cent of disability as indicated in Table 23, p. 193.

^b As reported to the Massachusetts Rating and Inspection Bureau, except for adjustments where amendments changed the benefit scale during the policy year 1935.

or 54.9 per cent, was paid them or reserved for future payment. Viewed as a whole, the proportion of wage loss compensated in this policy year amounted to 34.6 per cent.

Before examining these facts in greater detail it is interesting to compare the several situations. With the single exception of the permanent total cases—of which there were only thirteen—the proportion of wage loss compensated varied inversely with the seriousness of the injury. The less severe the injury, the more generous was the compensation, proportionally speaking. This results principally from the fact already adverted to, that the more serious the injury, the more restrictive are durational limits in the law. The special situation of permanent total cases is due to a 1935 amendment to the Massachusetts Workmen's Compensation Law calling for payment of a reduced compensation (50 per cent of weekly earnings instead of $66\frac{2}{3}$ per cent) after the maximum duration is attained. The variation in proportion of wage loss compensated is considerable, ranging from 14.8 per cent in fatal cases to 75.4 per cent in permanent total cases.

Compensation for permanent total disability is clearly adequate; and compensation for temporary total disability is nearly so. Compensation for both partial disability (major and minor permanent) and death, on the other hand, is clearly inadequate.

In Table 30 the salient facts regarding compensation for fatal cases are presented. The Massachusetts scale calls for pay-

TABLE 30
FATAL DEPENDENCY COMPENSATION IN MASSACHUSETTS
(POLICY YEAR 1935)

Type of case	Number of cases	Estimated wage loss ^a	Indemnity incurred ^b	Average indemnity per case	Per cent of wage loss
Total dependency.....	141	\$3,255,000	\$562,606	\$3,990	17.3
Installment.....	107	2,601,000	500,494	4,678	19.2
Lump sum.....	34	654,000	62,112	1,827	9.2
Partial dependency.....	23	555,000	32,915	1,431	5.9
No dependent.....	14	248,000	7,000	500	3.0
Total.....	178	\$4,058,000	\$602,521	\$3,372	14.8

^a Estimated on the basis of weekly wage, and on working-life expectancy as indicated in Table 22, pp. 188-189. Age and wage accepted as reported on individual case forms to the Massachusetts Rating and Inspection Bureau.

^b As reported on individual case forms to the Massachusetts Rating and Inspection Bureau, but all no-dependent cases paid less than \$500 were revalued.

ment of \$10 weekly to a dependent widow for not to exceed 400 weeks, and of \$2 weekly for each dependent child up to his sixteenth birthday. Other dependents receive 66 $\frac{2}{3}$ per cent of weekly earnings for up to 500 weeks subject to limits of \$4 and \$10 weekly, and an over-all limit of \$4000. In no-dependent cases, \$500 was then paid into the state's second injury fund, though at present this amount is \$1000.² It is clear from Table 30 that the over-all proportion of wage loss compensated is pulled downward by the no-dependent cases, and to a lesser degree by partial dependency and lump-sum total dependency cases.

Even at best, compensation of fatal cases in Massachusetts is clearly inadequate. In those total dependency cases settled on an installment basis alone the average indemnity was only \$4678 per case. Of an estimated wage loss of \$2,601,000, only \$500,494 was paid or reserved for future payment. This represented only 19.2 per cent of the loss sustained. The principal factors depress-

² The sum due on no-dependent cases was raised to \$500 during 1935. All cases were assumed to have received this amount even where closed before effective date of this amendment.

ing compensation in these cases were the durational limit of 400 weeks and the low flat sums paid weekly to dependents. Although the average weekly wage in these cases was over \$23, all widows received just \$10 on their own behalf, or about 42 per cent of the average wage. In no case could a widow draw payments for more than 400 weeks. No weekly payment for any of her children could exceed \$2, or about eight per cent of the average wage. These restrictions combined to reduce compensation to less than a fifth of wage loss.

In the other cases the proportion compensated was markedly lower. Lump-sum cases were compensated for only 9.2 per cent of wage loss. Of course these claimants were only entitled to the present value of their awards. With interest at 5 per cent for a period not to exceed 400 weeks (except for small sums paid for children as long as dependent), however, commutation can scarcely account for a reduction amounting to over 50 per cent of the proportion paid other total dependents. The suspicion persists that in some of these cases a relatively small lump sum is approved, partly because it impresses the claimant by comparison with installments, and partly because there is some legal flaw in the case. Partial dependents recovered only 5.9 per cent of wage loss during this period. Payments in no-dependent cases actually amounted to only \$4729, or \$338 per case, because the amendment raising the payment to \$500 was passed during 1935. The writer has revalued cases in which \$500 was not paid, so as to measure the compensation level prevailing during most of the policy year.

In Table 31 a closer analysis of permanent total cases is made possible. Part I of this table indicates that under the scale prevailing through most of the year permanent total claimants were awarded an average indemnity of \$10,653, or 75.4 per cent of wage loss sustained. The source of this high percentage is clear from part II. Under the old scale, only the specific compensation (payments under the permanent disability schedule for listed dismemberment or loss of use) and full compensation (not to exceed \$4500) would have been paid. This would have amounted to only \$55,613, or 26.9 per cent of wage loss. The reduced compensation (50 per cent of past earnings) made payable after receipt of \$4500 for the balance of the injured's life (following proof of permanent total disability) added \$82,875 to their com-

TABLE 31

 PERMANENT TOTAL DISABILITY COMPENSATION IN MASSACHUSETTS
 (POLICY YEAR 1935)

I. COMPENSATION PAID				
Cases	Estimated wage loss	Indemnity incurred	Average indemnity per case	Per cent compensated
13	\$207,000	\$138,488	\$10,653	75.4

II. DISTRIBUTION OF INDEMNITY INCURRED		
Type of payment ^a	Amount	Per cent of total
Specific compensation.....	\$ 2,000	1.4
Full compensation.....	53,613	38.8
Reduced compensation.....	82,875	59.8
Total compensation.....	\$138,488	100.0

III. EFFECT OF WEEKLY LIMITS	
Amount added because of weekly minimum.....	\$6179
Amount subtracted because of weekly maximum.....	8884
Net effect of weekly limits.....	- 2665

Sources: For source of part I see Table 29, p. 212. Parts II and III were prepared after tabulating the individual case reports to the Massachusetts Rating and Inspection Bureau. Three cases handled under the old benefit scale (maximum award, \$4500) were adjusted to the new scale for our present purpose.

^a Specific compensation is a flat \$10 weekly in cases involving dismemberment or loss of use. Full compensation is paid only until the old maximums (\$4500 or 500 weeks) are attained. Thereafter compensation per week is 30 per cent of the weekly wage.

Examination of part III indicates the effect of the weekly limits. Payments exceeding the statutory rate amounting to \$6179 were awarded to injured workers eligible for the weekly minimum. Those eligible for the weekly maximum received less than the statutory rate by amounts totalling \$8884. The net effect of the weekly limits was to reduce the weekly compensation rate by 1.3 per cent of past earnings to 65.4 per cent. It will subsequently appear that the effective rate of compensation for temporary total disability is much lower. This is because of the reduced rate of compensation paid permanent total claimants after receiving the maximums allowable at full compensation. Obviously a given weekly maximum is less restrictive at 50 per cent than at 66 $\frac{2}{3}$ per cent of past earnings. Because those who are permanently incapacitated receive compensation for the rest of their lives, not just for their working lives, the *total* compensation, as distinguished from the *weekly* compensation, amounted to 75.4 per cent of wage loss.

Table 32 presents the principal facts concerning compensation of permanent partial disability. Massachusetts provides three types of compensation for this degree of disability. During the "healing period" the claimant receives the regular payments for temporary total disability. If suffering from a listed dismem-

TABLE 32
PERMANENT PARTIAL DISABILITY COMPENSATION IN MASSACHUSETTS
(POLICY YEAR 1935)

I. COMPENSATION PAID				
Cases	Estimated wage loss	Indemnity incurred	Average indemnity per case	Per cent. compensated
443	\$3,219,000	\$1,090,304	\$2,483	32.4
724	760,000	297,876	411	39.2
1,171	\$3,979,000	\$1,387,910	\$1,184	35.0

II. DISTRIBUTION OF MAJOR PERMANENT COMPENSATION			
Cases	Type of payment	Amount of compensation	Per cent of total
410	Full compensation.....	\$ 708,576	65.0
164	Specific compensation.....	76,988	7.1
86	Partial compensation.....	86,369	7.9
	Total installments.....	\$ 871,923	80.0
175	Lump sum.....	218,381	20.0
443	Total.....	\$1,090,304	100.0

The sources of the data in part I were adequately indicated in Table 29 above. Data in part II were based on tabulation of items in the individual case reports filed with the Massachusetts Rating and Inspection Bureau. The number of cases in part II will not add to the total because many of the cases involved more than one type of payment. Even some cases eventually settled by lump sum were originally compensated for some weeks on an installment basis.

berment or loss of use, the claimant receives \$10 per week for a number of weeks depending on the member lost. Subsequently, if his earning capacity has been reduced by the injury, he receives 66 $\frac{2}{3}$ per cent of the reduction in earning capacity.³ The major permanent experience is broken down to show these three types of compensation. Chiefly because of the size of the installments, the full compensation during total disability bulks largest, representing 65 per cent of all compensation of major permanent claimants. Scheduled compensation is a smaller part of partial disability compensation in Massachusetts than in most jurisdictions. The flat sum (\$10) and the small number of weeks kept the total

³ See above, p. 121.

payments under this head down to 7.1 per cent of all major permanent compensation. Not all claimants sustain listed injuries, and this also acts to reduce the volume of scheduled payments. Compensation for subsequent partial loss of earning capacity has a smaller base than temporary disability payments: reduction of earning capacity instead of weekly earnings. Installment payments for reduction of earning capacity amounted to 7.9 per cent of major permanent compensation. Payments in the form of lump sums, amounting to 20 per cent of all major permanent payments, could naturally not be subdivided by type of compensation. Examination of these claims shows, however, that over 50 per cent of them were cases of nonlisted disability.

The average indemnity in major permanent cases was \$2483. The indemnity incurred amounted to 32.4 per cent of the wage loss sustained. This is too low, and it seems all the lower when compared with the rate of compensation in minor permanent cases. The average in these cases was only \$411, but the incurred indemnity represents 39.2 per cent of the wage loss sustained. For all permanent partial cases the average indemnity was \$1184, and the proportion of wage loss compensated, 35.0 per cent.

TABLE 33

TEMPORARY TOTAL DISABILITY COMPENSATION IN MASSACHUSETTS
(POLICY YEAR 1935)

Class of injured	Estimated wage loss ^a	Indemnity incurred ^b	Per cent compensated	Per cent eliminated by		
				waiting period	weekly maximum	weekly minimum
Eligible for minimum	\$ 225,300	\$ 161,000	71.5	7.5	...	12.3
Eligible for maximum	1,398,600	639,000	45.7	7.6	13.4	...
All others.....	2,199,100	1,299,000	59.1	7.6	...	...
Total.....	\$3,823,000	\$2,099,000	54.9	7.6	4.9	0.7

^a Based on individual case reports of serious and still-open cases to the Massachusetts Rating and Inspection Bureau, and, for nonserious and closed cases, on reports to the Massachusetts Department of Industrial Accidents. Weekly wages were given only in dollars and a fiscal year basis was used in reports to the Department of Industrial Accidents. The middle of the interval was used for wage reports to the Department of Industrial Accidents. Wage loss was taken as equal to product of wage and time loss (date of injury to date of reemployment or termination of disability).

^b Estimated from reports on extent of disability, wage, and age to the two state agencies. Because of the element of estimate, figures were rounded to the nearest \$1000.

In Table 33 the situation with regard to temporary disability is presented. Temporary disability payments were then being made after a waiting period of one week, subject to a proviso that compensation should be paid for this week if disability ex-

ceeded four weeks. The period in this proviso was shortened to two weeks in 1937. The rate of installment compensation is $66\frac{2}{3}$ per cent of past earnings, subject to a weekly maximum of \$18 and a weekly minimum of \$9. If actual wages are less than \$9 the compensation is the actual wage, but it can in no case be less than \$7 weekly.

Those eligible for the minimum sustained a wage loss of \$225,300, of which \$161,000 was recovered as compensation. The waiting period reduced the rate of compensation in these cases to 59.2 per cent, but the weekly minimum raised this 12.4 percentage points to 71.5 per cent. Those eligible for the maximum had an effective rate reduced by 13.4 percentage points to 53.3 per cent of earnings. Operation of the waiting period reduced this still further by 7.6 percentage points. Of a wage loss of \$1,398,600, claimants eligible for the weekly maximum recovered only \$639,000, or 45.7 per cent, as compensation. Those receiving the statutory rate were paid \$1,299,000, or 59.1 per cent of their wage loss of \$2,199,100. Operation of the waiting period reduced their compensation by 7.6 per cent of wage loss.

Viewing temporary disability compensation as a whole, it appears that the effective rate of compensation (66.7 per cent minus 4.9 per cent, plus 0.7 per cent) is 62.5 per cent of weekly earnings. Subtracting from this the discount for the waiting period (7.6 per cent), we get a proportion of wage loss compensated of 54.9 per cent. Computing directly by dividing the incurred indemnity (\$2,099,000) by the estimated wage loss (\$3,823,000), one also gets 54.9 per cent.

Compensation of temporary disability in Massachusetts was relatively generous even at this time. Since then the retroactive proviso of the waiting period has been made effective after two weeks. The weekly maximum was too restrictive even in 1935-1936, and on the higher wage level now prevailing is restrictive in the extreme. If the maximum could be raised to about \$25, the Massachusetts scale for temporary disability could be described as adequate for normal times.

Great progress in temporary disability compensation has been made in Massachusetts during the years since the original passage of the workmen's compensation law. Then temporary payments were at the rate of 50 per cent of past earnings after a waiting period of two weeks. They could not exceed \$10 a week,

and might be as low as \$4 a week. In Table 34 an attempt has been made to show the effect of changes since then by revaluing the temporary cases in policy year 1935 according to the original benefit scale. This procedure keeps everything constant except the benefit scale, thus measuring its change as precisely as possible.⁴

TABLE 34

ESTIMATED PROPORTION OF WAGE LOSS COMPENSATED IN TEMPORARY
DISABILITY CASES IN MASSACHUSETTS UNDER THE ORIGINAL SCALE

Class of injured	Estimated wage loss	Estimated compensation ^a	Per cent compensated	Per cent		
				eliminated by		added by
				waiting period	weekly maximum	weekly minimum
Those eligible for weekly minimum	\$ 16,000	\$ 7,600	47.5	15.4	...	12.9
Those eligible for weekly maximum	\$2,730,000	678,500	24.9	14.8	10.3	...
All others . . .	1,077,000	367,500	34.4	15.6	...	...
Total	\$3,823,000	\$1,053,600	27.6	15.0	7.5	0.1

^a Assuming a literal application of the Massachusetts Workmen's Compensation Act in its original form.

The few claimants eligible for the minimum of \$4 sustained a wage loss of \$16,000, and would have received \$7600 as compensation. The minimum would have raised their compensation by 12.9 per cent of the wage loss, but the waiting period would have reduced it by 15.4 per cent. The proportion of wage loss compensated would accordingly have been only 47.5 per cent (50.0 per cent plus 12.9 per cent, minus 15.4 per cent). The largest group of claimants, those eligible for the maximum of \$10 a week, sustained a wage loss of \$2,730,000, but would have recovered only \$678,500. The low weekly maximum would have lowered their compensation rate by 10.3 per cent of wage loss, and the waiting period would have lowered it by 14.8 per cent. They would accordingly have received only 24.9 per cent (50.0 per cent minus 10.3 per cent minus 14.8 per cent) of wage loss. Those who would have been paid at the statutory rate sustained

⁴ Full allowance naturally can not be made for discretion of commissioners in applying the scale, though the writer has studied the decisions closely in attempting to do so.

a wage loss of \$1,077,000, but would have drawn only \$367,500 of wage loss in compensation. The waiting period, by depriving them of 15.6 per cent, would have reduced their compensation rate to 34.4 per cent.

Viewing the situation as a whole, the total compensation would have amounted to only \$1,053,600 under the 1912 scale compared with \$2,099,000 under the 1935 act. The effective rate of compensation would have been only 42.6 per cent (50.0 per cent plus 0.1 per cent, minus 7.5 per cent) of past weekly earnings, instead of 62.5 per cent as in 1935-36. The waiting period discount would have reduced the proportion of wage loss compensated to 27.6 per cent (42.5 per cent minus 15.0 per cent). This is almost equivalent to saying that the 1935 scale was twice as generous as the 1912 scale.

It will be urged that the cost of living was higher in 1935-36 than in 1912, and that weekly earnings had also risen substantially in this period. Yet in 1935-36 weekly earnings averaged only 25 per cent higher, and living costs only 35 per cent higher, than in 1913. Moreover, these changes do not affect gains such as shortening of the waiting period, softening of its effect by addition of a retroactive proviso, or increasing the statutory rate of compensation. If Massachusetts workers temporarily injured during the policy year 1935 did not receive an entirely adequate compensation, they were clearly much better off than workers temporarily injured in 1912.

SUMMARY OF PART III

Losses of earnings have never been fully compensated, nor was it ever intended that they should be. Even the statutory rate of weekly compensation is substantially higher than the proportion of wage loss actually compensated. All states have fixed arbitrary limits to compensation: size of installments, period over which they may be paid, or total amount which they may aggregate. Even today no state provides benefits that average for all classes of injuries as much as 50 per cent of wage loss.

The problem of estimating wage loss is difficult because of the uncertainty of the time dimension. Even in temporary cases, the termination of disability is clouded sometimes by importunities of an employer or insurance carrier or feigning by a worker. In fatal and permanent cases the time dimension varies with the working-life expectancy of the injured workers. No adequate statistics of working-life expectancy are available, but clearly it is a function of two variables: mortality and superannuation. The United States Life Tables picture the national mortality experience adequately, and the census contains a cross-sectional count of the nation's work force broken down by age group. Combining these two bodies of data, reasonably accurate estimates of working-life expectancy can be prepared. In partial disability cases, the time dimension can be estimated by applying to working-life expectancies appropriate percentages of permanent total disability.

Where adequate injury and compensation statistics are not available, the proportion of wage loss compensated can be estimated with the help of standard accident and wage distributions. The American Accident Table, based on the experience of several states, indicates the distribution of injuries by extent of disability; of temporary total and permanent partial injuries by duration of total disability; of permanent partial injuries by nature and location of injury; and of fatal injuries by dependency status. Notwithstanding changes since the table was prepared and variations from state to state, it can be usefully employed in estimating the

time loss and, jointly with a benefit scale, in estimating compensation payments. To transmute time compensated to amount of compensation requires a basis for estimating the *effective* as opposed to the *statutory* rate of weekly compensation. The interaction of weekly maximums and minimums usually lowers the rate of weekly compensation and almost invariably alters it. The Standard Wage Distribution table developed by Mowbray from the experience of several states presents the per cents of cases at various distances from the average. Using this table therefore enables one to estimate quite closely the effective rate of weekly compensation.

Combining the processes indicated in discussing the accident and wage tables, one can estimate the proportion of wage loss compensated under any law. The number of weeks of wage loss is obtained from the accident table, applying in fatal and permanent cases the standard time loss charges up to 1000 weeks. The number of weeks of compensation is obtained by applying the distributions in the accident table to the benefit scale. The number of weeks lost is then multiplied by the average weekly wage to yield the wage loss. The effective rate of compensation is determined from the Standard Wage Distribution table and multiplied by the average weekly wage to yield the average weekly compensation. The product of the number of weeks compensated and the average weekly compensation is the estimated total compensation. Dividing this by the estimated wage loss, one derives an estimated proportion of wage loss compensated.

In 1940 the average wage of injured workers in North Carolina was \$17.75. The benefit scale called for payment of 60 per cent of weekly earnings (a) for 350 weeks in fatal cases, (b) for 400 weeks in total disability cases, and (c) for from 5 weeks to 200 weeks in scheduled partial disability cases. A waiting period of seven days applies to cases not disabling workers for more than four weeks. Weekly limits of \$7.00 and \$18.00, given an average wage of \$17.75, raise the effective rate of compensation to 60.6 per cent. Multiplying by \$17.75, one obtains an average weekly compensation of \$10.75. Applying the accident table to each level of disability and computing the probable wage loss and compensation, one arrives at the following percentages of wage loss compensated: (a) fatal cases, 19.6 per cent; (b) permanent total cases, 24.2 per cent; (c) permanent partial cases, 24.4 per cent;

and temporary total cases, 47.7 per cent. The over-all percentage was 26.4 per cent.

North Carolina is an important industrial state, and its law is of average generosity. True, the indications just reviewed are not precise because of possible differences in distribution of injuries and in application of the law. The error, however, is hardly very large. The percentage should not, of course, be considered as such, but in relation to some reasonable standard, say two-thirds of wage loss. Against this standard, a figure only slightly above one-quarter (26.4 per cent) seems very inadequate.

Ages of injured workers also vary, and working-life expectancies vary with age. Average age was used in the North Carolina computations, because useful age distributions are difficult to construct. Ages as given are often rounded to the nearest multiple of five, making precise compilations impossible. They fluctuate with differing conditions of employment and unemployment, and vary from state to state as well. A standard age distribution could, therefore, hardly be a very precise instrument. In any event, unless age and wage data are jointly available for each injury, average age will serve nearly as well as any distribution that can be prepared.

A more precise study of the proportion of wage loss compensated has been made possible by the coöperation of two agencies in Massachusetts. The Massachusetts Rating and Inspection Bureau opened its file of individual case reports (all serious cases and those not closed) and its classification records for the policy year 1935. The latter cuts across the calendar years 1935 and 1936. The Massachusetts Department of Industrial Accidents opened its complete file of tabulable injury reports for the fiscal years concerned, enabling a somewhat less detailed analysis to be made of injuries not covered in the individual case reports. Together, the two bodies of data furnish a firm basis for a close estimate of the proportion of wage loss compensated in Massachusetts.

The Massachusetts act pays a flat \$10 weekly to widows for up to four hundred weeks, and \$2 weekly for each dependent child until sixteen. The wage loss in total dependency cases paid on an installment basis amounted to \$2,601,000, of which \$500,494 or 19.2 per cent was indemnified. Other dependents receive 66⅔ per cent of past earnings for up to five hundred weeks and \$4,000,

but subject to weekly limits of \$4 and \$10. The proportion of wage loss compensated in partial dependency cases was only 5.9 per cent. In no-dependent cases, \$500 was at that time paid into the second injury fund, but at present \$1,000 must be paid. The over-all proportion compensated in fatal cases was 14.8 per cent.

The permanent total scale is more generous, continuing for life, after \$4,500 has been paid, at a reduced rate of 50 per cent of weekly earnings. At the beginning 66 $\frac{2}{3}$ per cent of weekly earnings is paid, subject to limits of \$18 and \$9 or actual wages, but not less than \$7. In thirteen cases, \$207,000 in wage loss was sustained and \$138,000, or 75.4 per cent, awarded as compensation. Of this amount \$2,000 was paid under the schedule for dismemberment, \$53,613 under the general total disability schedule, and \$82,875 under the reduced schedule subsequently paid to those whose disability proved permanent as well as total.

Partial disability payments include total disability compensation during the "healing period," specific compensation for dismemberment or loss of use at a flat \$10 weekly, and subsequent partial compensation for any loss of earning capacity. In major permanent cases, 65 per cent of compensation was for the healing period, 7.1 per cent for dismemberment or loss of use, and 7.9 per cent for loss of earning capacity. The remaining 20 per cent was paid in lump sum cases, and therefore could not be distributed under the above heads. The proportion of wage loss compensated was 32.4 per cent. In minor permanent cases, it was 39.2 per cent.

The scale for temporary total disability is the same as for permanent total disability up to \$4500. A waiting period of seven days, then retroactive after four weeks, now after two weeks, also applies. Claimants eligible for the weekly minimum drew 71.5 per cent of wage loss, those eligible for the weekly maximum drew only 45.7 per cent. Others drew 59.1 per cent of wage loss. The over-all percentage was 54.9 per cent. The waiting period eliminated 7.6 per cent of wage loss, the weekly maximum 4.9 per cent. The weekly minimum added 0.7 per cent.

Permanent total disability clearly is compensated adequately in Massachusetts. An increase in the weekly maximum would make it possible to say the same for temporary total disability. Compensation of permanent partial and fatal cases is clearly inadequate. It is anomalous that, aside from the small number

of permanent total cases, the more serious the injury, the lower is the proportion of wage loss compensated. This results from the restrictive effect of durational limits.

But, though the Massachusetts scale has flaws, it is better than average. It is also vastly better than the original scale. A re-valuation of the temporary disability cases for 1935 in terms of the original scale brings this out clearly. The waiting period was then two weeks and was unrelieved by a retroactive proviso. The rate of compensation was then 50 per cent of weekly earnings, subject to limits of \$4 and \$10. Even minimum claimants among the 1935 cases would have drawn only 47.5 per cent of wage loss under this scale. Those eligible for the maximum would have drawn only 24.9 per cent, and all others 34.4 per cent, of wage loss. The over-all proportion was 27.6 per cent, little more than half the proportion in 1935-36.

The previous chapter pointed out a number of flaws in American workmen's compensation laws. The present chapter has shown how they reduce the proportion of wage loss compensated. It is difficult to believe that advocates of workmen's compensation intended workers to absorb more than half of the wage loss due to industrial injuries. Yet that is what they do at present, *in every state in the United States*. Compensation benefits are clearly inadequate. What can be done to raise them? Are the costs of more generous compensation more than American industry can bear? If so, can any way be found to increase benefits without sharply increasing compensation costs? We are now prepared to turn to a consideration of these questions.

PART IV

THE COST OF WORKMEN'S COMPENSATION
INSURANCE, 1915-1940

INTRODUCTORY NOTE

THE LIABILITY of American employers under workmen's compensation laws amounts to a considerable sum even in a year of only moderate industrial activity. In 1939 the total benefits paid to injured workers as compensation for wage loss or medical care amounted to \$236,491,000.¹ Most American employers have preferred to insure this liability, and in 1940 paid \$354,141,181 in premiums for this purpose.² Including the cost of carrying one's own risk, the total cost of workmen's compensation insurance in 1940 is estimated to have exceeded \$420,000,000. The benefits to workers were paid under provisions which in the preceding two chapters were found to be inadequate in many respects. Higher benefits would result in higher direct costs (compensation benefits and expenses), at least in the immediate future.³ We must consider now whether the costs of workmen's compensation, including the expense of insuring, represent a serious impediment to the needed liberalization of the benefit scale.

¹ Michalina M. Libman, "Workmen's Compensation Benefits in the United States, 1939 and 1940," *Social Security Bulletin*, vol. V (1942), no. 1.

² See Table 36, p. 247. The estimated costs of carrying one's own risk, whether by the federal government or private employers, has been subtracted from the total cost of insurance.

³ The added stimulus to prevention might offset this in the long run.

CHAPTER XII

SECURITY FOR COMPENSATION

COMPULSORY security requirements are more common than compulsory coverage.¹ Most of the state laws have required private employers to insure their compensation liability or otherwise to provide security for deferred payments.² Many of the original laws contained no insurance requirements. Only four of the ten laws enacted in 1911 and only one of the three enacted in 1912 provided for insurance or proof of financial ability to meet compensation payments. Wisconsin added an insurance requirement in 1913, Rhode Island in 1915, New Jersey in 1917, Arizona in 1925, and Kansas not until 1927. One reason for the delay in providing for insurance may have been the atmosphere of distrust of private insurance in which the early systems of workmen's compensation were conceived. At present seven states compel employers under the act to take out insurance. Only in Alabama and Louisiana is no form of insurance now required. The Louisiana legislature passed an insurance requirement in 1920 but it was declared unconstitutional in part within a year, and altogether void in 1923.³ Alabama employers have never been required either to insure or to self-insure, but have been tempted to take out insurance by an unusual provision that such action would discharge all liability.

Elsewhere the employer may carry his own risk after satisfying the appropriate authorities of his financial responsibility. This practice has been called, not altogether accurately, self-insurance. It is assumed that a self-insuring firm employs a large staff of workers at many different operations, perhaps at several locations, and can therefore form its own insurance organization. The statutory provisions governing issuance of permission to self-insure are so loosely drawn, however, that the privilege is not

¹ For the situation in regard to coverage see Chapter II, pp. 19-23.

² See Table 35, p. 236.

³ *Zehner v. Mader*, 97 So. 34 (1923).

limited to this class of firms, nor does the self-insuring concern usually maintain a bona fide insurance organization. Most states require proof of financial ability, but few make mandatory the furnishing of a bond, much less the accumulation of reserves, creation of a trust fund, or "reinsurance."⁴

Generally speaking, no security is given beyond a sworn statement of assets and liabilities. To be sure, claims for compensation are ordinarily given a preferred lien against unencumbered assets, but when granting permission to carry one's own risk the authorities are in no position to make certain that such assets will be available when claims are presented or payments fall due. Payments of compensation may extend over a period of ten, fifteen, twenty, or more years. Our economic system has not yet guarded itself against the vicissitudes of the business cycle. In these circumstances can one guarantee long in advance the solvency of a firm? It seems best to surround the privilege of carrying one's own risk with provisions for periodical reëxamination of financial ability, securing long-term claims and suspending or abolishing the privilege where it has been abused.⁵ The financial ability requirements of New York State are probably the most stringent, even exacting a deposit with the state fund equal to the present value of future payments on account of death or permanent disability. Some losses to employees of "self-insurers" have, nevertheless, gone unpaid even in that state. As long ago as 1929, Lindsay Rogers recommended to the governor of New York that firms carrying their own risk be made subject to the same supervision as insurance companies.⁶

The state of New Hampshire is alone in providing for no other form of security for compensation than proof of financial ability. At first the vast majority of employers in that state carried their own risk. It was not until after the law had been in operation for eight years that any considerable volume of compensation insurance was written in New Hampshire. In 1921 the state

⁴ Some concerns carrying their own risk have taken out a reinsurance policy, usually covering losses in excess of a stated amount. Since they have not insured in the first instance they can hardly be said to have *reinsured*. Normally, reinsurance is sought by insurance companies, not by private individuals.

⁵ For a careful study of this problem, see Howard Teaf, *Self-Insurance of Workmen's Compensation*, volume IV of the report of the Governor's Commission to Study Workmen's Compensation, Pennsylvania Department of Labor and Industry, Special Bulletin no. 40 (1934).

⁶ Legislative Document No. 49 (1929), pp. 88-89.

insurance department was for the first time specifically instructed to undertake supervision of compensation insurance rates. Since 1920, however, a large proportion of New Hampshire employers have chosen to demonstrate financial ability by insuring with private companies.⁷

PRIVATE INSURANCE

Before the passage of the compensation laws the employer's liability to injured employees was to a considerable extent insured by private casualty companies, most of them organized as stock companies owned by their stockholders. As the compensation system was established and gradually extended, the amount of employer's liability insurance sold by the stock casualty companies fell off rapidly. Faced with this loss of business, they naturally fought vigorously for the right to sell compensation insurance. At present they enjoy this right in all states except seven, which established exclusive state funds.⁸ Although they formerly more completely dominated this casualty line than at present, stock casualty companies still write nearly 50 per cent of the compensation insurance sold in the United States.⁹

Although mutual casualty companies are incorporated, ownership is vested in their policyholders. The latter participate in the "profits" of the company (that is, receive back in the form of dividends that proportion of the premium which represents the amount in excess of the cost of insuring them), and are in some cases liable for assessments if the company is unable to meet its liabilities. Mutuals enjoy the right to sell compensation insurance in all states in which stock companies are so privileged, except Idaho. No provision was made by the Idaho statute for mutual insurance of the compensation obligation, and mutual companies have never been licensed by the state to write this form of insurance.¹⁰ Some mutuals limit their operations to a single state, line, or industry. With the expansion of mutual insurance in recent years many mutuals have come to compare

⁷ The Governor and Council of New Hampshire are now authorized to insure state employees.

⁸ See below the discussion of their struggle to obtain this right in two of these jurisdictions—successful in Idaho, unsuccessful in Ohio (p. 235).

⁹ Or 40 per cent of the hazard if self-insurance is included (see Table 36, p. 247).

¹⁰ See below, p. 235.

favorably with stock casualty companies in the number of lines written, the number of industries insured, and the number of states in which they are licensed.

A small volume of compensation insurance is written by so-called reciprocals, which also operate on a dividend and assessment basis. The assureds of a reciprocal, however, are called subscribers, and give a power of attorney to the manager of the organization, who therefore has the title of attorney-in-fact. He receives the premiums, pays the losses, and receives a fixed percentage for his services and expenses. A still smaller proportion of compensation liabilities is insured by Lloyds Associations, British or American. Such organizations partake of the nature of a large partnership, the members being given the opportunity of sharing one another's liability on some prearranged basis.

STATE INSURANCE

The first type of compensation insurance provided for by an American statute was compulsory insurance of the employer in a state fund created for that purpose. Such a fund is a state-owned and state-controlled organization issuing compensation coverage. Washington was the first state to adopt this system, and Nevada, Oregon, Wyoming, and North Dakota followed, in that order. At the time, only five nations had established state insurance institutions, and only one of these nations—Norway—had given this institution a monopoly of this line of insurance. Contributions to such a fund were of the nature of taxes rather than premiums, and it was perhaps for this reason that the system was adopted. It was unlikely that an exercise of the taxing power of a state would be held unconstitutional. The Washington state fund, unlike the Norwegian fund, employed an assessment plan, and consisted of 47 funds, each representing an industrial group and each financially independent. Not unnaturally, in view of the degree of industrial development of the state, many of these funds proved too small for application of the principle of loss distribution, and a condition of insolvency threatened for which the state treasury could assume no responsibility. Subsequent laws of this type met this situation by providing a general fund in which catastrophe losses of the several funds might be reinsured.

A less complete state monopoly of compensation insurance was established by the laws of West Virginia and Ohio. The original West Virginia act contemplated a complete monopoly, but was amended in 1915 to allow for carrying one's own risk provided the firm contributed toward the expense of administering the act. The Ohio act likewise swerved from intended monopoly, allowing not only self-insurance but also insurance by mutual associations. Until 1917, when the courts made several clear pronouncements and the legislature rephrased the confusing passages bearing on financial ability and mutual insurance, both stock and mutual companies fought for the right to insure the compensation liability in Ohio.¹¹ The right to carry one's own risk has persisted, though it has since been surrounded by severe limitations, including a provision that, once abandoned, it cannot be resumed.

In 1912, Michigan established a state fund in which employers might insure, but private companies were allowed to compete for this business. Similar competitive state funds were established in California and New York in 1913, in Maryland in 1914, in Montana, Colorado, and Pennsylvania in 1915, in Utah in 1917, in Arizona in 1925, and in Oklahoma in 1933. The Idaho statute appeared to contemplate an exclusive state fund, with provision for self-insurance, but among the methods by which an employer could demonstrate financial ability was a "guaranty contract." The attorney general of the state interpreted this phrase broadly to include a compensation insurance policy with a stock company.

A different form of state-controlled institution for insuring the compensation obligation was established in Massachusetts in 1912 and in Texas in 1913. The original purpose may have been to accord an insurance monopoly to a state-controlled mutual association. In the course of legislative debates, however, amendments were inserted permitting private companies to compete with the associations. Massachusetts and Texas made insurance a condition of election, thus forbidding self-insurance. In 1917 the Massachusetts Employees' Insurance Association was licensed to write other forms of insurance and became a private mutual company. The Texas Employers' Insurance Association con-

¹¹ See Acts of 1917, House Bill No. 506, p. 157, amendment of sec. 1465-69 of the General Code. See also U. S. Bureau of Labor Statistics Bulletin No. 243 (1918), pp. 93-94.

merits of private insurance, participating or nonparticipating, and state insurance, exclusive or competitive. Most of the debaters have shown greater vigor than objectivity. R. H. Blanchard has shrewdly observed that the management of the individual carrier was more important than its adherence to a particular theory of organization.¹² Examples could be cited to show prudent and efficient management or gross mismanagement by either type of insurance carrier. Much the same can be said for the different systems of insurance. The standards of workmen's compensation administration are as high in Massachusetts, which until 1943 required electing employers to insure with private companies, as in Wisconsin, which allows them under strict safeguards to carry their own risk; and standards are as high in New York, with a competitive state fund, as in Oregon, with an exclusive state fund. One cannot escape by use of convenient labels careful consideration of the record of the individual carriers and the individual states.

¹² G. F. Michelbacher and others, *Casualty Insurance Principles* (1942), p. 28.

CHAPTER XIII

INSURANCE RATES AND RATE-MAKING

BEFORE UNDERTAKING an analysis of the tendencies in the cost of workmen's compensation insurance it is necessary to set forth briefly the fundamentals of rate-making in this line. The purpose of the following comments is not to give an exhaustive treatment of these matters. No attempt at detailed analysis is possible here, though interested readers will be referred to full-length treatments of many points. The concepts and relationships set forth below are intended only to enable the uninitiated reader to follow the analysis of changes in costs.

An insurance rate is the price of insurance, and is always quoted in terms of units of exposure. The measure of exposure used depends on the kind of insurance. Desirable characteristics in a measure of exposure are (a) that it be conveniently ascertainable, (b) that it not be subject to manipulation, and (c) that it accurately reflect the nature of the obligation undertaken by the carrier. In automobile liability insurance (private passenger cars) the unit of exposure is one automobile for one year. In steam boiler insurance it is one boiler for one year. The unit of exposure in workmen's compensation insurance is \$100 of (covered) payroll expenditure.¹

The cost of insurance to an individual policyholder, commonly called the premium, is computed by multiplying the applicable rate by the number of units of exposure. If the applicable rate is \$1.25 and the covered payroll amounts to \$1,000,000 the premium is \$12,500. In the example given there are 10,000 units of \$100 of payroll, for each of which \$1.25 must be paid.

A rate is divisible into two parts: pure premium and expense

¹ But the state of Washington measures exposure in man-hours of employment, and a few classifications (especially in agriculture and domestic service) are on a man-hour or per capita basis in those states using them. Man-hours are undoubtedly a more precise indicator of exposure but are not always recorded. Payrolls are used, in spite of certain inherent shortcomings, as a measure of exposure principally because they can be more readily ascertained than any other measure.

loading. The pure premium is the amount of expected losses per unit of exposure; the expense loading is the amount of expected expenses per unit of exposure. These parts indicate a division of carrier expenditures into those covering the liability of the policyholder (to his injured employees) and those representing services by the carrier. The pure premium is designed to produce a fund sufficient to pay claims and to provide a reserve against deferred payments to claimants. The expense loading is designed to provide a fund sufficient to defray necessary expenditures incurred in issuing policies, adjusting claims, inspecting premises of policyholders, auditing their pay rolls and otherwise carrying on the insurance enterprise.

A loss ratio is obtained by dividing total losses (claims) by total premiums, an expense ratio by dividing total expenses by total premiums. All three data concerned must naturally refer to the same period, but may be accounted for by different methods. Premiums may be counted as collected, in which case the total for a given year will include a considerable sum contributed for some part of the following year, while excluding a considerable sum contributed for some part of the given year during the preceding year. Or, a reserve having been set up for "unearned" premiums, and each premium being considered fully "earned" only when the policy expires, the premiums may be adjusted to an "earned" basis by reference to the increase or decrease in the unearned premium reserve.²

Losses and expenses may be counted as they are paid or as they are incurred. Because most compensation claims are paid on an installment basis, payment of a substantial proportion of any given year's claims (most serious cases) is deferred to subsequent years. Similarly, a substantial proportion of loss payments in any given year is made for awards given in earlier years. Thus in 1938 the Ohio state fund paid losses amounting to \$13,368,311, but only 34.3 per cent of this amount was paid for 1938 claims. On the other hand, the fund *incurred* losses of \$15,861,386 during 1938, only 28.9 per cent of which were paid during 1938.³ The

² "Earned" premiums equal net premiums written (or collected) during the given year, minus the unearned premium reserve at the end of the given year, plus the unearned premium reserve at the end of the preceding year.

³ Ohio State Insurance Fund, *Workmen's Compensation: Annual Revision of Rules and Rates Effective July 1, 1937, and Actuary's Statement of the Status of the Fund as of December 31, 1938* (leaflet, n.d.).

volume of outstanding payments must accordingly be estimated and a reserve set up to provide the carrier with a fund to liquidate outstanding liabilities.⁴ The year-to-year change in a carrier's compensation loss reserve is the datum, then, with which the amount of loss payments can be adjusted to the amount of losses incurred. Expense payments are less likely to refer to prior or subsequent obligations, although, in cases involving litigation, adjustment expenses may be met in years other than the year in which the claim was incurred. Also, annual statements of insurance carriers are presented at so early a date that payments for the last quarter are not yet audited, if they are completed. Subtraction of payments for the previous year and addition of payments yet to be accounted for will adjust expense payments to an incurred basis.

The ratio of incurred losses to earned premiums having been computed, it is ordinarily compared with the normal loss ratio (pure premium divided by rate). If a rate includes an expense loading of 40 per cent, the balance, or 60 per cent, represents the pure premium, and the normal loss ratio is referred to as 60. If in the course of business the ratio of actual losses to premiums is less than 60 per cent, actual experience is better than was expected in this instance; if greater than 60 per cent, it is worse than expected. Barring sharp fluctuations in the expense ratio (which are relatively unusual), the loss ratio serves as a simple barometer of good or bad business. The expense loading is a judgment loading due to difficulties in accounting for expense payments, particularly on a state basis, and is normally 40 per cent of the rate, exclusive of certain specific loadings.⁵ It may be used as a standard of comparison for the expense ratio.

In the process of rate-making it is necessary to collect statistics of losses—number, nature, and cost. Instead of the calendar year, the policy year is the basic period of time in compensation rate calculations. A policy year is the period covered by all the policies issued in a specific year, and therefore cuts across two

⁴ This loss reserve is based on the carrier's estimates of outstanding compensation claims, but for claims presented during the three latest policy years the loss reserve cannot be less than 65 per cent of earned premiums (less any loss payments or claim expense payments made on these claims).

⁵ In certain states, for example, expense constants are added to the rates of risks not eligible for experience rating, to cover the higher cost (percentage-wise) of issuing and servicing small policies.

calendar years.⁶ Graphically it forms a parallelogram, the first policy issued (represented by the base line in Chart 1) falling virtually entirely within the first calendar year, while the last policy issued (represented by the top line in Chart 1) falls virtually entirely within the second calendar year. The policy year 1945, then, began on January 1, 1945, and terminated December

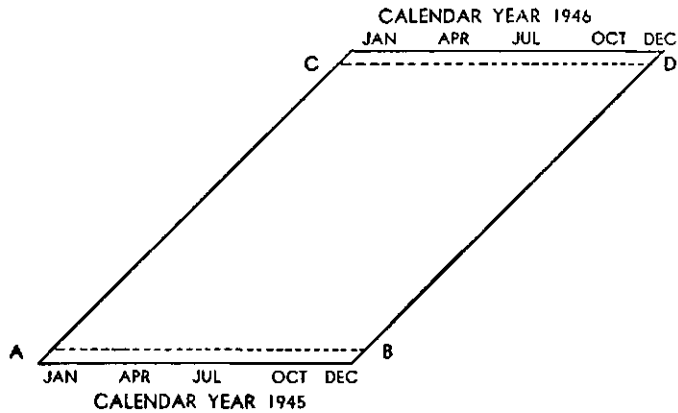


CHART 1. DIAGRAM OF A POLICY YEAR

(The dotted line AB represents a policy issued 15 January 1945 and expiring 15 January 1946. Similarly CD represents a policy issued 15 December 1945 and expiring 15 December 1946. Both are in policy year 1945, and experience on both will be included in exhibits of policy year 1945. Yet the experience on both policies is incurred during both calendar years 1945 and 1946.)

31, 1946. The policy year 1946 began January 1, 1946, and would terminate December 31, 1947. From the standpoint of presenting underwriting results and bringing together the most definitely related loss and exposure data, the policy year is the most suitable unit of time. There is one important disadvantage: analysis of a given policy year can never be completed until after the expiration of the second year.

Loss experience is not gathered indiscriminately nor are genuine differences in hazard ignored in rate-making. Pooling of good and bad risks is always dangerous as well as inequitable, for it tends to weaken the incentive to prevention on the part of the poor risks. The first step in discriminating is the setting up of classifications representing well-defined industries, processes, or occupations. There are at present some six hundred such classifications, each with a code number, most of them used in nearly all

⁶ If, as in most cases, the policies have a term of one year.

states. The payroll, premium, and losses of each insured firm are classified under one or more of these classifications, depending on the descriptions which most accurately fit their operations. Indemnity pure premiums (compensation cost per \$100 of payroll) are then prepared on the basis of the experience of the latest five policy years, and medical pure premiums on the basis of the latest two policy years. Where possible the experience of a given state alone is used, but if this is inadequate, national pure premiums based on national indications converted to the state benefit level are used to supplement the state experience.⁷ Even if state pure premiums alone are used, account must be taken of two additional factors: (a) amendments affecting the benefit scale, and (b) the tendency of successive reportings of losses to show some development.⁸

When the pure premiums have been inflated for the expense loading, the resulting rates are subject to certain additional adjustments before being posted as manual rates. One such adjustment is for rate level, that is, the average charge per \$100 of payroll for all classifications combined in the jurisdiction concerned. A 1934 resolution of the National Convention (now Association) of Insurance Commissioners provided that rate levels should be based on figures for the last two policy years with respect to indemnity losses, and the last year with respect to medical losses.⁹ Another such adjustment is for group rate levels, generally for manufacturing, contracting, and "all other" classifications.¹⁰ The procedure

⁷ But the Pennsylvania Compensation Rating and Inspection Bureau has generally followed a different practice. Small classifications have been combined with closely related classifications, on the assumption that the state's experience in closely related classifications is more indicative than extra-state experience in the same classification. The number of classifications used in Pennsylvania is very much smaller than in most states.

⁸ Law amendment factors are used to convert to a current basis experience incurred before amendments became effective. Policy year reportings are usually made four times at annual intervals. When rates are made, only a first reporting of the latest full policy year used will be available, while fourth reportings will be available for the first two policy years. Generally each reporting for a given policy year shows a slightly higher loss total than the preceding reporting, but the development proceeds at a diminishing rate. Loss development factors are accordingly used to render comparable the different reportings.

⁹ National Convention of Insurance Commissioners, *Proceedings* (1934), pp. 110-111.

¹⁰ In some states additional groups of classifications are identified for rate level calculations. Three additional groups are identified in Massachusetts, including "stevedoring."

is the same except that three policy years, rather than two, are generally included for indemnity losses. It is unnecessary for our limited purpose to consider further refinements in computing manual rates.¹¹

Risks paying a premium of \$500 or more may pay more or less than the manual rate, depending on their loss experience compared with that of all risks in the classification. This is not a large premium, for this amount would be due from an establishment paying \$1.25 per \$100 with a payroll of \$40,000; and at an average annual wage of \$1250 any establishment employing thirty-two workers would have a payroll of \$40,000. Yet Hobbs estimates that three quarters of all risks are not eligible for experience rating, but that those who are comprise about three quarters of the total insured payroll.¹² The process of experience rating is too intricate to be described in detail here. The essence consists in computing an adjusted rate somewhere between the manual rate and the rate indicated by the experience of the risk concerned. The actual losses of the risk in the period concerned (five policy years) are considered in relation to their nature, and are assigned a credibility weighting based on the amount of exposure. So-called *excess* losses, or so much of each indemnity loss as exceeds fifty times the maximum weekly benefit, and so much of any medical loss as exceeds \$100, receive a lower weighting in experience rating than so-called *normal* losses.¹³ An experience modification is prepared by computing a weighted average of the manual pure premium and the indicated pure premium (based on adjusted actual experience), the weights depending on the credibility of the firm's exposure.

The essence of experience rating is its projection of past experience, that is, its *prospective* character. Some risks complain that the use of a five year period produces too gradual an adjustment. Risks paying a premium of \$5000 or more may be rated on the basis of their experience in the year concerned, that is, *retrospectively* rated. An assured accepting this plan is rated by

¹¹ But interested readers are invited to consult C. W. Hobbs, *Workmen's Compensation Insurance* (1939), chap. xvi. See also below, pp. 395-397, for recent changes.

¹² *Ibid.*, p. 574

¹³ The basis for different weighting of "normal" and "excess" losses is the lower credibility of losses of relatively rare occurrence. It can also be argued that injury prevention (with which experience rating is obviously related) can control the frequency of injuries more effectively than their severity.

the customary method in the first instance, that is, by experience rating. When the policy year ends and final audits have been made the premium is adjusted by reference to actual loss experience under the policy. The adjusted premium is made up with reference to three elements: (a) a basic premium consisting of those expense elements which are independent of loss experience and a sum to cover such losses as may exceed the maximum retrospective premium; (b) a minimum retrospective premium ranging from 75 to 50 per cent of the standard premium, depending on size of premium; and (c) a maximum retrospective premium ranging from 175 to 125 per cent of the standard premium, again depending on size of premium.¹⁴ Between these limits, the premium is based on the loss experience of the assured. It is computed by adding to his basic premium the actual losses of the assured, loaded for expenses of adjustment and for premium taxes, subject to the maximum and minimum premium. The scope of retrospective rating is much narrower than that of experience rating, since in most states only risks paying a premium of \$5000 or more can qualify. Experience under it is still insufficient to permit any definitive appraisal of its merits compared with experience rating.

Compensation insurance rates are subject to some measure of regulation in most states. No rate regulation obtains in the "open" states of Connecticut, Idaho, Illinois, and Rhode Island; and "anti-compact" laws make it only advisory in Iowa and Nebraska. Elsewhere rates are subject to approval (or determination) by either the compensation authority or, more commonly, the insurance commissioner. The general purposes of rate regulation are (a) prevention of discrimination, (b) assurance that rates are adequate yet not unreasonable, and (c) scrutiny of competitive practices of carriers.¹⁵ For the most part actual rate-making operations are undertaken in the first instance by "non-partisan" rating organizations governed by committees equally representative of stock and mutual companies.

¹⁴ At \$5000, for example, the basic premium is 30 per cent, the minimum premium 75 per cent, and the maximum premium 175 per cent of the standard premium. At \$150,000 or over the basic premium is 22.5 per cent, the minimum premium 50 per cent, and the maximum premium 125 per cent of the standard premium. For a table of these rating values see Hobbs, *Workmen's Compensation Insurance*, p. 578.

¹⁵ For a more extensive discussion of regulation of compensation insurance rates see Hobbs, *Workmen's Compensation Insurance*, chap. xv, and E. W. Patterson, *The Insurance Commissioner in the United States* (1927).

Since 1923 the National Council on Compensation Insurance has collected and compiled national experience for compensation rate-making.¹⁶ The Council was formed at the instance of the National Convention (now Association) of Insurance Commissioners. The Council makes and files rates in twenty-seven states and administers them through regional bureaus in nineteen states.¹⁷ It submits rates for final action by the Texas Board of Insurance Commissioners, and makes and files advisory rates for Iowa and Nebraska. Nine states have independent rating bureaus which make and administer rates in the states concerned.¹⁸ In states with exclusive state funds, rate-making is a function of this public agency, and in states with competitive state funds the fund is generally permitted to charge less than the approved rates.

¹⁶ An excellent description of the development and functioning of this organization has been written by the late C. W. Hobbs in *The National Council on Compensation Insurance*, privately printed for the Committee on Workmen's Compensation of the National Association of Insurance Commissioners (1937). Mr. Hobbs was special representative of the National Association of Insurance Commissioners on the National Council.

¹⁷ Makes and files rates in Alabama, Arizona, Colorado, Connecticut, District of Columbia, Florida, Georgia, Idaho, Illinois, Indiana, Kansas, Kentucky, Louisiana, Maine, Maryland, Michigan, Missouri, Montana, New Hampshire, New Mexico, Oklahoma, Rhode Island, South Carolina, South Dakota, Tennessee, Utah, and Vermont. Administers them in Alabama, Arizona, Colorado, District of Columbia, Florida, Georgia, Idaho, Indiana, Kansas, Kentucky, Louisiana, Michigan, Missouri, Montana, New Mexico, Oklahoma, South Carolina, Tennessee, and Utah.

¹⁸ Such bureaus are found in California, Massachusetts, Minnesota, New Jersey, New York, North Carolina, Pennsylvania, Virginia, and Wisconsin. The Pennsylvania Compensation Rating and Inspection Bureau also makes and administers rates for Delaware.

CHAPTER XIV

DISTRIBUTION OF WORKMEN'S COMPENSATION HAZARD, 1915-1940

THE METHOD by which the workmen's compensation hazard of American firms has been secured can be approached by two avenues. Either the benefits paid or the cost of securing compensation may be estimated for each method. For the purpose of determining the proportions of the hazard protected by each method, the benefits paid are most indicative. The total cost of securing compensation also has a direct bearing on the relationship of benefit levels to costs, however, and the distribution of security costs should also be studied. The relevant data for 1940 are presented in Table 36. For private carriers both benefits and premiums could be secured from the *Spectator Insurance Year*

TABLE 36
DISTRIBUTION OF WORKMEN'S COMPENSATION INSURANCE, 1940

Secured by	Benefits paid		Cost of insurance	
	Amount	Per cent of total	Amount	Per cent of total
Carrying own risk	\$ 62,809,000	24.6	\$ 66,114,000	15.8
Federal government	13,048,000	5.1	13,734,000 ^d	3.3
Other	49,761,000 ^a	19.5	52,380,000 ^d	12.5
Private insurance	\$133,529,919 ^b	52.2	\$269,750,894 ^b	64.2
Stock companies	84,257,098	32.9	166,826,059	39.7
Mutual companies	46,488,374	18.2	96,919,274	23.1
Other companies	2,784,447	1.1	6,005,561	1.4
State insurance	\$ 59,454,000 ^e	23.2	\$ 84,390,287	20.0
Competitive funds	28,179,000	11.0	44,687,415 ^e	10.6
Exclusive funds	31,275,000	12.2	39,702,872 ^e	9.4
Total	<u>\$255,792,919</u>	<u>100.0</u>	<u>\$420,255,181</u>	<u>100.0</u>

^a Estimate of Michalena M. Libman in "Workmen's Compensation Benefits in the United States, 1939 and 1940," *Social Security Bulletin*, vol. 5 (1942), no. 1, p. 12; includes private and municipal self-insurers.

^b Total derived from separate tabulations by type of carrier in the *Spectator Year Book, Casualty and Surety Volume* (1940).

^c Totalled from reports of some of the state funds and from figures cited by Libman, above.

^d Estimated on the assumption that costs of administering and adjusting these claims must be roughly 5 per cent.

^e Totalled from reports of those state funds which are on a calendar year basis and from estimates for those on a fiscal year basis.

Book, Casualty and Surety volume (68th Annual Edition, 1940-41). Reports of the state insurance funds supply similar data, though sometimes on a fiscal year basis. Benefit payments by the federal government and by those carrying their own risk have been estimated by Michalina M. Libman. The cost of handling these payments has posed a real problem, however, for accounting methods by which they might be isolated are not in general use. Quite commonly the benefits paid are presumed to be the entire cost, but the writer is convinced that the most rigid economy cannot reduce the cost of administering them below 5 per cent of the awards. This conservative estimate is accordingly used in the first two entries in the final two columns.

Total benefit payments in 1940 aggregated nearly \$256,000,000. Over half this amount, or nearly \$134,000,000, was paid by private carriers, nearly 33 per cent by stock companies, and over 18 per cent by mutual companies. Other private carriers paid little more than 1 per cent of the country-wide total. Those carrying their own risk paid nearly a quarter of these benefits, and, exclusive of the federal government, paid nearly a fifth of them. State insurance funds paid 23.2 per cent of total benefits—exclusive funds 12.2 per cent, competitive funds 11 per cent. These percentages present as accurately as possible the 1940 distribution of the workmen's compensation hazard.

The cost figures are a less accurate indication of the distribution because of differences in cost among the carrier types and between insuring and carrying one's own risk. The total cost of securing compensation liabilities of American employers in 1940 amounted to \$420,255,181. Nearly two-thirds (64.2 per cent) of this cost was collected as premiums by private insurance carriers. Stock companies were responsible for nearly two-fifths (39.7 per cent), and mutual companies nearly one-fourth (23.1 per cent) of the total. State funds collected one-fifth of the total, competitive funds taking rather more than half of this amount. Those carrying their own risk expended nearly 16 per cent of the total, those other than the federal government, 12.5 per cent. The differences in cost are brought out by comparing the third and fifth columns. Private carriers paid 52.2 per cent of benefits but received 64.2 per cent of the cost of security.¹ State funds, on the other hand,

¹ For a discussion of differences in expenses of insuring compensation see below, pp. 260-262.

paid 28.3 per cent of benefits, but received only 23.3 per cent of the cost of security. Those carrying their own risk paid 24.6 per cent of the benefits, but expended only 15.8 per cent of the cost of security. Some explanation of these differences in cost is given below.

COUNTRY-WIDE EXPERIENCE OF CARRIERS OPERATING IN NEW YORK

Most of the compensation insurance written in this country is sold by insurance carriers operating in New York state. This is particularly true if we exclude state insurance. The total premiums earned in the United States in 1938 by stock and mutual companies was \$249,119,955. The total for stock and mutual companies operating in New York was \$207,415,922, or 83.3 per cent of the total for all carriers. In view of the inclusiveness of the country-wide experience of carriers operating in New York it is especially fruitful to examine it, for the reports of the New York Insurance Department provide a running account of their operations over a period of years, and no corresponding detail is available for so many years for all carriers operating anywhere in the United States.

PREMIUMS AND LOSSES

Two forces tended to make the compensation insurance business an expanding one during the twenty-five years before the second World War. In the first place, as noted above, the coverage of workmen's compensation was being extended as such legislation was passed in the several states, and its scope was gradually broadened by amendment. In the second place, benefits were being made more generous by amendments, causing some upward tendency in compensation insurance rates. How much has the business expanded, and what has been the relative movement of loss payments?

Table 37 presents one answer to these questions, indicating the fluctuations in premiums written, losses paid, the corresponding loss ratios, and the trend of loss ratios. Whereas only \$14,000,000 in premiums were written by carriers operating in New York state in 1913, nearly \$232,000,000 were written twenty-six years later in 1939. As early as 1919 premiums had nearly reached

TABLE 37

COUNTRY-WIDE PREMIUMS AND LOSSES OF ALL CARRIERS OPERATING IN
NEW YORK STATE, 1913-1939

Calendar year	Net premiums written	Losses paid	Loss ratio	5-Year period	Moving average loss ratio
	(thousands)	(thousands)	(per cent)		(per cent)
1913	\$ 14,269	\$ 3,764	26.38	...	...
1914	31,967	7,949	24.86	...	...
1915	31,850	13,449	42.23	1913-17	39.49
1916	47,950	22,250	36.40	1914-18	38.08
1917	75,656	32,231	42.60	1915-19	38.93
1918	111,237	37,863	34.04	1916-20	39.37
1919	122,618	45,751	37.31	1917-21	41.07
1920	144,920	59,694	41.19	1918-22	44.35
1921	121,330	60,911	50.20	1919-23	49.79
1922	103,965	63,703	61.27	1920-24	54.87
1923	127,278	78,704	61.84	1921-25	58.02
1924	144,681	89,339	61.75	1922-26	59.02
1925	161,187	94,845	58.84	1923-27	58.09
1926	181,396	102,975	56.77	1924-28	57.55
1927	191,403	107,784	56.31	1925-29	57.36
1928	193,064	112,277	58.16	1926-30	58.77
1929	205,068	122,249	59.61	1927-31	61.62
1930	195,408	128,095	65.55	1928-32	65.40
1931	162,667	119,041	73.18	1929-33	68.30
1932	120,839	97,387	80.59	1930-34	68.58
1933	112,836	82,874	73.45	1931-35	65.10
1934	144,596	83,073	57.45	1932-36	58.63
1935	170,071	86,024	50.58	1933-37	52.45
1936	199,419	94,554	47.32	1934-38	47.84
1937	238,195	107,234	45.02	1935-39	46.66
1938	232,063	109,990	47.40	...	...
1939	231,552	112,074	48.40	...	...
1913-1939	\$3,675,930	\$2,076,444	56.49		

Source: Computed from data contained in the annual reports of the New York State Insurance Department.

\$123,000,000, and in 1929 they had reached \$205,000,000. The bulk of this development was due to the workmen's compensation movement, which has resulted in a workmen's compensation law in every state except Mississippi. Yet the rate of growth in loss payments has been even greater. Although the 1939 premium volume was over sixteen times greater than the 1913 premium volume, 1939 loss payments were nearly thirty times greater than

those in 1913. Only \$3,764,000 in claims were paid in 1913, but in 1939 \$112,074,000 were paid to claimants.

These relative movements were to be expected for such is the nature of insurance enterprise, particularly where, as in the case of workmen's compensation insurance, payments are spread over a period of time, often over a period of years. Claims incurred in 1913 certainly greatly exceeded \$3,764,000, for loss payments in this early year could not have represented any substantial volume of claims prior to 1913. Each wave of legislation has had a similar effect on the relative movement of the two series. The effect on premium volume has been relatively immediate, but it has taken time for claim experience to catch up, to the extent of being reflected with reasonable accuracy in the movement of loss payments.

The individual loss ratios indicate this clearly. In 1913 and 1914 the loss ratio was less than 25 per cent. It was not until 1921 that a loss ratio of over 50 per cent was attained, and not until 1922 that a loss ratio of over 60 per cent was attained. From that year until 1935 no loss ratio of less than 55 per cent occurred, while in 1932 the loss ratio rose to 80.6 per cent. During the last four years of the period 1936 to 1939 the ratio dropped below 50 per cent, indicating improved experience. These fluctuations are smoothed when a moving five-year average is computed, and the trends become clearer. The first four data exhibit a high degree of stability at about 39 per cent, then an abrupt rise occurs until another plateau is attained at about 58 per cent. The depression follows, and the ratio, after attaining a peak of 68.58 per cent, declines rapidly to 46.66 per cent. The erratic behavior of the ratio of losses paid to premiums written is emphasized in periods of marked change, due to the influence on loss payments of claims from earlier years. Thus premiums declined 41 per cent between 1929 and 1932, while loss payments were declining only 20 per cent. Hence the loss ratio rose from 59.6 per cent in 1929 to 80.6 per cent in 1932.

INCURRED LOSSES AND EXPENSES

A more accurate comparison is afforded when premiums are placed on an earned basis and losses on an incurred basis. When expenses are also dealt with on this basis one may discern the un-

derwriting results. The fear has often been expressed that if employers were permitted to insure their compensation liability with private carriers a profit would be made out of an insurance line social in character. Through most of the period since the first World War these fears have not had much substance. The underwriting experience with workmen's compensation has been generally unfavorable, especially with those carriers capable of earning a profit in the accepted sense of the term. Only stock companies distribute profits among their stockholders. Dividends of participating companies are divided among the policyholders but represent the difference between the anticipated and actual cost of insurance rather than a "profit."

Table 38 presents the country-wide experience of carriers operating in New York with premiums on an earned, and losses and expenses on an incurred, basis. Over the seventeen-year period 1923 to 1939 inclusive, these carriers earned \$2,975,000,000 in premiums, paid to claimants or reserved for future payment \$1,891,000,000, and incurred expenditures of \$1,088,000,000 in carrying on this business. The combined losses and expenses incurred amounted to \$2,979,000,000, exceeding premium income by \$4,000,000. Viewed from another standpoint, these carriers spent 63.6 per cent of premiums in meeting claims and 36.6 per cent in defraying expenditures. Adding these percentages (100.2 per cent) it becomes apparent that they sustained an underwriting deficit of 0.2 per cent. It is hardly an actual deficit, for funds held in reserve for deferred payments of claims are generally invested. On the other hand, too much stress must not be laid on the investment possibilities, for in reserves for fatal and permanent total cases this has already been taken into account by expressing estimated claims in terms of their present value.

As is shown in column (7), underwriting profits have been confined to the last five of these seventeen years. A large underwriting deficit of 7.6 per cent was incurred in 1924, but the largest deficits were incurred in 1931, 1932, and 1933, in all of which years deficits exceeded 10 per cent. In 1933 the underwriting deficit amounted to 13.6 per cent. The data in column (6) indicate that these difficulties are not primarily due to the movement of expenses. The expense ratios show remarkable stability in the period 1923-1930, varying only from 36.2 (1926) to 38.6 per cent (1930). In the early thirties expense ratios rose above 40 per

TABLE 38

COUNTRY-WIDE PREMIUMS, LOSSES, AND EXPENSES OF ALL CARRIERS
OPERATING IN NEW YORK STATE, 1923-1939

I. PREMIUMS, LOSSES, AND EXPENSES						
(1) Year	(2) Premiums earned	(3) Incurred losses	(4) Loss ratio	(5) Expenses incurred	(6) Expense ratio	(7) Net gain ratio
	(thousands)	(thousands)	(per cent)	(thousands)	(per cent)	(per cent)
1923	\$ 125,536	\$ 84,567	67.36	\$ 47,506	37.84	- 5.45
1924	142,299	99,216	69.7	53,580	37.7	- 7.6
1925	156,063	103,338	66.2	58,224	37.3	- 3.6
1926	177,788	117,877	66.3	64,458	36.2	- 3.1
1927	187,020	120,759	64.6	69,077	36.9	- 1.9
1928	188,810	120,881	64.0	69,597	36.9	- 0.9
1929	202,248	138,485	68.4	75,368	37.3	- 5.7
1930	196,359	132,528	67.5	75,860	38.6	- 6.1
1931	163,548	116,727	71.1	66,814	40.8	- 11.9
1932	125,954	87,277	69.3	52,324	41.5	- 10.8
1933	114,443	82,414	72.0	47,588	41.6	- 13.6
1934	141,939	90,444	63.7	51,688	36.4	- 0.1
1935	164,930	101,365	61.4	57,534	34.9	+ 3.7
1936	194,628	116,825	60.0	64,850	33.3	+ 6.7
1937	233,530	131,233	56.2	75,718	32.4	+ 11.4
1938	229,614	121,941	53.1	78,954	34.4	+ 12.5
1939	230,227	125,351	54.4	78,578	34.1	+ 11.5
1923-1939	\$2,974,937	\$1,891,228	63.6	\$1,087,714	36.6	- 0.2

II. EXPENSES BY CATEGORY					
Year	(8) Investigation and adjustment	(9) Acquisition and field supervision	(10) General admin- istration	(11) Inspection and bureau	(12) Taxes
	<i>(figures in per cent of value of premiums earned)</i>				
1923	8.70	14.95	8.75	3.27	2.17
1924	8.8	14.7	8.8	2.9	2.5
1925	8.8	14.8	8.4	2.9	2.4
1926	8.6	14.4	8.3	2.7	2.2
1927	8.8	14.6	8.5	2.7	2.3
1928	8.9	14.7	8.6	2.6	2.1
1929	9.0	14.7	8.7	2.7	2.2
1930	9.9	14.9	9.1	2.9	1.9
1931	10.7	15.3	9.7	3.3	1.9
1932	11.7	14.5	10.1	3.5	1.8
1933	11.8	14.4	10.1	3.4	1.9
1934	9.6	13.7	8.5	2.5	2.1
1935	8.9	12.9	8.0	2.5	2.6
1936	8.4	12.3	7.6	2.4	2.6
1937	7.9	11.8	7.3	2.3	3.1
1938	8.4	12.1	7.8	2.6	3.5
1939	8.5	12.0	8.0	2.7	3.0
1923-1939	9.1	13.8	8.5	2.8	2.4

Source: Compiled from data in the annual reports of the New York State Insurance Department.

cent, attaining a peak of 41.6 per cent in 1933. Subsequent analysis will show that this is due to the "stickiness" of certain expense groups on a sharply declining premium volume.² The sharp drop in expense ratios beginning in 1934 reflected not only a rise in premium volume, but also a considerable shift of business to carriers with lower expenses.³

A much more important factor in fluctuations of the net underwriting gain or loss is the relative movement of losses and premiums, reflected in marked fluctuations in the loss ratio. To some extent these fluctuations reflect difficulties in rate-making.⁴ Losses and payrolls (and hence premiums which vary directly with payrolls) inherently vary in different degree. In general, payrolls and premiums are subject to a larger range of fluctuations. In periods of hard times, for example, payrolls decline because of falling employment, reductions in work hours, and to some extent reductions in wages. The number of claims also declines, but the average cost per case often rises, and incurred losses generally decline less than payrolls and premiums. Weekly maximums are less restrictive on a falling wage level and weekly minimums apply to a larger proportion of claims. These developments tend to raise the proportion of wage loss compensated.⁵ Claims are pressed which might not have been urged in better times, and reduced opportunities for reemployment tend to lengthen the never precisely determinate "period of disability."⁶ Closed cases are reopened by unemployed workers. Commissioners also tend to a more sympathetic appraisal of claims in such periods. In periods of good times reverse tendencies appear. Weekly maximums become increasingly restrictive, weekly minimums less often applicable. The ease of finding employment re-

² For further elaboration of this point, see below, p. 256.

³ For further elaboration of this point, see below, pp. 262-264.

⁴ In periods of expanding business, rate increases tend to produce too favorable experience, while in periods of depression rate reductions have the opposite effect.

⁵ For discussion of this tendency in another context see above, pp. 183-185.

⁶ These tendencies are noted for Ohio by Louis Levine in his article "Workmen's Compensation Experience in Ohio during the Depression," *Journal of Political Economy*, XLII (1934), 237ff, and for Maryland by E. E. Singleton in *Workmen's Compensation in Maryland* (1935), pp. 65ff. In most cases compensation ends with resumption of employment, but if not, by the filing of a discontinuance. The proportion of cases settled by discontinuance increases during hard times.

duces to a minimum the number of doubtful cases and the period during which disability is pleaded.

These conflicting tendencies are reflected in marked fluctuations of loss ratios when considerable business fluctuations occur. Even the short, sharp recession of 1924 was reflected in a loss ratio (69.7 per cent) higher by more than two points than in the preceding year. But the big bulge occurred in the early thirties, when the loss ratio rose to 71.1 per cent in 1931, and ultimately to 72.0 per cent in 1933. In 1929 premiums earned had reached a peak of \$202,000,000, from which they had declined 19 per cent in 1931. During the same period losses incurred declined only 16 per cent. Between 1931 and 1933 a further drop of 30 per cent in premiums was accompanied by a decline of only 29 per cent in losses incurred. These developments are emphasized if 1928 rather than 1929 is taken as the point of departure. In 1929 itself a relatively high loss ratio of 68.4 was incurred, partly because of the decline in production which began as early as June, and partly because of the high claim frequency in the busy portions of the year, perhaps due to the industrial strains that accompany high-level employment. Between 1928 and 1933 premium volume declined about 40 per cent, incurred losses only about 32 per cent; accordingly, the loss ratio rose from 64.0 per cent in 1928 to 72.0 per cent in 1933.

The opposite occurred in the late thirties when a measure of economic recovery and higher compensation insurance rates greatly improved the underwriting experience. Premiums earned in 1939 were more than double those earned in 1933. Losses incurred, however, were only 53 per cent higher in 1939 than in 1933. The loss ratio accordingly dropped from 72.0 per cent to 54.4 per cent, leading many to argue that insurance rates were redundant. The lower loss ratio (— 17.6 per cent) and lower expense ratio (— 7.5 per cent) changed a net underwriting deficit of 13.6 per cent to a net underwriting profit of 11.5 per cent.

For the seventeen-year period, the expense ratio averaged 36.6 per cent. This was divided into expenditures of 9.1 per cent for investigation and adjustment of claims, 13.8 per cent for acquisition and field supervision, 8.5 per cent for general administration, 2.8 per cent for inspection and bureau assessments, and 2.4 per cent for taxes. Tax payments are generally based on premiums,

and most fluctuations in this item may therefore be traced to tax legislation. The higher taxes of the late thirties, for example, reflect principally the social security program and the premium taxes for security funds set up in many states.⁷ Fluctuations in acquisition cost are due chiefly to shifts from one to another type of carrier, such as the substantial diversion of business from stock companies to mutual companies and to the New York state fund in the late thirties.⁸ This also has some bearing on fluctuations in administrative and adjustment expenses, but the major bulge in these expense groups is due to their "stickiness" on a declining premium volume. Investigation and adjustment expenditures had not exceeded 9.0 per cent of earned premiums prior to the depression, but they reached a high of 11.8 per cent in 1933. Expenditures for general administration had not exceeded 8.8 per cent prior to the depression, but they reached a high of 10.1 per cent in 1932 and 1933. The subsequent declines in these expense groups were sharpened by the above-mentioned diversion of business in the late thirties from stock companies to mutual companies and to the New York state fund. Expenditures for inspection and bureau assessments also proved "sticky" in the depression years, and declined subsequently below the average for the period, but were increasing in 1938 and 1939.⁹

Stock companies have generally found the workmen's compensation line unprofitable. This is made abundantly evident by Table 39. Over the seventeen-year period their incurred losses of \$1,342,948,000 plus incurred expenses of \$892,704,000 exceeded their earned premiums of \$2,096,960,000 by \$138,692,000. This is an underwriting deficit of 6.6 per cent. They incurred underwriting deficits in each of the years 1923-1935, ranging from 2.6 per cent in 1935 to 20.5 per cent in 1933. Underwriting profits were confined to the last four years, the peak profit of 6.8 per cent being attained in 1937. The average expense ratio was

⁷ Security funds for each main type of private carrier (stock or mutual) were set up in Louisiana, New Jersey, New York, North Carolina, and Pennsylvania, securing their moneys by a 1% premium tax. The proceeds are used to defray claims against bankrupt carriers. Premium taxes for social security are collected in New York and Pennsylvania.

⁸ More recently, graduated charges for acquisition have been applied to risks eligible for retrospective rating and this has reduced slightly the acquisition expense ratio of stock companies. For further elaboration see below, pp. 300-301.

⁹ For further analysis of expenditures for inspection and bureau assessments see below, pp. 356-358.

TABLE 39

COUNTRY-WIDE EXPERIENCE OF STOCK COMPANIES OPERATING IN
NEW YORK STATE, 1923-1939

I. PREMIUMS, LOSSES, AND EXPENSES						
Year	Premiums earned	Losses incurred	Loss ratio	Expenses incurred	Expense ratio	Net gain ratio
	(thousands)	(thousands)	(per cent)	(thousands)	(per cent)	(per cent)
1923	\$ 97,464	\$ 65,845	67.6	\$ 40,977	42.0	- 9.6
1924	110,159	78,800	71.5	46,328	42.1	- 13.6
1925	121,856	82,212	67.5	50,715	41.6	- 9.1
1926	138,130	93,150	67.4	55,872	40.5	- 7.9
1927	144,236	94,195	65.3	60,161	41.8	- 7.1
1928	142,467	90,613	63.6	59,729	41.9	- 5.5
1929	152,414	103,807	68.1	64,718	42.5	- 10.6
1930	150,223	103,392	68.8	65,377	43.5	- 12.3
1931	125,803	91,330	72.6	57,292	45.5	- 18.1
1932	94,485	67,681	71.6	44,084	46.7	- 18.3
1933	83,921	61,560	73.3	39,579	47.2	- 20.5
1934	98,011	60,927	62.2	41,723	42.6	- 4.8
1935	107,071	64,677	60.4	45,159	42.2	- 2.6
1936	122,062	71,120	58.3	49,700	40.7	+ 1.0
1937	141,773	74,916	52.8	57,235	40.4	+ 6.8
1938	134,680	68,331	50.7	57,643	42.8	+ 6.5
1939	132,204	70,393	54.6	56,412	42.7	+ 2.7
1923-1939	\$2,096,959	\$1,342,948	64.0	\$892,704	42.6	- 6.6

II. EXPENSES BY CATEGORY

Year	Investigation and adjustment	Acquisition and field supervision	General administration	Inspection and bureau
	<i>(figures in per cent of value of premiums earned)</i>			
1923	10.0	18.0	9.2	3.3
1924	9.3	17.9	9.4	2.8
1925	9.2	17.8	9.0	2.9
1926	9.1	17.4	8.9	2.6
1927	9.4	17.8	9.2	2.7
1928	9.4	18.1	9.4	2.6
1929	9.4	18.3	9.6	2.7
1930	10.4	18.2	9.9	2.8
1931	11.1	18.6	10.5	3.3
1932	12.3	17.7	11.1	3.5
1933	12.3	18.0	11.3	3.3
1934	10.0	18.0	9.8	2.4
1935	9.6	17.8	9.3	2.4
1936	8.9	17.5	8.8	2.3
1937	8.4	17.3	8.5	2.3
1938	9.0	17.6	9.4	2.4
1939	9.2	17.7	9.4	2.6
1923-1939	9.7	17.9	9.5	2.7

Source: Compiled from data in the annual reports of the New York State Insurance Department.

42.6 per cent and the range was confined to from 40.4 per cent in 1937 to 47.2 per cent in 1933. The loss ratio, however, ranged from 50.7 per cent in 1938 to 73.3 per cent in 1933, averaging 64.0 per cent. This would indicate that the principal difficulties of stock companies were due to the uncertain behavior of the loss ratio. As will be shown later, however, the position of stock companies is rendered peculiarly vulnerable to these difficulties by their mode of operation and their high expense ratio.¹⁰

As may be seen in Table 40, mutual companies fared much better than stock companies in this field. Over the period 1923-1939 they earned \$703,076,000 in premiums, devoted \$413,285,000 to claims and claim reserves and \$162,247,000 to expenses, earning thereby an underwriting profit of \$127,544,000, or 18.1 per cent. The bulk of this "profit" has been returned to policyholders as "dividends," thus lowering the net cost of insurance. The more favorable experience of mutual companies is due in part to more selective underwriting. Their loss ratio averaged only 58.8 per cent compared with 64.0 per cent for stock companies. Even in the depression year of 1933 the loss ratio of mutual companies rose only to 64.1 per cent, and it never exceeded 66.3 per cent. In general, their loss ratio is more stable than that of the stock companies, ranging from 53.0 per cent in 1938 to 66.3 per cent in 1923. This is a range of 12.7 per cent as compared with 22.6 per cent for stock companies. Their mode of operation, including the "dividend" privilege and sometimes the possibility of assessment, provides them with better protection against extreme fluctuations of losses.

The principal factor in the better showing of mutual companies is their lower expense ratio. Whereas stock companies incurred expenses averaging 42.6 per cent of earned premiums, mutual companies incurred expenses averaging only 23.1 per cent of earned premiums. As in the case of stock companies, the mutuals' expense ratios remained within a relatively narrow range, varying from 21.3 per cent in 1937 to 27.4 per cent in 1933. In three expense groups, the mutual companies have consistently cut under the stock companies. They devoted 7.7 per cent of premiums to investigation and adjustment compared with 9.7 per cent for stock companies; 5.9 per cent to general administration compared with 9.5 per cent; and 4.7 per cent to acquisition and field super-

¹⁰ See below, pp. 299-304.

TABLE 40

COUNTRY-WIDE EXPERIENCE OF MUTUAL COMPANIES OPERATING IN
NEW YORK STATE, 1923-1939

I. PREMIUMS, LOSSES, AND EXPENSES						
Year	Premiums earned	Losses incurred	Loss ratio	Expenses incurred	Expense ratio	Net gain ratio
	(<i>thousands</i>)	(<i>thousands</i>)	(<i>per cent</i>)	(<i>thousands</i>)	(<i>per cent</i>)	(<i>per cent</i>)
1923	\$ 25,005	\$ 16,576	66.3	\$ 5,990	24.0	+ 9.7
1924	28,420	17,462	66.1	6,570	23.2	+ 10.7
1925	29,881	17,865	58.4	6,722	22.5	+ 19.1
1926	33,634	20,331	53.1	7,532	22.4	+ 24.5
1927	36,147	21,715	60.1	7,728	21.4	+ 18.5
1928	38,485	24,567	63.8	8,435	21.9	+ 14.3
1929	40,681	26,829	65.9	9,104	21.4	+ 12.7
1930	37,896	22,518	59.4	9,003	23.8	+ 16.8
1931	30,546	18,794	61.5	7,943	26.0	+ 12.5
1932	25,227	14,625	58.0	6,887	27.3	+ 14.7
1933	23,722	15,104	64.1	6,491	27.4	+ 8.5
1934	34,428	21,100	61.3	7,905	23.0	+ 15.7
1935	43,882	25,323	57.7	9,956	22.7	+ 29.6
1936	54,711	31,785	58.1	11,901	21.8	+ 20.1
1937	70,297	38,173	54.3	14,950	21.3	+ 24.4
1938	74,292	39,369	53.0	17,162	23.9	+ 23.1
1939	75,825	41,148	54.0	17,971	23.7	+ 22.3
1923-1939	\$703,076	\$413,284	58.8	\$162,247	23.1	+ 18.1

II. EXPENSES BY CATEGORY

Year	Investigation and adjustment	Acquisition and field supervision	General admin- istration	Inspection and bureau
	<i>(figures in per cent of value of premiums earned)</i>			
1923	7.81	4.92	6.42	3.37
1924	7.65	4.32	6.34	3.12
1925	7.65	4.26	5.85	3.17
1926	7.44	4.40	5.76	2.20
1927	7.05	4.28	5.60	2.89
1928	7.61	4.46	5.67	2.72
1929	7.68	4.48	5.95	2.96
1930	8.58	4.42	6.31	2.94
1931	9.45	4.94	6.79	3.30
1932	10.20	5.46	6.64	3.58
1933	10.34	5.34	6.62	3.68
1934	8.10	4.80	5.47	2.84
1935	7.34	4.63	5.72	2.66
1936	7.12	4.26	5.81	2.50
1937	6.52	4.25	5.68	2.39
1938	7.1	5.3	5.3	3.0
1939	7.2	5.3	5.8	3.0
1923-1939	7.7	4.7	5.9	2.8

Source: Compiled from data in the annual reports of the New York State Insurance Department.

vision as compared with 17.9 per cent. On inspection expenses and bureau assessments, on the other hand, they have expended a slightly larger percentage of premiums, 2.8 per cent as compared with 2.7 per cent. The major disparity is in acquisition cost, and may be traced to the different selling methods generally employed. Stock companies sell the overwhelming proportion of their policies through agents who receive a prearranged rate of commission. Mutual companies sell most of their policies direct through salesmen employed by the company at salaries.¹¹

As is shown in Table 41, the New York state fund has also fared better than the stock companies. Its loss ratio is consistently higher and its expense ratio consistently lower than either the stock or mutual companies. The disparity in loss ratios is in the main attributable to the lower rates charged by the fund. It is permitted by law to sell at 15 per cent below the approved manual rates, and the differential between its rates and those of other carriers in New York business approaches 15 per cent. If allowance is made for this, the average loss ratio of the state fund is reduced from 76.9 to 66.9 per cent, which is still somewhat higher than that of the stock companies, and substantially higher than that of the mutual companies. The average expense ratio, when thus adjusted, is reduced from 18.7 to 16.3 per cent, still lower than that of either carrier group. The underwriting experience of the state fund has been almost uniformly good. Over the seventeen-year period it earned \$175,000,000 in premiums, paid or reserved for payment \$134,000,000 in claims, and incurred expenses of \$33,000,000 in carrying on this business. The resulting underwriting profit of \$8,000,000 amounted to 4.4 per cent of earned premiums. Except in 1929, from 1931 to 1934, and in 1937, it earned underwriting profits, in which its policyholders participated. Its depressional difficulties were quite similar to those experienced by other carriers.

The acquisition expense of the fund is much less than that of either stock or mutual companies, averaging only 1.1 per cent of

¹¹ "Direct" selling is apparently more economical, but the mutual companies also economize by concentrating to a somewhat greater extent than stock companies on the larger assureds. The services of agents selling on commission are unquestionably valuable, especially to smaller assureds, and to some extent the lower selling expense of mutual companies reflects their fewer services of this nature. For further discussion of the value of the services of agents see below, pp. 300-302.

TABLE 41

EXPERIENCE OF THE NEW YORK STATE INSURANCE FUND, 1923-1939

I. PREMIUMS, LOSSES, AND EXPENSES						
Year	Premiums earned	Losses incurred	Loss ratio	Expenses incurred	Expense ratio	Net gain ratio
	(thousands)	(thousands)	(per cent)	(thousands)	(per cent)	(per cent)
1923	\$ 3,067	\$ 2,146	78.8	\$ 540	17.6	+ 11.5
1924	3,720	2,954	79.4	682	18.3	+ 5.3
1925	4,326	3,261	75.4	787	18.2	+ 7.0
1926	6,024	4,396	73.0	1,054	17.5	+ 9.8
1927	6,637	4,849	73.1	1,188	17.9	+ 7.9
1928	7,858	5,702	72.6	1,433	18.2	+ 9.2
1929	9,152	7,849	85.8	1,546	16.9	- 2.7
1930	8,240	6,618	80.3	1,481	17.9	+ 1.7
1931	7,199	6,103	84.8	1,578	21.9	- 6.7
1932	6,242	4,971	79.6	1,356	21.7	- 1.4
1933	6,800	5,749	84.6	1,518	22.3	- 6.9
1934	9,506	8,418	88.6	2,060	21.7	- 10.3
1935	13,978	11,366	81.3	2,419	17.3	+ 1.4
1936	17,854	13,921	78.0	3,248	18.2	+ 3.8
1937	21,459	18,143	84.5	3,532	16.5	- 1.0
1938	20,642	14,241	69.0	4,149	20.1	+ 10.9
1939	22,198	13,809	62.2	4,195	18.9	+ 18.9
1923-1939	\$174,902	\$134,496	76.9	\$32,766	18.7	+ 4.4

II. EXPENSES BY CATEGORY

Year	Investigation and adjustment	Acquisition and field supervision	General administration	Inspection and bureau
	<i>(figures in per cent of value of premiums earned)</i>			
1923	2.5	1.0	12.4	1.7
1924	3.6	2.4	10.2	2.1
1925	4.8	2.2	8.6	2.6
1926	5.3	1.9	7.4	2.9
1927	5.4	1.9	7.6	3.0
1928	7.5	1.7	6.4	2.6
1929	7.8	1.3	5.7	2.1
1930	7.1	1.4	6.3	3.1
1931	9.2	1.6	7.4	3.7
1932	8.8	1.7	7.5	3.7
1933	10.2	1.6	7.0	3.5
1934	10.9	1.2	6.5	3.1
1935	8.9	0.8	5.2	2.4
1936	9.5	0.8	5.4	2.5
1937	9.0	0.6	4.9	2.0
1938	9.6	0.6	6.0	2.4
1939	8.7	0.7	7.3	2.2
1923-1939	8.4	1.1	6.5	2.0

Source: Compiled from data in the annual reports of the New York State Insurance Department.

earned premiums. Its expenditures for investigation and adjustment are lower proportionately than those of stock companies, but roughly similar to those of mutual companies after allowance is made for difference in rates charged. The average expenditure was 8.4 per cent of premium compared with 9.7 per cent by stock companies and 7.7 per cent by mutual companies. The average expenditure for general administration was 6.5 per cent of premiums compared with 9.5 per cent by stock companies and 5.9 per cent by mutual companies. As in the case of adjustment expenses, the per cent is roughly equivalent to that for mutual companies, after allowance is made for difference in rates charged. The average expenditure for inspection expenses and bureau assessments was 2.0 per cent of premiums, lower than that of either stock or mutual companies. This does not necessarily imply inferior safety work, for the business of the fund is concentrated in New York state, and effective work can be done more economically under such conditions.¹²

No similar data covering a period of years may be presented for state insurance funds generally. A study of their costs was made some fifteen years ago by McCahan.¹³ He found that competitive funds had expense ratios averaging 14.6 per cent and that they were quite generally permitted to sell policies at a discount—usually up to 15 per cent—below approved rates. Exclusive state funds spent an average of 5.9 per cent of premiums in meeting expenditures other than loss payments. Such recent reports as contain data regarding expenditures of state funds indicate no important changes in general procedure or expense ratios in the intervening years.

CHANGING DISTRIBUTION OF WORKMEN'S COMPENSATION INSURANCE

The differences just discussed in the cost of compensation insurance have had a considerable effect on the distribution of the business. We are not yet prepared to evaluate these differences, but with the help of Table 42 it is possible to study their effect on the distribution of the business. In 1917 stock companies collected premiums of \$64,641,000, or 68.6 per cent of total work-

¹² For elaboration of this point see below, p. 303.

¹³ David McCahan, *State Insurance in the United States* (1929), pp. 99ff.

TABLE 42

INDICATED TREND OF PROPORTIONS OF COMPENSATION HAZARD
INSURED BY THE SEVERAL CARRIER GROUPS

Carrier groups	1917		1926		1940	
	Premiums (thousands)	Per cent of total	Premiums (thousands)	Per cent of total	Premiums (thousands)	Per cent of total
Stock companies.	\$64,641	68.6	\$154,789	59.9	\$166,836	47.1
Mutual companies.	11,632	12.4	44,710	17.3	96,919	27.4
Reciprocals, etc.	Not available		15,495	6.0	6,006	1.7
State funds						
Exclusive.	11,765	12.5	24,281	9.4	39,798	11.2
Competitive.	6,134	6.5	18,979	7.4	44,687	12.6
Total.	\$94,172	100.0	\$258,254	100.0	\$354,236	100.0

Sources: Totals for private carrier groups are from the Spectator Insurance Year Books covering the years concerned, except for reciprocals for which the figure was totalled from individual carrier reports. State fund totals were obtained by adding figures adjusted to a calendar year basis from individual fund reports.

men's compensation premiums.¹⁴ Exclusive state funds were second with \$11,765,000, or 12.5 per cent of total premiums. Mutual companies collected only 12.4 per cent and competitive state funds only 6.5 per cent of total premiums.

By 1926 important shifts in the distribution of this business had occurred. No new state funds had been established, but several of the competitive funds had been able to divert business from private carriers on the basis of price competition. Mutual companies had competed very effectively with stock companies because of their lower net cost, and had expanded their compensation business very substantially. In 1926 stock companies wrote a substantially larger volume of compensation insurance than in 1917, but a much smaller proportion of the national total. Their premium volume was now 59.9 per cent of the national total, while that of mutual companies had risen to 17.3 per cent. The proportion sold by exclusive state funds had declined to 9.4 per cent, chiefly because of the increased number of states with workmen's compensation laws. The proportion written by competitive state funds had risen to 7.4 per cent. Other insurance carriers, for whom no 1917 data were available, wrote 6.0 per cent of the national total in 1926.

In 1940 further changes indicating persistence of these trends

¹⁴ But this total is not quite complete, since data on other private carriers (reciprocals, Lloyds, etc.) are not available. Their share of the business was relatively small, judging from limited evidence, and the error is consequently not great.

took place. Stock companies wrote only a slightly larger absolute premium volume than in 1926, and their proportion of national writings shrank to 47.1 per cent. Mutual companies made even more substantial gains at their expense in this period, and their proportion of national writings rose to 27.4 per cent. Competitive state funds likewise made considerable gains, their proportion of national writings rising to 12.6 per cent. Exclusive state funds made a more modest gain, perhaps including a larger proportion of firms that had formerly carried their own risk. There was a sharp decline in the proportion sold by other carriers, from 6.0 per cent in 1926 to 1.7 per cent in 1940.

Clearly these figures indicate an unstable competitive condition in this line, resulting principally from differences in expense ratios. Such differences cannot be considered adequately apart from an appraisal of services rendered. Some appraisal is attempted below, where the possibility of lower insurance costs is analyzed.¹⁵ This possibility must be examined thoroughly by insurance organizations if private insurance of workmen's compensation is to continue. The extension of social insurance may well bring health insurance and nonindustrial disability insurance to the United States in the next decade.¹⁶ If undertaken under state insurance, such a program will present to private insurance carriers the most serious challenge yet offered them to curtail all unnecessary expenditures. There is a close relationship between these coverages and workmen's compensation, and in the field of occupational disease they clearly overlap. The public is likely to be impatient with differences in cost that do not have a clear and adequate explanation.

¹⁵ See below, pp. 299-302; 304-308.

¹⁶ Even before the war health insurance was being strongly advocated, and during the war the United States as well as England became more deeply interested in extending social security to make postwar economic adjustments more enduring. See the very warm discussion of the relationship of these suggested programs to workmen's compensation, U. S. Department of Labor, Division of Labor Standards, Bulletin No. 46 (1940), pp. 51-58, 64-73.

CHAPTER XV

COMPENSATION LOSS EXPERIENCE IN AN INDUSTRIAL STATE

THE ANALYSIS thus far undertaken has been more indicative with regard to details of expenses than of losses, particularly as these affect the assureds, the American employers. To indicate the impact of loss payments on American employers directly, and on their employees indirectly, it is necessary to find data over a period of years regarding these payments in relation to premiums and policies for which they were made. This requires policy year exhibits of total premiums and losses, broken down by type of payment, industry group, and classification. Such records for a long period of years are unobtainable on a country-wide basis, or even locally in most states. The state of Massachusetts has preserved an invaluable volume of such records, and the Insurance Department of that state and the Massachusetts Rating and Inspection Bureau have generously made them available for this study. The original data are public records. Tabulations and computations have been independently made, but both agencies concerned have given valuable advice as to methods and details.

Table 43 is a master table for the remaining tables of this chapter. In it are presented data indicating the main tendencies of the compensation loss experience of Massachusetts from the effective date of the Workmen's Compensation Act (July 1, 1912) to the beginning of the second World War.¹ The first two entries in columns (2), (3), (6), (9), and (14) are not precisely comparable with later entries because they are based on data for calendar periods. This also results in some overlapping of the second and third entries. Both the period October 1, 1914, to January 1, 1917, and the policy year 1916 include the calendar year 1916, although the policy year 1916 includes no experience

¹ But it is not possible to locate precisely the date of commencement of hostilities in a policy year. Data for policy year 1939 are presented, though more than 50 per cent of the loss experience falls in the period subsequent to September 1, 1939.

TABLE 43

TREND OF COMPENSATION LOSS EXPERIENCE IN MASSACHUSETTS,
ALL CARRIERS, 1912-1939

(1) Policy year	(2) Audited payroll	(3) Audited earned premiums	(4) (5) Losses Incurred		(6) Total
			Indemnity	Medical	
<i>(all figures in thousands)</i>					
July 1, 1912, to Oct. 1, 1914 ^a	\$ 975,206	\$ 7,610	...	...	\$ 5,361
Oct. 1, 1914, to Jan. 1, 1917 ^a	1,172,100	10,862	...	...	4,550
1916	766,883	7,369	\$3,295	\$ 994	4,289
1917	895,432	10,657	3,860	1,109	4,970
1918	1,069,416	13,491	3,808	1,242	5,036
1919	1,347,244	14,267	4,594	1,793	6,387
1920	1,296,230	12,449	4,618	1,810	6,428
1921	1,177,958	9,677	4,427	1,875	6,302
1922	1,313,198	11,080	5,282	2,366	7,649
1923	1,415,935	11,734	5,544	2,406	7,950
1924	1,383,604	13,201	5,455	2,507	7,962
1925	1,440,843	13,688	5,812	2,779	8,590
1926	1,464,442	13,659	5,977	2,828	8,806
1927	1,419,838	13,856	6,487	2,897	9,384
1928	1,392,440	13,729	6,715	2,841	9,556
1929	1,496,734	15,217	7,586	3,241	10,680
1930	1,258,294	12,142	7,016	2,918	8,968
1931	1,103,485	11,034	5,580	2,471	7,775
1932	890,620	9,823	4,022	1,932	5,918
1933	947,005	11,144	3,955	2,053	6,008
1934	1,006,360	12,177	4,070	2,126	6,196
1935	1,068,405	12,884	4,195	2,246	6,441
1936	1,195,158	14,446	4,332	2,479	6,811
1937	1,202,132	13,872	4,263	2,456	6,719
1938	1,165,212	13,054	4,262	2,454	6,715
1939	...	...	4,227	2,606	6,833

on policies issued prior to January 1, 1916.² Breakdowns of losses by type, whether indemnity or medical, were not available for periods before policy year 1916. Up to and including policy year 1928, third reportings are used, this being the final published development of the experience. The later policy years up to and including policy year 1936 are fourth reportings. For policy year 1937 a third reporting was available, for policy year 1938 a second reporting, and for policy year 1939 a first reporting, when

² For a discussion of the nature of a policy year see above, pp. 241-242.

TABLE 43 (Continued)

Policy year	II							
	Loss ratios			Per cent of total losses		Loss costs per \$100 payroll		
	(7) Indem- nity	(8) Medi- cal	(9) Total	(10) Indem- nity	(11) Medi- cal	(12) Indem- nity	(13) Medi- cal	(14) Total
	<i>(per cent of earned premiums)</i>							
July 1, 1912, to Oct. 1, 1914 ...	...	...	42.0	...	...	...	...	\$0.39
Oct. 1, 1914, to Jan. 1, 1917 ...	...	...	70.0	...	...	...	...	0.55
1916	44.7	13.5	58.2	76.8	23.2	\$0.430	\$0.130	0.560
1917	36.2	10.4	46.6	77.7	22.3	0.431	0.124	0.555
1918	28.2	9.2	37.4	75.4	24.6	0.356	0.116	0.472
1919	32.2	12.6	44.8	71.9	27.1	0.341	0.133	0.474
1920	37.1	14.5	51.6	71.8	28.2	0.356	0.140	0.496
1921	45.7	19.4	65.1	70.2	29.8	0.376	0.159	0.535
1922	47.7	21.4	69.0	69.1	30.9	0.403	0.180	0.583
1923	47.2	20.5	67.8	69.7	30.3	0.392	0.170	0.562
1924	41.3	19.0	60.3	68.5	31.5	0.394	0.181	0.575
1925	42.5	20.3	62.8	67.7	32.3	0.403	0.193	0.596
1926	43.7	20.7	64.4	67.9	32.1	0.408	0.193	0.601
1927	46.8	20.9	67.7	69.1	30.9	0.457	0.204	0.661
1928	48.9	20.7	69.6	70.3	29.7	0.482	0.204	0.686
1929	49.7	21.2	70.9	70.1	29.9	0.506	0.216	0.722
1930	53.0	22.0	75.0	70.6	29.4	0.523	0.217	0.740
1931	49.3	21.8	71.1	69.3	30.7	0.494	0.219	0.713
1932	40.9	19.7	60.6	67.6	32.4	0.451	0.217	0.668
1933	35.5	18.4	53.9	65.8	34.2	0.418	0.217	0.635
1934	33.4	17.5	50.9	65.7	34.3	0.404	0.211	0.615
1935	32.6	17.4	50.0	65.1	34.9	0.393	0.210	0.603
1936	30.0	17.1	47.1	63.6	36.4	0.362	0.207	0.569
1937	30.7	17.7	48.4	63.4	36.6	0.355	0.204	0.559
1938	32.4	18.8	51.2	63.5	36.5	0.366	0.211	0.577
1939	...	...	...	61.9	38.1	...	...	...

Sources: Basic data were supplied by the Massachusetts Insurance Department and the Massachusetts Inspection and Rating Bureau.
a Not precisely comparable with succeeding entries because based on data for calendar periods.

this table was prepared. In general the data are sufficiently comparable to be indicative, though the figures for policy year 1939 should be interpreted with caution since there is usually a significant development from first to second reporting, especially in losses. Except where otherwise stated, the term "year" in the discussion that follows will mean policy year.

Covered payrolls expanded from 1916 to 1919, but contracted during the following two years in response to the postwar depression. The milder recessions of 1924 and 1927 are also observable, but the general trend was upward until 1929, in which year a high of \$1,496,734,000 was attained.³ The thirties were almost without exception years of lower payrolls than the twenties. Only in 1930, 1936, and 1937 was a payroll attained that exceeded that for any year in the twenties, and even in those years only the 1921 level was exceeded. After 1933 a gradual expansion of payrolls occurred. This decade was a period of almost continuous depression in Massachusetts, and, like many other industrial states in the northeastern part of the country, the state experienced a lesser degree of recovery from the great depression. Audited payrolls are not, however, a precise record of the payrolls of the state, for only covered payrolls are audited, and the Massachusetts law was at this time elective.⁴ There is some evidence that, under the impact of the depression, elections under the act declined somewhat, even relatively, during this period, though this was not a major factor in the decline of audited payrolls.

The high point for earned premiums was also attained in 1929, but payroll and premium figures do not move uniformly together. This is principally attributable to two factors: (a) changes in rates, including both manual and experience rates, and (b) changes in the distribution of covered payrolls in the state. These factors will be examined in detail below.⁵ The cost of compensation insurance to Massachusetts employers has naturally increased as benefits have been liberalized, but the rate of increase is lower than might have been expected in view of the magnitude of benefit increases. If the entries in column (3) are divided by those in column (2) and then multiplied by 100, the earned premium cost per \$100 of payroll (average effective rate) is obtained for each

³ Indeed, the 1927 decline was more severe and more persistent than can be accounted for by reference to the 1927 recession. Audited payrolls declined not only in 1927 but also in 1928, and during the latter year were five per cent below the 1926 level. The principal factor in these declines appears to have been the depressed condition of the textile industry, which is so vital a part of the state's economy. It will be recalled that this was one of the distressed industries to which attention was called by President Hoover when he summoned the extraordinary session of Congress in 1929.

⁴ Cf. above, p. 22, and below, Table 57, p. 342.

⁵ For a discussion of (a), see pp. 281-287; for (b), see pp. 273-276.

period.⁶ In 1938 the earned premium per \$100 had risen only 22 per cent above the original level. The rates put into effect when the act became effective were set too high, however, and were lowered effective October 1, 1914. A fairer comparison, therefore, is between the calendar period October 1, 1914, to January 1, 1917, and policy year 1938. From this lower level, the premium per \$100 had risen 45 per cent by 1938. As has been shown, the benefit scale in policy year 1935 was roughly twice as generous as the original scale.⁷

Although they do not move uniformly together, compensation insurance rates ultimately depend upon loss experience.⁸ From 1916 to 1929 the volume of loss payments increased each year, with but a single break in 1921. The 1929 peak of \$10,680,000 was not subsequently approached in the period under consideration. The annual declines that occurred following 1929 ended after 1932, and loss payments increased slightly except in 1937 and 1938. More important than these absolute changes is the movement of losses relative to payrolls (pure premiums or loss costs per \$100 of payroll) and to premiums (loss ratios). The average pure premium during the first two and a quarter (calendar) years of the act was \$0.39 per \$100 of payroll, but during the next two and a quarter (calendar) years rose to \$0.55 per \$100. During the three most recent years in the period under consideration it was only a cent or two higher. Up to 1930, however, it rose almost uninterruptedly (declines in 1918 and 1923 only), attaining a peak figure of \$0.74 per \$100. After 1930 the

⁶ The results of this computation, rounded to the nearest cent, are as follows:

Period	Premium per \$100	Period	Premium per \$100	Period	Premium per \$100
July 1, 1912, to		1921	\$0.82	1930	\$0.97
Oct. 1, 1914	\$0.93	1922	0.84	1931	1.00
Oct. 1, 1914, to		1923	0.83	1932	1.12
Jan. 1, 1917	0.78	1924	0.95	1933	1.18
1916	0.95	1925	0.95	1934	1.21
1917	1.19	1926	0.93	1935	1.26
1918	1.27	1927	0.98	1936	1.21
1919	1.06	1928	0.99	1937	1.15
1920	0.96	1929	1.02	1938	1.13

⁷ See above, pp. 218-220. This is shown for temporary disability only. The increases were much higher in permanent total cases, and lower in fatal and permanent partial cases.

⁸ Cf. discussion of rate-making, above, especially pp. 241-245.

average pure premium declined each year until 1938, the low point of this period being \$0.56 per \$100 in 1937.

In 1938 the average pure premium was 49 per cent higher than during the first two and a quarter (calendar) years under the act, but only five per cent higher than during the following two and a quarter (calendar) years. This must be regarded as extraordinary in view of the marked liberalization of the act in the meantime. In part, the relatively slight increase resulted from higher wages, \$100 of payroll representing a smaller exposure in number of workers and man-hours. No precise indications of the increase in wages are available but, as has been shown, benefits in 1930 had generally been raised more than wages.⁹ The changed distribution of covered payrolls in Massachusetts has also tended to reduce the scope of increases in pure premiums.¹⁰ On the other hand, it will be shown subsequently that there has been marked improvement in injury reporting generally, and in Massachusetts specifically.¹¹ Not only has coverage been broadened and have benefits been increased, but interpretation and application of coverage provisions and benefit scales have been liberalized.¹² These are factors tending to produce greater increases in pure premiums. It is safe to conclude that the modest increases that did occur in Massachusetts reflected in some measure efforts by Massachusetts employers to control both the volume and severity of industrial injuries.

Separate analysis of the two principal types of loss shows one way in which greater concern about the severity of industrial injuries has manifested itself. In columns (4) and (5) losses are broken down into indemnity (wage loss compensation) and medical losses, and their relative movements are shown in three ways in columns (7) and (8), (10) and (11), and (12) and (13), respectively. Indemnity losses expanded almost uninterruptedly until 1929, but since then, after four successive years of decline, have risen only very slightly. Medical losses increased more sharply than indemnity losses, also reaching a peak in 1929, but

⁹ See above, p. 220.

¹⁰ Cf. below, p. 276.

¹¹ See below, pp. 340-343.

¹² Note comment on growing liberalization in interpreting phrases such as "arising out of and in course of employment," above, p. 44. See also references to decisions of the Massachusetts and Minnesota courts regarding occupational diseases and full-time earnings, above, pp. 49-50, and pp. 86-87.

since 1932 have recovered a much greater proportion of the declines during the early thirties than have indemnity losses.

The movement of the two loss groups with reference to each other is most directly shown in columns (10) and (11). Indemnity losses constituted 77.7 per cent of all losses in policy year 1917, which included the most serious phase of our participation in the first World War. Medical losses, then 22.3 per cent of all losses, never again constituted so small a proportion. Except for slight declines in 1923, 1926, 1927, 1928, and 1930, the upward movement of the proportion of losses that were medical has been strong and persistent. Whereas in each of the first three policy years, medical losses represented less than a fourth of all losses, they exceeded a third of all losses in each of the last seven years. In 1939 they attained a peak proportion of 38.1 per cent or nearly two-fifths of all losses. However one may explain this trend, it is a definite one, and is by no means confined to Massachusetts. Dawson discusses this trend in terms of a country-wide tendency.¹³ Data for New York state indicate a strikingly similar trend. In policy year 1917 medical losses were only 16.4 per cent of New York losses, but by policy year 1935 they represented 32.1 per cent of New York losses.¹⁴

The causes of the growing proportion of medical losses are several. That medical benefits have been increased more generously than compensation benefits has already been pointed out.¹⁵ This circumstance indicates a growing recognition by the state of the importance of medical care. But the state has not been alone in this, for American employers have become increasingly aware of the possibility of reducing compensation costs by providing adequate medical care.¹⁶ The extension of medical care tends not only to increase medical benefits absolutely, but also to reduce indemnity payments absolutely. The growing interest of the medical profession in industrial medicine has also been a factor, producing or helping to produce important findings bearing on the

¹³ *Problems of Workmen's Compensation Administration*, U. S. Bureau of Labor Statistics Bulletin No. 672 (1940), chap. vi, pp. 93-94.

¹⁴ Computed from data in a mimeographed release furnished the author by the Compensation Rating and Inspection Board of New York (1937).

¹⁵ See above, p. 165.

¹⁶ Unfortunately a significant minority of American employers have been alarmed at the rising cost of medical care, and have devised or adopted various plans of "medical cost control," most of which have reduced medical payments chiefly by reducing the amount of medical care. See above, pp. 165-166.

cure of industrial ailments, rehabilitation of injured workers, and the like. An additional factor is the circumstance, not generally recognized, that the safety movement has effected a reduction of severity as well as frequency of industrial injuries.¹⁷

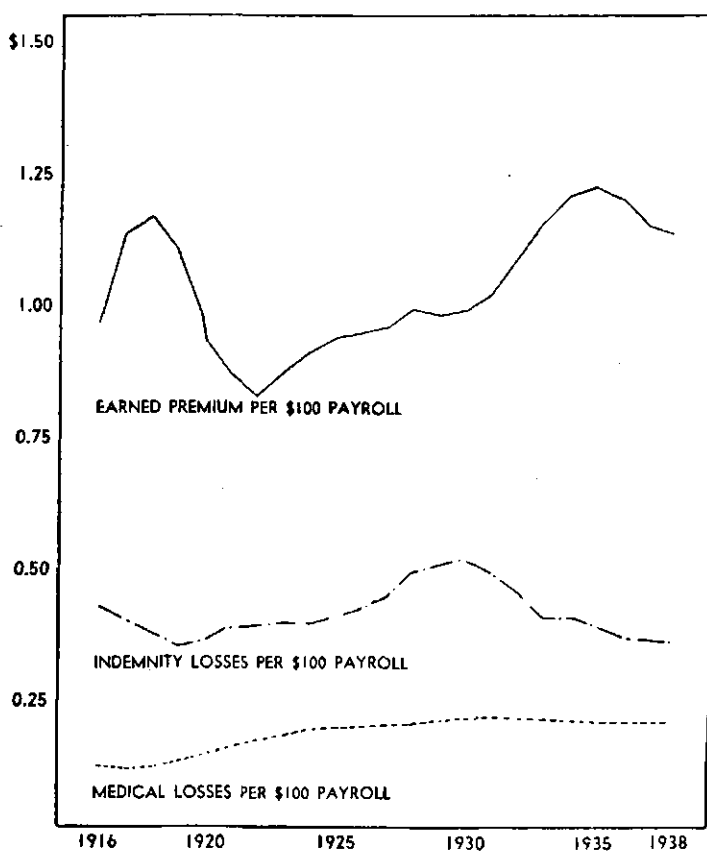


CHART 2. TREND OF WORKMEN'S COMPENSATION EXPERIENCE IN MASSACHUSETTS, 1916-1938

(3 year moving averages)

The changed relationship of medical and indemnity losses to earned premiums is shown in columns (7), (8), and (9). From a low of 9.2 per cent of earned premiums in 1918, the medical loss ratio rose to a peak ratio of 22.0 per cent in 1930, and was still 18.8 per cent in 1938. The indemnity loss ratio was only 28.2 per cent in 1918, but was still only 30.0 per cent in 1936, and only 32.4 per cent in 1938. Indemnity pure premiums (loss costs per \$100 of payroll, see column (12)) declined from \$0.430 in 1916 to \$0.341 in 1919, then rose to \$0.523 in 1930. Since then

¹⁷ See below, pp. 331-343.

they have declined almost without interruption, and amounted to only \$0.366 in 1938, or nearly 15 per cent less than in 1916. Medical pure premiums, on the other hand, have generally risen, being as low as \$0.116 in 1918, but \$0.211 in 1938. The 1938 medical pure premium was 62 per cent higher than the corresponding figure for 1916.

COMPENSATION EXPERIENCE BY INDUSTRIAL GROUPS

How much of the changes indicated in Table 43 may properly be attributed to the changing distribution of employment in Massachusetts is shown in Table 44. Here are presented for selected policy years a breakdown of the principal indications of Table 43 by three industrial groups: manufacturing, contracting, and "all other." The absolute figures were compiled by adding payroll, premium, and loss figures furnished by the Massachusetts Insurance Department for all manufacturing, contracting, and "all other" classifications. The absolute decline in insured factory payrolls, observable as early as 1930, had carried the total almost back to the 1916 level by 1935. What is far more significant, however, is the persistent downward trend in the proportion of insured payrolls that represents factories. Originally roughly 60 per cent of insured payrolls were factory payrolls, but this percentage had dropped to 51.1 per cent as early as 1925, and after a sharp decline to 40.8 per cent in the depression year of 1930, had recovered only to 44 per cent by 1935. Payrolls of contractors were lower absolutely in 1935 than in 1916, and the only exception to a downward tendency in proportion of total payrolls was an expansion in 1925. Whereas nearly 7 per cent of insured payrolls for 1916 represented contracting, less than 4 per cent of those for 1935 did so. The 1935 proportion (3.8 per cent) was only half the 1925 proportion (7.6 per cent). Payrolls of "all other" concerns, on the other hand, increased both absolutely and relatively except for the last selected year, when they declined sharply in absolute terms and slightly in relative terms. In 1916, only about one-third of insured payrolls were accounted for by "all other" firms, but in both 1930 and 1935 more than half of insured payrolls were accounted for by such firms.

The importance of these shifts for our present purpose is indicated by the data in columns (4) to (7) of Table 44. The

The average rate of premium for contractors was 100.4 per cent higher, and the average pure premium 74.3 per cent higher in 1935 than in 1916. For "all other" firms, the corresponding changes were an increase of 3.8 per cent in average rate of premium, and a *decrease* of 9.1 per cent in average pure premium.

If the distribution of payroll had remained the same, how much increase in average rates and loss costs might have been expected? Other things remaining the same, there would then have been not a 26 per cent increase, but a 38 per cent increase in average rates of premium, and not a 9 per cent increase, but a 35 per cent increase in average pure premiums. These are substantial differences, but they fall far short of accounting for an approximate doubling of benefit levels.

Looking at the indications from another angle, it appears that while the rise in compensation costs has been generally quite modest, such has not been the case for all concerned. The rise in premium rates between 1916 and 1935 averaged generally only 26 per cent, but for factories it averaged 52 per cent, and for contractors over 100 per cent. It will presently be shown that even larger increases occurred in some classifications. These developments help to explain the resistance of certain industries to liberalization of the benefit scale, and also the attitude of certain interests toward compensation rate-making.

There is obviously no precise correlation between the fluctuations in premium rates and loss costs shown in Table 44, but this is not to be expected. Except for retrospectively rated assureds, rates are made on the basis of past experience covering more than a single policy year. Hence year-to-year fluctuations of rates and loss costs will not always be in the same direction, let alone the same degree. But in general, the data in Table 44 dispose of a common contention of certain interests that compensation rate-making is discriminatory. The high rates and large increases in rates charged contractors, for example, have been the subject of bitter complaint, not only in Massachusetts, but generally. Yet the data indicate that these rates reflect the loss experience of contractors rather accurately. The loss ratios for contracting were almost uniformly higher than those for manufacturing or "all other" industries, indicating that contractors suffer less, rather than more, than other employers, from any occasional redundancy of compensation insurance rates. Admittedly rates during recent

years have been generally redundant due to an abrupt improvement in loss experience, economic recovery, and other factors. It is perhaps to be expected that those paying the highest rates would resent this state of affairs most vigorously, but study of their complaints reveals more heat than light.

STRUCTURE OF COMPENSATION CLASSIFICATIONS

Before undertaking the further breakdown of compensation loss experience by individual classifications it is necessary to examine closely the nature and structure of the principal classifications used in Massachusetts. These are presented by name and code number and the changes in structure are noted in Table 45. They have been selected on the basis of payroll exposure, but, for obvious reasons, a somewhat less exacting exposure requirement

TABLE 45

PRINCIPAL WORKMEN'S COMPENSATION CLASSIFICATIONS IN MASSACHUSETTS

Code Number

27 MANUFACTURING CLASSES

3808	Automobile manufacturing or assembling ^a
2003	Bakeries ^b
3558	Boot and shoe machinery manufacturing
2660	Boot and shoe manufacturing or repairing ^c
4240	Box manufacturing
2501	Clothing manufacturing ^d
2417	Cloth printing
2041	Confectionery manufacturing
2222	Cotton spinning and weaving ^e
3643	Electric power or transmission equipment manufacturing
3081	Foundries—iron, n.o.c. ^f
2883	Furniture manufacturing—wood, n.o.c.—assembling or finishing ^g
3383	Jewelry manufacturing

^a Includes Assembling, although separately classified (3809) until 1920.

^b Not strictly comparable because reclassified (hitherto 2000) in 1934 and extended to include a small number of nonbaking employees, principally drivers and helpers on bakery trucks.

^c Including the experience of Slipper manufacturing (2661), which was combined with 2660 in 1925.

^d From time to time this class has expanded and at present includes Furnishing-goods manufacturing (2553), Corset manufacturing (2554), Shirt manufacturing (2521), Collar and cuff manufacturing (2520), Suspender manufacturing (2550), and a part of Rubber garments manufacturing (4409). Excepting Rubber garments manufacturing, the experience of all these classes has been taken into account in computing the cost for the early years.

^e Until 1920, Awning manufacturing (2246) and Duck cloth manufacturing (2240) were separately classified.

^f Malleable iron-founders (3086) were added in June, 1934.

^g Has included experience of Chair manufacturing (2880), since 1923, and of Billiard table manufacturing (2870), Pianoforte case manufacturing (2925), Phonograph cabinet manufacturing (2928), and Tank seat or cabinet manufacturing (2824) since 1934.

TABLE 45 (Continued)

Code Number

2362	Knit goods manufacturing, n.o.c. ^b
2585	Laundries ⁱ
2688	Leather goods manufacturing, n.o.c. ^j
3632	Machine shops, n.o.c. ^k
4304	Newspaper publishing
4239	Paper manufacturing ^l
4299	Printing or lithographing ^m
4417	Rubber boots and shoes manufacturing
4410	Rubber goods manufacturing, n.o.c. ⁿ
2303	Silk throwing and weaving ^o
2021	Sugar refining ^p
2623	Tanning ^q
3241	Wire drawing—iron or steel
2286	Wool spinning and weaving

13 CONTRACTING CLASSES

5403	Carpentry, n.o.c. ^r
5645	Carpentry—private residences ^s
5213	Concrete construction, n.o.c. ^t
5190	Electric wiring
5022	Masonry, n.o.c. ^u
3724	Millwright work, n.o.c. ^v
5490	Painting and decorating—interior
5461	Painting and decorating—not interior
6003	Pile driving ^w
5480	Plastering, n.o.c. ^x
5183	Plumbing, n.o.c. ^y
5551	Roofing—all kinds ^z
5506	Street and road construction ^{aa}

^b This class was expanded in 1934 to include Glove and mitten manufacturing (2552).
ⁱ Until June, 1934, laundry workers were separately classified if Hand launderers (2582). Before July, 1922, Wet wash launderers (2580) were also separately classified.

^j Was extended in 1923 to include Pocketbook manufacturing (2687).

^k Includes experience of Acetylene gas machinery manufacturing (3522) and Projectile or shell manufacturing (3639), although the former was separately classified until 1920, and the latter until 1934.

^l Includes experience of classes 4232, 4233, and 4234, listed as such until April, 1922.

^m Until December, 1923, separately classified: Printing (4300) and Lithographing (4203).

ⁿ Class was expanded by later inclusion (1923) of Rubber cement manufacturing (4411) and a part of Rubber garments manufacturing (4409). Because of the division of the latter class, it has not been possible to take this change into account.

^o This class was slightly enlarged in 1923 to embrace Ribbon manufacturing (2301).

^p In 1934, experience of Molasses and syrup refining (2020) was combined with Sugar refining.

^q Was extended in 1920 to include Leather (2620), Dressing (2622), and Carriers (2624); in 1922 to include Leather manufacturing; and in 1934 to include Wool pulling (2264).

^r Established in 1929 and including experience hitherto separately classified as Carpentry, n.o.c. (5401), Silo erection (5400), and Tank and silo erecting (5404).

^s Until 1926, bore code number 5643 and was entitled: Contractors—private residences—carpentry.

^t Established in 1929 and embracing the following classes of concrete construction: Buildings—foundations (5204 and 5208), Piers, etc., (5210), Dams (5207), Grain elevators (5206), and Silo erection—concrete (5202). In 1932, Floors or sidewalks (5201) and Foundations for buildings (5209) were added.

^u Takes into account experience of Masonry—private residences (5646), originally 5647, which was combined with 5022 in 1934; also several small extensions, e.g., Marble and stone setting (5024), Masonry—bridge building (5021), Mausoleums (3321), and two plastering classes (5347 and 5473).

TABLE 45 (Continued)

Code Number

17 "ALL OTHER" CLASSES

9015	Buildings—care, etc., n.o.c. ^{bb}
7380	Chauffeurs and helpers, commercial, n.o.c. ^{oo}
8810	Clerical—office employees, n.o.c. ^{dd}
8868	Colleges and schools—professors, etc. ^{oo}
9101	Colleges and schools—all other ^{ff}
7205	Drivers and helpers, n.o.c. ^{oo}
7539	Electric light and power ^{gg}
0006	Farm labor ^{hh}
7500	Gas works
8833	Hospitals—professional ⁱⁱ
9052	Hotels ^{jj}
9079	Restaurants ^{kk}
8742	Salesmen, collectors, or messengers ^{oo}
8008	Stores—clothing
8039	Stores—department ^{ll}
8006	Stores—grocers
7219	Truckmen, n.o.c. ^{mm}

^v Was expanded in 1917 to include Refrigerator erection and repair (5440); and in 1920 to embrace Acetylene gas machines (3722), Automatic stoker installation (3734), Engines—installation (3727), Farm machinery—demonstration (0051), Gas benches and retorts (5026), Leather belting (3732), Merry-ground, swings, etc.—erecting (5066), Portable bakers' ovens (3721), Pumps—installation (3729), and Refrigerating machinery (3723).

^w Since 1934 has included experience of Pile driving—building foundations only (6222).

^x Until 1923 Fireproof construction—wire lathing and concreting (5212) was separately classified.

^y Carrier systems (5143) was combined with this class in 1934.

^z Was expanded in 1920 to include Roofing—slate (5546), and in 1934 to include Roofing—built-up roofing (5547) and Roofing, n.o.c. (5545).

^{aa} Established June, 1934, to embrace experience of Paving (5500) and Road and street making (6042).

^{bb} Established in 1922, combining Care, custody, and maintenance of office buildings (9007), Manufacturing and mercantile premises (9006), Apartment houses (9004), and Hall attendants (9103). In 1934 Bath-house attendants (9183) were included.

^{cc} Not strictly comparable because many employees in this classification were allocated to the classes in which a majority of their firm's employees were included in June 1934.

^{dd} Absorbed Municipal, etc., clerical employees (8802) in 1920, and Office draughtsmen (8811) in 1922.

^{ee} Established in 1920 when separate classifications for agricultural, technical, military, and other schools were abandoned.

^{ff} In 1920 this classification was broadened to include "All other" employees of agricultural schools (9100) and Churches, etc. (9104). (The experiences of the added classes are not included in the cost figure under original benefits.)

^{gg} Until 1921, when this class was established, the employees concerned were separately classified for Local operation (7531) and Transmission (7532).

^{hh} Small additions to exposure resulted from inclusion of Outservants (0902) in 1926 and Private chauffeurs to farmers (0901) in 1934. It is impossible to take these additions into account since the employees were insured per capita instead of in units of payroll. They affect the comparability of the cost figures little, if at all.

ⁱⁱ Established in January, 1930, including employees formerly in class 8830 and a small additional number of Employees of dentists and physicians (8832).

^{jj} Established in 1929 and including employees of hotels (formerly 9050) and apartment hotels (formerly 9005).

^{kk} Established in January, 1929, and including experience of Restaurant employees (9071) and Caterers (9069), later (9091). Class 9071 was broadened in 1920 to include employees of lunch rooms (9070) and lunch wagons (9077).

^{ll} Not strictly comparable because reclassified in 1934 (hitherto 8000) and includes a small number of employees not engaged in purely mercantile activities, particularly drivers and helpers of department store trucks.

^{mm} Was broadened in 1934 to include experience of Express companies (7361).

was applied in selecting contracting classifications. As the numerous explanatory notes make clear, the structure of classifications is not fixed, but is being constantly studied and improved on the basis of experience. These changes complicate our task in studying the experience over a period of years. Where some classifications are absorbed bodily by others the prior experience can easily be adjusted to correspond. But where they are partitioned, and either absorbed in part by one or more classifications or divided altogether among two or more classifications, no accurate adjustment is possible. Fortunately, absorbed classifications are usually rather small and their experience is usually similar to that of the classifications with which they are merged. Consequently the error, when adjustment is impossible, is usually very small. Most important are those cases in which large classifications are sharply reduced, a considerable proportion of the exposure being divided among a large number of classifications. This happened to "Drivers and helpers" (7205), for example, in 1934. More than half of the exposure was subsequently accredited to such classifications as Bakeries (2003), Department stores (8039), and others. In such cases one can only observe the influence of the change.

A careful inspection of the classifications in Table 45 shows not only the nature of the sample selected for intensive analysis, but also the basic principles underlying the construction of the classifications. There are twenty-seven manufacturing classifications, and inclusion of so many is justified by the importance of factory employment in the state, especially in the earlier years. Though there are only seventeen "all other" classifications, many of them have a very large exposure, and their total exposure has averaged nearly as high as the total exposure of the selected manufacturing classifications. Addition of other classifications in this category was thought unwise because it would have required inclusion of much smaller classifications. The thirteen contracting classifications are included in spite of the small exposure contained by some of them, largely to illustrate the high compensation cost of employing certain groups of workers.

Except for Printing and lithographing (4299), the manufacturing classifications have been set up principally on the basis of the *industry* involved. On the other hand, except for Street and road construction (5506), the contracting classifications have been set

up on the basis of *occupation* followed. Nine of the "all other" classifications were set up principally by reference to industry, eight by reference to occupation. Existence of these two principal bases of classifying has led to some of the difficulties which have been gradually adjusted by absorption, partition, or reconstruction of the sort briefly adverted to above. In general, the development of the present classifications over the past twenty-five years has shown two principal tendencies: (a) reduction in the number of different classifications from over 1400 to about 600, and (b) growing emphasis on the industrial as opposed to the occupational basis of classification.

COMPENSATION EXPERIENCE OF PRINCIPAL CLASSIFICATIONS

The manual rates computed for five of the contracting classifications and for all of the selected manufacturing and "all other" classifications are presented for six selected dates in Table 46.¹⁹ The uneven fluctuations in compensation insurance rates are evident from the table. The rates for factory classifications on December 31, 1938, were lower in two cases than on May 1, 1916: Laundries (2585) and Wire drawing (3241). At the other extreme, they were more than double the 1916 rates in four cases: Automobile manufacturing and assembling (3808), Boot and shoe manufacturing (2660), Clothing manufacturing (2501) and Rubber goods manufacturing (4410). Eight classifications had increases of less than 25 per cent, five of 25 to 49 per cent, four of 50 to 74 per cent, and four of 75 to 99 per cent. Contracting operations were less fortunate. Operations in three of the five classifications were subject to rates beginning December 31, 1938, that were more than double those effective on May 1, 1916: Carpentry—private residences (5645), Masonry (5022) and Plumbing (5183). In the remaining two classifications the increases exceeded 75 per cent. "All other" classifications fared better than either factories or contractors. For five of the seventeen classifications rates were lower in 1938 than in 1916: Chauffeurs (7380), Clerical office employees (8810), Professional employees of colleges and schools (8868), Electric light and power

¹⁹ Data for some absorbed or partitioned classifications are not complete in the case of eight of the contracting classifications. The exposure is so small in these cases that the lack may involve serious error.

TABLE 46

MANUAL RATES IN MASSACHUSETTS FOR SELECTED CLASSIFICATIONS, 1916-1938

Code number	May 1, 1916	Jan. 1, 1920	July 7, 1924	Dec. 31, 1928	June 30, 1934	Dec. 31, 1938
I. 27 MANUFACTURING CLASSES						
3808	\$0.73	\$1.09	\$1.24	\$1.56	\$2.46	\$3.67
2003	1.02	1.35	1.19	1.46	2.02	1.53
3558	0.69	0.69	0.84	0.92	0.99	0.78
2660	0.29	0.43	0.40	0.50	0.74	0.68
4240	1.02	0.99	1.03	1.14	1.56	1.08
2501	0.20	0.25	0.22	0.27	0.48	0.45
2417	0.74	1.09	1.19	1.40	1.64	1.28
2041	0.62	0.91	0.94	1.01	1.27	0.83
2222	0.64	0.92	0.88	0.93	1.27	0.80
3643	0.83	1.03	1.09	1.24	1.16	0.88
3081	1.29	1.63	1.58	2.25	2.70	2.31
2883	1.08	1.32	1.50	1.48	2.15	1.96
3383	0.36	0.35	0.38	0.40	0.52	0.50
2362	0.48	0.29	0.51	0.54	0.70	0.62
2585	1.28	1.23	1.19	1.36	1.86	1.25
2688	0.48	0.43	0.61	0.64	0.88	0.85
3632	1.11	1.35	1.29	1.40	1.82	1.23
4304	0.60	0.45	0.57	0.65	0.81	0.71
4239	1.43	1.40	1.50	1.72	2.06	1.45
4299	0.60	0.69	0.57	0.65	0.81	0.71
4417	0.36	0.83	0.67	0.71	0.85	0.58
4410	1.39	1.96	1.96	2.23	2.59	2.03
2303	0.22	0.43	0.49	0.49	0.79	2.53
2021	1.33	1.71	1.86	1.96	2.24	1.53
2623	1.07	1.54	1.29	1.77	2.43	1.70
3241	2.10	1.71	1.40	1.59	1.98	1.32
2286	0.50	0.65	0.66	0.77	0.96	0.80
II. 5 CONTRACTING CLASSES						
5645	\$1.51	\$1.97	\$2.07	\$2.21	\$3.46	\$3.18
5190	0.93	1.19	1.02	1.09	1.84	1.75
5022	3.50	5.12	4.14	5.36	7.98	7.29
5490	1.02	1.23	1.09	1.12	1.62	1.84
5183	0.93	1.43	1.24	1.48	2.14	2.22
III. 17 "ALL OTHER" CLASSIFICATIONS						
9015	\$0.97	a	\$1.09	\$1.35	\$1.67	\$1.35
7380	1.21	\$1.63	1.29	1.54	1.57	1.05
8810	0.08	0.10	0.05	0.05	0.08	0.07
8868	0.13	0.10	0.05	0.05	0.08	0.10
9101	a	a	1.09	0.87	1.21	1.01

TABLE 46 (Continued)

Code number	May 1, 1916	Jan. 1, 1920	July 7, 1924	Dec. 31, 1928	June 30, 1934	Dec. 31, 1938
7205	\$1.58	\$2.35	\$1.76	\$1.96	\$2.35	\$2.81
7539	3.65	"	2.90	2.47	1.92	1.19
0006	1.33	1.29	1.34	1.89	2.50	2.40
7500	1.51	2.15	1.76	1.83	1.75	1.24
8833	0.23	0.25	0.30	0.32	0.34	0.30
9052	0.53	0.59	0.96	0.82	1.16	1.20
9079	0.60	0.59	0.84	0.90	1.16	1.17
8742	0.13	0.15	0.10	0.10	0.26	0.18
8008	0.15	0.19	0.14	0.15	0.36	0.40
8039	0.34	0.39	0.37	0.38	0.43	0.46
8006	0.36	0.59	0.61	0.68	0.43	0.46
7219	1.97	3.69	3.62	4.84	5.46	4.04

Source: Manual rates furnished by the Massachusetts Insurance Department, and combined for some years with weighting based on payroll exposure.

^a Basic data not available.

companies (7539), and Gas works (7500). For four of them, on the other hand, rates had doubled in the interim: Hotels (9052), Clothing stores (8008), Grocers (8006), and Truckmen (7219). Rates were 25 to 49 per cent higher for four of the classifications, and 75 to 99 per cent higher for three of them.

AVERAGE ACTUAL RATES

It must be remembered that a manual rate is not necessarily the rate paid by all concerns with operations falling within a particular classification. Those paying a premium of \$500 or more are rated in some measure, depending on their exposure, on the basis of their own recent experience.²⁰ Hence their rates may be either higher or lower than the manual rate. Since credits (favorable experience rates) normally exceed charges (unfavorable experience rates), this is a great advantage for eligible concerns. One reason for the clamor of contracting concerns about manual rates, is the fact that, because of the small scope of operations in some classifications, their premiums are not large enough to meet the eligibility requirement for experience rating. Because of the difference between manual rates and actual average rates of premium, Table 47 presents actual average rates of pre-

²⁰ For discussion of experience rating see above, pp. 244-245.

TABLE 47

COST OF COMPENSATION INSURANCE IN MASSACHUSETTS
FOR SELECTED CLASSIFICATIONS, 1916-1938

EARNED PREMIUM PER \$100 PAYROLL

Code number	Class name	Policy years				
		1916-17	1920-21	1925-26	1930-31	1937-38
I. PRINCIPAL MANUFACTURING CLASSES						
3808	Automobile mfg.....	\$0.54	\$0.92	\$1.12	\$1.67	\$3.98
2003	Bakeries.....	1.07	1.36	1.13	1.47	1.69
3558	Boot & shoe mach.....	0.80	0.71	0.92	0.87	0.48
2660	Boot & shoe mfg.....	0.37	0.40	0.39	0.53	0.72
4240	Box mfg.....	1.10	1.02	0.91	1.12	1.30
2501	Clothing mfg.....	0.26	0.23	0.23	0.30	0.50
2417	Cloth printing.....	0.95	0.89	1.10	1.34	1.32
2041	Confectionery mfg.....	0.71	0.76	0.88	0.84	0.89
2222	Cotton spinning, etc.....	0.77	0.80	0.77	0.90	.841
3643	Electric equipment.....	0.99	0.86	0.97	0.89	00.6
3081	Foundries—iron.....	1.71	1.52	1.66	2.20	3.66
2883	Furniture mfg.....	1.36	1.13	1.28	1.45	2.05
3383	Jewelry mfg.....	0.44	0.34	0.36	0.41	0.50
2362	Knit goods mfg.....	0.42	0.36	0.42	0.55	0.65
2585	Laundries.....	1.21	1.19	1.03	1.27	1.37
2688	Leather goods mfg.....	0.50	0.51	0.55	0.67	0.96
3632	Machine shops.....	1.40	1.28	1.28	1.34	1.42
4304	Newspaper publishing.....	0.54	0.49	0.51	0.54	0.68
4239	Paper mfg.....	1.63	1.22	1.42	1.50	1.67
4299	Printing, etc.....	0.64	"	0.57	0.67	0.73
4417	Rubber boots & shoes.....	0.56	0.74	0.73	0.70	0.77
4410	Rubber goods mfg.....	1.63	1.61	1.48	2.26	2.17
2303	Silk throwing, etc.....	0.28	0.35	0.36	0.55	0.86
2021	Sugar refining.....	1.60	1.17	2.10	1.59	1.36
2623	Tanning.....	1.49	1.15	1.25	1.75	1.83
3241	Wire drawing.....	2.21	0.91	1.45	1.32	1.33
2286	Wool spinning, etc.....	0.65	0.57	0.64	0.68	0.81
II. PRINCIPAL CONTRACTING CLASSES						
5403	Carpentry, n.o.c.....	\$4.43	\$4.76	\$5.23	\$3.67	\$9.88
5645	Carpentry—pvt. residence...	1.74	1.70	2.00	1.60	4.23
5213	Concrete construction.....	4.69	4.02	3.83	4.34	7.40
5190	Electric wiring.....	1.17	0.97	0.99	1.17	1.94
5022	Masonry.....	4.18	3.83	4.14	5.46	8.74

TABLE 47 (Continued)

Code number	Class name	Policy years				
		1916-17	1920-21	1925-26	1930-31	1937-38
3724	Millwright work.....	\$2.40	\$1.93	\$2.36	\$2.55	\$3.96
5490	Painting, etc.—int.....	1.12	1.09	1.07	1.14	1.76
5461	Painting—not int.....	3.90	5.91	7.17	8.78	15.21
6003	Pile driving.....	5.45	5.12	24.11	5.49	9.25
5480	Plastering.....	1.98	1.87	1.87	2.06	3.98
5183	Plumbing.....	1.23	1.08	1.22	1.54	2.38
5506	Roofing.....	2.98	2.54	3.00	4.02	4.88
5551	Street, etc., const.....	5.17	6.42	5.33	7.44	11.11
III. PRINCIPAL "ALL OTHER" CLASSES						
9015	Buildings, care, etc.....	\$1.30	\$1.23	\$1.17	\$1.46	\$1.48
7380	Chauffeurs, etc., n.o.c.....	1.49	1.41	1.34	1.49	1.30
8810	Clerical, etc.....	0.10	0.10	0.06	0.05	0.07
8868	Colleges—prof., etc.....	0.09	0.10	0.05	0.05	0.10
9101	Colleges—all other.....	0.80	0.79	1.09	0.92	0.99
7205	Drivers, helpers, n.o.c.....	1.92	1.94	1.61	1.92	2.85
7539	Elec. light & power.....	4.34	2.35	2.18	1.71	1.20
0006	Farm labor.....	1.44	1.13	1.50	1.99	2.58
7500	Gas works.....	1.79	1.55	1.70	1.59	1.20
8833	Hospitals—professional.....	0.38	0.26	0.31	0.27	0.28
9052	Hotels.....	0.56	0.62	0.90	0.86	1.18
9079	Restaurants.....	0.58	0.60	0.89	0.91	1.16
8742	Salesmen, etc.....	0.16	0.16	0.10	0.11	0.26
8008	Stores—clothing.....	0.20	0.16	0.16	0.18	0.37
8039	Stores—department.....	0.38	0.34	0.36	0.38	0.47
8006	Stores—grocers.....	0.44	0.48	0.61	0.83	1.07
7219	Truckmen, n.o.c.....	2.18	3.19	3.72	4.49	4.83

Source: Computed from basic data furnished by the Massachusetts Insurance Department and the Massachusetts Rating and Inspection Bureau. For a more detailed description of classes see Table 45, pp. 277-279.

^a Basic data not available.

mium for all the selected classifications for four two-policy-year periods. Use of a two-policy-year period is to enable comparisons to be made with corresponding entries in Table 48. Loss costs for a single policy year would not be sufficiently indicative; but for classifications with a large exposure, a two-policy-year period is sufficiently indicative for our purpose.

Average actual rates of premium were higher during 1937 and 1938 than during 1916 and 1917 for all except four of the twenty-seven manufacturing classifications: Boot and shoe machinery

manufacturing (3558), Electric power and transmission equipment manufacturing (3643), Sugar refining (2021), and Wire drawing (3241). They were more than twice as high for three classifications: Automobile manufacturing and assembling (3808), Foundries (3081), and Silk throwing and weaving (2303). Increases for nine classifications were less than 25 per cent, and for six additional classifications less than 50 per cent. But increases of from 50 to 74 per cent were experienced by two classifications, and of from 75 to 99 per cent by three classifications. In twenty-two of the twenty-seven classifications the average actual rate of premium for these two policy years was higher than the manual rates effective December 31, 1938. Rates then established were, to be sure, lower than those effective in the preceding two policy years. Yet comparisons between the final columns of Tables 46 and 47 are in some cases suggestive. The poor record of Automobile manufacturing and assembling (3808) and the good record of Wire drawing (3241) are evident in both tables. The difference for Iron foundries (3081) is due largely to a rate reduction effective December 31, 1938. The panicky atmosphere in which the silicosis hazard had been previously rated was beginning to clear about this time.²¹

Six contracting classifications experienced actual average rates of premium in 1937-38 more than twice as high as those experienced in 1916-17: both Carpentry classifications (5403 and 5645), Masonry (5022), Painting—not interior (5461), Plastering (5480), and Street and road construction (5506). Two other classifications averaged premium costs 75 to 99 per cent higher than in 1916-17, while all remaining classifications were paying at least 50 per cent more. One who wishes to understand the keen interest of contractors in compensation insurance rates should observe the following rates: for Carpentry, n.o.c. (5403), \$9.88 per \$100 of payroll; for Concrete construction (5213), \$7.40; for Masonry (5022), \$8.74; for Painting—not interior (5461), \$15.21; for Pile driving (6003), \$9.25; and for Street and road construction (5506), \$11.11. Yet a comparison of these figures with those for loss costs in Table 48 furnishes general support for them. A sharp decline in loss costs for Pile driving (6003) had not yet been fully reflected in premium rates

²¹ See above, pp. 288-289. Note also that the loss experience shown in Table 48 supports the reduction in rates.

for this classification. Rates in 1937-38 were generally somewhat excessive, but contracting was not a particular sufferer from this redundancy.²² The position of this industry, one of the most vulnerable during business reactions, is an excellent illustration of the problem faced by those who seek more adequate compensation benefits.

Four "all other" classifications averaged premium costs during 1937-38 more than double those in 1916-17: Hotels (9052), Restaurants (9079), Grocers (9006), and Truckmen (7219). Five of these classifications averaged rates lower than in 1916-17: Chauffeurs (7380), Clerical office employees (8810), Electric light and power (7539), Gas works (7500), and Hospitals (8833). Increases for other classifications were modest except for three classifications: Salesmen (8742), up 63 per cent; Farm Labor (0006), up 79 per cent, and Clothing stores (8008), up 85 per cent. The average rates in 1937-38 for Chauffeurs (7380), Drivers and helpers (7205), and Truckmen (7219) are not strictly comparable with those listed for earlier periods because of the diversion of substantial portions of the exposure to classifications representing the industries employing these workers. Comparison of the average rates of premium of each of the selected "all other" classifications with the manual rates in Table 46 shows close correspondence in general.

AVERAGE PURE PREMIUMS

Average loss costs for four two-policy-year periods are presented for each of the selected classifications in Table 48, and are broken down by indemnity and medical losses in Table 49. The improving loss experience, partially reflected in lower manual rates effective December 31, 1938, and more completely in subsequent reductions, appears in this table. All but five of the manufacturing classifications, all but four of the contracting classifications, and eight of the "all other" classifications experienced lower average loss costs in 1937-38 than in 1930-31. In short, thirty-nine of the fifty-seven classifications improved their loss experience in this interval. Of the manufacturing classifications, only one experienced loss costs 100 per cent or

²² See the general analysis of the possibility of lowering compensation insurance costs, below, pp. 298-308.

TABLE 48

 COMPENSATION LOSS EXPERIENCE IN MASSACHUSETTS
 FOR SELECTED CLASSIFICATIONS, 1916-1938

LOSS COSTS PER \$100 PAYROLL

Code number	Class name	Policy years				
		1916-17	1920-21	1925-26	1930-31	1937-38
I. PRINCIPAL MANUFACTURING CLASSES						
3808	Automobile mfg.	\$0.612	\$0.613	\$0.680	\$1.863	\$1.634
2003	Bakeries	1.090	0.618	0.858	1.214	0.626
3558	Boot & shoe mach.	0.328	0.737	0.473	0.443	0.358
2660	Boot & shoe mfg.	0.228	0.191	0.256	0.477	0.421
4240	Box mfg.	0.921	0.521	0.712	0.923	0.676
2501	Clothing mfg.	0.156	0.113	0.176	0.314	0.245
2417	Cloth printing.	0.541	0.727	0.789	0.758	0.413
2041	Confectionery mfg.	0.490	0.611	0.496	0.659	0.625
2222	Cotton spinning, etc.	0.454	0.447	0.556	0.622	0.532
3643	Electric equipment.	0.431	0.511	0.526	0.435	0.257
3081	Foundries—iron.	0.837	0.778	1.178	1.432	1.479
2883	Furniture mfg.	0.726	0.656	0.767	0.889	0.959
3383	Jewelry mfg.	0.159	0.137	0.199	0.253	0.286
2362	Knit goods mfg.	0.202	0.225	0.233	0.468	0.376
2585	Laundries.	0.684	0.516	0.891	1.009	0.644
2688	Leather goods mfg.	0.175	0.240	0.343	0.683	0.339
3632	Machine shops.	0.660	0.675	0.688	1.031	0.694
4304	Newspaper publishing.	0.264	0.299	0.206	0.416	0.317
4239	Paper mfg.	0.657	0.854	0.914	1.093	0.741
4299	Printing, etc.	0.283	*	0.437	0.364	0.373
4417	Rubber boots & shoes.	0.341	0.399	0.336	0.402	0.176
4410	Rubber goods mfg.	0.868	1.338	0.823	1.494	0.978
2303	Silk throwing, etc.	0.331	0.181	0.236	0.712	0.369
2021	Sugar refining.	0.537	1.439	0.806	0.554	0.751
2623	Tanning.	0.785	0.703	0.901	1.224	1.005
3241	Wire drawing.	0.495	1.162	0.719	1.216	0.592
2286	Wool spinning, etc.	0.351	0.326	0.397	0.528	0.407
II. PRINCIPAL CONTRACTING CLASSES						
5403	Carpentry, n.o.c.	\$2.897	\$2.880	\$3.497	\$3.993	\$4.759
5645	Carpentry—pvt. residence. ...	0.998	1.145	1.284	2.142	1.724
5213	Concrete construction.	2.166	2.406	2.347	5.159	4.105
5190	Electric wiring.	0.539	0.453	0.760	1.094	1.086
5022	Masonry.	3.145	2.290	3.042	5.162	3.867

TABLE 48 (Continued)

Code number	Class name	Policy years				
		1916-17	1920-21	1925-26	1930-31	1937-38
3724	Millwright work	\$0.383	\$0.892	\$1.522	\$2.320	\$1.086
5490	Painting, etc.—int.	0.647	0.644	0.562	0.851	0.718
5461	Painting—not int.	3.419	4.232	4.116	7.136	10.139
6003	Pile driving	2.087	1.418	14.872	5.160	2.170
5480	Plastering	0.832	0.965	1.267	1.903	1.925
5183	Plumbing	0.657	0.533	0.858	1.511	1.238
5506	Roofing	1.490	1.971	1.071	4.014	2.491
5551	Street, etc., const.	5.494	2.567	3.945	4.043	8.309

III. PRINCIPAL "ALL OTHER" CLASSES

9015	Buildings, care, etc.	\$0.690	\$0.614	\$0.739	\$0.870	\$1.029
7380	Chauffeurs, etc., n.o.c.	0.692	0.647	0.775	0.780	0.713
8810	Clerical, etc.	0.020	0.012	0.022	0.018	0.029
8868	Colleges—prof., etc.	0.017	0.021	0.030	0.031	0.043
9101	Colleges—all other	0.367	0.645	0.454	0.605	0.676
7205	Drivers & helpers, n.o.c.	1.105	0.835	1.156	1.234	0.261
7539	Elec. light & power	1.661	1.543	0.998	0.929	0.508
0006	Farm labor	0.692	0.782	0.896	1.693	1.503
7500	Gas works	1.081	0.861	0.903	0.698	0.464
8833	Hospitals—professional	0.047	0.182	0.214	0.150	0.212
9052	Hotels	0.385	0.496	0.705	0.676	0.778
9079	Restaurants	0.353	0.462	0.501	0.643	0.795
8742	Salesmen, etc.	0.017	0.033	0.031	0.085	0.068
8008	Stores—clothing	0.083	0.056	0.101	0.134	0.238
8039	Stores—department	0.291	0.254	0.215	0.264	0.266
8006	Stores—grocers	0.268	0.267	0.482	0.496	0.400
7219	Truckmen, n.o.c.	1.742	1.959	2.469	3.397	2.339

Source: Computed from basic data furnished by the Massachusetts Insurance Department and the Massachusetts Rating and Inspection Bureau. For a more detailed description of the classes see Table 45, pp. 277-279.

^a Basic data not available.

more above the 1916-17 level: Automobile manufacturing and assembling (3808). This helps explain corresponding increases in manual rates and average premium rates for this classification. The larger increase, oddly enough, was in indemnity loss costs, and appeared in the latter periods, 1930-31 and 1937-38. Five manufacturing classifications experienced increases of 75 to 99 per cent in average loss costs between 1916-17 and 1937-38: Boot and shoe manufacturing (2660), Foundries (3081), Jewelry

(3383), Knit goods (2362), and Leather goods (2688). Ten classifications confined increases to less than 25 per cent. Six managed to reduce average loss costs below the 1916-17 level: Bakeries (2003), Box manufacturing (4240), Cloth printing (2417), Electric power and transmission equipment manufactur-

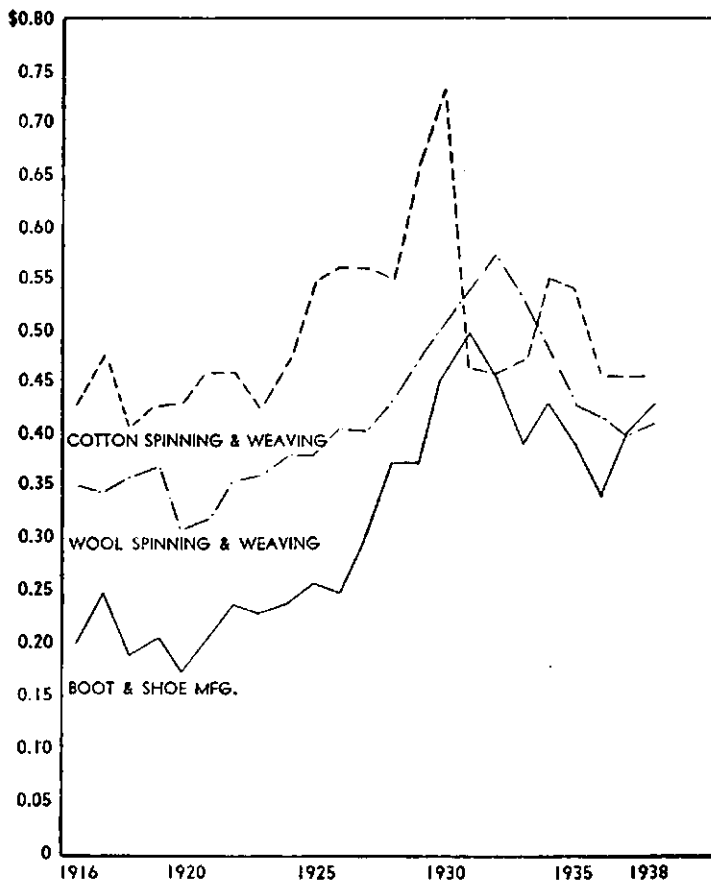


CHART 3. INDICATED TREND OF LOSS EXPERIENCE OF PRINCIPAL FACTORY CLASSIFICATIONS IN MASSACHUSETTS, POLICY YEARS 1916-1938

(Loss costs per \$100 payroll)

ing (3643), Laundries (2585), and Rubber boot and shoe manufacturing (4410). Especially noteworthy also is the improved experience of Boot and shoe machinery manufacturing (2660), which, after an early rise in loss costs, has recovered most of this ground. Only Foundries (3081), Furniture manufacturing (2883), Jewelry manufacturing (3383), Printing and lithographing (4299), and Sugar refining (2021) had poorer loss records in 1937-38 than in 1930-31.

Four contracting classifications experienced average loss costs

more than double those of 1916-17: Electric wiring (5190), Millwright work (3724), Painting and decorating—not interior (5461), and Plastering (5480). No contracting classification had a better loss record than in 1916-17, but the increases in three cases were confined to less than 25 per cent: Masonry

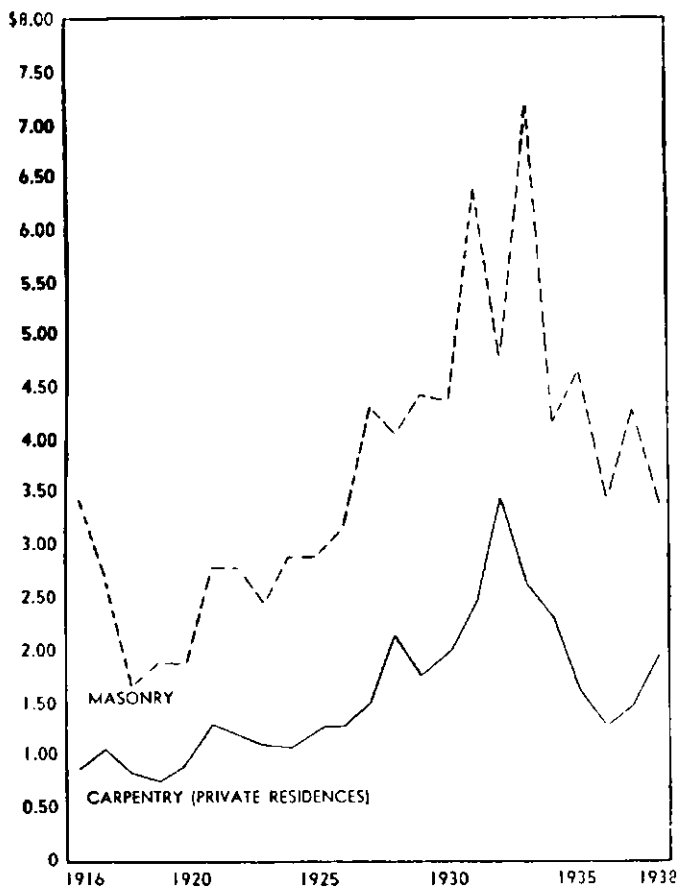


CHART 4. INDICATED TREND OF LOSS EXPERIENCE OF PRINCIPAL CONTRACTING CLASSIFICATIONS IN MASSACHUSETTS, POLICY YEARS 1916-1938

(Loss costs per \$100 payroll)

(5022), Painting and decorating—interior (5490), and Pile driving (6003). The improved experience of Masonry and Pile driving, though recent and therefore not yet fully reflected in the rates effective on December 31, 1938, was especially praiseworthy in view of the extremely hazardous character of these occupations. Only four contracting classifications failed to achieve better loss records in 1937-38 than in 1930-31: Carpentry, n.o.c. (5403), Painting and decorating—not interior (5461), Plastering (5480), and Street and road construction (5506). The very

high rates for exterior painting and road construction are largely explained by their loss experience.

Six "all other" classifications experienced loss costs in 1937-38 more than double those of 1916-17: Colleges and schools—pro-

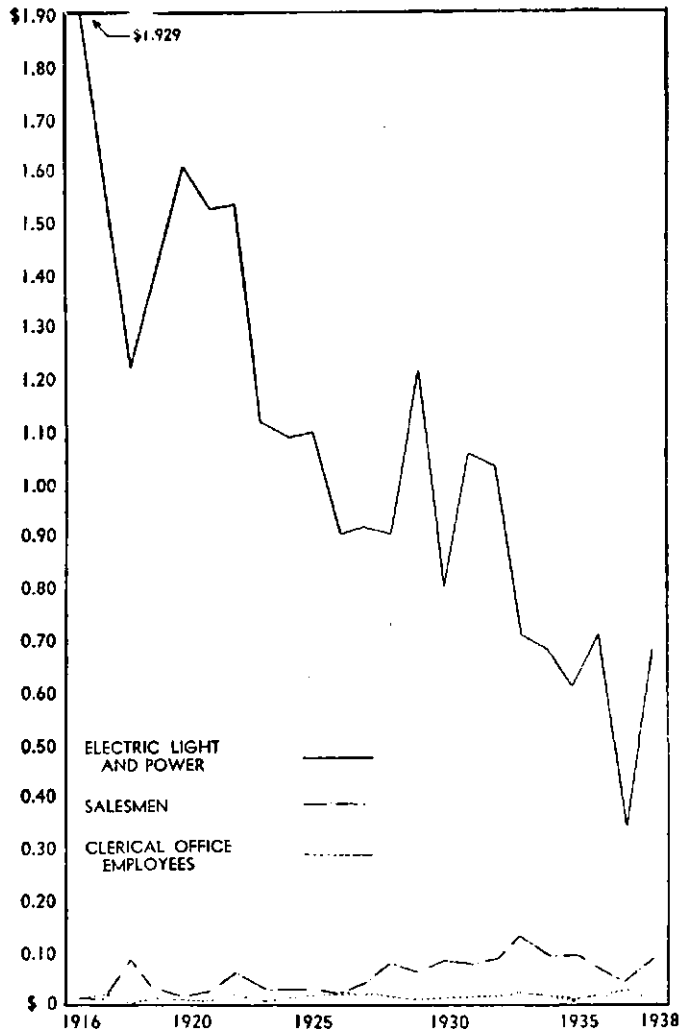


CHART 5. INDICATED TREND OF PRINCIPAL "ALL OTHER" CLASSIFICATIONS IN MASSACHUSETTS, POLICY YEARS 1916-1938

(Loss costs per \$100 payroll)

professional (8868), Farm labor (0006), Hospitals (8833), Hotels (9052), Salesmen (8742), and Clothing stores (8008). The increases for professional employees of colleges and schools and for salesmen were measured from a very low base (less than two cents), and have accordingly resulted in no large adjustments in rates. Many employments in these six classifications are re-

garded as so inherently "safe" that necessary precautions are neglected, and sharper increases are likely to occur if this tendency is not overcome. Four "all other" classifications had better loss records in 1937-38 than in 1916-17: Drivers and helpers (9205), Electric light and power (7539), Gas works (7500), and Department stores (8039). The improvement for Drivers and helpers was very marked and rather recent, and must be regarded as due in some measure to the diversion in 1934 of a large portion of the exposure to classifications representing the industries employing drivers. The improved experience of the public utilities was very marked and consistent, a reduction occurring in each period.

What was shown in general above is shown in detail in Table 49: the increasing significance of medical losses compared with indemnity losses. Only two manufacturing and three "all other" classifications experienced lower medical loss costs in 1937-38 than in 1916-17: Electric power and transmission equipment manufacturing (3643), Rubber boot and shoe manufacturing (4410), Drivers and helpers (7205), Electric light and power (7539), and Gas works (7500). On the other hand, all contracting classifications, ten manufacturing classifications, and eleven "all other" classifications—thirty-four of the fifty-seven classifications—experienced average medical loss costs in 1937-38 more than double those of 1916-17. Eleven manufacturing classifications reduced average indemnity loss costs below the 1916-17 level, while ten additional classifications confined increases to less than 25 per cent. Two contracting classifications reduced average indemnity loss costs to less than the 1916-17 average, as did five "all other" classifications. Two contracting and three "all other" classifications, confined increases in average indemnity loss costs to less than 25 per cent of the 1916-17 average. Briefly, whereas thirty-four of the fifty-seven classifications experienced increases of 100 per cent or more in average medical loss costs, eighteen of the fifty-seven classifications reduced average indemnity loss costs, while fifteen additional classifications experienced increases in indemnity loss costs of less than 25 per cent. Only for three classifications was the proportion of loss payments devoted to medical losses lower in 1937-38 than in 1916-17: Automobile manufacturing and assembling (3808), Wool spinning and weaving (2286), and Colleges and schools—

TABLE 49

INDEMNITY AND MEDICAL LOSS EXPERIENCE IN MASSACHUSETTS
FOR SELECTED CLASSIFICATIONS, 1916-1938

LOSS COSTS PER \$100 PAYROLL

Code number	Class name	Policy years							
		1916-17		1925-26		1930-31		1937-38	
		Indem- nity	Medi- cal	Indem- nity	Medi- cal	Indem- nity	Medi- cal	Indem- nity	Medi- cal
I. PRINCIPAL MANUFACTURING CLASSES									
3808	Automobile mfg.	\$0.363	\$0.249	\$0.365	\$0.315	\$1.109	\$0.754	\$1.268	\$0.366
2003	Bakeries	0.924	0.166	0.623	0.235	0.871	0.343	0.376	0.250
3558	Boot & shoe mach.	0.183	0.145	0.219	0.254	0.180	0.263	0.184	0.174
2660	Boot & shoe mfg.	0.158	0.070	0.158	0.098	0.317	0.160	0.243	0.178
4240	Box mfg.	0.739	0.182	0.440	0.272	0.640	0.283	0.391	0.285
2501	Clothing mfg.	0.107	0.049	0.115	0.061	0.192	0.122	0.125	0.120
2417	Cloth printing	0.437	0.104	0.531	0.258	0.558	0.200	0.276	0.137
2041	Confectionery mfg.	0.381	0.109	0.337	0.159	0.464	0.195	0.428	0.197
2222	Cotton spinning, etc.	0.358	0.096	0.388	0.168	0.433	0.189	0.350	0.182
3643	Electric equipment	0.289	0.142	0.333	0.193	0.280	0.155	0.137	0.120
3081	Foundries—iron	0.599	0.238	0.742	0.436	1.005	0.427	0.975	0.504
2883	Furniture mfg.	0.546	0.180	0.480	0.287	0.558	0.331	0.550	0.409
3383	Jewelry mfg.	0.095	0.064	0.097	0.102	0.155	0.098	0.159	0.127
2362	Knit goods mfg.	0.141	0.061	0.138	0.095	0.330	0.138	0.236	0.140
2585	Laundries	0.558	0.126	0.645	0.246	0.706	0.303	0.416	0.228
2688	Leather goods mfg.	0.095	0.080	0.188	0.155	0.404	0.279	0.164	0.175
3632	Machine shops	0.434	0.226	0.413	0.275	0.684	0.347	0.420	0.274
4304	Newspaper publishing	0.189	0.075	0.128	0.078	0.263	0.153	0.197	0.120
4239	Paper mfg.	0.492	0.165	0.582	0.332	0.751	0.342	0.425	0.316
4299	Printing, etc.	0.210	0.073	0.298	0.139	0.229	0.135	0.213	0.160
4417	Rubber boots & shoes	0.231	0.110	0.198	0.138	0.317	0.085	0.104	0.072
4410	Rubber goods mfg.	0.655	0.213	0.542	0.281	1.101	0.393	0.633	0.345
2303	Silk throwing, etc.	0.252	0.079	0.181	0.055	0.475	0.237	0.245	0.124
2021	Sugar refining	0.437	0.100	0.629	0.177	0.392	0.162	0.466	0.285
2623	Tanning	0.654	0.131	0.621	0.280	0.849	0.375	0.681	0.324
3241	Wire drawing	0.351	0.144	0.409	0.310	0.683	0.533	0.383	0.209
2286	Wool spinning, etc.	0.274	0.077	0.253	0.144	0.375	0.153	0.285	0.122
II. PRINCIPAL CONTRACTING CLASSES									
5403	Carpentry, n.o.c.	\$2.445	\$0.452	\$2.349	\$1.148	\$3.045	\$0.949	\$3.290	\$1.469
5645	Carpentry—pvt. resi- dence	0.855	0.143	0.944	0.340	1.535	0.607	1.179	0.545
5213	Concrete construction	1.668	0.498	1.022	1.325	3.918	1.241	2.989	1.116
5190	Electric wiring	0.391	0.148	0.493	0.267	0.746	0.348	0.677	0.409
5022	Masonry	2.751	0.394	2.240	0.802	4.048	1.114	2.908	0.959

TABLE 49 (Continued)

Code number	Class name	Policy years							
		1916-17		1925-26		1930-31		1937-38	
		Indem- nity	Medi- cal	Indem- nity	Medi- cal	Indem- nity	Medi- cal	Indem- nity	Medi- cal
3724	Millwright work.....	\$0.310	\$0.073	\$0.873	\$0.649	\$1.702	\$0.618	\$0.669	\$0.417
5490	Painting, etc.—int....	0.578	0.069	0.427	0.135	0.663	0.188	0.491	0.227
5461	Painting—not int....	3.110	0.309	3.272	0.844	5.761	1.375	7.669	2.470
6003	Pile driving.....	1.757	0.331	9.560	5.312	3.848	1.312	1.481	0.689
5480	Plastering.....	0.667	0.165	0.970	0.297	1.497	0.406	1.427	0.498
5183	Plumbing.....	0.509	0.148	0.542	0.316	1.045	0.466	0.806	0.432
5551	Street, etc., const....	5.046	0.448	2.990	0.955	2.925	1.118	5.884	2.425
5506	Roofing.....	1.232	0.258	0.522	0.549	3.005	1.009	1.777	0.714

III. PRINCIPAL "ALL OTHER" CLASSES

9015	Buildings, care, etc....	\$0.602	\$0.088	\$0.547	\$0.192	\$0.617	\$0.253	\$0.726	\$0.303
7380	Chauffeurs, etc., n.o.c..	0.518	0.174	0.503	0.272	0.508	0.272	0.441	0.272
8810	Clerical, etc.....	0.015	0.005	0.012	0.010	0.008	0.010	0.015	0.014
8868	Colleges—prof., etc....	0.002	0.015	0.018	0.012	0.015	0.016	0.024	0.019
9101	Colleges—all other....	0.296	0.071	0.285	0.169	0.402	0.203	0.412	0.264
7205	Drivers, helpers, n.o.c..	0.887	0.218	0.843	0.313	0.834	0.400	0.124	0.137
7539	Elec. light & power...	1.441	0.220	0.716	0.282	0.662	0.267	0.291	0.217
0006	Farm labor.....	0.560	0.132	0.584	0.312	1.247	0.446	0.910	0.593
7500	Gas works.....	0.853	0.228	0.632	0.271	0.419	0.279	0.261	0.203
8833	Hospitals—prof.....	0.025	0.022	0.153	0.061	0.090	0.060	0.135	0.077
9052	Hotels.....	0.300	0.085	0.472	0.233	0.459	0.217	0.488	0.290
9079	Restaurants.....	0.250	0.103	0.305	0.196	0.392	0.251	0.390	0.305
8742	Salesmen, etc.....	0.009	0.008	0.021	0.010	0.060	0.025	0.135	0.028
8008	Stores—clothing.....	0.064	0.019	0.067	0.034	0.069	0.065	0.135	0.103
8039	Stores—department...	0.240	0.051	0.151	0.064	0.161	0.103	0.173	0.093
8006	Stores—grocers.....	0.176	0.092	0.299	0.183	0.288	0.208	0.193	0.207
7219	Truckmen, n.o.c.....	1.473	0.269	1.837	0.632	2.561	0.836	1.598	0.741

Source: Computed from basic data furnished by the Massachusetts Insurance Department and the Massachusetts Rating and Inspection Bureau. For a detailed description of the classes, see Table 45, pp. 277-279.

professional (8868). In general, the increases in medical pure premiums were consistent and substantial from period to period, while the indemnity pure premiums tended to decline after rising until 1930-31.

NOTE ON DISTRESSED INDUSTRIES

If there is one thing that stands out clearly from the detailed analysis of the Massachusetts experience it is that while, in

general, rises in compensation insurance costs have been moderate, especially as compared with rises in benefit levels, the rises in costs have been very uneven, and have seriously affected particular industries and occupations. In Massachusetts the contracting industry has been more seriously "distressed" than any other by the movement of compensation insurance costs in the period studied. Its rates and average premium costs doubled between 1916 and 1938, and its average loss costs increased nearly 75 per cent in the same period. Its difficulties were not confined to Massachusetts: rather, its situation in that state was typical. For some of the smaller classifications, manual rates ran to \$25 or \$30 per \$100 of payroll in Massachusetts, and to \$35 in New York state. On a normal volume of business, and especially on a declining volume of business, such charges represent a serious factor sometimes affecting the decision whether to construct or whether to bid. As has already been said, and as will be made clearer below, this situation does not reflect on the rate-making process. It is, nevertheless, a matter that must be considered when weighing the desirability of increasing compensation benefits.

Dawson has pointed to several situations of this kind, especially noting the difficulties of the fishing and lumber industries in Nova Scotia. That province has a compulsory act under which a heavy deficit occurred in the fishing classification, necessitating insurance assessments. After studying the situation the provincial authorities made coverage of fishermen elective. Similar difficulties affecting the province's lumbering classification were resolved in a different manner. Compulsory coverage was continued, but compensation of injured lumber workers was paid at a differential percentage below the statutory rate.²³ These adjustments are certainly not satisfactory solutions to the problem of "distressed" industries.

Equally unsatisfactory was the attempted resolution of the difficulties of the coal mining industry of Pennsylvania. Following passage of the 1937 amendments providing substantial increases in benefits, the Anthracite Institute met in New York City and voted to reject the state's elective act. Similar action was taken by associations of bituminous coal operators. Nearly 300,000

²³ Marshall Dawson, "Coverage Limitations of Workmen's Compensation Laws," *Monthly Labor Review*, XLVIII (June, 1939), pp. 1278-1279.

workers, a great majority (perhaps 225,000) of whom were coal miners, were found to be working for rejecting employers in 1938. Never before had any sizable number of employees falling within the scope of the Pennsylvania act been denied coverage. Yet rejecting concerns did not pose the only problem for the state's compensation authorities. Evidences were found of private arrangements with employees to accept compensation under the old scale. When amendments designed to discourage nonelection and other abuses were passed, the Pennsylvania Supreme Court intervened and declared the changes unconstitutional on seven counts. We are not here concerned with most of the opinion, but only with a specific reference to the possibility that benefit increases if "unreasonable" might be voided under the state's constitution.²⁴

Faced with a chaotic coverage situation and this judicial hint, the Pennsylvania Legislature reduced benefits sharply in 1939, although leaving them somewhat more generous than the pre-1937 scale. Within a year most of the coverage difficulties had ended. Yet tailoring a benefit scale to suit the demands of a "distressed" industry, however large, is a highly unsatisfactory procedure. It may well be that certain provisions of the 1937 act were unreasonably high, notably the absolute weekly minimum of \$12.00. It is certain that many provisions of the 1939 scale were unreasonably low, notably the medical benefit limits and the partial disability schedule. What is most disturbing about the 1939 act, however, is the implicit assumption that the relation between benefits and costs is simple and direct. That a coal mine safety campaign might have kept the costs of more generous benefits within reasonable bounds, or that examination of the possibility of paring compensation insurance costs might have been helpful, seem not to have been considered. We are now prepared to consider some of the possibilities of paring compensation insurance costs.²⁵

²⁴ *Rich Hill Coal Co. v. Bashore*, 7 Atl. (2nd) 302, 325 (1939).

²⁵ For discussion of the other possibility (relation of safety work to compensation costs) see Part V, especially pp. 370-371.

CHAPTER XVI

CAN THE COSTS OF COMPENSATION INSURANCE BE REDUCED?

ARE RATES TOO HIGH?

BEFORE EXAMINING the expense loading critically, it will be well to consider whether, within the limits of rating procedure as now carried on, rates should be regarded as unreasonable. During most of the period in which compensation insurance has been sold, loss ratios have been relatively high, and large numbers of carriers have incurred underwriting deficits. In the period from 1923 to 1929, for example, the country-wide loss ratio of all carriers operating in New York state was in no year less than 64.0 per cent, or four points above the assumed normal loss ratio of 60 per cent. During the succeeding four years the loss ratio was in no year less than 67.5 per cent, and in 1933 reached a high of 72.0 per cent.¹ Similarly, Massachusetts data by policy years show loss ratios on state business varying from 60.3 to 69.6 per cent during the twenties, and from 70.9 to 71.1 per cent during the early thirties.² On the other hand, calendar year country-wide loss ratios of carriers operating in New York state varied from 53.1 to 56.2 per cent in the late thirties, and policy year loss ratios on Massachusetts business since 1932 have never exceeded 53.9 per cent, while a low of 47.1 per cent was touched in 1936. These periodic fluctuations illustrate the chief difficulty in compensation rate-making: the difficulty of predicting the future course of business and the consequent reliance on the experience of the latest policy years (for rate level, usually two years). As Hobbs has pointed out, this has the effect of producing cumulatively better experience when economic conditions are improving, and cumulatively worse experience when they are retrograding. To overcome this tendency, a contingency loading varying from 0.0 to 5.0 per cent of the rate was added to the rate structure in

¹ See Table 38, p. 253.

² See Table 43, pp. 266-267.

1934.³ Though it strongly supported carriers in the crisis of the early thirties, it has not as yet proved an effective stabilizer of compensation rates.

Some have argued that a way should be found to project the indications of past experience by study of related data. Contractors urged this course in the thirties, perhaps in the hope of obtaining lower rates. Actuaries generally disapproved this course, holding that there was no sound basis for projection. When the second World War began, two actuaries confessed to the writer that they had misgivings about the accuracy of recent loss indications. They seemed fearful that a rising trend of loss ratios would develop, and expressed great interest in exhibits in the writer's possession showing movements of pure premiums during the first World War. This interest suggested that it might be possible to attempt projections on the basis of supposedly comparable periods. Curiously enough, the period of the second World War has proved the fears of these actuaries to be unfounded, and has also confirmed the opinion that, so far as rate changes are concerned, the two war periods were generally comparable.⁴ In neither case have loss ratios been very high. At any rate, it appears that the possibility of projection should be studied closely and disinterestedly to determine whether the dilemma described by Hobbs can be resolved.

ARE EXPENSES OF CARRIERS TOO HIGH?

Sharp differences in expense loading among different types of carriers were pointed out above.⁵ During the period 1923-1939 over 85 per cent of the compensation insurance sold by stock companies operating in New York state was sold by companies devoting 40 per cent or more of premiums to expenses. During the same period about 80 per cent of the compensation insurance written by mutual companies operating in New York state was sold by companies devoting less than 25 per cent of premiums to expenses. The expense ratio of the New York state fund during this period averaged 18.7 per cent of premiums, or, allowing for the differential below board rates which they charge, 16.5 per

³ C. W. Hobbs, *Workmen's Compensation Insurance* (1939), p. 545.

⁴ See the discussion of this below, pp. 388-393.

⁵ See pp. 258-262.

cent of premiums. On the average, competitive state funds have devoted about 14 per cent of premiums to expenses; exclusive state funds about 6 per cent. It has been pointed out that an unstable competitive condition has resulted from these differences. Even more important is this question: are the differences justifiable?

Specific analysis of expense groups showed stock companies to be expending proportionately more for everything except inspections and bureau activities. The widest margin was in expenditures for acquisition and field supervision. Stock companies devoted an average of 17.9 per cent of premiums to these purposes, mutual companies an average of 4.7 per cent. Competitive state funds spend a still smaller proportion of premiums for business-getting, while exclusive state funds naturally have no business-getting expenses. The bulk of the premium volume written by stock companies is sold through agents receiving a commission, usually 10 per cent of premium, for their services. The test of any fee is the value of the service rendered. Are the services of agents selling compensation insurance worth an annual commission as high as 10 per cent of premium?

The services of agents have never been itemized, nor has any definite attempt ever been made to evaluate them. Just because they are not *employees* of the carrier, they can serve the assured by checking premiums, securing prompt and fair adjustments, and giving advice about the type of coverage to seek. Dodd has argued that "any services which may be rendered by agents on the renewal of policies can be better rendered by the carriers themselves."⁶ On this basis he has urged abandonment of commissions on renewals. A safer contention is that the services of agents are worth less on renewals than on new business. But to act on either contention is difficult in the extreme. Agents are not employees of the companies for whom they solicit business, and may resort to frequent shifting of their clientele if renewal with the same carrier yields no commission or a reduced commission.

Greene has pointed out that agents' services are worth less to large than to small assureds, and that this should be recognized by graduating rates of commission.⁷ Since he urged this course

⁶ W. F. Dodd, *Administration of Workmen's Compensation* (1936), p. 593.

⁷ W. W. Greene, "The Chief Trouble with Workmen's Compensation Insurance," *Proceedings of the Casualty Actuarial Society*, XXI (1935), 227-232.

of action, a moderate degree of graduation has been introduced as a feature of the retrospective rating plan." No assured paying a premium of less than \$5000 is eligible for these reduced percentages, however, and as late as 1939 the expenditures of stock companies for acquisition and field supervision were 17.7 per cent of premiums, just 0.2 per cent less than the seventeen-year average (1923-1939). This hardly represents the program advocated by Greene. "Acquisition cost," he contended, "should be drastically reduced. The reduction should not be uniform for risks of all sizes, but rather should be graduated according to size of risk as measured in terms of premium."⁹

The spokesman for this view is an official of a stock company, and, in the capacity of president of the society, was addressing the Casualty Actuarial Society, an organization of actuaries, most of whom are employed by insurance companies. He was not, he insisted, "desirous of depriving the producer of his just remuneration. Rather I feel that any system of insurance to endure must adequately recognize him. However, it is my belief that commission scales in the compensation business have been *higher than is warranted by the compulsory nature of the coverage*" (italics mine). He went on to point out that a moderate rate of commission on a larger volume of business is preferable to a higher rate on a dwindling volume. Incidentally, he accused some agents of "practising this theory privately, whether or not they profess it publicly."¹⁰ This would appear to mean that some agents were returning part of their commission to some of their best customers.

Greene's argument is impressive, but points straight at the primary difficulty the stock companies would face if they sought to remedy the situation. The National Association of Insurance Agents has protested against reductions in rates of commission or abandonment of renewal commissions. Clearly the agents are a powerful interest group capable of fighting vigorously any efforts they think will reduce their income. Like many other such groups they appear unwilling or unable to weigh the possibility that reductions in rates or prices may mean not reduction, but increase, of total income. Individual stock companies are particularly vulnerable to opposition by their agents, for the

⁹ See above, pp. 244-245.

⁹ Greene, "The Chief Trouble with Workmen's Compensation Insurance," p. 232.

¹⁰ *Ibid.*, p. 234.

latter can easily retaliate against companies which reduce rates of commission by offering their clientele to companies which continue to pay the old rates.

Dodd has suggested that the mechanism used in assigned risk plans is a convenient way of dealing with this problem. In supporting this suggestion he notes the "alarm" expressed by the National Association of Insurance Agents lest such plans in Wisconsin and Minnesota should develop to a point where all compensation premiums would be written without commissions.¹¹ What Dodd has in mind is the plan for assigning "undesirable risks" (concerns unable to obtain compensation insurance) now operating in many states. It is clear that where risks are assigned, no agent's services are required and no commission is paid. But risk assignments are usually permitted under existing regulations only after (a) proof of difficulty in getting insurance, and (b) acquiescence in use of the assignment procedure by an overwhelming proportion (85 to 100 per cent) of insurance carriers. What is not made clear by Dodd is how the assignment mechanism can replace present methods of acquisition without destroying competition for business, and perhaps competition in service as well.

A less dangerous step would be action by a large state, or by several states, lowering the allowable expense loadings, or even establishing a legal limit to the rate of commission or other expense items. If the latter measure were taken, either a flat limit or graduated limits might be employed, and separate limits for new business and renewals might be set up. A graduated scale, with graduations effective at a relatively low level, appears preferable. Although it provides relief where it is least needed, a graduated scale would seem to have a firm economic basis in differences in cost. Lower limits on renewals are also economically justifiable, but selection of the differential must be made with care if the danger of frequent shifts by agents from one carrier to another is to be avoided.

IS THE COST OF SCATTERED BUSINESS TOO HIGH?

A large number of insurance carriers have widely scattered compensation premium volumes, with small numbers of assureds in

¹¹ Dodd, *Administration*, p. 592.

each of several states. In 1939, nine carriers wrote less than \$25,000 of compensation insurance in New York state, and twenty less than \$100,000.¹² The average premium size for all private carriers in 1935 was \$344.¹³ If we apply this average to the cited premium volumes it appears that nine carriers had perhaps seventy policyholders, while twenty had 290, in New York state in 1939. For a state the size of New York the expense of serving so small a number of policyholders of this average size comes high. Yet concentrations in less populous states are generally much smaller. If some means of distributing small concentrations of business could be found, the over-all cost of compensation insurance could be reduced.

One factor making the cost of scattered business high is the difficulty of scheduling servicing so that travel and time expenditure can be economized. If a large number of risks are found in a given locale their payrolls can be audited, their plants inspected, their claims investigated, each at approximately the same time. The heavy outlay for effective safety work where business is widely scattered is discussed below.¹⁴ If, as the writer believes, this is equally true of other services, the alternative is between inadequate service and expensive service. Expenditures for inspections and bureau assessments in 1939 for twelve carriers with small and scattered compensation premium volumes ranged from 0.1 to 2.1 per cent of premiums, and averaged only 1.0 per cent of premiums. It is unthinkable that they could have accomplished any loss prevention worthy of the name with so small an outlay. Yet if preventive service is not made available, an apparent saving in premium is probably false economy, resulting in higher loss costs in the long run.

Hobbs notes as one reason for the higher expenses of stock companies that they "reach more readily the small and medium-sized risks and those in locations where industry is scattered."

In 1935 the average stock premium was \$291, the average non-stock premium, \$501.¹⁵ Undoubtedly the agency system of selling performs a valuable function by reaching risks that might otherwise have difficulty in insuring their compensation liabilities.

¹² State of New York, *Eightieth Annual Report of the Superintendent of Insurance for . . . 1938 (1939)*, part III, Statistical Table 9.

¹³ Hobbs, *Workmen's Compensation Insurance*, p. 338.

¹⁴ See p. 361.

¹⁵ Hobbs, *Workmen's Compensation Insurance*, p. 338.

In consequence, it produces a more widely scattered premium volume and higher expenses, not only for acquisition but for all services. Stock companies have sought to overcome these difficulties by devices such as expense constants for all risks, or, more commonly, for those not eligible for experience rating.¹⁶ This shifts the cost, rather than counteracting it. A real solution would be to reassign risks that are parts of small concentrations. If companies A and B have respective premium volumes of \$70,000 and \$50,000 in area X, and of \$50,000 and \$70,000 in area Y, an exchange of policies could leave each company with a premium volume of \$120,000 in one of the two areas. Though stated oversimply, there is no sound reason why such a plan, broad enough to take care of complications and subject to proper supervision, could not function effectively with considerable saving in the cost of compensation insurance.

IS STATE INSURANCE LESS EXPENSIVE?

It has already been stated that competitive state funds have expense ratios somewhat lower than those of private mutual companies, and that those of exclusive state funds are substantially lower than either. Before considering this final question of compensation insurance costs, however, one must compare not only expense ratios but the services they represent. There is no magic in state insurance that guarantees high standards of service at low expense; and there is also no magic in private insurance that transmutes higher expense into superior service. The state may, to be sure, exempt a state fund from tax liabilities, or absorb a part or all of administrative expenses. But special favors of this character may not fairly be held to result in lower expenses, but only in shifting of expenses.

The principal advantage enjoyed by the state fund is concentration of business, and this is enjoyed especially by an exclusive state fund. In the case of a competitive state fund this advantage may be lost, if it is so inactive a competitor as to have only a small proportion of the state's business, or if it has only a small

¹⁶ But fourteen states have refused to sanction use of expense constants: Alabama, Florida, Kansas, Michigan, Minnesota, Missouri, New Hampshire, South Carolina, South Dakota, Tennessee, Texas, Utah, Virginia, and Wisconsin. Expense constants (sometimes called policy fees but invariably applied as flat charges) vary from \$3 to \$10. See Hobbs, *Workmen's Compensation Insurance*, p. 552.

total business. Downey estimated that this advantage, where exercised, might enable an exclusive fund to perform adequate service for from 10 to 15 per cent of premiums.¹⁷ A particularly active competitive fund, meeting additional expenses because of competition, should be able to perform adequate service for from 15 to 20 per cent of premiums. Both these estimates assume an effectively functioning business organization.

Critics of state insurance, not usually entirely disinterested, have argued that state funds, like any government enterprise, are inherently inefficient. Low expenses of state funds are dismissed as based in part on state favors, and for the rest on deficient service. Specifically, it is claimed that they are generally slow in handling claims and that investigations are inadequate; that they are staffed by underpaid help, and that the latter are consequently always inexpert and usually inefficient; that in matters of service generally, they are lax, often to the point of leaving requests for service and letters unanswered; and that their work in loss prevention is deficient, with the result that, while expenses are lower, loss costs are higher than they otherwise would be. Each of these arguments must be considered on its merits.

On promptness of payment, available evidence shows that private carriers are ordinarily more prompt than state carriers. McCahan criticized state funds generally on this count in a full-length study of state insurance in the United States.¹⁸ An investigating committee appointed by the governor of Ohio complained about claim-handling by that state's fund in 1934.¹⁹ Horlacher found the Pennsylvania State Workmen's Insurance Fund less prompt in claim-handling than private carriers; and the latter, incidentally, less prompt than concerns carrying their own risk.²⁰ A similar finding is indicated by Idaho reports covering nine years.²¹ But the North Dakota fund has averaged an

¹⁷ E. H. Downey, *Workmen's Compensation* (1924), p. 99.

¹⁸ David McCahan, *State Insurance in the United States* (1929), pp. 49-57.

¹⁹ W. W. Greene, "State Monopoly of Compensation Insurance, Laboratory Test of Government in Business; Part I," *Proceedings of the Casualty Actuarial Society* (1936), vol. XXIII, part I, p. 1.

²⁰ J. P. Horlacher, *The Results of Workmen's Compensation in Pennsylvania*, Pennsylvania Department of Labor and Industries Special Bulletin No. 40 (1934), part I-b.

²¹ U. S. Department of Labor, Division of Labor Standards, Bulletin No. 46 (1940), p. 127.

elapsed time of only nineteen days, including appealed cases.²² A serious weakness of claim procedure by exclusive state funds generally and by competitive funds less commonly is their combination of the quasi-judicial function of deciding claims under the law with the financial function of insuring liabilities involved in these claims. This procedure, which permits an interested party to act as judge, has been referred to as "economical" and as preventing "overlapping." The record indicates instead that it tends to promote the litigation which workmen's compensation was designed to reduce.

Deficient claim service, however, is hardly an inherent characteristic of state insurance. The Utah state fund has adopted the methods of private carriers in claim-handling, and compares favorably with them in promptness and fairness of adjustments.²³ The New York and North Dakota state funds also have a good record in this matter.

In both selection and compensation of personnel most of the state funds leave something to be desired. Only four of the nineteen states concerned offer their technical personnel the protection of civil service in selection, promotion, and tenure.²⁴ Elsewhere the requirement of training is usually secondary to that of political backing, so even when competent men are appointed they may be summarily removed following an election. This situation is complicated by the low scale of remuneration prevailing in most of these states. Until wartime adjustments were made, the annual salary of so important an official of the Pennsylvania State Workmen's Insurance Fund as the actuary was \$3000. Other salaries of technical experts were in line with this figure. McCahan found the salaries of most state fund officials extremely low.²⁵ It is impossible to obtain at such salaries the services of officials comparable in experience and background to those employed by private carriers, especially with no secure tenure. Although this situation is quite general, however, it is not universal. The salary scale and security of the personnel of the New York state fund are comparable to those of private carriers, and its employees are both competent and efficient. The

²² *Ibid.*, p. 18.

²³ *Ibid.*, p. 19.

²⁴ But the three largest funds, those of California, New York, and Ohio, do provide this.

²⁵ McCahan, *State Insurance*, Table IX, p. 27.

writer has found employees of state funds generally neither inefficient nor incompetent, notwithstanding low salary scales and onerous conditions of tenure.

The same report of the Ohio Investigating Commission mentioned above complained about failure to answer communications—admittedly a sign of laxity. Service bureaus were found by Fondiller to be functioning in Ohio, apparently performing services not adequately rendered by the state fund. They numbered among their clients some 25 per cent of the policyholders.²⁶ On the other hand, insurance brokers advertising in nationally known newspapers and periodicals have listed services which they perform for their clients, among them services ordinarily supposed to be performed by the private carriers for whom they solicit. As is pointed out below, the safety work of state funds is admitted by their warmest advocates to be inferior to that of the better private carriers. Sweeping judgments on this matter are not in order. Praiseworthy safety work is performed by the competitive funds of California, New York, and Pennsylvania. The much-criticized Ohio fund has, since 1924, collected a safety work contribution of 1 per cent of premium from its assureds, and has made substantial progress in this matter. It is, moreover, one thing to agree that the safety services of state funds are inferior to those of the better private carriers, and quite another to dismiss the services of state funds as ineffective, or to whitewash those private carriers whose services are also inferior to those of the better private carriers.

Greene has compared the loss costs of Ohio classifications with those of comparable classifications in New York and New Jersey, making allowance for differences in benefit scales. He argues on the basis of his computations that the average loss cost in Ohio exceeds that in New York and New Jersey by 38 per cent. This difference he traces to inadequacy of loss prevention service by the Ohio State Insurance Fund, and he urges that it equals any difference in expense loading between state and private insurance.²⁷ But Greene's methods are not unexceptionable, and, as a stock company official, he has small claim to impartiality in this

²⁶ See also McCahan, *State Insurance*, p. 37.

²⁷ W. W. Greene, "State Monopoly of Compensation Insurance, Laboratory Test of Government in Business; Parts I and II," *Proceedings of the Casualty Actuarial Society* (1936), vol. XXIII, part I, pp. 1ff, and (1939), vol. XXVI, part II, pp. 130ff.

matter. Attacking his thesis, Richard Fondiller has questioned his treatment of reserves and the comparability of his adjusted loss cost exhibits.²⁸ A more trenchant analysis by the actuary of the Ohio fund serves to indicate only too clearly that, of the three participants in this argument, only Fondiller has preserved scientific detachment.²⁹

The possibility of lowering costs by extending state insurance of workmen's compensation has never been adequately explored. It appears that as matters stand existing cost differentials reflect in some measure differences in services. Serious weaknesses in the functioning of state funds have been pointed out. Recent experience with social security has demonstrated that, on the state level, we cannot assume that, apart from careful supervision, state insurance institutions will develop high standards of service. The high level of competence found among the personnel operating the Social Security Act, however, is a strong challenge to the view of many business men that government organizations in this field cannot function effectively. In the next decade that challenge will be presented in more serious form as the nation reexamines its social insurance program.³⁰ Astute executives of private insurance carriers will feel that it is wiser to trim their expenditures to meet this challenge than to rest their case on a priori attacks on government in business.

²⁸ Discussion of Part II, Greene's paper, *Proceedings of the Casualty Actuarial Society* (1939), vol. XXVI, part II, pp. 187ff.

²⁹ *Ibid.*, pp. 200ff.

³⁰ Consider, for example, the effect of introducing as a feature of an extended social security program compensation for nonoccupational disability. The costs and benefits of such a program under the Social Security Board would inevitably be compared with those under private insurance of workmen's compensation.

SUMMARY OF PART IV

COVERED EMPLOYERS, except in Alabama and Louisiana, have been required either to insure their compensation liability or otherwise to provide security for deferred payments. Seven states compel the employer to take out insurance. Elsewhere he may carry his own risk after satisfying the appropriate authorities of his financial ability. This latter practice, not altogether accurately called "self-insurance," is properly applicable only to large firms and, unless reinsured, only to firms with diversified operations. The privilege is not usually so closely confined, nor does the typical concern maintain a bona fide insurance organization. Judging from the volume of awards, roughly one-fifth of American workers are employed by establishments carrying their own compensation risk.

Private casualty companies may write compensation insurance in all states having compensation laws except the seven states which have established exclusive state funds. Stock companies, that is, insurance companies owned by their stockholders, write about 47 per cent of the compensation insurance sold in the United States. Mutual companies, owned by their policyholders, write about 27 per cent of the business, but have been expanding their sales rapidly. Other private carriers, principally reciprocal exchanges, write about 3 per cent of the business. Assureds of reciprocals are called subscribers, and give a power of attorney to the manager, who receives premiums, pays losses, and receives a fixed percentage for his services and expenses.

The first type of security requirement included in an American workmen's compensation law was compulsory insurance in a state fund created for that purpose. Five states early adopted this system. A less rigid monopoly, allowing for carrying one's own risk, was established in two states. Exclusive state funds have not been established elsewhere. They write nearly 10 per cent of the country's business, the Ohio state fund accounting for over half of this amount. State funds in which employers may insure, but which compete for business with private carriers,

have been established in eleven states. These funds are not invariably active competitors, but are active in Arizona, Montana, and Utah. The eleven funds write nearly 11 per cent of the country's business, those of California, New York, and Pennsylvania accounting for three-quarters of this amount.

The laws of only twenty-five states require insurance or proof of financial ability for compensation liabilities to public employees. Six states with exclusive state funds require public corporations to insure with the state fund. So also do five states with competitive state funds. Elsewhere, if subject to a security requirement, public bodies have the option of insuring or of demonstrating financial ability. Rightly or wrongly, supporters of workmen's compensation in many jurisdictions have assumed that the state and its subdivisions would surely remain solvent.

Most of the fears expressed, that if employers were permitted to insure their compensation liability with private carriers a profit would be made out of an insurance line social in character, have proved to have little basis. Over the seventeen-year period 1923 to 1939 inclusive, all carriers operating in New York state collected \$2,975,000,000 in earned premiums, paid or reserved for future payment \$1,891,000,000 to compensation claimants, and incurred expenditures of \$1,088,000,000 in the process. Thus they sustained an underwriting loss of \$4,000,000. Those carriers capable of dividing a profit in the accepted sense of the term, the stock companies, suffered a much heavier underwriting loss. Their incurred losses of \$1,342,948,000 plus incurred expenses of \$892,704,000 exceeded their earned premiums of \$2,096,960,000 by \$138,692,000. This is an underwriting deficit of 6.6 per cent. Investment of the funds held prior to payment of some or all of the claims might reduce this to an actual deficit of about 2 to 3 per cent.

Between 1923 and 1935 the over-all total for carriers operating in New York showed a net underwriting loss on workmen's compensation writings each year. These net losses varied from 0.1 per cent in 1924 to 13.6 per cent in 1933. By this test the business appears to have been shaky in 1923-24, fair from 1925 to 1928, poor in 1929-30, and extremely poor from 1931 to 1933. Since 1935 there has been an underwriting profit each year, and a high of 12.5 per cent was attained in 1938. Stock companies

have generally found the business extremely unprofitable. They incurred underwriting deficits in each of the years 1923–1935 ranging from 2.6 per cent in 1935 to 20.5 per cent in 1933. They earned underwriting profits beginning in 1936, reaching a high of 6.8 per cent in 1937.

The nonstock carriers have fared much better than the stock companies. Over the period 1923–1939 mutual companies operating in New York earned \$703,076,000 in premiums, devoted \$413,285,000 to claims and claim reserves and \$162,247,000 to expenses, earning thereby an underwriting profit of \$127,544,000, or 18.1 per cent. Virtually all of this "profit" was returned to the policyholders as "dividends," thus lowering the net cost of insurance. The New York state fund, also operating on a participating basis, earned premiums of \$174,902,000, met claims of \$134,496,000 and incurred expenses of \$32,766,000. Its underwriting surplus amounted to \$7,640,000, or 4.4 per cent. The mutual companies accumulated an underwriting profit in each of the seventeen years, but the size of this surplus varied with conditions. It ranged from 8.5 per cent in 1933 to 29.6 per cent in 1935, and exceeded 20 per cent in each of the years from 1936 to 1939. The underwriting experience of the New York state fund has been somewhat less favorable. Deficits were incurred in six of the seventeen years, ranging from 1.0 per cent in 1937 to 10.3 per cent in 1934. Underwriting profits of from 1.4 per cent (1935) to 18.9 per cent (1939) were earned in the remaining years.

The more favorable experience of the mutual companies is due in part to more selective underwriting. Their loss ratio of 58.8 per cent is more than 5 points below the stock companies' loss ratio of 64.0 per cent. But this is hardly true of the New York state fund. Allowing for the differential in rates (the state fund may charge 15 per cent below the manual rates) the loss ratio of the fund is still 67 per cent, or higher than that of the stock companies. The principal factor in the better financial showing of the participating carriers is their much lower expense ratio. The mutual companies incurred expenses amounting to 23.1 per cent of premiums and the state fund of 18.7 per cent of premiums (only 16.3 per cent at full manual rates). The expense ratio of the stock companies was 42.6 per cent.

The difficulties of the compensation insurance business may

scarcely be ascribed entirely to differences in mode of operation. The over-all expense ratio has varied relatively little, and was substantially higher than the average only in the early thirties. This was largely due to the "stickiness" of certain expenses (notably general administration) on a sharply declining premium volume. A much more important factor in the fluctuations of the net gain or loss from underwriting has been the marked fluctuations of the loss ratio. These fluctuations stem in part from difficulties in rate-making, but also arise from the failure of losses and payrolls to change in the same degree. When times are bad payrolls decline, and premium volume tends to decline in about the same proportion. The number of claims also declines, but incurred losses generally decline less than proportionately. The average cost per case rises when times are hard. Maximum payments are less restrictive on a falling wage level, while minimum payments act more frequently to raise the proportion of wage loss compensated. Claims are pressed which might not have been urged in better times. Closed cases are reopened. The greater difficulty in finding reëmployment persuades some workers to plead continuance of healed ailments. Commissioners also tend to make more liberal appraisals of claims.

From their 1929 peak, premiums earned by carriers operating in New York dropped 19 per cent by 1931, but the decline in losses incurred was only 16 per cent. Between 1931 and 1933 a further drop of 30 per cent in premium volume occurred, but the decline in losses incurred was only 29 per cent. The loss ratio therefore rose from 68.4 per cent in 1929 to 71.1 per cent in 1931 and 72.0 per cent in 1933. The ratio of losses paid to premiums written behaves even more erratically. This is because so large a proportion of payments in a given year is for claimants injured in earlier years. In 1932 premium writings were 41 per cent below the 1929 level, but losses paid were only 20 per cent lower than in 1929. The ratio of losses paid to premiums written accordingly rose from 59.6 per cent in 1929 to 80.6 per cent in 1932.

An unstable competitive condition has resulted from the differences in insurance overhead among the carriers. The overall expense ratio was 36.6 per cent of earned premiums for the seventeen-year period. This represented expenditures of 9.1 per cent for investigation and adjustment of claims, 13.8 per cent for ac-

quisition and field supervision, 8.5 per cent for general administration, 2.8 per cent for inspection and bureau fees, and 2.4 per cent for taxes. Claim expenses of stock companies amounted to 9.7 per cent of premiums, those of the New York state fund to 8.4 per cent, and those of mutual companies to 7.7 per cent. Administrative expenses absorbed 9.5 per cent of stock company premiums, but only 6.5 per cent of the premium earnings of the state fund, and only 5.9 per cent of the premium earnings of mutual companies. Stock companies devoted 2.7 per cent of earned premiums to inspecting and bureau fees, mutual companies 2.8 per cent, and the state fund 2.0 per cent. The outstanding difference is in the cost of business-getting. Acquisition expenses amounted to 17.9 per cent of stock company premiums, but only to 4.7 per cent of mutual company premiums, and to 1.1 per cent of state fund premiums. The persistence of these differentials has resulted in a considerable diversion of business to the participating carriers. Thus stock companies, which wrote 68.6 per cent of the business in 1917, wrote only 47.1 per cent in 1940. Mutual companies, which wrote only 12.4 per cent in 1917, wrote 27.4 per cent in 1940.

Expense ratios of competitive state funds average about 15 per cent of earned premiums. Exclusive funds devote only about 5 per cent of premiums to expenses. Differences in cost cannot be considered adequately apart from an appraisal of service rendered. Their warmest advocates admit that exclusive state funds do not undertake safety work comparable to that of the private companies writing the bulk of the business. An exclusive state fund enjoys a tremendous advantage in concentration of business and freedom from competition, and could probably render comparable services for from 10 to 15 per cent of premiums earned. On the other hand, stock companies are at a disadvantage because of the wide distribution of their assureds and the high cost of servicing them. They could substantially improve their competitive position by reducing the cost of acquiring business.

Stock companies acquire most of their business through agents located at various points and working "territories" for a commission. The bulk of mutual compensation insurance is sold "direct" by salesmen on salary. The commissions paid to agents may be considered as divided in two parts, one of which is the reward for

getting business, and the other the return for service rendered the customer. It is impossible to itemize or measure the value of the services to the customer. Two things seem clear, however: (a) the cost to the agent of getting business is much higher on first year policies than on renewals; and (b) the services rendered on renewals are generally less valuable than on first year policies. These considerations would seem to justify a lower rate of commission on renewals. The value of services rendered probably diminishes as size of risk increases, and some concession to this circumstance is found in the graduated allowances for acquisition on retrospectively rated assureds. In 1939, nevertheless, the cost of acquisition of stock companies was 17.7 per cent of premiums as compared with 17.9 per cent for the seventeen year period. A prominent stock casualty company official and former president of the Casualty Actuarial Society has pointed out that the rate of commission on compensation insurance is higher than is consistent with the essentially compulsory character of the coverage.

The cost of compensation insurance to American employers has naturally increased as benefits have been liberalized, but the rate of increase is, in general, lower than might have been expected. The general counsel of the American Federation of Labor noted a 25 per cent increase in rates in Wisconsin. Complete data for Massachusetts indicate that the earned premium per \$100 of payroll has risen about 22 per cent from the original level. The initial rates were set somewhat too high, however, and were subsequently lowered. From this lower level, the premium per \$100 has risen 45 per cent. The benefit scale is roughly twice as generous as the original scale. Pure premiums, that is, loss payments per \$100, have risen 49 per cent. Indemnity pure premiums (payments per \$100 for indemnifying wage loss) have actually declined 14 per cent, while medical pure premiums have risen 62 per cent.

Too much should not be inferred from these figures. A considerable change in the distribution of covered industries in Massachusetts has taken place in the intervening years. In policy year 1916, 59.6 per cent of the covered payroll was paid to factory employees and 6.9 per cent to employees of contractors. In policy year 1935 these percentages had fallen to 44.0 per cent and 3.8 per cent respectively. After 1919 the country as a whole experienced a tendency to a declining percentage of em-

ployees working in factories. Only the industrial states of the southeast failed to experience this tendency. Dividing the Massachusetts workmen's compensation experience accordingly, it appears that the premium per \$100 has doubled for contracting enterprises, has increased 52 per cent for manufacturing enterprises, but has increased only 4 per cent for "all other" enterprises. Pure premiums have risen 74 per cent for contracting, 27 per cent for manufacturing, and have declined 9 per cent for "all other" industries. The same sharp differences between indemnity and medical pure premiums is evident. In manufacturing, for example, indemnity pure premiums rose 12 per cent, while medical pure premiums rose 90 per cent.

A detailed analysis of the principal industrial classes in Massachusetts also shows a very uneven change in costs. Four of the twenty-eight principal manufacturing classes experienced reductions in premium per \$100, while nine faced increases of less than 25 per cent. On the other hand, nine paid increases of more than 50 per cent, and three of more than 100 per cent. All twelve of the principal contracting classes paid increases of more than 50 per cent, and six of more than 100 per cent. Of the seventeen principal "all other" classes, five registered reductions in premium per \$100, and four increases of less than 25 per cent. Six "all other" classes paid increases of over 75 per cent, and four of over 100 per cent. These uneven changes help to explain resistance to the liberalization of benefit scales. Industry in general can clearly absorb the resulting increases in rates, but particular industries, and even industry groups, might face serious difficulties.

The considerable rises in medical costs which have occurred throughout the country reflect several tendencies. Increases in medical benefits have been very large, not only by direct additions to periods or amounts for which they may be secured, but by grant of discretionary power to relax such limits as exist. There have been tremendous advances in medical knowledge and equipment, and a growing interest from the medical profession in industrial ailments. Paralleling this has come a growing realization that there is an intimate connection between adequate medical care and promptness of recovery and reemployment. Both employers and insurance carriers are increasingly disinclined to penurious avoidance of medical expenditures.

The declines in indemnity pure premiums found in the case of many industries, tend to indicate a growing concern for industrial safety. They have taken place in spite of increases in the speed of production and in the mechanization of industrial processes, and in spite of substantial liberalization of benefit scales. It must be admitted that a given volume of payroll exposure represents today a smaller exposure in man-hours than in 1916. Also the growing willingness to provide adequate medical care has tended to shorten the average duration of disability. On the other hand, rising wage levels, if accompanied by more liberal benefit provisions, are reflected in larger claims for a given degree of disability. And willingness to provide adequate medical care is closely related to concern for industrial safety. If it is difficult to assess precisely the influence of each of these variables, it is also impossible to deny that preventive measures have profoundly influenced the movement of compensation costs. Clearly the possibility of further liberalization of benefit scales depends in part on the possibility of broadening and intensifying interest in industrial safety.

PART V

INJURY PREVENTION AND COMPENSATION COSTS

INTRODUCTORY NOTE

FEARS of rising premium costs, general or particular, appear sometimes to have set limits to increases in workmen's compensation benefits. Such fears are often based on an inadequate appraisal of the factors involved. Two factors are commonly ignored. On a rising wage level, maximum provisions become more restrictive and minimum provisions less helpful to workers; hence compensation costs prove lower than expected. More important is the general downward trend in frequency, which lowers not only direct (compensation) costs of industrial injuries, but their indirect (damage, spoilage, morale) costs as well. If the necessity for compensating accidents more adequately will stimulate preventive activity, direct costs of the higher benefits may rise little, if at all. The decline in indirect costs should more than offset any such increase.

Much attention is commonly given to interruptions of production, especially when a serious shortage of manpower exists. Yet one of the most serious causes of interrupted production excites relatively little comment. In 1940, according to estimates of the U. S. Bureau of Labor Statistics, 1,889,700 persons were injured at their jobs, 18,100 of them fatally.¹ Excluding the time loss allocable to deaths and permanent disabilities, the number of man-days of actual absence from work due to injury is estimated at nearly 42,000,000. If deaths and permanent injuries are included at standard rates of time loss, the fatal and permanent cases involved an estimated loss of 192,000,000 man-days. The overall total for 1940 was nearly 234,000,000. If 780,000 workers were employed full-time, they would work about 234,000,000 man-days in a year.

This is an impressive total, especially when compared with the much more modest figure of nearly 7,000,000 man-days lost due to industrial disputes.² This direct time loss is only a part

¹ *Monthly Labor Review*, LIII (1941), 327ff. Cf. above, p. xix, but there only injuries to workers (not self-employing) are considered.

² It is not intended to minimize the effect of industrial disputes, and the comparison may not be quite fair in view of the higher concentration of the man-days lost during industrial disputes.

of the effect on productive capacity, for other indirect interruption of production incident to the occurrence of the injuries—damaged equipment and materials, diverted attention, and strained morale—also took place. The extent of the indirect loss is difficult to estimate, but it has been said that its costs average four times those from the direct loss.³ Injured workers can be replaced, some will argue, while the loss due to fatal and permanent injuries stretches into a vague future. Injured workers usually are replaced, but seldom by equally proficient workers. In periods of serious labor shortages it is idle to talk of time losses due to industrial injuries as “replaceable.” As to the time dimension, the measure of the error, if any, is the extent of fluctuations in fatal and permanent cases.

One of the most serious aspects of these indications of 1940 is the reflected increase over 1939 figures. Some increase was to be expected, for employment was about 9 per cent higher than in 1939 and man-hours were up about 11 per cent. The number of injuries increased about 14 per cent, however, and the number of days lost nearly 12 per cent. The increases continued in 1941, during which year 2,422,750 persons were injured, 19,250 of them fatally. The nation's effort to avail itself of the less efficient equipment, men and hours, was beginning to tell. At a time when manpower shortages still exist, the moment is propitious to examine the relationship between injury prevention and compensation.

³ H. W. Heinrich, *Industrial Accident Prevention* (1931), pp. 17-33.

CHAPTER XVII

THE RELATION BETWEEN THE COMPENSATION AND SAFETY MOVEMENTS

THE ACTION of the several legislatures in passing compensation acts was usually preceded by study and investigation. A majority of the investigating commissions concluded that a primary result of workmen's compensation legislation would be a reduction of injury frequency and severity. The Pennsylvania commission was directed to investigate both accident prevention and compensation, and reported in favor of additional preventive legislation as well as a compensation act. The Massachusetts commission rated this aspect of compensation legislation as of first importance.¹ Perhaps as a result of this expression by the commission, the Massachusetts act was given the title: "An Act Relative to Payments of Employees for Personal Injuries Received in the Course of their Employment and to the Prevention of Such Injuries." Not only the titles, but also the provisions of many of the compensation laws reflect that conclusion regarding the preventive effect of workmen's compensation. The California act is a model in this regard. The preamble to the 1917 revision states: "A complete system of workmen's compensation includes adequate provision for the comfort, health, safety, and general welfare of any and all employees . . . also full provision for securing safety in places of employment."² This statement of policy is implemented in sections 33 to 54, which empower the Industrial Accident Commission to undertake and enforce regulations regarding industrial safety.

The intimate connection of compensation and prevention was not invariably recognized in either the titles or terms of the several statutes, but the reports of the investigating commissions are virtually unanimous in concluding that the connection was inti-

¹ Commonwealth of Massachusetts, *Report of the Commission on Compensation for Industrial Accidents* (1912), p. 46.

² California, chap. 586, Acts of 1917, sec. 1.

TABLE 50

INDUSTRIAL SAFETY PROVISIONS OF WORKMEN'S COMPENSATION LAWS, 1940

State	Board empowered to make and/or enforce reasonable safety rules and regulations	Board directed to tabulate accident reports, study causes and results of accidents, and make recommendations to legislature for accident prevention	Mutual insurance associations empowered to make and enforce reasonable safety regulations as regards their members	Compensation made subject to increase if employer neglects reasonable safeguards, or decrease if employee ignores or refuses to use them	Other provisions
Arizona.....	×	...	...	...	...
California.....	×	...	×	...	a
Colorado.....	×	...	×	...	...
Connecticut.....	...	...	×	...	...
Delaware.....	...	×	...	...	...
Dist. of Col.....	...	×	...	...	...
Florida.....	...	×	...	...	...
Idaho.....	×	...	...	...	...
Kentucky.....	...	...	...	×	...
Maryland.....	×	...	...	...	o
Massachusetts.....	...	...	×	...	e
Missouri.....	...	...	...	×	...
Montana.....	×	...	...	...	...
Nevada.....	...	...	...	×	...
New Hampshire.....	...	...	×	...	...
New Mexico.....	...	...	...	×	f
New York.....	...	...	g	...	...
North Carolina.....	...	×	...	...	...
North Dakota.....	×	...	...	...	...
Ohio.....	×	...	...	...	i
Oregon.....	j	...	...	...	...
Pennsylvania.....	...	...	×	...	...
South Carolina.....	...	×	...	×	...
Texas.....	...	...	l	...	...
Utah.....	×	...	...	...	...
Vermont.....	...	...	m	...	...
Washington.....	×	...	...	×	...
West Virginia.....	n	...	...	...	...
Wisconsin.....	...	...	...	×	...
Wyoming.....	...	...	...	...	f

a There is a further positive requirement that the employer do all that is reasonably necessary to protect life and safety.

b The commission may only enforce statutory safety provisions.

c The commission may rescind approval of an employer's plan for securing compensation if reasonably necessary for accident prevention.

d Applies to all insurers, whether stock or mutual.

e A separate act establishes a Division of Occupational Hygiene in the Department of Labor and Industries to study accident and disease prevention.

mate. Contemporary statements indicate that this feeling was not confined to the members of the commissions. Speaking for insurers, Herbert Wilson remarked in 1916: "Workmen's compensation legislation is a powerful instrument for greater safety in the industries."³ Speaking for the state, Will French of the California Industrial Accident Commission said: "The true science of workmen's compensation is accident prevention."⁴ In 1925, A. L. Emery, a manufacturer, addressed the National Safety Congress in these words: "Our first real interest in safety work was forcibly demanded of us by passage in Massachusetts in 1912 (sic) of the workmen's compensation act."⁵

Not only the California act but those of eleven additional states have given the compensation authority specific responsibility for industrial safety.⁶ In five other jurisdictions the compensation authority is directed to study the causes and results of accidents (and/or diseases) and to report to the legislature with appropriate recommendations.⁷ These and relevant provisions are set forth in Table 50 for the thirty jurisdictions and compensation laws which explicitly recognize the relation of compensation and prevention. The table is intended only for this limited purpose, and does not presume to indicate the general situation with regard to public regulation of industrial safety. Many states have separate laws according responsibility for industrial safety to a specific agency. Seven compensation acts permit or direct mutual insurance associations to make and enforce safety regulations for their assureds. More will be said concerning this in another connection. Ex-

³ Quoted by J. B. Andrews in *The Annals* of the American Academy of Political and Social Science, CXXIII (1926), no. 212, p. 207.

⁴ U. S. Bureau of Labor Statistics, Bull. 210, p. 145 (1916).

⁵ Quoted in the *Textile World*, LVXIII (Oct. 3, 1925), 68.

⁶ Arizona, Colorado, Idaho, Maryland, Montana, North Dakota, Ohio, Oregon, Utah, Washington, and West Virginia.

⁷ Delaware, District of Columbia, Florida, and North and South Carolina.

f On a negative note, the compensation act provides that nothing it contains repeals any existing safety statute.

g Group of assureds in state insurance fund must abide by approved safety regulations.

h This power resides in a Bureau for Prevention of Accidents and Diseases, responsible to the commission.

i The commission may prescribe measures against disease, the employer to assume costs.

j The commission may investigate all cases in which employer fails to provide statutory safeguard and certify offenders to prosecuting attorney.

k Applies to state workmen's insurance fund also.

l The quasi-official Texas Employees' Insurance Association may make and enforce safety regulations affecting its assureds.

m By a separate act Vermont achieved this purpose.

n The commission may require installation of safety appliances; it may also require adoption of safety rules by the employer which, when approved, must be properly posted.

tremely significant is the positive requirement in the California act that the employer do all that is reasonably necessary to protect life and safety. The Maryland provision allowing rescission of approval of an employer's plan for securing compensation is apparently aimed at self-insuring concerns with poor accident records.

All available evidence supports the view that workmen's compensation is a stimulus to prevention of industrial injuries. It will be noted later that categorical statistical demonstration of prevention is impossible, but that other evidence, including related statistical indications, is reasonably conclusive.⁸ The parallel development of the compensation and safety movements is itself suggestive. In 1913 the third harvest of compensation laws brought the total of states having such laws to twenty, including most of the industrial states, and the same year saw the establishment of the National Safety Council. Some have been led by the parallel development to ascribe the safety movement to the compensation movement. "The safety movement," argues De Blois, "had its origin in the changed conditions which arose from the enactment of workmen's compensation laws."⁹ Actually the evidence indicates that the safety movement was already under way before the compensation laws were passed. There can be no question, however, that the new legislation provided a tremendous stimulus. "The subject of accident prevention," asserted Leon Senior, "has been in our minds for a long time, but it did not take real shape until the advent of compensation laws."¹⁰ "It is especially through the payment of compensation," argues Downey, "that the cost of work injuries is brought home to the entrepreneur."¹¹

HAS INJURY PREVENTION UNDER WORKMEN'S COMPENSATION BEEN EFFECTIVE?

Before undertaking to appraise the relation of workmen's compensation to injury prevention it is necessary to consider the

⁸ See below, pp. 331-343.

⁹ L. A. De Blois, *Industrial Safety Organization for Executive and Engineer* (1926), p. 32.

¹⁰ Leon S. Senior, "Inter-Relation of Compensation and Safety Work in New York State," *The Annals of the American Academy of Political and Social Science*, CXXIII (January, 1926), p. 210.

¹¹ E. H. Downey, *Workmen's Compensation* (1924), p. 131.

effectiveness of the safety movement. To do so is not a simple matter, for it is a multivariable problem and it is difficult to quantify the preventive forces. The data available for some of the variables are by no means satisfactory in their coverage, nor are they in suitable form. Categorical statistical demonstration that the safety movement has reduced the over-all hazard is accordingly not to be expected. The existing statistical indications may, however, be fruitfully examined and used as a basis for some judgments on the effectiveness of injury prevention.

A detailed consideration of the difficulties of direct analysis should prove helpful. One body of data that is much to be desired is the annual series of industrial injury frequency rates. Such rates are expressed in terms of two variables: the number of injuries and the number of man-hours worked. Existing compilations regarding either variable are limited, and the more so as one attempts to carry the analysis back through the years. The system of forty-eight laboratories, however well it may serve in testing the merits of alternative types of legislation, creates a host of difficulties for statisticians. Uniform data on industrial injuries are not obtainable for the several states. Some states require a report of every industrial injury (including diseases), others only of accidents, and still others only of compensable injuries (or accidents).¹² These differences complicate the task of estimating a national total of industrial injuries. Even if a dependable total could be obtained over a considerable period of years, existing information regarding employment, particularly hours worked, is highly unsatisfactory, and makes proper interpretation of available estimates of industrial injuries difficult.¹³ For the most part information on injury rates can be secured only in reportings to various agencies giving data on both injuries and man-hours worked. The largest collections of such reportings are those made to the National Safety Council and to the U. S. Bureau of Labor Statistics. Extremely useful though they are, these two bodies of data do not furnish adequate basis for an estimate of the national over-all injury rate. Their samples do not represent American industry accurately either in proportions of the several industries or in size of establishments.

¹² See the discussion of these differences below, pp. 326-331.

¹³ Cf. A. H. Reede, "Adequacy of Employment Statistics," *Journal of the American Statistical Association* (March 1941), pp. 71ff.

The difficulties encountered in attempts to measure the actual as opposed to the applicable coverage have been already adverted to.¹⁴ But even if one possessed complete series of injury rates and compensation coverage, correlation of the two series would not show the relation of compensation to injury prevention. Injury hazards are subject to profound changes. The trend in number and proportion of machine accidents is extremely significant, but can scarcely be properly interpreted apart from analysis of the increase in mechanization of industry. Available compilations to measure increase in mechanization of industry, however, are limited in scope and character. Periodically, relatively complete indications for the manufacturing industries are published as a part of the Census of Manufactures. Production and sales of electric power are adequately measured, but it is difficult to isolate industrial consumption. This problem is only one of those encountered when one attempts a proper evaluation of such industrial injury statistics as are available. Thus one cannot evaluate data on elevator accidents without considering increased use of elevators as average size of buildings increases, nor data on workers injured while operating motor vehicles without considering increased use of motor vehicles in industrial operations. In the light of these considerations, Altmeyer's assertion that "it can be argued that if it were not for workmen's compensation the industrial accident rate would have increased as a result of changes in industrial processes" appears a serious understatement.¹⁵

In fact, one should hardly be prepared to accept injury data without giving full consideration to the effect of improved reporting. It is generally recognized that workers must be educated to avail themselves fully of their rights under any labor legislation. Following the passage of workmen's compensation laws there was a growing awareness on the part of workers first of the existence of compensation, then of the nature and scope of compensation. It may be added that the medical profession has shown a similar tendency, and that doctors are much more prone to consider the possibility of industrial causation today than formerly. At the same time a definite strengthening of the forces requiring complete reporting of industrial injuries has been gradually taking place.

¹⁴ See Chapter II, pp. 21-23.

¹⁵ Cited by W. F. Dodd in *Administration of Workmen's Compensation* (1936), p. 699.

The number of state laws calling for complete reporting has increased, and the scope of reporting has been broadened in many other jurisdictions. At the same time administration of these provisions has improved, resulting in readier compliance with their terms. In view of these developments it can scarcely be assumed that current data are strictly comparable with early compilations.

The improved reporting requirements are indicated in Table 51. In alternate columns the progress in reporting requirements is shown in two aspects. One column contains the period for which disability must persist, if any, before the reporting requirement becomes effective. A second column indicates which employers are required to file reports. "Subject" employers are those subject to the compensation laws of their states. At present, twenty-two states call for reports of all injuries regardless of extent of disability, but only fifteen of them exact this of all employers, whether or not subject to the compensation act. Eleven additional states ask all employers to report only injuries causing disability lasting a given period. Five states require reports of all tabulable injuries, that is, those causing loss of at least one shift, and two of them enforce this against all employers. For seven states the disability requirement is "more than one day," and except in one of these states, all employers must comply. Three states ask all employers to report injuries persisting beyond three days. Subject employers must report injuries lasting a week in three states, over a week in Illinois, and over two weeks in Alabama. In all of these latter states, including those with the three-day proviso, there is an obvious relationship between the disability requirement and the waiting period. The Louisiana law makes no provision for injury reports, although a separate law requires reports of mining injuries.

The gradual extension of reporting requirements is perhaps more clearly indicated in Table 52. Here the proportion of employees (other than federal employees) affected by one or another type of requirement is indicated for each of four years. In 1940 some kind of injury report was required for 73.2 per cent of all employees regardless of calling, and for 15 per cent of all employees because they were working for subject employers. Only 7.3 per cent of employees were completely unaffected by reporting requirements. This represented a substantial improvement over the situation in 1915, when 47.2 per cent of employees were work-

TABLE 51
INJURY REPORTING PROVISIONS OF WORKMEN'S COMPENSATION LAWS, 1915-1940.

State	1915		1920		1929		1940	
	For which injuries	From which employers	For which injuries	From which employers	For which injuries	From which employers	For which injuries	From which employers
Ala.....	.....	.....	over 2 wks.	subject	over 2 wks.	subject	over 2 wks.	subject
Ariz....	no provision	no provision	no provision	no provision	all	subject	all	all
Ark....	.....	.....	.....	.....	.....	.....	all	all
Calif...	all	all	all	all	all	all	1 day	all
Colo....	.....	.....	all	all	over 10 da.	all	all	all
Conn... 1 day	subject	1 day	subject	1 day	subject	1 day	subject	1 day
Del.....	.....	.....	all	subject	all	subject	all	subject
D. C....	.....	.....	.....	.....	all	all	all	all
Fla.....	.....	.....	.....	.....	.....	.....	all	all
Ga.....	.....	.....	.....	.....	1 wk.	subject	1 wk.	subject
Idaho..	.....	.....	1 day	all	1 day	all	1 day	all
Ill.....	over 1 wk.	subject	over 1 wk.	subject	over 1 wk.	subject	over 1 wk.	subject
Ind.....	.....	.....	over 1 da.	all	over 1 da.	all	over 1 da.	all
Iowa...	all	all	over 1 da.	all	over 1 da.	all	over 1 da.	all
Kansas.	as directed	subject	as directed	subject	as directed	all	over 1 da.	all
Ky.....	.....	.....	over 1 da.	subject	over 1 da.	subject	over 1 da.	all
La.....	no provision	no provision	no provision	no provision	no provision	no provision	no provision	no provision
Maine..	.....	.....	all	subject	all	subject	1 day	subject
Md.....	all	all	all	all	all	all	over 3 da.	all
Mass...	all	all	all	all	all	all	all	all
Mich...	all	all	all	all	all	all	all	all
Minn...	no provision	no provision	1 day	all	1 day	subject	over 1 da.	subject
Miss. ...	.....	.....	.....	.....	.....	.....	.....	.....

Mo. ....	.....	.....	.....	.....	all	all	all	all
Mont. ....	.....	.....	all	all	all	all	all	all
Nebr.	no provision	no provision	as directed	no provision	as directed	no provision	as directed	as directed
Nevada	all	all	all	subject	all	subject	all	subject
N. H.	as directed	no provision	as directed	no provision	as directed	no provision	as directed	as directed
N. J.	over 2 wks.	all	over 2 wks.	all	all ^a	all	all ^a	all
N. Mex. ....	.....	.....	no provision	no provision	no provision	no provision	all	no provision
N. Y.	all	all	all	all	over 1 da.	all	over 1 da.	all
N. C. ....	.....	.....	.....	.....	.....	.....	over 3 da.	all
N. Dak. ....	.....	.....	all	all	all	all	all	all
Ohio	all	all	all	all	all	all	all	all
Okla. ....	.....	.....	all	all	all	all	all	all
Oregon.	all	all	all	all	all	all	all	subject
Pa. ....	.....	.....	over 2 da.	all	over 2 da.	all	all	all
R. I.	over 2 wks.	subject	over 2 wks.	subject	1 wk.	subject	1 wk.	subject
S. C. ....	.....	.....	.....	.....	.....	.....	over 3 da.	all
S. Dak. ....	.....	.....	all	subject	all	subject	all	subject
Tenn. ....	.....	.....	no provision	no provision	1 wk.	subject	1 wk.	subject
Texas.	all	all	over 1 da.	all	over 1 da.	all	over 1 da.	all
Utah ....	.....	.....	all	all	all	all	all	all
Vt. ....	.....	.....	1 da.	subject	1 da.	subject	1 da.	subject
Va. ....	.....	.....	over 1 wk.	all	all	all	all	all
Wash.	all	all	all	all	all	all	all	all
W. Va.	as directed	all	as directed	all	as directed	all	as directed	as directed
Wis.	all	4 or more	all	4 or more	all	3 or more	as directed	as directed
Wyo. ....	.....	.....	all	subject	all	subject	all	subject

Source: Tabulated from analysis of the several laws on workmen's compensation, accident reporting, etc.

^a Insured employers must report all injuries, other employers only those causing disability lasting one week.

TABLE 52
EMPLOYEES AFFECTED BY INJURY REPORTING PROVISIONS OF
COMPENSATION LAWS, 1915-1940

	1915 ^a	1920	1929 ^b	1940
I				
Total employees ^c	24,214,038	29,116,777	33,054,243	33,263,824
Unaffected.....	11,416,206	6,225,119	4,930,188	2,440,586
Per cent.....	47.2%	21.4%	14.9%	7.3%
Affected.....	12,797,832	22,891,658	28,124,055	30,822,824
Per cent.....	52.8%	78.6%	85.1%	92.7%
"All employers".....	43.9%	56.1%	59.9%	73.2%
"Subject employers"..	6.7%	10.4%	14.4%	15.0%
Other.....	2.2%	12.1%	10.8%	4.5%
II				
Injury-reporting requirement:				
All injuries.....	41.2%	42.5%	38.9%	38.6%
One day or over.....	1.4%	4.1%	8.3%	8.7%
Over 1 day.....	...	14.3%	24.5%	25.6%
Over 2 days.....	...	1.3%	1.0%	...
Over 3 days.....	...	...	...	4.6%
One week or over.....	...	...	2.7%	3.4%
Over 1 week.....	3.8%	6.0%	5.3%	6.4%
Over 10 days.....	...	...	0.8%	...
Over 2 weeks.....	4.4%	8.4%	0.9%	0.9%
"As directed".....	2.0%	2.0%	2.7%	4.5%
Total.....	52.8%	78.6%	85.1%	92.7%

Source: Based on Tables 4 and 51 and the basic data used in preparing them.

^a Census statistics (Census of Occupations) for 1910 were used in preparing the 1915 estimates. This was before the large wartime changes and the data are reasonably indicative.

^b Census statistics for 1930 were used in preparing the 1929 estimates. The record-breaking unemployment occurred after the date of enumeration (April), and the data are accordingly reasonably indicative.

^c For basis of computation see Chapter II, pp. 16-20 and 23-27.

ing in establishments subject to no such requirement. Only 43.9 per cent of all employees were then residing in states which asked reports of all employers. In 1940 reports of all injuries were called for in states including 38.6 per cent of employees, a lower percentage than in 1915, chiefly because of a change in the New York requirement. Only injuries causing disability of more than one day need be reported there at present. Improvements are registered, however, in the more inclusive disability provisions. The percentage affected by a one-day proviso advanced from 1.4 per cent in 1915 to 8.7 per cent in 1940, and for more than one day, from 0 to 25 per cent.

So far as the laws are concerned, then, more injury reports are

required for a larger proportion of employees than ever before. The progress in this matter is admittedly fully as much a matter of enforcement as of statutory change. The test of any law is administration. There is abundant evidence that with the passing of time the margin of noncompliance with these requirements has been narrowing.¹⁶

¹⁶ See below, pp. 340-343.

CHAPTER XVIII

STATISTICAL ANALYSIS OF THE SAFETY MOVEMENT

IF THE PRECISE MOVEMENT of over-all industrial injury rates through the years cannot be shown, farsighted employers have furnished the data with which to prove the possibility and value of prevention. The United States Bureau of Labor Statistics has published from time to time the record of coöperating firms in the iron and steel industry. For a select group of establishments that have shown consistent interest in safety the 1939 frequency rate was 4.4 injuries per million man-hours, less than half the rate for the entire industry, and less than one-tenth the rate for these establishments in 1913.¹ The periodic releases of the American Petroleum Institute and the Portland Cement Association also show substantial progress. Since 1926 frequency of injuries to petroleum workers has declined 73 per cent and severity 30 per cent. The rates for cement workers have been reduced 76 per cent and 45 per cent respectively since 1928.²

More impressive because representing many industries, rather than one, are the indications of reportings to the National Safety Council and the United States Bureau of Labor Statistics. In 1940 over 5000 establishments, which furnished over 7,000,000,000 man-hours of employment, reported their injury experience to the National Safety Council.³ The frequency rate for all industries was 12.52 injuries per 1,000,000 man-hours, and the severity rate 1.44 days lost per 1000 man-hours. Injuries in establishments reporting to the Council were 69 per cent less frequent and 50 per cent less severe than in 1926. The demands of the defense program made no difference in accident frequency in these establishments, and severity was actually 1 per cent lower in 1940 than in 1939. The downward trend in the reporting establishments is not merely a depressional phenomenon: frequency was more than 25 per cent lower in 1929 than in 1926, and

¹ *Monthly Labor Review*, LI (1940), 332-333.

² *Accident Prevention Magazine* (2nd quarter, 1941).

³ National Safety Council, *Accident Facts* (1941 edition).

was 8 index points lower in the busy year of 1940 than in the depression year of 1932. Severity was over 15 per cent lower in 1929 than in 1926 and was 15 index points lower in 1940 than in 1932. The hazardous construction industry shows an improvement of 79 per cent in injury frequency and 78 per cent in injury severity between 1926 and 1940. Lumbermen belonging to the Council reported a 59 per cent decline in frequency and a 46 per cent decline in severity between 1926 and 1940. Quarry injuries were 75 per cent less frequent and 41 per cent less severe in 1940 than in 1926. Substantial improvement over the base year in frequency was registered in every industry, and only reporting mine operators posted a higher severity rate than in the base year.

For manufacturing, the Bureau of Labor Statistics' sample is broader and more representative, including a larger proportion of small plants. In 1939, 29,000 establishments employing nearly 5,000,000 workers for over 9,700,000,000 man-hours reported injury experience to the Bureau of Labor Statistics. Only in manufacturing, however, has the Bureau's sample had sufficient breadth to serve as the basis for an estimate of the trend of injury rates. The 1940 sample included 4,162,000 employees, or over 40 per cent of the total number estimated to have been employed in factories in that year. The coverage varies considerably from subgroup to subgroup, but through weighting it has been found possible to estimate the injury rates for the entire manufacturing group. This assumes that the experience of the firms reporting to the Bureau is typical *within each subgroup*.

Although the Bureau's sample is not entirely representative, and has grown larger in recent years, the data are nevertheless indicative. The frequency rate declined about 25 per cent over the period since 1926, and this can scarcely be regarded as a depression development. The rate during the busy year of 1940 was 7 per cent lower than the rate for the most depressed year, 1932. The indications in regard to severity are mixed. The frequency of deaths and permanent total cases declined more than the overall frequency, but the decline in frequency of permanent partial cases was substantially less than in over-all frequency. The trend for the Bureau's sample differs in two principal respects from that for the members of the National Safety Council. It descends far less steeply, and differs in timing. The drops in frequency were 25 per cent and 69 per cent respectively. The difference in

timing is indicated by the shapes of the parabolas (see Chart 6). That for the Bureau is concave, indicating a hesitant early decline with gradually increasing tempo. The parabola representing the trend for members of the Council is convex, however, and the rate

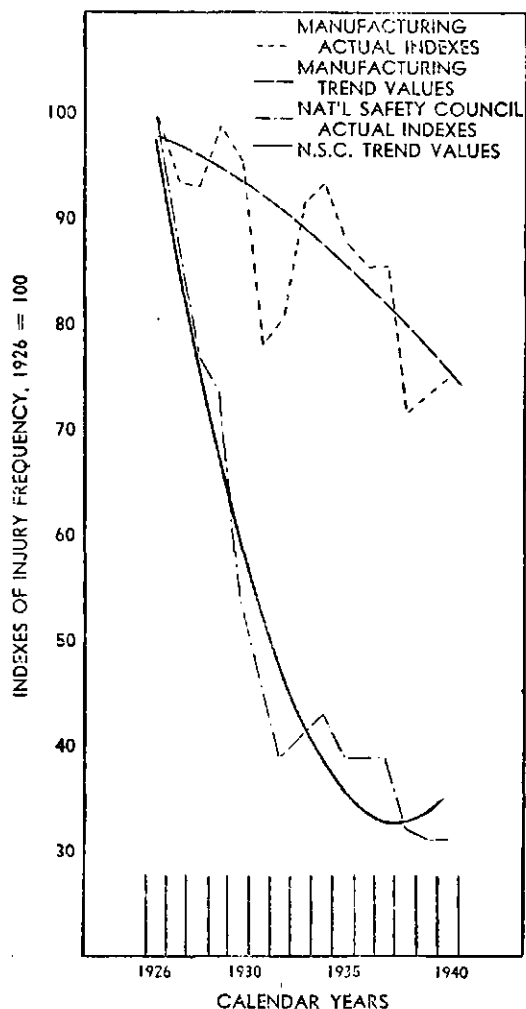


CHART 6. TREND OF INJURY FREQUENCY, BUREAU OF LABOR STATISTICS FIGURES (MANUFACTURING) AND NATIONAL SAFETY COUNCIL FIGURES, 1926-1940

of decline is accordingly falling off. These indications are both encouraging, nevertheless, suggesting as they do the increased concern over industrial safety throughout the manufacturing community.

TREND OF MACHINE INJURIES

An interesting feature of all available data on agency involved in industrial injuries is the declining proportion of injuries involv-

ing machines. The several annual reports of the Massachusetts Department of Industrial Accidents are among the most complete sources on causes of industrial injuries over a period of years. The pertinent figures on machine accidents in Massachusetts are

TABLE 53
MACHINE ACCIDENTS IN MASSACHUSETTS 1918-1938

Fiscal year	Tabulable injuries ^a	Machine accidents		At point of operation		
		Number	Per cent	Number	Per cent of	
					tabulable injuries	machine accidents
1917-18	77,505	19,640	25.3	16,113	20.8	82.0
1918-19	67,240	18,490	27.0	14,764	22.0	79.8
1919-20	65,488	15,307	23.4	11,135	17.0	72.7
1920-21	53,313	10,057	18.9	7,778	14.5	77.3
1921-22	51,105	8,498	16.6	6,663	13.0	78.4
1922-23	64,890	11,345	17.4	8,569	13.2	75.5
1923-24	60,439	9,483	15.7	7,277	12.0	76.7
1924-25	59,079	7,961	13.5	5,330	9.0	67.0
1925-26	59,488	7,852	13.2	5,635	9.5	71.8
1926-27	64,167	8,566	13.3	5,651	8.8	66.0
1927-28	60,330	7,683	12.7	4,635	7.7	60.3
1928-29	60,195	6,817	13.0	4,760	7.9	60.9
1929-30	61,741	8,001	13.0	5,191	8.4	64.9
1930-31	50,006	6,238	12.5	4,079	8.2	65.4
1931-32	42,067	4,887	11.6	3,102	7.4	63.5
1932-33	31,769	3,792	13.2	2,635	8.3	69.5
1933-34	35,217	5,098	14.5	3,004	8.5	58.9
1934-35	32,973	4,723	14.3	2,074	6.3	43.9
1935-36	34,323	5,084	14.8	2,668	7.8	52.5
1936-37	38,460	5,808	15.1	3,465	9.0	59.7
1937-38	33,460	4,201	12.6	2,577	7.5	61.3

Source: Basic data are from the annual reports of the Massachusetts Department of Industrial Accidents. Computations independently made.
^a Cases involving absence from work for one or more shifts.

presented in Table 53. It appears that machine accidents occurred in largest volume in the fiscal year 1917-18 and formed the largest proportion of all tabulable cases in the following fiscal year. From that time on a persistent downward trend in both absolute and relative volume of machine accidents is observable. The proportion of injuries involving machines declined from 27 per cent in 1918-19 to a low of 11.6 per cent in 1931-32 and was

12.6 per cent in 1937-38. The average for recent years is about half that for the first three years. Minor upward fluctuations in the recovery years 1933-1937 may have reflected such depressional tendencies as postponing needed repair and replacement and curtailment of all "unnecessary" expenditures for safety work.

Some will argue that the trend of machine accidents in Massachusetts arises from a shrinkage of employment opportunities in machine industries. Employment in the manufacturing industries, chief users of machines, was declining in this state even in the twenties, and there is some evidence that hours of work were also being curtailed. The sharpest downward trend in proportion of injuries involving machines occurred, however, during the twenties, when the decreases in employment were most moderate. Moreover, when comparisons are made which eliminate the employment factor, a downward trend of machine accidents persists. Thus, the decline in textile machine accidents was greater than

TABLE 54

TEXTILE MACHINE ACCIDENTS IN MASSACHUSETTS, 1918-1938

Fiscal year	Injuries in textile industries	Textile machine accidents	Ratio of textile machine accidents to textile injuries
1917-18	12,870	4,263	33.1%
1918-19	9,885	3,449	34.9%
1919-20	11,260	3,381	30.0%
1920-21	7,570	1,930	25.5%
1921-22	9,097	2,223	24.4%
1922-23	10,060	2,550	25.3%
1923-24	7,253	1,815	25.0%
1924-25	7,148	1,402	19.6%
1925-26	7,198	1,470	20.7%
1926-27	7,508	1,762	23.5%
1927-28	6,757	1,524	22.6%
1928-29	6,140	1,323	21.5%
1929-30	5,371	1,226	22.8%
1930-31	3,550	889	25.0%
1931-32	2,818	699	24.8%
1932-33	2,764	741	26.8%
1933-34	3,592	973	27.1%
1934-35	3,066	841	27.4%
1935-36	3,396	894	26.3%
1936-37	3,697	994	26.9%
1937-38	2,200	490	22.3%

Source: Basic data are from the annual reports of the Massachusetts Department of Industrial Accidents. Computations independently made.

the decline in textile injuries generally (see Table 54). The comparison is a fair one; for an overwhelming proportion of textile machine accidents involve textile workers, and the great bulk of machine accidents affecting textile workers involve textile machines.⁴ The ratio of textile machine accidents to textile injuries declined from 34.9 per cent in 1918-19 to 19.6 per cent in 1924-25. After the latter fiscal year it was somewhat higher, particularly in the recovery years, but never higher than 27.4 per cent. In 1937-38 it was 22.3 per cent.

The data in the last three columns of Table 53 allow a further and more directly pertinent inference. The emphasis on proper design and guarding of machines during recent decades has apparently borne fruit. Regardless of the number of machines working or the number of hours they are manned, how else can one explain the decline in proportion of machine accidents occurring at the point of operation. The trend is clear and decisive. From a high of 82 per cent in 1917-18, point-of-operation accidents declined to a low of 43.9 per cent in 1934-35, and remained at 61.3 per cent in 1937-38. The average for the last five years was 55 per cent, compared with 78 per cent for the first five years. The trend is so persistent that it is almost linear, and, except for the unusual developments in the thirties, would perhaps have been so. Paucity of data makes similar demonstrations for other states difficult, but there is little reason for thinking that machine guarding has been less widely adopted or has proved less effective in other industrial states. Available data for New York and Wisconsin show that the trend in proportion of industrial injuries involving machines is not just a Massachusetts phenomenon (see Table 55).

Properly to evaluate the indications of data on machine accidents one must take into account the increasing mechanization of industrial processes. Precise measures of the increased mechanization have not been worked out, but certain indications can be examined. Professor Harry Jerome has pointed out that between 1919 and 1929 rated horsepower per wage-earner in our manufacturing industries increased nearly 50 per cent.⁵ Even greater increases were noted for steam railroads, mines, and farms. These

⁴ During the two year period ending June 30, 1936, for example, over 98% of textile machine accidents in Massachusetts affected textile workers, and nearly 90% of machine accidents affecting textile workers involved textile machines.

⁵ Harry Jerome, *Mechanization in Industry* (1934), p. 224f.

TABLE 55

PROPORTION OF INDUSTRIAL INJURIES INVOLVING MACHINES
IN MASSACHUSETTS, NEW YORK, AND WISCONSIN

Fiscal year	Per cent of cases		
	Massachusetts	New York	Wisconsin
1912-14 ^a	...	...	21.9
1915-17 ^a	...	...	19.0
1917-18	22.8	...	21.1
1918-19	25.1	...	20.9
1919-20	21.2	...	21.2
1920-21	15.3	...	17.3
1921-22	15.0	...	17.4
1922-23	15.3	15.8	17.6
1923-24	13.6	14.8	16.2
1924-25	11.8	13.6	17.0
1925-26	11.6	13.6	17.1
1926-27	12.0	13.2	15.9
1927-28	11.3	11.8	14.6
1928-29	11.5	12.4	15.5
1929-30	11.6	11.8	13.8
1930-31	10.6	10.3	12.9
1931-32	9.6	10.2	11.1
1932-33	10.0	10.3	10.7
1933-34	13.2	10.6	11.4
1934-35	12.8	10.5	12.0
1935-36	13.1	...	12.7
1936-37	13.5	...	15.2
1937-38	11.0	...	13.0

^a Comparable tabulations not made in Massachusetts in this period.

figures may exaggerate the increase in mechanization, since rated capacity does not indicate power actually used and since the growing use of electric power appears to result in a lower ratio of power-driven machines to rated capacity.⁶ A somewhat better index for the purpose in hand is quantity of power consumed by industrial users. The indications are still imperfect, however, because (a) only electric power is measured, (b) no data on power generated by plants not selling power are available, and (c) some power sold to industrial establishments is used for purposes other than driving machinery. Moreover, there is no way of taking into

⁶ *Ibid.*, pp. 211-213.

account those important mechanical improvements which result in a decrease in power requirements.

When all of these sources of error are admitted, and the balance between those which are offsetting is considered, it remains clear that the increase in use of power-driven machinery is considerable. The amount of electric energy purchased by industrial users was 124 per cent higher in 1938 than in 1920 (see Table 56). At the bottom of the depression in 1932 it was two-thirds again as high as in 1920. At the peak in 1937 it was 168 per cent higher. For

TABLE 56
ELECTRIC ENERGY CONSUMED IN THE UNITED STATES,
BY TYPE OF USER, 1920-1938

	Kilowatt hours sold to ultimate consumers				
	Total	Domestic	Commercial	Industrial	Other
	<i>(all figures in millions)</i>				
1920	31,420	2,640	3,530	18,690	6,660
1921	29,660	2,820	4,220	16,460	6,160
1922	34,640	3,160	4,440	19,040	8,000
1923	40,950	3,800	5,460	23,400	8,290
1924	43,830	4,530	6,620	25,270	7,410
1925	49,220	5,100	7,630	27,660	8,830
1926	55,190	5,870	8,200	32,240	8,880
1927	60,540	6,580	9,340	35,120	9,500
1928	65,980	7,410	10,200	38,290	10,080
1929	74,010	8,440	11,500	43,690	10,380
1930	73,410	9,560	12,300	41,000	10,550
1931	70,320	10,230	12,010	37,890	10,190
1932	62,150	10,410	10,800	31,930	9,010
1933	63,610	10,280	10,320	33,820	9,190
1934	68,240	11,060	10,920	36,320	9,940
1935	74,100	12,230	12,070	39,590	10,210
1936	85,900	13,520	13,840	46,860	11,680
1937	93,520	15,210	15,540	50,070	12,700
1938	88,260	16,610	16,220	41,900	13,530

Source: Spurgeon Bell, *Productivity, Wages, and National Income* (1940), p. 278.

specific states no breakdown of power sales by type of user can be made. In Massachusetts, however, electric power production has expanded steadily, and in 1936 was 76 per cent higher than in 1920. The rate of gain in sales of power to industrial establishments in Massachusetts was almost certainly more modest; yet, if

we can judge from the national experience, a considerable increase did take place. We may conclude that the decline in proportion of industrial injuries involving machines is all the more significant because it was registered in spite of considerable increases in the mechanization of industrial processes.⁷

INCREASING PROMINENCE OF SPRAINS

In most states the number of industrial injuries reported rose throughout the twenties, and in many states this tendency continued with some levelling off in the thirties. Altmeyer notes striking increases in Wisconsin in the first of these decades and observes that the rate of increase far exceeded the rate of increase in number employed.⁸ Such a comparison takes account of only one aspect of change in employment, but more important is the failure to acknowledge the effects of improved reporting. One clear indication of this tendency is the increased prominence of sprains in injury tabulations. In Massachusetts the proportion of injuries involving strains and sprains rose from 13.3 per cent in 1919 to 25.9 per cent in 1937. The absolute number of cases of strain in handling was higher in 1937 than in 1919, although the injury total was nearly 45 per cent lower than in 1919. Cases of back strain and hernia were more prominent even absolutely in 1937 than in 1929.⁹ A similar tendency is revealed by New York figures covering the period from July, 1922, to December, 1935.¹⁰

There is no reason for supposing that exposure to strain has been increasing. Contemporary workers are not required to lift heavier loads than those of two decades ago, nor to engage in other more strenuous tasks. On the contrary, the development of conveyors and elevators has proceeded rapidly, and has substantially reduced the number of lifting operations and of the most strenuous industrial processes. The speed of contemporary industry is

⁷ For further explanation of this apparently paradoxical tendency see below, pp. 344-348; 364-366.

⁸ A. J. Altmeyer, *The Industrial Commission of Wisconsin* (1932), pp. 163-164.

⁹ Data are from the annual reports of the Massachusetts Department of Industrial Accidents (Public Document No. 105).

¹⁰ See the periodic bulletins on *Causes of Compensated Accidents* issued by the New York State Department of Labor, Special Bulletins Nos. 152, 164, 176, 182, 210.

higher, but the strain involved is less often a cause of accidents than of loss of employment for those unable to keep pace. The shortening of the work interval must also be admitted as a compensating factor. On the other hand, workers have unquestionably grown more aware of their rights under workmen's compensation laws. This greater awareness has been influenced by the attitude of physicians, who are increasingly alert to the possibility that strains and other injuries may have been industrially caused. The growing liberality of workmen's compensation commissions is also a factor, both directly through their encouraging reporting of certain injury types, and indirectly through their interesting lawyers in the legal possibilities of such claims. It is unnecessary for our purpose to consider the possibility that many recent claims are less well-founded than earlier claims. Clearly the increased prominence of cases of strains illustrates the need for discounting the apparent upward movement in volume and frequency of industrial injuries.

REPORTING OF UNINSURED CASES IN MASSACHUSETTS

The tendency to more complete reporting may be observed in another way. Until 1943, the Massachusetts employer signified election to be covered by insuring, and all injuries reported to the Department of Industrial Accidents were separated according to their insurance or noninsurance. In Table 57 the percentage of tabulable cases insured and not insured is compared with the percentage of fatal cases insured and not insured for each fiscal year. A clear trend toward wider insurance coverage is manifest for both tabulable and fatal cases. Equally significant is the much smaller percentage of tabulable cases not insured than of fatal cases not insured. The percentage of tabulable cases not insured declined from 9.8 per cent in 1915-16 to a low of 3.7 per cent in 1931-32, and 7.4 per cent in 1937-38. The proportion of fatal cases not insured, which had been 39.0 per cent in the first year of the act, and was 21.0 per cent in 1915-16, declined to a low of 9.5 per cent in 1933-34 and was 11.6 per cent in 1937-38. In every fiscal year the percentage of fatal cases uninsured was substantially higher than (usually over twice as high as) the percentage of tabulable cases uninsured.

This tendency hardly signifies what it may appear to signify.

TABLE 57

INSURED AND UNINSURED INDUSTRIAL INJURIES IN MASSACHUSETTS, 1913-1938

Fiscal year	Tabulable injuries	Per cent insured	Per cent uninsured	Fatal injuries	Per cent insured	Per cent uninsured
1912-13	...	...	...	474	61.0	39.0
1913-14	...	...	...	509	72.0	28.0
1914-15	...	...	...	370	78.1	21.9
1915-16	68,180	90.2	9.8	463	79.0	21.0
1916-17	78,789	90.6	9.4	481	78.4	21.6
1917-18	77,505	91.7	8.3	438	86.3	13.7
1918-19	67,240	92.0	8.0	356	80.9	19.1
1919-20	65,488	92.5	7.5	376	73.6	26.4
1920-21	53,313	90.6	9.4	296	80.0	20.0
1921-22	51,105	90.8	9.2	306	80.1	19.9
1922-23	64,890	90.8	9.2	330	78.5	21.5
1923-24	60,439	90.9	9.1	336	84.5	15.5
1924-25	59,079	92.8	7.2	308	82.8	17.2
1925-26	59,488	93.2	6.8	313	84.7	15.3
1926-27	64,167	91.9	8.1	317	87.4	12.6
1927-28	60,330	93.4	6.6	340	88.0	12.0
1928-29	60,195	95.1	4.9	353	89.2	10.8
1929-30	61,741	95.7	4.3	344	89.8	10.2
1930-31	50,006	96.0	4.0	282	89.7	10.3
1931-32	42,067	96.3	3.7	222	87.4	12.6
1932-33	31,769	96.2	3.8	162	88.9	11.1
1933-34	35,217	96.2	3.8	231	90.5	9.5
1934-35	32,973	95.5	4.5	242	88.8	11.2
1935-36	34,323	94.6	5.4	224	88.4	11.6
1936-37	38,460	93.8	6.2	232	87.1	12.9
1937-38	33,460	92.6	7.4	207	89.4	11.6

Source: Data are taken from the annual reports of the Massachusetts Department of Industrial Accidents (Public Document 105).

There is little warrant for the view that the most hazardous employments have remained outside the compensation acts. What is much more likely is that minor injuries in uninsured establishments are less likely to be reported. The members of the Department of Industrial Accidents had felt for some time that this was the case. A special tabulation of the injuries reported in the two years ending June 30, 1936, supports this conclusion. Insured and uninsured cases were distributed by extent of disability. Although total injuries, whether temporary or permanent, constitute about the same proportion of cases in both insured

and uninsured establishments, fatalities are more than twice as prominent and permanent partial cases less than half as prominent in uninsured establishments. This suggests general underreporting of nonfatal cases and serious underreporting of permanent partial cases by uninsured establishments. The special tabulation also shows that the average time loss in permanent partial cases is 1091 days for uninsured, but only 859 days for insured, establishments. This disparity tends to confirm the suspicion just developed, suggesting as it does that it is the minor permanent cases which are so seriously underreported. In view of the widening scope of insurance coverage the amount of this underreporting must be regarded as declining.

It seems clear (a) that injury rates have been declining since the middle twenties, (b) that this tendency would have been more readily observed had it not been for wider coverage of workers and injuries and more complete reporting, and (c) that analysis of and elimination of hazards has played an important part in reducing injury rates. Our analysis, if falling somewhat short of categorical demonstration, tends nevertheless to establish that a very real and effective movement for greater industrial safety has developed. If it had done no more than arrest the upward movement of industrial injuries, that itself would have been an achievement in a period of intensive mechanization. But the safety movement appears to have brought about a real reduction in the frequency and severity of industrial injuries. It remains to consider the forces making for elimination of industrial hazards, and the relation of their activities to the compensation movement.

CHAPTER XIX

INDUSTRIAL SAFETY WORK BY EMPLOYERS

EMPLOYERS and managers with keen safety-consciousness have made very great contributions to industrial safety. Many of them were slow to waken to the importance of industrial safety, at first because of poor cost accounting, later because of the growing rift between ownership and operation. When they were roused, however, they quickly assumed leadership in the safety movement, and have not since relinquished the lead. They swiftly sensed the danger arising out of increased mechanization of industrial processes and increased electrification of machines. Subsequently they sensed the danger of personal carelessness, and sought first by safety education and later by directed supervision to minimize this danger.

The history of the industrial revolution is a record of the adjustment of human beings to mechanical processes. With the invention and utilization of power-driven machinery in England came a tremendous burst of energy devoted to production. This brought with it an enormous expansion in the total supplies of commodities available in the markets, and at lower prices than ever before. At the same time a demand was created for people to tend machines, especially unskilled operatives at low wages. This demand was met by large-scale employment of women and children. Working conditions became intolerable, and were largely unrelieved until the Factory Acts were passed.

In the United States, the English experience was paralleled at a later date, and we suffered many the same conditions. The great textile cities of Lowell and Lawrence, for example, which were developed by utilization of power-driven machinery, soon became noted for long hours, poor pay, and extremely undesirable working and living conditions for the operatives, a substantial portion of whom were women and children.

Until 1900 power, in the sense we know it today, was unknown. Electricity was undeveloped; machines were either steam-driven or connected with water power; but the stage was being set for the

great expansion of power resources that was to come later. Transportation facilities were enormously improved; our coal and iron resources were being developed; steel mills were erected; there was an increasing use of machine methods of production. All these developments tended to complicate the problem of industrial safety.

Prior to 1900 the owner of a plant had usually operated it, was quite regularly in the plant, and in consequence often felt a keen sense of responsibility toward his employees. The "trust" movement introduced the absentee owner, with resulting absence of interest or sense of responsibility. Processes were speeded up, greater energy was used to operate heavier machines, and with no planned industrial safety measures operations became steadily more dangerous. At about the turn of the century, however, public opinion became aroused at this additional consequence of the concentration of capital in larger and larger units.

Much agitation resulted from observation of the horrible working conditions found in many firms, especially in steel mills and in large-scale foundry operations. Writers like Lincoln Steffens in his *Autobiography* and Ida Tarbell in her *History of the Standard Oil Company* portrayed conditions of employees working for what were known as "soulless corporations." As the use of heavier and heavier machines became more widespread, requiring more and more power for their operation, the hazard of industrial injuries increased many fold. It was said of many plants that they were slaughter-houses. These conditions were brought about largely by the lack of management responsibility resulting from absentee ownership; by the attempt to maximize profits regardless of the welfare of workers; and by the absence of any control over the constantly increasing volume of power being utilized to operate machines. Small wonder that the public was roused at learning of the evils of such a system. The famous Pittsburgh Survey undertaken by the Russell Sage Foundation was especially influential, particularly when Miss Crystal Eastman dramatized the findings in her best-seller, *Work-Accidents and the Law* (1910).

There were stirrings in employer-management circles too. In 1907 a safety committee was appointed by the Association of Iron and Steel Electrical Engineers. In the same year a safety exhibit was staged by the American Institute of Social Science at the American Museum of Natural History. This eventually grew

into the American Museum of Safety, established in New York City in 1911. The same year the National Association of Manufacturers sponsored a trip to Germany for study of German employers' associations (*Berufsgenossenschaften*), which were setting admirable safety records under the stimulus of workmen's compensation.¹ The employers and the employers' organizations were among the principal supporters of the early wave of workmen's compensation laws in this country. Many employers had begun to assume responsibility for safe operations, but felt pressed by the cut-throat competition of less responsible firms. They saw in workmen's compensation a lever with which to force general interest in industrial safety.

In 1913 the safety committee of the Association of Iron and Steel Electrical Engineers, which through these years had been sponsoring annual safety programs, proposed the formation of the National Safety Council. Employers were not then, and they are not now, the only group interested in the Council, but their influence was dominant from the outset. The safety and compensation movements became bound up for many of these employers and managers in another movement—the development of the profession of industrial management.

Men like Frederick Taylor, leader in the scientific management movement, studied plant operations to develop efficient operating practices. Time and motion studies became customary in well-managed plants, and management executives began to take the place of mill superintendents and overseers. It came to be recognized that plant safety and efficiency go hand-in-hand. Many industrial firms hired safety engineers. The safety problem was seen to be, like the production problem, a function of industrial planning and discipline.

Meanwhile the trend toward heavier machines, operating faster under substantially greater power and performing more complicated operations, continued at a most rapid rate. The utilization of electric energy helped make this possible by greatly increasing the number of outlets for tapping power resources. Other things being equal, this trend would have enormously increased the number of industrial injuries. Awakened safety consciousness and efficiency consciousness, which move together, have prevented

¹ See F. C. Schwedtman and J. A. Emery's description of this study, *Accident Prevention and Relief* (1911), especially pp. 99-103.

such a result. A few examples make clear the course this development has taken.

A few years ago (and unfortunately still in many establishments) the standard practice for driving machines within a factory was by means of shafting, from which belts running over pulleys came down to operate the machines. Such a method is replete with hazards. The greater the power required, the greater the hazard. Modern technique calls for self-contained machine units with push-button control, eliminating thereby all the hazards connected with belts and shafting.

Ordinarily the material to be worked by the machine had to be lifted onto the machine platform and pushed into the machine by hand—obvious hazards, which are multiplied when the power utilized becomes greater or the process is speeded up. Modern technique calls for continuous mechanical feeds. Oftentimes electric or air hoists are used to put the material into the machine.

The continuous production line was an innovation of the automobile industry. Twenty-five years ago such methods were practically unknown. Through proper design the process of manufacture is simplified and speeded up. There is a minimum of handling, and physical hazards are guarded and controlled. Material handling has also been accelerated and made easier in many ways, such as by increased use of roller conveyors. If these methods had not been guarded by safety engineering, however, they would obviously have been responsible for serious increases in the number and severity of work injuries.

Employers and managers took these and similar steps to overcome the natural tendency of increasing mechanization to result in increased hazards. But they found that the safety equipment provided was sometimes willfully disregarded or, more often, improperly used by their workers, or other human failings led to accidents. Safety education programs were undertaken, but at first met with jeers and protests. Signs were torn down or mutilated. Those who acted cautiously were ridiculed; those who acted with bravado were applauded. It became evident that securing the cooperation of the workers was a large-scale undertaking embracing the following steps: (1) enlisting their interest by demonstrations, motion pictures, and posters; (2) demonstrating the firm's interest in employees' safety by conducting competitions, keeping records, and rewarding deserving employees;

(3) giving continuous education through the formation of worker committees on safety, rotating the membership so as eventually to bring in a considerable proportion of the employees; and (4) vigorously enforcing safety rules adopted either directly or at the suggestion of the safety committees. These measures have borne fruit over the years.

One large Chicago steel plant keeps an accident scoreboard to whet the human appetite for competition. The several departments are rated not on their absolute records, but on their progress. Every time an unsafe practice is observed a report publicizes it, drawing attention to the dangers. Safety meetings occur frequently at subordinate levels as well as at the plant level. Once a week each superintendent holds a safety meeting attended by all foremen responsible to him to discuss housekeeping, working practices, accidents and near accidents, and hazards in the department. Brief but frequent informal meetings of his subordinates are held by each foreman to discuss some rule, practice, or experience. During the first six months of 1940, 3609 safety meetings of all kinds were held. Evidences of the results of this program are at every hand. Aisles are clear, work benches neat, equipment not in use is properly stacked. At each drinking fountain are dispensers with ample supplies of salt tablets. At control levers in the rod mill men sit high up where they can see and readily stop the power if any worker is in danger from the machinery.

Although the employers and managers have made great contributions to industrial safety, certain weaknesses have appeared in their programs. There has often been an atmosphere of paternalism about their efforts. While willing to pioneer in adopting new and safer equipment, they are often hesitant to see regulations imposed by state authorities to safeguard equipment. They accept the programs of safety committees enthusiastically as long as the strings remain firmly in their own hands. The growth of a powerful union movement found them generally unwilling to continue this work as a mutual undertaking. While once they thought of the movement largely in terms of machine design and guarding, they came over almost overnight to the thesis that personal rather than mechanical factors required the principal emphasis. In general it may be said of employer safety work, as of industrial management, that it was a production program undertaken by the producer from his own point of view.

CHAPTER XX

INDUSTRIAL SAFETY WORK BY LABOR ORGANIZATIONS

THE WORKER'S STAKE in industrial safety is large and direct. It is his life and limbs that are threatened by industrial hazards, and his earning capacity that will be interrupted or ended if he is injured. He is usually poorly prepared to assume the financial burdens injuries entail, which circumstance helps to explain the development of the system for compensating work injuries. Yet under the present compensation laws, however complacent he may feel about such compensation, the worker is never completely indemnified, nor nearly so. As has been pointed out, the proportion of wage loss compensated nowhere averages 50 per cent, and is generally less than 40 per cent. Even in temporary cases where the wage loss is clearly determinate the percentage compensated is unlikely to rise to 60 per cent.¹ The worker has, accordingly, no sound reason for relaxing the vigilance with which he seeks to avoid industrial injury.

The trade unions have naturally interested themselves in problems of industrial safety. This interest has taken several forms. At safety meetings, congresses, and sessions considering safety regulations union agents have usually been on hand to represent the worker's point of view. In the lobbies of legislatures and the offices of legislators union agents have presented arguments for and sometimes assisted in drafting safety measures. Trade unions have sometimes provided the pressure leading to investigations of mechanical and disease hazards and more adequate enforcement of safety regulations. Miss Hamilton's study of the carbon disulphide hazard in rayon manufacturing is a case in point.² In their training programs many trade unions have emphasized safe working practices. One of the features of union-management coöperation, where it has flowered, has been coöp-

¹ See above, Part III.

² *Survey of Carbon Disulphide and Hydrogen Sulphide Hazards in the Viscose Rayon Industry*, Pennsylvania Department of Labor and Industry, Special Bulletin No. 46 (1937).

eration in efforts toward safer operation. The work of the safety committees of the United Mine Workers in fostering safe practices and administering mine safety rules illustrates the possibility of such coöperation.³

Unfortunately managements and trade unions have not generally coöperated effectively in this regard, although both have a natural and vital interest in industrial safety. The two parties have engaged in widespread recrimination of a character unlikely to add to sound understanding. In part the deficient coöperation has resulted from a difference in conception of the nature of the problem. The typical worker tends to overemphasize the mechanical factors in injuries, the typical manager to overemphasize the personal factors. Workers and their representatives are strong supporters of factory acts and health investigations, and of code standards involving improved design and guarding of machines. They are less enthusiastic over standardization of working practices and coöperation in enforcement of operating rules. Managers and their representatives have usually brought little or no pressure for more rigorous inspection and regulation, and have sometimes resisted adoption of particular mechanical safeguards.⁴ The safety programs of managements are studded with admonitions to use safe methods and with systems of rewards for encouraging their use. The fact is, of course, that both mechanical and personal elements are usually present in industrial injuries, and the overwhelming significance of neither has been categorically demonstrated.⁵

Another factor preventing coöperation is the conflict of interests between the two groups. Belligerent anti-union tactics have sometimes compelled unions to expend all their energy to exist. Even when accepting collective bargaining in good faith, managements

³ See the statement by William Green in his article, "The Need for Safety from the Worker's Point of View," in *The Annals of the American Academy of Political and Social Science*, CXXIII (1926), no. 212, p. 4.

⁴ Notable exceptions to these strictures can be adduced in regard to both union policy on safe rules of work and managerial policy on technical improvements. As a part of their program of coöperation with the Baltimore and Ohio Railroad the rail brotherhoods went far beyond the letter of the safety provisions of their trade agreement. Concerns like the U. S. Steel Corporation have pioneered in the introduction of safe equipment and then helped to secure regulatory action to standardize it.

⁵ The National Safety Council has found that, except in 17% of the cases, there is both a mechanical and a personal cause.

have often been reluctant to seek a coöperation that might prove valuable lest it add to the prestige of the union.

As Watt has observed, "Too often in my own experience, management has taken the position that matters of safety, health and prevention are strictly the business of management and no particular concern of workers. . . . There is a community of responsibility and there should be a real community of authority. Workers should have the right and the opportunity to share on an equal footing with employers the responsibility in working out policies and practices by which safe and healthful standards will be mobilized and operated."⁸

On the other hand, union leaders have sometimes preferred a noncoöperative attitude because of their convictions regarding some ultimate reconstitution of society. Fearful that the "class struggle" is not proceeding rapidly enough, and that coöperating workers may forget their "natural enmity" toward their employers, these leaders assail what they call "class collaboration." It would appear that a high price in life and limb—and productive efficiency—was being exacted by adamant managers and union leaders. For where it has been secured, effective coöperation between union and management has invariably resulted in vastly improved injury experience.

Such coöperation depends on a clear recognition of the interest of each party in the program. If managers wish to secure coöperation they must permit worker representatives to share in planning the program. If unions wish to encourage an alert, safety-conscious management they must accept a share of the responsibility for formulating safe rules and working practices and encouraging their observance. Union members are unlikely to participate effectively in safety meetings in the direction of which they play no part. Interest grows with participation.

By the same token, securing the support of management for specific mechanical or material improvements requires a mutual exchange of views and participation in a common program of action. Such positive steps may prove far more effective than regulations, however well enforced.

That such coöperative programs are possible and fruitful was amply demonstrated in the second World War. Joint committees

⁸ Robert J. Watt, "Labor Enlists," *Proceedings of the Pennsylvania Industrial Safety Conference* . . . June 5, 1942, p. 12.

of union and management to accelerate output were often phenomenally successful. Employees of the Wood Works Division of the Carnegie-Illinois Steel Corporation of McKeesport, Pennsylvania, surpassed the goal set by their Production Drive Committee for June 1942. The Production Drive Committee of the Wyckoff Drawn Steel Company's plant at Ambridge, Pennsylvania, reported that this plant and the sister plant at Chicago had broken the monthly shipping record by over 800 tons with a June (1942) shipment of 21,081 tons. This was the sixth consecutive record-breaking month.⁷ Such coöperation can be equally effective in the field of industrial safety. Incidentally, finding and working for a common objective in this manner will do more to promote industrial peace than a carload of conciliators.

Coöperation of this character, of course, calls for mutual confidence as well as equality. In the case of industrial safety there is a firm basis for this in the considerable interdependence of economic interest. Two convictions current in some union circles require searching reëxamination: (a) that the benefits from safety work are exclusively or principally to the employer; and (b) that employment opportunities are unaffected by the behavior of labor costs. The saving resulting from prevented injuries is joint, for injuries are never completely compensated. For fatal injuries, no compensation can be more than the most futile apology. Even the saving to the employer may inure to the worker's benefit. If it makes labor cost less—lower insurance rates, lower training costs, etc.—it weakens the tendency to replace labor or to restrict operations. True, labor cost is only one factor affecting production decisions, and its influence must be considered in relation to (a) the elasticity of the demand for the product and for the labor required to produce it, and (b) the nature of the market structure—the extent of monopolistic elements, for example. The current tendency to assume a highly monopolistic market and an essentially inelastic demand situation for the individual firm will bear close scrutiny. Neither business executives nor union leaders have considered adequately the possibility that lower costs and prices may enlarge the market to a more than corresponding extent.

⁷ Clinton S. Golden, "Collective Bargaining and Accelerated Production," *The Annals of the American Academy of Political and Social Science*, CCXXIV (November, 1942), 101-102.

CHAPTER XXI

INDUSTRIAL SAFETY WORK BY INSURANCE CARRIERS

"As a factor in industrial accident prevention," David van Schaack of the Aetna Life Insurance Company told the American Academy of Political and Social Science, "the casualty insurance company is certainly not surpassed by any other agency, and in the effectiveness of its work over the widest range it is unequalled."¹ H. W. Heinrich of the Travelers Insurance Company assured the Ninth New York Safety Congress that "it is the daily work of insurance companies to prevent accidents." At another point he asserted that the carrier that considers its obligations fulfilled when it has issued a policy, collected a premium, and paid an award, "is unworthy of a place in American industrial life."² Addressing a recent semiannual meeting of the Casualty Actuarial Society, S. Bruce Black, president of the Liberty Mutual Insurance Company, made the following statement: "The other and great purpose of compensation was to bring all the energies of employers and employees and the public together to eliminate as far as possible the loss due to work injuries. I think that in recent years we have seen an intensified effort on the part of insurance companies to accomplish that purpose of the compensation system."³

While insurance undertakes by consolidating risks to provide for costs of feared misfortunes, prevention undertakes rather to avoid them. Preventive efforts are seldom completely effective, and need to be supplemented by protection. If insurance provides only protection the cost tends to be excessively high, so insurers are prone to interest themselves in prevention also. A high

¹ *The Annals of the Academy of Political and Social Science*, CXXIII (January, 1926), no. 212, p. 36. Mr. van Schaack was director of the Bureau of Inspection and Accident Prevention of the Aetna Life Insurance Company.

² *Proceedings of the Ninth Annual New York State Industrial Safety Congress . . . 1925 (1926)*, p. 123. Mr. Heinrich is assistant superintendent of the Engineering and Inspection Division of the Travelers Insurance Company.

³ *Proceedings of the Casualty Actuarial Society (1938)*, vol. XXV, part I, p. 239.

cost of insuring may result from lowered individual responsibility or from adverse selection, or from a combination of these factors. When all members of a risk group are placed on the same footing some of them may become less careful in their efforts to avoid the feared misfortune.⁴ Fortunately the act of insuring precedes the feared eventuality, so preventive work may be undertaken. Just as collective assumption of financial responsibility adds to individual security, so collective assumption of preventive effort may add to its effectiveness. Insurance tends to suffer from adverse selection in those states where it is not altogether compulsory. The poorest risks are in greatest need of protection and seek it in largest numbers. The best risks may refrain from insuring, especially if the cost of insuring seems unduly high. Faced with this tendency, insurance carriers may adjust by (a) refusing to underwrite the most undesirable risks, (b) classifying the risks, or (c) merit rating. This last adjustment in part restores individual responsibility.

Instead of making these passive adjustments insurance carriers may assume responsibility for a program of accident prevention. The character of the relationship between policyholders whose costs are jointly determined strengthens the tendency to undertake safety work. This relationship has not always been recognized, even by insurers, but the results obtained in certain lines of insurance and the insistence of better risks in all lines have forced such recognition. The adoption of a policy of supplying a regular preventive service may well change the balance between the portions of premium disbursed in loss payments and in meeting expenses. The limits of the change are very flexible—a fact that should be borne in mind by those who question the possibility of genuine interest of insurers in conservation. As one may argue that if doctors prevent disease they will limit the need for their curative services, so some have urged that wholehearted efforts for industrial safety would limit the need for compensation insurance. In point of fact, income for preventive service is not less rewarding than income for adjustment of loss. Conservation opens up as

⁴ For widely different views on this matter compare A. W. Whitney's article, "Insurance and Prevention," *Proceedings of the Casualty Actuarial Society* (1922), vol. IX, part II, pp. 265-266, with R. H. Blanchard's "Compulsory Motor Vehicle Liability Insurance in Massachusetts," *Law and Contemporary Problems*, III (October, 1936), 552-553.

rich a field as alleviation. In many branches of insurance, payment of losses represents one of the more modest aspects of the business. In 1939 companies selling steam boiler insurance in New York state devoted more than twice as much money to boiler inspections as to payment of claims.⁵ In a single year the engineers of the Hartford Steam Boiler Insurance and Inspection Company (note the title) have reported as many as 20,000 dangerous defects in boilers inspected, and over 180,000 less serious defects.⁶ It is not surprising that many assureds place a higher value on this inspection service than on protection. Conservation has not ruined this business, but has given it a different character. If such a change were to take place in the character of the workmen's compensation line, it would represent a vital contribution to the solution of the problems of man-power shortage which the nation periodically faces.

The action of the several legislatures in passing workmen's compensation laws was typically preceded by study and investigation. A majority of the investigating commissions concluded that a primary result of workmen's compensation would be a reduction of accident frequency and severity. Recognizing the interest of insurance institutions in prevention and their ability to perform this service, many of the early compensation laws provided for safety work by insurance associations. The Massachusetts and Texas acts contained virtually the same provision. Each law had originally been drawn so as to make the act of insuring with a specially provided mutual insurance association constitute a firm's election to be covered. The board of directors of this quasi-official association was directed—not simply empowered—to “make and enforce reasonable rules and regulations for the prevention of injuries on the premises of subscribers, and for this purpose, the inspectors of the association shall have free access to all such premises during regular working hours.” The subscribers might appeal such rules to the Industrial Accident Board, which was given a right of review. The Texas Employers' Insurance Association continues to function under this legislative mandate, but the Massachusetts Employee's Insurance Associa-

⁵ New York State Insurance Department, Annual Report (1939), vol. III, Tables 4 and 6.

⁶ J. H. Magee, *Property Insurance* (1945), p. 584.

tion became a private mutual company in 1917. Neither association retained the insurance monopoly originally provided for, and a logical consequence was an amendment calling upon all compensation insurers, stock or mutual, to make and enforce safety rules and regulations affecting their assureds.

In other states similar provisions applied only to mutual insurance associations. Apparently the legislators were influenced by the record of the German associations of employers (*Berufsgenossenschaften*). There was also no question of the constitutionality of such a requirement for members of a mutual association. The 1913 acts of California and Connecticut contained this feature, and later enactments of Colorado, New Hampshire, and Pennsylvania were to follow suit. New York and Pennsylvania accorded such a power to their competitive state funds, and by a separate enactment Vermont also permitted mutual insurance associations to undertake safety work.

Wholly apart from legal requirements, the record shows a growing interest of insurance carriers in industrial safety as the compensation movement gained headway. Insurance carriers were among the principal sponsors of the National Safety Council, and have consistently played an important part in its work, both financially and technically. The rating procedure was geared to safety considerations, largely as a result of studies by company actuaries. The engineering departments of the companies entered this new field with enthusiasm, going far beyond the needs of any merit rating program. Representatives of the carriers early began to take part in the official safety activities of those states which interested themselves in public safety standards. Not unnaturally, the claimed value of preventive services has become a principal feature of the competition of private carriers.

Compensation insurance carriers expend considerable sums each year on industrial safety work, but it is difficult to determine very closely just how much. Insurance carriers doing business in New York state must report to the Insurance Department each year for each line the expenditure for "inspections and bureau assessments." A small portion of this amount represents dues and assessments not primarily concerned with safety work, and an indeterminate but minor portion of inspection expenditures represents assistance to the underwriting, actuarial, claims, and payroll audit departments. Some part of this inspectional assistance has

safety significance.⁷ Offsetting these items, a part of other expenses has safety significance. The form of the claim file is generally drawn in part with reference to the needs of the engineering department, and the actuarial department frequently compiles and analyzes statistical materials used extensively by the engineering department. The expenditure for inspections and bureau assessments may accordingly be taken as a rough measure of the expenditure for safety work.

In Table 58 the estimated expenditures for inspections and bureau assessments for workmen's compensation of all carriers

TABLE 58

ESTIMATED EXPENDITURES FOR INSPECTION AND BUREAU ASSESSMENTS FOR
WORKMEN'S COMPENSATION OF ALL CARRIERS OPERATING IN NEW YORK STATE

Calendar year	Premiums earned ^a	Inspection and bureau ratio ^a (per cent)	Estimated expenditure ^b
1923	\$125,535,874	3.3	\$4,105,000
1924	142,298,654	2.9	4,127,000
1925	156,062,847	2.9	4,526,000
1926	177,788,448	2.7	4,800,000
1927	187,020,282	2.7	5,050,000
1928	188,809,820	2.6	4,909,000
1929	202,247,756	2.7	5,461,000
1930	196,359,016	2.9	5,694,000
1931	163,548,465	3.3	5,397,000
1932	125,953,716	3.5	4,408,000
1933	114,443,015	3.4	3,891,000
1934	141,939,439	2.5	3,548,000
1935	164,930,111	2.5	4,123,000
1936	194,628,024	2.4	4,671,000
1937	233,529,705	2.3	5,371,000
1938	229,614,100	2.6	5,956,000
1939	230,227,482	2.7	6,200,000
1923-1939	\$2,974,936,755	2.8	\$82,237,000
Average	\$174,996,280	2.8	\$4,837,000

^a Adapted from the annual reports of the New York Insurance Department, vol. III (earlier issues, part III), Table IX, part 2.

^b Computed by multiplying the entries in the preceding two columns.

⁷ The underwriting department, for example, may ask for an inspection of an establishment to determine whether it is a desirable assured. This is called a "first" inspection, but becomes the starting point for subsequent inspectional work if the establishment is subsequently insured.

doing business in New York state are presented for the seventeen-year period 1923-1939. The expenditures have been estimated by computing the products of the earned premiums and the inspection and bureau ratios listed in the several annual reports of the New York State Insurance Department. To avoid any misleading inference as to their precision the figures have been rounded to the nearest \$1000. Over the seventeen-year period these carriers expended \$82,237,000 for such purposes. This is an annual average of \$4,837,000, or 2.8 per cent of earned premiums. The highest absolute expenditure was made in 1939, when \$6,200,000 were spent for these purposes. In part this was due to the growth of the business, however, so percentagewise the 1939 expenditure was only average. The "stickiness" of these expenditures is indicated by the high figure of 3.5 per cent expended in 1932. This was obviously due more to the low premium level than to the absolute level of payments for inspections and bureau assessments.

The safety program of a compensation insurance carrier is carried on on three principal fronts: (a) a consulting service aimed at providing a vital coöperation between insurer and assured in minimizing losses; (b) a laboratory in which safety devices and methods may be studied intensively; and (c) maintenance of relations with other agencies interested in industrial safety through consultation, participation in programs and publications, financial support, committee work, and so forth. On all of these fronts the better carriers have given outstanding service.

The basic element in the consulting service is the periodic inspection. A consulting engineer trained in this work makes the inspection, planning it principally on the basis of reports of earlier inspections, reports of accidents since the previous inspection, and any requests for information or service from the assured. As he threads his way through the establishment his wary eye catches details such as these: loose objects in the aisles, an improperly stacked group of metal disks, a nail protruding from a wall, a loose tread on a staircase, a poorly lighted corner or an area lighted by glaring bulbs, a woman with full sleeves tending a machine, a poorly designed or imprudently removed guard, an unguarded opening into an elevator shaft, a couple of workers engaged in "innocent horse-play," and so on. His sense of smell is alert too, and if fumes or dust seem suspicious or in dangerous

concentration he will unstopper a bottle in his pocket and get a sample of the air. He does not sneak into the establishment, but goes at once to responsible officials, with whom he will usually already have established good rapport. To them he will communicate verbally anything he may have seen amiss. Perhaps before he leaves he will attend a safety meeting, make a demonstration to the management or the workers, or discuss with some interested official a new development in production or safety engineering. When he returns to the office he promptly dictates a letter to the responsible official in the plant, repeating in writing the substance of his findings, any recommendations, or any information he feels may be helpful.

This is highly important work and demands other talents besides those of an engineer. Assuredly the consulting engineer must know intimately the industrial processes he inspects, but he must also know men. An impractical suggestion or an impolitic act will undermine confidence in his judgment. Yet he can as little afford to be namby-pamby as offensive. If employed by a large concern he will probably be a specialist, visiting factories, or buildings under construction, or stores, or transport companies, or perhaps even specializing within one of these fields. He must be aware of what the other branches of his department are doing, for he is the vital contact between the laboratory and the safety code committeeman, on the one hand, and the assureds on the other hand. The assured will arrange through him for special service and will count on him for recent valuable information. He will observe when safety laws and regulations are broken, but he is interested in securing far more than mere compliance with statute and rule.

Other features of the consulting service flow principally from one or another of the remaining aspects of the carrier's safety program. The laboratory is a vital source of valuable information and guidance in matters of industrial health and safety. Those who work in the laboratory have two principal types of assignments. From the general welter of current problems in health or safety, one may be selected for which they will seek a solution. Or the mail or telephone will bring a request for advice from an assured that will be turned over to the laboratory for an answer. Either type of assignment may require mechanical, chemical, or electrical analysis. Sometimes the laboratory worker may go

with the consulting engineer to study the assured's problem on the premises. The writer watched one such analyst studying the exhaust system in a workroom of a radio tube concern. After measuring the velocity of the air within the hood and noting the construction of the vents, he recommended (with supporting drawings) changes in the design of the system which cleared up the difficulty.⁸ In another case a concern was interested in a new cleaning solution, but wished to be certain that those who used it would not suffer some form of dermatitis. Chemical tests were run which reassured them. Now and then the routine assignments of this kind referred to the laboratory either by assureds or by consulting engineers become less demanding, so the analyst is able to experiment with a new dust counter or design a safer circuit.⁹

The fruits of such researches are one of the features of the third aspect of carriers' safety work. The *Journal of Industrial Hygiene*, the *American Medical Journal*, and the proceedings of our safety congresses and health meetings have among their principal contributors the employees of insurance laboratories. At the meetings of state or national safety congresses pertinent demonstrations are usually offered, and some of the most effective of them have been planned, mounted, and presented by insurance carriers or carrier organizations. Safety demonstrations and models of safety equipment are effective means of influencing the conduct of assureds and their workers. Effective publications to reach every level in industry are another valuable lever. The simple poster, the check list, the pamphlet, the periodical, and so forth are all found coming from insurance carriers. The Travelers Insurance Company's *Standard*, the Liberty Mutual Insurance Company's *Exchanger*, and the Ohio State Insurance Fund's *Monitor* are examples of periodicals with important safety features, published at the instance of insurance carriers. Financial support of safety activities is another related feature of this aspect of carriers' safety work. Nor have they contributed finan-

⁸ The difficulty in this instance was a number of cases of throat irritation among the workers, none serious up to that time. Following the changes in the exhaust system no further irritations were observed.

⁹ Such a laboratory as has been described may belong to a large insurance company or to an organization representing many companies, such as the National Conservation Bureau, which channels the safety efforts of most stock casualty companies.

cial support alone. They have played a leading role in the work of the National Safety Council, the American Standards Association, and other organizations engaged in safety work. P. G. Agnew has paid a tribute to their work on committees framing safety codes.¹⁰ Important studies of safety and related problems have been financed in whole or in part by carriers or carrier organizations.

It must not be supposed that the quality of the safety services of insurance carriers is uniform. Even students who warmly advocate state insurance agree that the best safety work is done by a few large private carriers.¹¹ Many private carriers provide mediocre safety services, and some provide practically none. A principal reason for this is the scattered nature of a part of the business. Twelve firms writing compensation insurance in New York state in 1939 did a country-wide business of less than \$100,000. Expenditures of these companies for inspections and bureau assessments ranged from 0.1 per cent to 2.1 per cent of premiums, and averaged only 1.0 per cent.¹² Even moderately large carriers frequently write small volumes of business in particular states, thus necessitating heavy outlays for effective safety work. Twenty carriers writing compensation insurance in New York state in 1939 wrote less than \$100,000 in that state, and nine of them less than \$25,000.¹³ Carriers having only a small and widely distributed volume of business cannot provide competent safety engineering economically, if at all. Fortunately the large carriers with the best preventive services were writing two-thirds of the private business in 1939.

The competitive state funds of California, New York, and Pennsylvania are also proficient in this regard. The Pennsylvania fund is hampered somewhat by the circumstance that even technicians such as consulting engineers must have and retain political sponsors. The other, smaller competitive funds are handicapped by the small scale of their operations. Because of

¹⁰ U. S. Bureau of Labor Statistics Bulletin No. 530 (1930), p. 69. Dr. Agnew, secretary of the American Standards Association, was addressing the Association of Government Officials in Industry.

¹¹ See, for example, John R. Commons and others, *History of Labor in the United States, 1896-1932* (1935), vol. III, p. 585.

¹² New York State Insurance Department, *Annual Report* (1939), vol. III, Table 9, part 2.

¹³ *Ibid.*

the compact nature of their business exclusive state funds enjoy a great opportunity for effective safety work. In general, however, their record in this field is disappointing. McCahan criticized them on this count in 1929.¹⁴ Friendlier critics have more recently acknowledged that their services do not compare with those of the best private carriers.¹⁵ The Ohio state fund has since 1924 collected a special assessment of 1.0 per cent of premium for safety work, and now leads the exclusive state funds in quantity and effectiveness of safety services.¹⁶

Some carriers have been more interested in good underwriting than in effective engineering. All private carriers have resorted to some extent to selective underwriting. However they may justify this from the narrow standpoint of their own or their policyholders' interests, the "undesirable risk" is an accusing finger levelled at the insurance engineer. It is pleasant to be able to report a weakening of the tendency toward selective underwriting in recent years as the emphasis in instructions to personnel has shifted from "rescind" to "convert."

A principal weakness of the safety work of the carriers is their difficulty in reaching the small establishment. The low premiums collected from these establishments makes the expense of frequent inspections relatively high, if not prohibitive. Since the accident record of small establishments usually has been relatively poor, it would be well to consider alternative methods that may bring results without incurring excessive expense. The formation of organizations of small assureds of similar character with provisions for directed discussion of common safety problems or safety demonstrations has proved helpful in some instances.

Notwithstanding these limitations, the value of preventive services by insurance carriers has been acknowledged by responsible leaders on every front of the industrial safety movement. "The casualty insurance companies," wrote W. H. Cameron, then managing director of the National Safety Council, "are . . . entitled

¹⁴ David McCahan, *State Insurance in the United States* (1929), pp. 34-42.

¹⁵ Commons and others, *History of Labor*, vol. III p. 585; Marshall Dawson, *Problems of Workmen's Compensation Administration*, U. S. Bureau of Labor Statistics Bulletin No. 672 (1940), pp. 23, 147-148; W. F. Dodd, *Administration of Workmen's Compensation* (1936), pp. 561-562.

¹⁶ Consult issues of the *Monitor*, published by the Ohio Industrial Commission, for examples of the safety activities resulting from this contribution.

to praise for the work they have done to promote interest in safety and to develop methods of making the work effective.”¹⁷ I. M. Rubinow, pioneer in the movement to provide protection against industrial injuries, has praised the preventive work of insurance carriers.¹⁸ P. G. Agnew of the American Standards Association, leader in safety-code making, has acknowledged gratefully the services of insurance carrier representatives both in framing codes and securing compliance with them.¹⁹ “The insurance companies play a large role in the prevention of accidents,” concluded H. A. Millis, well-known labor economist.²⁰ During the second World War many consulting engineers and specialists in the employ of the carriers were called to Washington to assist in formulating an industrial safety program for the national emergency.²¹ These engineers and specialists would be the first to argue that it is those who are directly concerned—management and workers—who take the decisive step by doing the safe thing, but they can claim a generous share of the credit for planning and imparting the safe course of action.

¹⁷ W. H. Cameron, “Organizing for Safety Nationally,” *The Annals of the American Academy of Political and Social Science*, CXXIII (1926), p. 28.

¹⁸ Article on “Industrial Hazards” in the *Encyclopedia of the Social Sciences*, vol. VII, p. 704.

¹⁹ U. S. Bureau of Labor Statistics Bulletin No. 530 (1930), pp. 64ff.

²⁰ *Labor's Risks and Social Insurance* (1938), p. 224. This book, written by Millis, is vol. II of the series by H. A. Millis and R. E. Montgomery on *The Economics of Labor*.

²¹ For details of this contribution see below, p. 402.

CHAPTER XXII

INDUSTRIAL SAFETY WORK BY REGULATORY AGENCIES

THE INTEREST of the public in industrial safety is obvious. Inadequately compensated victims of industrial injuries are, at best, deficient in purchasing power, and may become public charges. Even compensation cannot replace lost man power, time, limbs, and lives. Society is a heavy loser when the rearing, education, and training of years are lost or partially lost in a few moments.

This interest of the public is generally recognized, but ideas on how it should express itself have varied widely. At one time it was held that the free play of economic forces could be depended on to eliminate the unsafe establishment or practice. Workers and consumers were assumed to discriminate against unsafe employers, and employers to discriminate against unsafe workers. The fundamental errors in this line of reasoning were two: (a) left to themselves, none of the three parties is usually sufficiently informed regarding deficiencies in equipment or practices to discriminate effectively against them; and (b) all three are frequently "caught in the works," and find it difficult if not impossible to discriminate effectively. The worker may have no other job. The consumer may be unable to pay the price of the safely-produced article. The employer may face a shortage of the required kind of labor, or be constrained by a clause in a trade agreement.

When the need for regulatory action became evident two principal conceptions of the best method of regulation evolved. In 1877, Massachusetts enacted the first American law requiring factory safeguards. During the years that followed, most of the other states passed similar legislation. Under this legislation it became the task of state inspectors to determine after a tour of the premises of an establishment whether its equipment and construction squared with the law. Most of these laws were phrased in rather general terms, but some of them contained considerable

detail with regard to particular types of equipment. In either case the task of the inspector was not easy. In attempting to enforce compliance with a vague requirement, it was difficult to exact obedience from a reluctant management because the case had to be proved. In enforcing a detailed requirement the inspector was up against the tendency of such details to become dated. In either case he was the agent of an authority handing down requirements from on high, which were resented as such.

In 1911, Wisconsin enacted a law establishing a system of administrative regulation of industrial safety. The Industrial Commission was empowered "to ascertain and fix such reasonable standards and to prescribe, modify, and enforce such reasonable orders for the adoption of safety devices, safeguards, and other means and methods of protection to be as nearly uniform as possible, as may be necessary to carry out all laws and lawful orders relative to the protection of the life, health, safety and welfare of employees."¹ Employer and worker organizations were invited to participate in the drafting of the orders, and were permitted to petition for hearings on the reasonableness of the orders. Under this legislation the Commission has issued thousands of orders, special and general. In 1913, Massachusetts established a Department of Labor and Industries (for three years called "Board" instead of "Department"), and authorized it to formulate and enforce safety rules and regulations. This idea spread, and the leading industrial states—California, Massachusetts, New Jersey, New York, Ohio, Pennsylvania, and Wisconsin—have done very effective work in administrative regulation of industrial safety.

These states do not follow exactly the same methods but there is general agreement on procedure. A detail of the *modus operandi* in Pennsylvania will show how this Commonwealth has proceeded. The process consists of three general types of action: research, approval, and enforcement. Three divisions of the Department of Labor and Industry are each assigned one of these duties. The Bureau of Industrial Standards collects the data, supervises the activities of the advisory committees, and assembles their recommendations for presentation. The Industrial Board holds a hearing at which all interested parties may be rep-

¹ *The Annals* of the American Academy of Political and Social Science, CXXIII (1926), p. 80.

resented, and in part on the basis of the testimony, decides whether to approve the recommended regulation. If disapproved, it goes back to the Bureau of Industrial Standards. If approved, it is promulgated by the Secretary of Labor and Industry. After promulgation, enforcement of the regulation is entrusted to the Bureau of Inspection.² An atmosphere of coöperation among the interested parties—management, workers, and the public—is found in each of the stages.

Administration of health standards, while following a generally similar pattern, is in many states an interdepartmental matter. State divisions (or bureaus) of industrial (or occupational) hygiene have been established in all our industrial states, but frequently have been lodged in the state departments of health. This sometimes results in ineffective collaboration of the formulating and enforcing agencies. The employees of health departments, moreover, have not in the past had the experience of securing effective coöperation of representatives of workers and employers.³

The factory (or other) inspector is to the state what the consulting engineer is to the insurance carrier. On his work depends the maintenance of that vital coöperation between the state, the management, and the workers which makes for industrial safety. Under the old-line factory act he was essentially a policeman; today he is much more than that. He must possess an intimate knowledge of industrial processes and keen practical insight so that his recommendations will command respect. He must be firm when enforcing the law, yet not evoke such resentment in this aspect of his work as to cripple his efforts to secure coöperation. This requires a sound understanding of human nature. Coöperation is more important than mere compliance, because from it flows a willingness to go beyond the requirements of the law or regulation.

Consideration of the nature of the contents of a safety code makes this clear. Three important verbs are used in stating the position of the law with reference to equipment and other safety specifications. The verb "shall" connotes an explicit order, dis-

² L. G. Hines, *Organization and Functions of the Department of Labor and Industry*, Pennsylvania Department of Labor and Industry, Special Bulletin No. 50 (1942).

³ See the comments of Dr. Leonard Greenberg on this problem in U. S. Bureau of Labor Statistics Bulletin No. 678 (1939), p. 32.

obedience of which will evoke the penalties provided in the basic safety law. The verb "should be" connotes a strong recommendation of the code-making authority. The verb "is recommended" connotes a milder recommendation of the code-making authority. The inspector can demand compliance with explicit orders, but not with recommendations. Compliance with recommendations will depend on the spirit of cooperation he is able to build up in the establishments he visits.

Table 59 illustrates the nature of enforcement activities of typical regulatory agencies for the year 1937. It is clear from an

TABLE 59
ENFORCEMENT ACTIVITIES OF INDUSTRIAL SAFETY STAFFS
IN SELECTED STATES, 1937

	Pennsylvania ^a	New York	Massachusetts ^c
Inspections.....	59,882	190,888	46,300
Special inspections.....	10	83,926	not available
Reinspections.....	not available	99,433	9,832
Visits.....	26,812	186,094	8,345
Orders.....	8,601	306,781	17,158
Compliances.....	7,920	298,090	17,436
Prosecutions.....	317	6,073	1,001
Employees in inspected es- tablishments.....	1,061,550	2,105,281	658,090

Sources: Biennial Report, Pennsylvania Department of Labor and Industry (1937-38); Annual Report, New York Department of Labor (1938); Annual Report, Massachusetts Department of Labor and Industries (1937-38).

^a Field Inspection Division, Bureau of Inspection.

^b Bureau of Inspection, Department of Labor.

^c Division of Industrial Safety, Department of Labor and Industries.

examination of the figures on orders and compliances that compliance without force is ordinarily the end of the matter. The comparison is not exact, for the compliances do not refer to exactly the same period, but the general balance prevailing is significant. The number of prosecutions is relatively small in all three jurisdictions. Each staff makes use not only of inspections (investigations for purposes of enforcement), but also of visits (appearances, usually on invitation, for demonstrations, consultation, and the like). Each of these state organizations is capable of performing valuable consultative service, for each has an industrial laboratory and employs skilled investigators. Each is willing as well as able to demonstrate safe equipment and prac-

tices and to provide safety literature, bulletins, speeches, and guidance. This is safety service tailored to meet the needs of modern industry and the requirements of modern legislation.

Leading industrial states have sponsored on the state and regional level safety congresses and meetings which serve to keep participants abreast of latest developments in equipment and practice. They have improved in recent years the collection of injury statistics, though in no state are present compilations entirely satisfactory. Statistics of exposure (man-hours), number of injuries, and causes are especially needed for effective safety work. One device for encouraging more complete reporting of exposure is the accident prevention contest. Since 1934, Pennsylvania has conducted such a contest, featuring competition for honor and merit certificates on the basis of a firm's frequency rate (injuries per million man-hours) in relation to those of other firms in the same industry group. In 1941, 73 per cent of the state's employees and 60 per cent of the state's accidents were covered. This is very close to complete coverage for those eligible.⁴ The contest is much more than a statistical device, for it directs the participating employer's attention to his injury record and directs the bureau's attention to what may be called the "sore spots" in the state's industrial injury situation.⁵

Pennsylvania's experiments with more adequate injury cause statistics have thus far proved less fruitful. In 1938 the state began the collection of statistics based on the Heinrich cause code, which seeks to focus attention on immediate, concrete preventive measures. Five of the six digits of the Heinrich code were selected: agency, agency part, unsafe mechanical or material condition, accident type, and unsafe act. The potential value of such cross-tabulations as these statistics make possible is obvious, but it can be realized only if certain conditions obtain. The questions on the report form must be carefully selected and directly phrased. A continuous effort must be made to secure

⁴ The Bureau of Inspection sponsors the contest, but since it has no control over mine safety, the contest does not include the state's large coal industry.

⁵ For the report on the 1943 Accident Prevention Contest see Benjamin F. Sellers's article "Pennsylvania's War on Industrial Accidents during 1943," *Pennsylvania Labor and Industry Review* (July, 1944), pp. 40-48. The writer is indebted to Lieutenant-Colonel Harry D. Immel, formerly director of the Pennsylvania Bureau of Inspection, and to Robert M. Sigmond, a former student, for information regarding these contests.

accurate and complete information, for some employers do not voluntarily furnish this. The coding of these statistics is an exacting task calling for intimate knowledge of industrial processes, good judgment, and consistency. Unfortunately none of these prerequisite conditions has been entirely met in Pennsylvania, and the data are sometimes not only not indicative, but suggest bizarre conclusions. These weaknesses may yet be corrected, and if so the experiment should prove extremely fruitful.⁶

The level of safety activities by regulatory agencies varies greatly from state to state. Not even all of the industrial states have done good work in this field. The United States Bureau of Labor Statistics, and more recently the Division of Labor Standards, have sought to encourage active safety work on the state level. They have, of course, rendered invaluable services on their own part to the national movement as a whole. One serious weakness of the state programs is the difficulty of obtaining funds. The Department of Safety of the North Carolina Industrial Commission became almost completely inoperative in the depression years 1931 to 1933.⁷

Situations such as this have led Dawson to recommend that such agencies be made financially independent by contributions out of premium income and from concerns carrying their own risk.⁸ Another weakness is the "pulling" and "hauling" between various agencies with overlapping powers. In general, too, the regulatory agencies are understaffed, and as might be expected the smaller establishments, which stand in greatest need of guidance, are least often, and in some cases never, inspected. These weaknesses in no sense imply that regulatory agencies, particularly in the states mentioned above, have not made valuable contributions to the safety movement.⁹ As in the case of insurance carriers, their contribution is primarily consultative and inspirational, but nevertheless highly significant.

⁶ See an unpublished master's thesis by Robert M. Sigmond, "Industrial Injury Statistics in Pennsylvania," for full-length analysis of the experience with both the Heinrich Code and the accident prevention contests. Copies may be borrowed from the library of the Pennsylvania State College.

⁷ J. M. Keech, *Workmen's Compensation in North Carolina, 1929-1940* (1942), p. 103.

⁸ Marshall Dawson, *Problems of Workmen's Compensation Administration*, U. S. Bureau of Labor Statistics Bulletin No. 672 (1940). See especially chapters VIII and IX on allied services and methods of financing.

⁹ Millis and Montgomery, *op. cit.*, p. 225.

CHAPTER XXIII

NOTE ON THE INTERRELATION OF SAFETY WORK AND COMPENSATION

THE RELATION between the compensation and safety movements is twofold. On the one hand the necessity for compensating injuries is a powerful stimulus toward preventing them. On the other hand the reduction in injury costs—direct or indirect—resulting from injury prevention makes possible the payment of more liberal benefits. Many employees are paying no more for accident compensation or insurance today than twenty-five or thirty years ago, although benefit levels are much higher than in those early years. In some firms and some industries they are paying less than they were twenty-five or thirty years ago.¹ One may attribute this to the pertinacity with which they have sought to control and reduce industrial hazards. Actually, such a conclusion oversimplifies the matter. The relationship is interacting: the will to promote safety derives some of its force from the higher cost of individual accidents, while the ability to consider higher benefits is strengthened by the increasing safety of operations.

As Dawson has pointed out, it is a mistake to hold that employers can profit only from economy and workers only from liberality in this field.² The interacting relationship under consideration signifies that pinchpenny economy and ill-considered liberalization are equally to be avoided. More adequate benefits should be provided whenever they come within reach. In this matter it is not necessary to wait until the last firm or the last industry can afford to pay them. It is enough if the bulk of our establishments can afford them. Ill-considered increases and loose administration are likely to bring a workmen's compensation law into disrepute, however, with effects similar to those which occurred in Pennsylvania in 1938.³

¹ See the evidence on this point, above, pp. 281-295.

² Dawson, *Problems*, p. 83.

³ See above, p. 23; pp. 296-297.

The nature of this relationship suggests the need for more effective integration of the forces in the safety movement, some of which have been described above. No definitive judgment can be offered on the relative effectiveness of the several groups. Leadership has been assumed by employers, but has recently been challenged effectively by labor organizations. Carrier representatives have probably been more successful in securing coöperation in matters where it cannot be demanded, while regulatory bodies certainly have a more powerful weapon of enforcement than mere rescission. All groups have been gravitating more and more toward approaches to the safety problem of a quite similar nature. There is no point in working at cross purposes. If the interrelationship of the safety and compensation movements has been accurately described, a genuine community of interest exists in this matter. It is obviously possible for isolated firms and groups to profit at the expense of society in regard to safety and compensation as well as in regard to other economic matters. But it is emphatically not true that any large group—capital or labor—can progress in these matters except as both industrial safety and compensation are increased. Adequate compensation makes safety more imperative. Increased safety makes adequate compensation possible.

SUMMARY OF PART V

A MAJORITY of the commissions studying the need for workmen's compensation concluded that an important result of compensating injuries would be a reduction of injury frequency and severity. The Massachusetts act actually included in its title the words "prevention of such injuries." The preamble to the California law of 1917 called for "securing safety in places of employment."

The laws of twelve states have given the compensation authority specific responsibility for industrial safety. In five other jurisdictions the compensation authority is directed to study the causes and results of accidents (and/or diseases) and to report to the legislature with appropriate recommendations. Seven compensation laws permit or direct mutual insurance associations to make and enforce safety regulations affecting their assureds.

All available evidence indicates that workmen's compensation has been a powerful stimulus to the prevention of industrial injuries. The parallel development of the compensation and safety movements is itself suggestive. The safety movement was already under way before workmen's compensation laws were in force. Safety-conscious employers and managers were among the strongest supporters of workmen's compensation, believing that it would increase interest in industrial safety.

The relation between compensation and prevention is twofold. The necessity for compensating industrial injuries is a powerful stimulus toward preventing them. The reduction in injury costs—direct or indirect—resulting from injury prevention helps make supportable payment of more liberal benefits. In general, workmen's compensation insurance rates have risen far less than benefit levels, and there has been a tremendous saving in indirect costs.

Excessive caution has characterized discussion of the success of the safety movement. American employers and workers are entitled to know that they have done good work and that the results, if not precisely calculable, are nevertheless evident. Far-sighted employers have furnished the data with which to prove the possibility and value of prevention. Thus, coöperating firms

in the iron and steel industry posted a 1940 frequency rate of 4.5 injuries per million man-hours, less than half the rate for the industry as a whole, and less than one-tenth the rate for the very same firms in 1913. Injuries in establishments reporting to the National Safety Council in 1940 were 69 per cent less frequent and 50 per cent less severe than in 1926. The manufacturing sample of the Bureau of Labor Statistics, which included over 40 per cent of factory employees, attained a 1940 frequency rate 25 per cent lower than in 1926, and actually 7 per cent lower than in the depression year of 1932. The improved experience reflected in the data cited was obtained in a period during which workmen's compensation benefits were first provided and subsequently broadly liberalized.

A persistent downward trend in both absolute and relative volume of machine accidents is observable. The emphasis on proper design and guarding of machines during recent decades has apparently borne fruit, for the proportion of machine accidents occurring at the point of operation has been steadily declining. That the proportion of industrial injuries involving machines should have declined is all the more significant because it occurred in spite of considerable increases in the mechanization of industrial processes.

In most states the number of industrial injuries reported rose throughout the twenties, and in some states this tendency continued with some leveling off in the thirties. This tendency must be discounted for the effects of improved reporting. One clear indication of improved reporting is the increased prominence of sprains in injury tabulations. Contemporary workers not only need not work more strenuously than earlier workers, but have been substantially helped by the development of elevators and conveyors. But contemporary workers and their physicians are increasingly alert to the possibility that strains and other injuries may have been industrially caused. Another indication of improved reporting is a Massachusetts tabulation tending to show that a greater proportion of minor injuries are currently being reported.

It seems clear: (a) that injury rates have been declining since the middle twenties; (b) that this tendency would have been more readily observed had it not been for the gradually expanding coverage of workers and injuries and more complete reporting; and

(c) that analysis of and elimination of hazards has played an important part in reducing injury rates. A very real and effective movement for greater industrial safety has developed. If it had done no more than arrest the upward movement of industrial injury figures, that would have been a noteworthy achievement in such a period of increasing mechanization.

It is difficult to assign the credit for accident prevention to particular agents because so many forces are being exerted in so many ways to achieve it. The principal factors involved are farsighted employers, safety-conscious workers and labor leaders, engineering departments of compensation insurance carriers, and the regulatory agencies of the several state governments.

Farsighted employers and managers have made great contributions to industrial safety. Early in the present century they assumed leadership of the safety movement as they became aware of the terrible consequences of unplanned mechanization. They helped found the American Museum of Safety, the National Safety Council, and, impressed by the German safety movement, joined in the American workmen's compensation movement. Intensive study of the relationship between safety and production bore fruit in the replacement of shafting with push-button control and in the development of continuous mechanical feeds and production lines. When these steps prevented many accidents but did not effectively reach those caused by personal factors, they undertook safety education even against considerable resistance from their workers.

In all these measures employers have sometimes been paternalistic, sometimes even autocratic. Perhaps they have been more production-minded than safety-minded but fortunately the productive way is usually the safe way.

The worker's stake in safety is large and direct, but he has sometimes failed to recognize this interest. Trade unions early interested themselves in industrial safety, and have acted vigorously in seeking regulatory action to guard equipment, to provide a healthful atmosphere, and the like. Safety committees such as those of the United Mine Workers have fostered safe rules and safe practices.

Unfortunately managements and unions have often not coöperated effectively in safety work. Although accidents usually have both a mechanical and a personal cause, workers have been in-

clined to overemphasize the former, and employers the latter. Belligerent antiunion tactics by some employers and belligerent opposition to "class collaboration" by some workers have often prevented coöperation for greater safety. Like many employers, some union leaders have shown strong tendencies to accept extreme versions of monopolistic theory, and have failed to consider adequately the possibility that lower costs and prices—in this case resulting from reduced injury rates—may enlarge the market to a more than corresponding extent.

Responsible leaders on every front of the industrial safety movement have acknowledged the contribution of insurance carriers through their engineering services. An insurance institution tends to seek (a) to avoid handling accounts with excessive losses, (b) to minimize the cost of insurance to its policyholders, and (c) to counteract the tendencies toward adverse selection and toward lowered individual responsibility. Reduction of losses does not threaten insurers with loss of business, for conservation opens up as large a field as alleviation.

The safety program of compensation insurance carriers is carried on on three principal fronts: (a) a consulting service aimed at providing a vital coöperation between insurer and assured in minimizing losses; (b) a laboratory in which safety devices and methods may be studied intensively; and (c) maintenance of relations with other agencies interested in industrial safety through consultation, participation in programs and publications, financial support, committee work, etc. On all of these fronts the better carriers have given outstanding services.

There has been some tendency toward selective underwriting, although many carriers have shifted the emphasis from rescission of policies to conversion of the policyholder. The undesirable-risk problem remains an accusing finger leveled at the insurance engineer. A principal weakness of the safety work of the carriers is the inability to reach effectively the very small establishment. The low premium collected makes frequent inspection costly, and the accident record of these establishments as a group has been relatively poor.

Another principal weakness is the scattered nature of a part of the business. Twelve firms writing compensation insurance in New York state in 1939 did a country-wide business of less than \$100,000. Carriers having only small and widely distributed

volumes of business cannot provide competent safety engineering economically, if at all.

The interest of the public in safety is obvious, but has not always been effectively expressed. After experimenting with *laissez-faire* and statutory regulation, the trend is now toward administrative regulation. In this field the great industrial states of California, Massachusetts, New Jersey, New York, Ohio, Pennsylvania, and Wisconsin have made outstanding contributions. Standards which have been formulated by committees representative of employers, workers, and the public have been approved and promulgated by appropriate authorities and enforced by inspectors.

The latter have tended in recent years to stress their police functions less and their service functions more. Among the services they can make available are safety literature, lectures, demonstrations, and special investigations and advice. Collection of injury statistics has improved, but leaves much to be desired. Of special interest in the safety field are improved data regarding exposure and causes.

The level of safety work varies from state to state, being hampered sometimes by lack of interest, sometimes by lack of funds, and sometimes by conflict of authority. Most of the agencies are understaffed and therefore cannot service effectively the firms which need help most—the small firms. The United States Bureau of Labor Statistics and more recently the United States Department of Labor, Division of Labor Standards, beside organizing their own valuable safety programs, have given inspiration and guidance to the state agencies. The contributions of the regulatory agencies are primarily consultative and inspirational, but nevertheless highly significant.

The relationship between safety and compensation makes necessary more effective integration of the forces in the safety movement. A genuine community of interest exists in these matters. Neither capital nor labor can truly make progress in this field except as industrial safety is extended and compensation benefits are increased. Adequate compensation makes safety more imperative. Increased safety makes adequate compensation possible.

PART VI: SUPPLEMENT

RECENT CHANGES IN WORKMEN'S COMPENSATION
AND INSURANCE

CHAPTER XXIV

LEGISLATIVE CHANGES, 1940-1945

CHANGES IN COVERAGE

THE TABLES of coverage and benefits which appear in Parts I and II portray the legislative situation up to July 1, 1940. In November, 1940, the electorate of Arkansas approved in a referendum vote a workmen's compensation law submitted to them by the state legislature. Private employments are compulsorily covered, except agriculture, domestic service, casual workers, and employees of firms with less than five employees. Public employments are excluded, although voluntary coverage is permitted. Insurance by private insurance companies or the carrying of one's own risk with the deposit of a bond is permitted. Judging from the census of 1940, the new law applied to about 156,500 employees.

The laws of five states were amended to relax their numerical exemptions in this period.¹ The Delaware provision, which had exempted employers of less than five, now exempted only employers of less than three. The Virginia and Vermont limits were lowered from eleven to seven employees and the Alabama limit from sixteen to eight employees. The Missouri commission was authorized to apply the numerical exemption to nonhazardous employments alone if this seemed desirable. The net effect of these amendments appears to have been to reduce the scope of numerical exemptions from 342,000 employees excluded in 1940 to 299,000 employees excluded in 1945.

The early forties were a period of major employment shifts, and these alone added very substantially to the coverage of employments by workmen's compensation laws. The nature of the principal shifts is indicated in Table 60. Employment in nonagri-

¹Alabama, Delaware, Missouri, Virginia, and Vermont. The laws of Massachusetts and Michigan, which were made compulsory during this period, with addition of numerical exemptions, were changed in 1945 so as to cover electively even the employees of small firms.

TABLE 60
CHANGES IN EMPLOYMENT AND UNEMPLOYMENT, 1940-1945

	April, 1940	April, 1945
	<i>(figures in thousands)</i>	
Number employed in nonagricultural establishments	28,739 ^a	37,791 ^a
Manufacturing	9,832	15,102
Mining	835	761
Construction	1,118	699
Transportation and utilities	2,956	3,792
Trade	6,122	6,990
Finance, service, and miscellaneous	4,160	4,444
Federal, state, and local government	3,716	6,003
Number unemployed	8,000 ^b	770 ^c

^a As estimated by the U. S. Bureau of Labor Statistics.

^b As reported for the week of March 24, 1940, by the census of 1940.

^c As estimated by the U. S. Bureau of the Census from a sample count of the labor force.

cultural establishments, usually covered by these laws, rose by more than 9,000,000 in this period. Unemployment had meantime dropped some 7,200,000 from its 1940 level of 8,000,000. Most of the increase in employment clearly represented a net gain in coverage. Thus 5,300,000 of these workers became factory workers and 2,300,000 government workers, principally employees of the federal government. The increase in employment in trade—nearly 900,000—must also have contributed largely to the broader coverage. All in all, these shifts added over 8,000,000 workers to the national coverage total, bringing it to more than 35,000,000 workers.

The balance between compulsory and elective coverage was substantially altered in this period.² The new law adopted by Arkansas was compulsory. The Delaware law was amended to apply compulsorily, while those of Massachusetts and Michigan were amended to apply compulsorily except to small firms. Even without allowing for increases and shifts in employment, these changes added more than 2,500,000 persons to the number covered compulsorily. The percentage so covered by state laws rose from 46.4 per cent in 1940 to 56.1 per cent in 1945. Including workers under the federal laws for civil employees and longshoremen, the proportion under compulsory laws in 1945 was 58.0 per cent.

² For a discussion of compulsory and elective coverage see above, pp. 19-23.

The scope of workmen's compensation was broadened to include not only a larger number of employees, but also a greater proportion of work injuries. Two principal types of change helped to bring this about: shortening of waiting periods and relaxation of the limits within which they apply, and adoption of more and broader occupational disease laws.

The waiting period was shortened by amendment in three states, from one week to three days in Delaware, and from two weeks to one week in Alabama and Iowa. There is now only one waiting period of longer duration than a week, that of Colorado, which lasts ten days.

Alabama and Delaware, while shortening the waiting period, eliminated the retroactive proviso to which the longer periods had been subject.³ On the other hand, five states shortened the period after which the retroactive proviso should come into play.⁴ The Arkansas law included a retroactive proviso. The net effect of these changes was to reduce the average period required by a retroactive proviso from 31.2 days to 29.7 days. The average flat waiting period remained 6.2 days. The average such period where coupled with a retroactive proviso dropped from 7.0 days to 6.6 days, largely as a result of the Alabama and Iowa amendments.

Coverage of occupational diseases was both extended and broadened. The new Arkansas law applied to a list of occupational diseases. Six states which hitherto had made no provision for occupational diseases amended their laws to include such a list.⁵ The Kentucky law, which had applied to silicosis in coal mining, was made applicable to all industries with a silicosis hazard. Oregon adopted an occupational disease law of a general type, and the laws of Michigan, Minnesota, and Nebraska were broadened to provide coverage of any disease proximately caused by the employment. The net effect of these changes was to raise the proportion of employees covered by occupational disease legislation from 79.4 per cent in 1940 to 87.3 per cent in 1945. The proportion under general coverage rose from 52.5 per cent in 1940 to 61.9 per cent in 1945.

³ That is, the period of disability after which even the wage loss during the waiting period would be indemnified. For a discussion of this so-called retroactive proviso see above, p. 32.

⁴ Connecticut, Illinois, Iowa, Michigan, and Tennessee.

⁵ Arizona, Colorado, Maine, New Mexico, Utah, and Virginia.

Another important development of this period was the growth of group coverage of employees for accident and sickness non-industrial in character (usually excluding cases compensated under workmen's compensation laws). This has usually resulted from collective agreements, but in Rhode Island it was provided by law. The willingness of managements to concede group policies for nonindustrial disability was undoubtedly influenced by two factors: the operation of excess profits taxes during the war years and the impossibility of granting wage increases beyond relatively fixed limits. But whatever the motivation, a situation resulted in which many cases of disability which could scarcely have been covered under existing provisions of workmen's compensation laws could be handled under one of these group policies. Professor Blanchard has reported that in 1944 some 233 carriers had written \$458,790,506 of accident and health insurance, an increase of 150 per cent over 1938. In 1942 about 40 per cent of the writings represented group policies, compared with 24 per cent in 1938.⁶

The Rhode Island statute providing for compulsory group accident and health coverage has been criticized for its ambiguity. The law does not clearly exclude disabilities compensated under the workmen's compensation law, and the result has been that many claimants have received both workmen's compensation and accident or health payments. This is manifestly impolitic since in many cases a disabled worker may receive more money during disability than when employed. The intent of the Rhode Island act is praiseworthy, but this loophole should be closed.

CHANGES IN BENEFITS

The conclusions of Parts II and III are based on the benefit scales in existence in 1940. During the more recent years these scales have been liberalized by amendment. Have these changes been such as to invalidate or to weaken seriously any of the conclusions reached?

Table 61 presents in summary form the effect of the principal increases in benefits. It does not attempt to deal with individual increases nor to present average increases in all features of the

⁶ See Ralph H. Blanchard's *Survey of Accident and Health Insurance*, Social Security Board, Bureau Memorandum No. 62 (November, 1945).

TABLE 61
CHANGES IN PRINCIPAL FACTORS OF THE BENEFIT SCALE, 1940-1945

Type of benefit	Weighted average ^a		Per cent change
	1940	1945	
Weekly benefits (temporary)			
Rate of compensation.....	63.7%	64.2%	+ 0.8
Maximum weekly payment.....	\$20.13	\$21.77	+ 8.1
Minimum weekly payment			
Definite.....	\$7.59	\$7.77	+ 2.4
Provisional.....	\$7.87	\$8.20	+ 4.2
Total benefits			
Death			
Maximum amount.....	\$5,935	\$6,102	+ 2.8
Maximum duration.....	373.9 weeks	387.6 weeks	+ 3.7
Permanent total cases			
Maximum amount.....	\$6,816	\$6,896	+ 1.2
Maximum duration.....	468.3 weeks	490.0 weeks	+ 4.6
Permanent partial cases			
Arm (exclusive) ^b	237.2 weeks	244.2 weeks	+ 3.0
(additional) ^c	236.1 weeks	241.1 weeks	+ 2.1
Hand (exclusive).....	184.0 weeks	190.8 weeks	+ 3.7
(additional).....	177.3 weeks	181.0 weeks	+ 2.1
Eye (exclusive).....	123.8 weeks	130.3 weeks	+ 5.3
(additional).....	130.9 weeks	132.3 weeks	+ 1.1
Medical benefits			
Maximum amount.....	\$277.96	\$322.10	+ 15.9
Maximum duration.....	84.6 days	93.7 days	+ 10.8

^a Averages weighted for coverage as indicated by the census of 1940.

^b An average for those jurisdictions whose compensation for loss of a member is confined to a schedule of specified numbers of weeks for each such loss.

^c An average for those jurisdictions which, in addition to these payments, compensate also for the healing period.

benefit scale. Neither of these steps is necessary to our purpose. It is the over-all picture for the important features of the benefit scale that is required to answer the question raised. The weekly benefits are not of primary importance when treating of death or permanent disability, and in any case the same trend would be observed as is shown for temporary disability. The limits to total amount and duration are not of primary importance in cases of temporary disability.

What has happened in recent years is a continuation of what had been happening before 1940. The main improvement in benefit scales has been in temporary disability and medical benefits. The maximum weekly payment for temporary disability has

increased 8.1 per cent since 1940, and similar increases have been allowed for other degrees of disability. The increases were needed in view of rising levels of wages and living costs, but the increases in benefits generally have not sufficed to offset either the higher wage level or the higher cost of living. The Bureau of

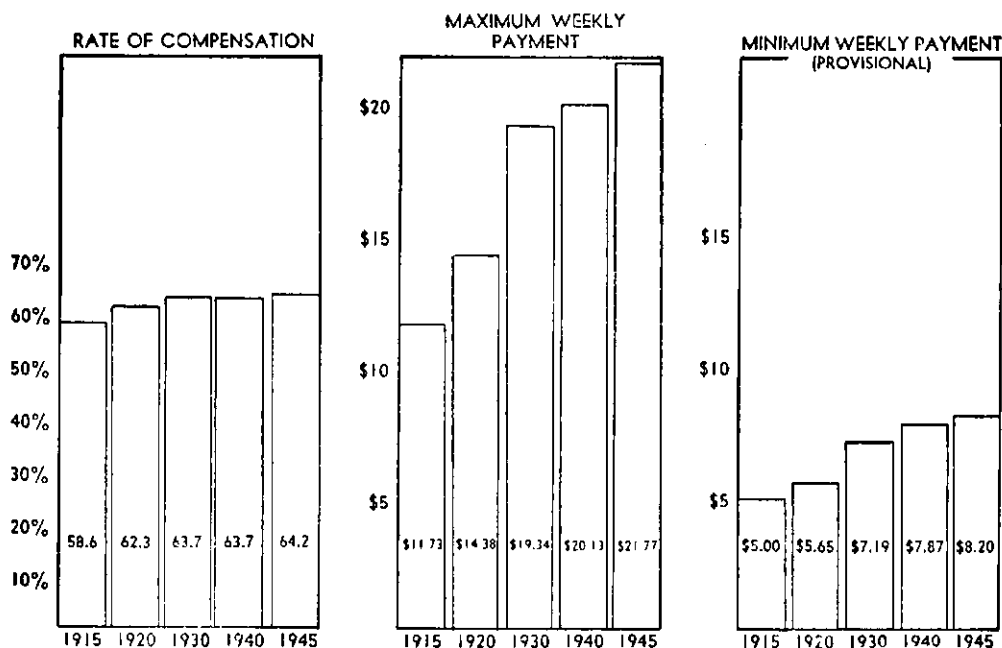


CHART 7. INDICATED TREND OF WEEKLY PAYMENTS FOR TEMPORARY DISABILITY, 1915-1945

(Averages weighted for coverage.)

Labor Statistics showed average weekly earnings in manufacturing to be 51.2 per cent higher in October, 1945, than in October, 1940, and the cost of living to be 29.2 per cent higher in November, 1945, than in November, 1940.⁷ As might have been expected in a period of rising wage levels, interest in the minimum weekly payment has been much less keen. The average definite minimum rose 2.4 per cent and the average provisional minimum 4.2 per cent during this period.

Perhaps the war labor shortages helped to point up the need for more adequate medical care. At any rate, the average maximum amount of medical benefits was raised 15.9 per cent, while the average maximum duration was raised 10.8 per cent. The average maximum amount of medical benefits is now \$322.10 and

⁷ See *Monthly Labor Review*, vol. LII (Jan., 1941), and vol. LXII (Jan., 1946).

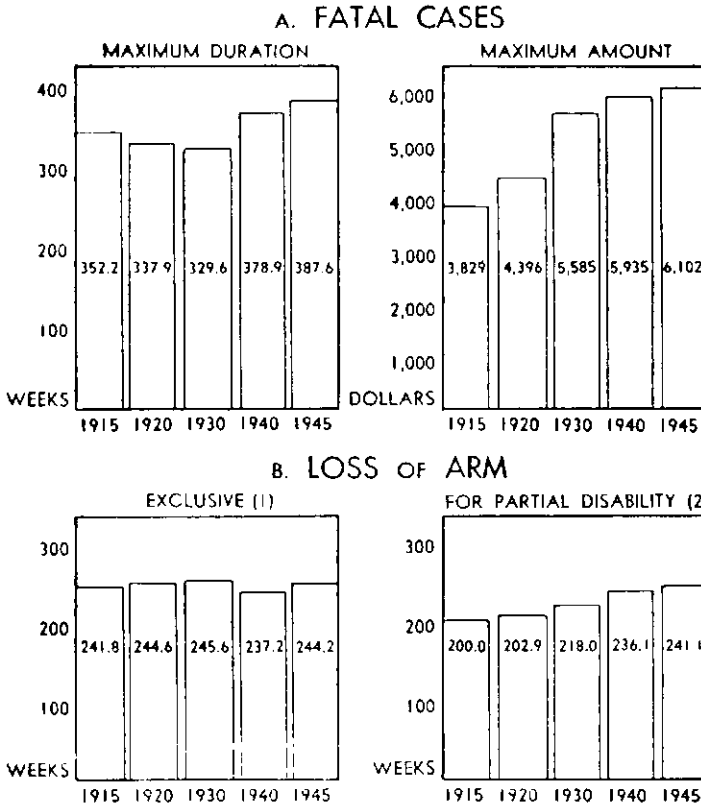


CHART 8. INDICATED TREND OF TOTAL BENEFITS IN SELECTED SERIOUS CASES

(The several bars represent averages weighted for coverage.)

- (1) In lieu of all other compensation.
- (2) In addition to compensation for temporary disability during healing period.

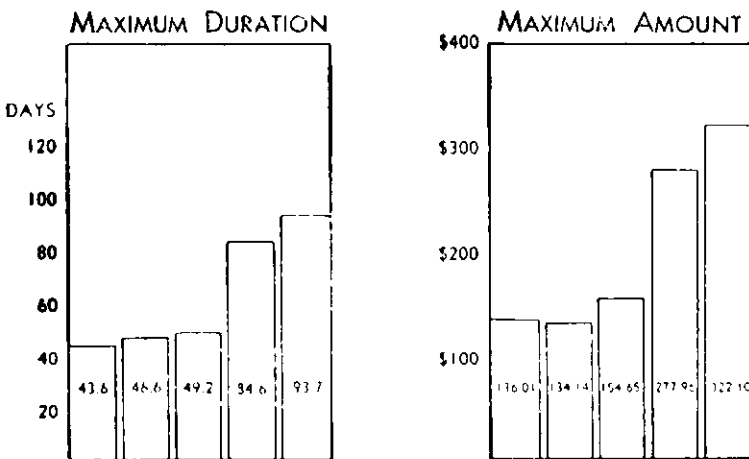


CHART 9. INDICATED TREND OF LIMITS TO MEDICAL BENEFITS, 1915-1945

(The several bars represent averages weighted for coverage.)

the average maximum duration 93.7 days. When it is borne in mind that in twelve laws no limit exists, while in fourteen jurisdictions existing limits may be exceeded with approval of the commission, this is an encouraging situation.

One cannot say the same of benefit payments for permanent disability or death. The average maximum amount of benefits to those permanently and totally incapacitated was raised only 1.2 per cent, and for those fatally injured only 2.8 per cent. The average maximum duration was raised 4.6 per cent for permanent total disability and 3.7 per cent for death. Under all except sixteen laws victims of permanent disability are cut off without compensation after an average of 490 weeks—about nine and one-half years. Under all except eight laws survivors of fatally injured workers are cut off without compensation after an average of 387.6 weeks—about seven and one-half years. In cases where a maximum amount is also in force a lower effective duration is established for all high-paid workers.

The durations of benefits to workers suffering permanent partial disability were raised in proportions similar to those cited for death and permanent total disability. The most generous average increase was in the number of weeks of compensation for loss of an eye. In jurisdictions offering no other compensation the average duration for loss of an eye rose from 123.8 weeks to 130.3 weeks, or 5.3 per cent. No progress occurred toward a more rational system for compensating permanent partial disability except in one particular: the treatment of second injuries.

The war served in two respects to strengthen the movement to establish second-injury funds. It became evident that without such funds many handicapped veterans would find it difficult to obtain suitable employment. But the employment of handicapped workers during the critical manpower shortage had shown also that they could be advantageously employed. There was a general agreement by groups of employers, employees, veterans' organizations, and other interested parties that the second-injury fund would be the best solution of the difficulty. In September, 1944, the International Association of Industrial Accident Boards and Commissions approved a draft bill providing for establishment of a second-injury fund to be supported by payment of \$500 in no-dependency fatal cases. Where an employee had sustained loss of one of two members, so loss of the other would involve

permanent total disability, an employer would be liable only for the partial disability in case of subsequent loss of the second member, the balance of the claim to come from the second-injury fund.⁸

In July, 1940, there were twelve such funds in existence, while alternative and essentially equivalent arrangements were available in four other states. At the end of 1945 there were thirty-one second-injury funds, while alternative and equivalent arrangements were available in three other states.⁹ The coverage is broader than appears from a mere enumeration of states, for with few exceptions the large industrial states have second-injury funds. An analysis of coverage statistics indicates that 73.5 per cent of those covered work in states with second-injury funds, and that an additional 7.3 per cent work in states with equivalent arrangements.

⁸ See *Monthly Labor Review*, LXI (August, 1945), 284ff.

⁹ Arizona, Arkansas, California, Colorado, Connecticut, Delaware, District of Columbia, Idaho, Illinois, Iowa, Kansas, Maine, Maryland, Massachusetts, Michigan, Minnesota, Missouri, New Jersey, New York, North Carolina, Oklahoma, Oregon, Pennsylvania, Rhode Island, South Carolina, Tennessee, U. S. Longshoremen's Act, Utah, Washington, Wisconsin, and Wyoming. Alternative and equivalent arrangements are available in North Dakota, Ohio, and West Virginia.

CHAPTER XXV

CHANGES IN UNDERWRITING METHODS AND RESULTS

THE WAR PERIOD brought a considerable expansion of premium volume covering compensation liabilities. This is shown for the period 1940 to 1944 in Table 62. Total premiums earned by

TABLE 62
COUNTRY-WIDE PREMIUMS AND LOSSES OF CARRIERS
OPERATING IN NEW YORK STATE, 1940-1944

	1940	1942	1944
		<i>(figures in thousands)</i>	
Premiums earned.....	\$239,146	\$372,587	\$435,057
Stock companies.....	134,567	210,324	256,031
Mutual companies.....	82,489	138,040	151,642
N. Y. State Fund.....	22,090	24,224	27,384
Losses incurred.....	\$131,326	\$231,630	\$254,361
Loss ratio (per cent).....	54.9	62.2	58.5
Stock companies.....	55.8	60.0	57.3
Mutual companies.....	55.3	56.5	58.3
N. Y. State Fund.....	77.1	79.9	70.0

Source: Adapted from the Annual Reports of the New York State Insurance Department, vol. III, Table 9.

carriers operating in New York state increased from \$239,146,000 to \$435,057,000, or 81.9 per cent. The premiums earned for 1945 can, at this writing, only be estimated, but are likely to be about \$500,000,000. The increases have brought little change in the proportions of the risks covered by principal types of private carriers. The New York state fund, however, had a smaller proportion of the 1944 business than of the 1940 business.¹

Three factors may cause premium volume to rise. Passage of a new compensation law opens up a new territory in which this

¹ This may have been due in part to their inability to compete for overseas contracts at American defense bases.

line may be sold. Expansion of industrial payrolls raises the base on which premiums are computed. The raising of premium rates, given a stable payroll, produces larger receipts.

It is clear that higher payrolls were the primary factor in the recent expansion of compensation premium writings. A new compensation law, passed by Arkansas in 1939 and referred to Arkansas voters in November, 1940, became effective following the successful referendum. The relatively restricted coverage in this nonindustrial state, however, made only a minor contribution to larger premium writings. In the year ending June 30, 1941, rate increases were filed in only three of the states coöperating with the National Council on Compensation Insurance. The largest increase (5.5 per cent) occurred in Rhode Island (effective April 23, 1941), which state had lowered its rate 4.5 per cent the preceding fall. In the same period rate reductions ranging from 0.1 per cent to 10.6 per cent were reported in thirty-six jurisdictions. During the following year the number of rate increases rose to fourteen, twelve states making an upward adjustment, two of them making two such adjustments. In the year ending June 30, 1943, there were rate level increases in thirteen states. The number of rate reductions, however, was twice as great in both years. New Jersey was the only large industrial state which, on balance, appeared to have a higher rate level at the end of this three-year period than it had at the beginning.

It is too early to secure from insurance sources any accurate indications regarding payroll exposure for much of this recent period.² Table 63 presents national indications for the principal industrial groups insured. By no means all of the payrolls represented in this table are insured, but in general the indications with regard to rate of increase may be considered reasonably accurate. By 1944 covered payrolls were more than double what they had been in 1940. The data in Table 63 suggest not only a sharp increase in payrolls but also a marked change in industrial distribution. By 1944 contracting payrolls had risen nearly 60 per cent and mining payrolls nearly 70 per cent. But in 1942 contracting payrolls were 173 per cent higher than in

² This is because payroll exposure data are compiled by policy years, cutting across two calendar years. A first reporting for policy year 1945, which ended December 31, 1946, is not available at this writing.

1940. Factory payrolls rose quite steadily to 175 per cent higher in 1944 than in 1940. Not only have payrolls increased, but they have increased most markedly in the relatively more hazardous fields of construction, mining, and the manufacture of durable

TABLE 63
CHANGES IN PAYROLL OF INDUSTRY GROUPS NORMALLY INSURED FOR
WORKMEN'S COMPENSATION, 1940-1944

	1940	1941	1942	1943	1944
	(index numbers: 1940 = 100)				
Contract construction.....	100.0	169.0	273.2	230.6	159.0
Mining.....	100.0	119.7	137.4	154.3	169.5
Manufacturing.....	100.0	139.3	198.4	262.5	275.0
Trade.....	100.0	115.1	120.1	133.3	144.8
Finance.....	100.0	105.9	110.4	116.7	122.9
Communication.....	100.0	108.9	115.3	122.3	128.7
Total.....	100.0	129.2	166.9	201.6	208.6

Source: Based on absolute figures in the U. S. Bureau of Foreign and Domestic Commerce's *Survey of Current Business* (June, 1945), pp. 17ff., and (November, 1945), p. 23.

goods. Clearly the recent increase in payrolls is the principal explanation of the recent expansion in compensation premium writings.

The war period witnessed a slight reversal of the downward trend in compensation loss ratios which had persisted for nearly six years when the war broke out in September, 1939. Insurance carriers operating in New York state incurred losses of \$131,326,000 in 1940 on a premium volume of \$239,146,000. The ratio of losses incurred to premiums earned was 54.9 per cent. As shown in Table 62, the experiences of 1942 and 1944 were less favorable. The loss ratio rose to 62.2 per cent of premiums earned in 1942, but receded to 58.5 per cent in 1944. These loss ratios were still relatively favorable, however. During the first World War the ten largest stock companies and three largest mutual companies had combined loss ratios ranging from 60 per cent to 70 per cent.

The 1941 experience of state funds was also relatively favorable. Seven competitive state funds wrote premiums of \$41,644,000 and paid losses of \$27,219,000, sustaining a loss ratio of 65.4 per cent. Three exclusive state funds wrote premiums of \$35,408,000 and paid losses of \$22,070,000, sustaining a loss ratio of 62.3 per cent. In the absence of necessary data, the experience of the

state funds cannot be placed on an incurred basis. It can be reported that the Ohio state fund incurred losses of \$20,773,000 on an earned premium volume of \$25,324,000. The resulting incurred loss ratio of 82 per cent was the lowest experienced by the fund in five years. This very favorable experience made it possible to reduce the general rate level 10.3 per cent.³

The great changes involved in wartime production undoubtedly made for some increase in accident frequency, and this exerted a buoyant influence on the loss ratio.⁴ The upward movement of wages, although it resulted in a somewhat higher average cost per case, had an opposite effect on the loss ratio. Precise indications with regard to these two factors are not available, but some indications may be given. In Table 64 estimates of the frequency

TABLE 64
INDUSTRIAL INJURIES IN THE UNITED STATES, 1940-1944

Year	Number of injuries	Man-days lost	Frequency rate (factory workers)
1940	1,889,700	233,840,000	15.3
1941	2,180,200	251,000,000	18.1
1942	2,267,700	263,000,000	19.9
1943	2,414,000	274,000,000	20.0
1944	2,230,400	222,994,000	18.4

Source: U. S. Bureau of Labor Statistics, *Monthly Labor Review*, LIII (August, 1941), 327; LV (September, 1942), 501; LVII (November, 1943), 865; LIX (November, 1944), 905; LXI (October, 1945), 638.

of industrial injuries in factories are presented. In 1940 the frequency rate touched a low of 15.3 injuries per million man-hours for the period covered. In 1941 the frequency rate rose to 18.1, and during 1942 it rose again to 19.9. The rise in 1943 was scarcely perceptible, and in 1944 the frequency rate dropped to 18.4. If the experience of reporting factories may be taken as in any measure typical, injury frequency has increased, as might be expected, but the rate of increase is encouragingly low. The rate

³ Comparison of the absolute values of these loss ratios with those of private carriers should be made only after due allowance for the taxes on premiums of private carriers, the lower manual rates which competitive funds are permitted to charge, and the generally lower expense ratios of state funds.

⁴ Conversion of plants, introduction of new processes, hiring of less-experienced workers, problems of training additional supervisors for the expanded work force, and the generally increased tempo of production are all factors tending in this direction.

for 1944, for example, is well below the rate for 1934. Incidentally one must exercise caution in making inferences regarding loss experience from injury rates. In periods of intense industrial activity claim frequency is unlikely to rise as rapidly as injury frequency, for claims which would be pressed in harder times are not then pressed.

In Table 65 the recent trend of weekly wages of injured workers is presented for ten industrial states coöperating with the Na-

TABLE 65
AVERAGE WEEKLY WAGES OF INJURED WORKERS IN SELECTED INDUSTRIAL STATES, 1940-1945

	Six months ending			Per cent change 1940-1945
	June 30, 1940	June 30, 1942	June 30, 1945	
Alabama	\$17.70	\$26.15	\$33.24	+ 87.8%
California	27.73	36.56	50.79	+ 83.2%
Illinois	27.82	31.13	42.24	+ 51.9%
Massachusetts	25.17	30.08	40.59	+ 61.3%
Michigan	27.55	35.21	49.27	+ 78.8%
New Jersey	27.20	31.87	43.36	+ 49.4%
New York	27.55	31.06	43.71	+ 58.7%
North Carolina	17.75	23.45	30.81	+ 73.6%
Texas	23.83	26.55	42.33	+ 77.6%
Wisconsin	23.55	32.00	40.70	+ 72.8%

Source: Basic data were furnished by A. Z. Skelding, actuary of the National Council on Compensation Insurance.

tional Council on Compensation Insurance. The data make it clear that a general rise in wages of a substantial proportion has been going on. The increase from the six-month period ending June 30, 1940, to the six-month period ending June 30, 1945, is in no state less than 49.4 per cent, in four states is more than 75 per cent, and in one state is 87.8 per cent. It had been freely predicted in some quarters that compensation insurance carriers should hardly expect substantial wage increases during the war period. The writer cautioned against this view as early as November, 1939. He pointed out that even if hourly rates remained stable, the increase in hours worked would result in higher weekly wages, in part because of the larger multiplier and in part because of the penalty rate for hours worked overtime.⁵ As a

⁵ See the report of an informal discussion of this point in the *Proceedings of the Casualty Actuarial Society*, XXVI (November 16 and 17, 1939), 233 and 236.

matter of fact, wage rates have been increased as well, but hourly earnings have not advanced nearly as much as weekly earnings. It is the weekly wage which is decisive for the compensation insurance carrier, for most compensation awards are paid to the claimants in installments the size of which is based on past weekly earnings.

If workers received as compensation a definite percentage of past weekly earnings, a rise or fall in wage levels would have no effect on the loss ratio, since the cost per case and the premium volume would both rise or fall in the same proportion. But the per cent of past weekly earnings compensated is generally subject to a weekly minimum and maximum, and these limits profoundly affect the proportion of wage loss compensated when wage levels are disturbed. In the recent period the rising level of wages has rendered an ever increasing proportion of claimants subject to the weekly maximum, while weekly minimums have become virtually inoperative. Claimants eligible for the weekly minimum receive more than the statutory per cent of past weekly earnings; claimants subject to the weekly maximum, on the other hand, receive less than the statutory percentage. The average cost per case rises, therefore, but substantially less than the general level of wages.⁹ Amendments providing higher weekly limits have softened the tendency to a lower proportion of wage loss compensated, but, as pointed out above, on the average these have not been sufficient.

The war period necessitated certain underwriting adjustments. Changes in manual classifications and rules and adjustments of rating procedure were in some cases found necessary. The tremendous expansion of the munitions industry caused a general overhauling of the classification and rate structure in that industry. The bulk of this business had carried its own risk in the pre-war period, and the experience accumulated in the explosives classifications by the National Council on Compensation Insurance was so small in volume that manual rates were not established, risks being rated specifically. War conditions caused manufacturers in closely allied industries to convert, and there arose a considerable demand for compensation coverage. Accordingly, specific manual rates were established, predicated on "optimum" conditions, and effective April 22, 1941. The naval

⁹ For a fuller elaboration of this point see above, pp. 183-185.

expansion program caused the reestablishment of one abandoned classification: Boat building—concrete.

The need for providing compensation and other liability insurance for war construction projects occasioned some interesting modifications of rating procedure. The War Department began by calling for competitive bids, producing an unhealthy inter-carrier relationship. More mature consideration resulted in the Comprehensive Insurance Rating Plan for National Defense Projects issued by the War Department on May 3, 1941, and applied to all cost-plus-a-fixed-fee contracts. Concurrent policies covering not only compensation, but also auto bodily injury liability, auto property damage, comprehensive bodily injury liability, and other property damage were provided.

The workmen's compensation hazard was to be rated retrospectively in regard to incurred losses and allocable claim expenses. A fixed charge was provided covering the expenses of payroll audit, inspection and bureau, reinsurance, and general administration. A service charge for so-called advisory services was apparently designed to take the place of agents' commissions. The plan was accepted in most states, and with commendable will to cooperate, by the insurance industry. After some experience with this business, rating rules were amended to allow for charging an average compensation rate rather than individual rates for several manual classifications. In general the experience proved favorable, but did not accord well with other compensation experience. Hence it was decided to eliminate this experience in determining state rate levels, class rates, and experience rates.

After Pearl Harbor the plan was rechristened the War Projects Insurance Rating Plan. A new standard Insurance Service Agreement was announced effective September 1, 1942. The agencies then using the plan, in addition to the War and Navy Departments were the Defense Plant Corporation, the Maritime Commission, the National Public Housing Authority, and the Federal Works Agency. All responsibility for claims service was allocated to the insurance division of the agency concerned, and fees were correspondingly reduced. The fee percentages were applied to 50 per cent instead of 90 per cent of the standard premium, and in the War Department the rate of fee was reduced on all premiums over \$100,000.

Certain difficulties arose in multiple contract situations. On

construction projects, where insurance was secured in the usual manner by each of several contractors, a wasteful servicing of the contractors by their several insurers might have resulted. The War Department suggested that one company service all of the contractors by agreement in such instances. In factory war work not only were separate contracts found operating concurrently, but some firms were performing work both under one or more cost-plus-a-fixed-fee contracts and under one or more fixed-price contracts. The Joint Rating Committee, after careful study of such situations, prepared and promulgated rules applying the Rating Plan to employers with multiple contract situations.

The low loss ratios on war projects indicate commendable coöperation of the assured and his employees with the insurer and the government in the patriotic endeavor to promote greater safety and health. The medical plans presented one problem in rating. In general, the employer was directed to hire and pay medical personnel but to bill the insurer each month for a share of their salaries. The percentages reimbursable varied with type of project, amounting to $66\frac{2}{3}$ per cent in construction and shipbuilding, 50 per cent in general manufacturing, and $33\frac{1}{3}$ per cent in explosives manufacturing. There was an upper limit in final reckoning of the premium, however, fixed at $12\frac{1}{2}$ per cent of the standard premium for general manufacturing, at 10 per cent for construction and shipbuilding, and at 7 per cent for explosives manufacturing.

In general, we may accept Mr. Hobbs's judgment that "the War Department's handling of its insurance problems has been sensible and as considerate as was consistent with keeping government insurance costs at a reasonable level."⁷

Wartime conditions affected rate-making procedure for workmen's compensation insurance in two ways. In the first place, the customary procedure of combining the experience of four or five years in making rates for individual manual classifications proved of doubtful validity in a period of rapid expansion and widespread changes in processes, materials, work periods, wage levels, and personnel. In the second place, both carriers and rating organizations, faced with shortages of both personnel and

⁷ C. W. Hobbs, *Report Relative to the National Council on Compensation Insurance, made to the National Association of Insurance Commissioners* (June 8, 1942), p. 10.

equipment, found it impossible to adhere to established schedules of statistical filing dates.

It was accordingly necessary to establish a new rating plan that would be responsive to changing industrial conditions and at the same time so much simpler to operate that it would relieve the organizations concerned of an intolerable statistical burden. The rates committee of the National Council on Compensation Insurance recommended adoption of such a plan to the National Association of Insurance Commissioners in 1943. This plan was adopted with minor modifications. Under the plan the exhibit by classes of premiums and losses was confined to the latest two policy years. Medical losses, on the other hand, were remanded from a one-year to the two-year basis. The contingency loading was abandoned. So were the industry group rate levels (manufacturing, contracting, and so forth). The complicated system of using national experience was replaced with a system of comparing the state indications of the latest two policy years with pure premiums based on existing state laws.⁸ A more drastic plan, retaining group rate levels but freezing the relative position of the classifications, was presented as a measure which might subsequently be taken if it proved necessary.⁹

These changes in rating procedure may prove to be, as they were characterized at the time, only emergency measures. It is not impossible, however, that the postwar years may continue to produce changing conditions requiring the more responsive rate structure. The near future should naturally end any purely statistical difficulties on which the rating changes were based.

An overshadowing development with a permanent bearing on the rate-making process was a decision of the United States Supreme Court on June 5, 1944, holding that insurance is commerce.¹⁰ This decision raised questions as to the propriety of existing rate-making machinery, since the authority to establish such machinery at the state level was not clear. These doubts were resolved in part by Public Law 15, approved by the federal government on March 9, 1945. The Congress held that continued regulation and taxation of the business of insurance by the several states was in

⁸ For a brief analysis of the factors mentioned here see above, Chapter XIII.

⁹ Cf. C. W. Hobbs, *Report Relative to the National Council on Compensation Insurance, made to the National Association of Insurance Commissioners* (June 6, 1943), pp. 43-47.

¹⁰ *U. S. v. Southeastern Underwriters' Association, et al.*, 322 U. S. 533.

the public interest; but it went on to provide that the Sherman Clayton and Federal Trade Commission Acts shall be applicable to the business of insurance after January 1, 1948, to the extent that the business should not by then be regulated by state law. This was a clear indication to those states which had not already done so that they must legislate to provide a proper legal basis for insurance rate regulations now permitted within their borders. Many of these states have already passed, while others have under consideration, a law to effect this purpose. The combination of the Supreme Court's decision and of Public Law 15 would, in the absence of such a law, have the effect of holding present rating agreements monopolistic.

The war years also saw the adoption of four plans for dealing with the problem of large risks. During the prewar period, as noted above, the retrospective rating plan had been introduced to provide the possibility of lower-cost insurance for large risks.¹¹ Earlier attempts to introduce graduated expense loadings (becoming lower for larger risks) had failed, however. Now this was introduced, in principle at least, when a "guaranteed cost" or "advance discount" plan was offered, conceding immediate discounts from standard premiums varying by size of risk. This plan did not embody any retrospective rating of losses.

The other three plans did embody such rating, within alternative maximum and minimum limits. The premium under the first of these plans could exceed the standard only by an adjustment factor that could in no case exceed 10.5 per cent. The remaining plans specify maximum premiums substantially in excess of the standard premiums for concerns with poor loss records. Those having very good loss records, on the other hand, are offered the possibility of making substantially greater savings. It remains to be seen what effect the new plans will have on the increasingly keen competition for the large policies, which Hobbs has called the "Real Problem in Workmen's Compensation Insurance."¹²

¹¹ For discussion of the nature of experience rating and retrospective rating of losses by individual concerns, see Chapter XIII, especially pp. 244-245.

¹² C. W. Hobbs, *Report Relative to the National Council on Compensation Insurance* (June 6, 1943), p. 19.

CHAPTER XXVI

CHANGES IN INDUSTRIAL SAFETY WORK

THE PATTERN of industrial safety work changes with changing industrial circumstances. The war which began in 1939 brought many changes in existing safety programs, because virtually all American industry expanded and converted to meet the demands of war. The resulting changes in processes and hazards called for new safeguards. Hundreds of thousands of workers training for war jobs stood in need of safety education. The installation of second and third shifts to make maximum use of plants and facilities presented safety problems with which engineers were generally less familiar. The strain for greater production, placing a premium on speed, increased the risk of industrial accidents in a variety of ways. The increasing tempo itself was in some cases more hazardous. As every precious moment was diverted to direct productive activity, the normal allowance for committee work and other safety activity was more difficult to provide and in some cases was greatly reduced. A critical shortage of skilled workers caused many workers to be employed overtime, with the danger that resulting fatigue might induce accidental injury.

The changing composition of the work force raised a host of problems. It was necessary to employ persons both older and younger than had previously been preferred. Although present from the beginning of the defense program, this tendency was strengthened by the drafting of workers under the Selective Service Act. Younger workers, because they are inexperienced, are somewhat more prone to accident but recover rapidly. Elderly workers, on the other hand, are less prone to accidents but have lower recuperative powers. A considerable increase in the employment of women occurred, and many of them performed services not customarily performed by women hitherto. The expansion and changing composition of the work force produced a corresponding increase in the need for supervisory talent. Since

the conduct of a safety program is a function of industrial supervision, the shortages of adequately trained supervisors and the difficulty of adapting many competent supervisors to a changing work force constituted a safety problem as well as a production problem. The supervisory problem was complicated by the increasingly active labor market, which limited the possibility of enforcing safety rules by disciplinary action.

Consulting engineers of compensation insurance carriers were thus asked to preach safety-mindedness to managements that were production-minded. They had to reach workers with safety suggestions with a minimum outlay of time. While watching for all the familiar danger signals, they had to be on the alert for new hazards resulting from the conversion of plants and manpower. They had to strive to secure more effective safety management at a time when industrial discipline was necessarily being relaxed. Yet safety was recognized as vital to conservation of manpower and as a prerequisite of efficient production. Plants which had been "getting by" for many years could not continue to do so and still maintain the pace of production. Such was the challenge of war production to the insurance engineer.

Nor were the insurance carriers without internal difficulties of their own in meeting this challenge. The armed forces claimed some of their most talented engineers, while others were drawn into war production. It was difficult to replace these employees at a time when a premium was placed on technical skill and when training was complicated by the rapidly changing industrial situation. Although most of the carriers were servicing a larger number of employees than before the outbreak of war, few of them were able to add to their engineering staffs. In this activity, as in others, the needs of the war came first. Many war firms asked insurance carriers to assign consulting engineers to their plants on a full-time basis. The bulk of available consulting engineers spent most of their time in plants working on war orders. Figures furnished the writer by two large carriers indicated that over 10 per cent of their consulting engineers were on special assignment to specific war firms; and that over 60 per cent spent most of their time in inspecting establishments with war orders. This meant a sharp reduction of inspection service for other establishments.

As in industry generally, shortages of materials created difficulties for insurance carriers as well. Consulting engineers were

compelled to wink at the continued use of equipment that was no longer safe but which could not be replaced for lack of priorities, and they had to devise methods of guarding against the hazards that resulted. All the recommendations of the engineers had to be placed in a new frame of reference: they had to be made with due regard to the possibility of following them where materials were required which were difficult to obtain.

In these circumstances, the contribution of the insurance carriers to industrial safety in war time appears all the more significant. "Many of these projects cannot be named today," said Captain R. F. Hill, "but it *can* be said that the insurance industry has followed the contractors wherever they have gone."¹ Like the merchant marine and the production lines in our war plants, the engineering departments of our compensation insurance carriers can claim their heroes. Assigned to specific plants, consulting engineers operated on patchwork schedules so that they might spend some time on every one of the three shifts. Frequently they slept on the premises. Sometimes consulting engineers anticipated new hazards before they claimed a single victim. At other times they took quick action to minimize the danger of a repetition.

One of the dangers resulting from war production was the intense concentration of activities that under normal circumstances were nonhazardous. In the airplane industry, for example, great quantities of radium-painted dials were installed in instrument panels. On a routine inspection a safety engineer's assistant took a sample of the air in the room where these dials were stored. In the laboratory of the insurance company the sample was found to contain a dangerous concentration of radon. As a result of this finding the concern distributed the stored dials among several storerooms, dissipating the gas and rendering it harmless. This action was taken before a single worker was affected.²

Another example of the effects of concentration in war plants was the growing dermatitis hazard. Although a skin infection, dermatitis does not usually result from allergies but from ma-

¹ R. F. Hill, "The Role of Insurance in the Defense Program," *Journal of the American Association of University Teachers of Insurance*, IX (March, 1942), p. 51.

² A. D. Little, "Fighting the 7th Column," *Boston Business* (December, 1942), p. 10.

terials which act as primary irritants, causing inflammation on any type of skin if contact is sufficiently intense. The two principal irritants are oils and solvents. Oil dermatitis has always been common in metal-working processes, and war production brought a considerable expansion in this field. Carbon tetrachloride, trichlorethylene, alcohol, kerosene, toluol, thinner, turpentine, and benzene are solvents used in great quantities in war plants. Careless use of carbon tetrachloride to clean the cords of parachutes resulted in severe dermatitis for several female employees. Inexperienced employees cleaning cartridges and shells with carbon tetrachloride and trichlorethylene worked with unprotected hands and suffered severe dermatitis. Workmen handling wax and resins in insulating materials for cables broke out not only on the hands and arms but also on the legs and bodies. Hot creosote administered under pressure as a preservative to ties, poles, and lumber used in shipbuilding also proved a major irritant.⁸

Safety engineers are aware that solvents that degrease inanimate substances will dissolve out the natural oils in the skin. Wherever possible hands and other exposed parts should be protected. Where contact is inevitable, frequent cleaning of the exposed parts and general personal cleanliness will be found useful countermeasures. An official of the engineering department of one large carrier described experiments carried on in the company laboratory to test the properties of a wax, ordinarily used but little, but used extensively in shipbuilding. As a result of these studies steps were taken to minimize the amount of handling and the number of workmen with unprotected hands. Supervisors were urged to encourage the utmost cleanliness.

In a period of serious labor shortage the particular site where an accident occurs becomes a matter of little moment. Absence from the job is equally disrupting whether it is an industrial, a home, or a travel accident. A certain foundry in western Pennsylvania went 212 days without a disabling accident—an excellent record. The chairman of the Regional Committee for Conservation of Manpower in War Industries, in congratulating the director, asked for a check on off-the-job accidents of the 1500 employees of this foundry. The check showed sixty-two disabling

⁸ C. A. Neslager, *Dermatitis, in War Industries*, Best's Insurance News, Fire and Casualty Edition, XLIII (December, 1942), 55ff.

accidents in two hundred and three days, five of them fatal.⁴ The emphasis in safety work shifted to an attack on industrial absenteeism however caused. Insurance carriers joined in the campaign against off-the-job accidents.

Early in 1941, voluntarily acceding to a request from the government for coöperation, the insurance carriers formed the Insurance Committee for the Protection of Industrial Defense Plants. Over four hundred carriers were represented on this committee. Its executive arm, called the National Bureau for Industrial Protection, coöperated with government departments in collecting reports of injuries to defense workers and in making inspections of defense plants. The Insurance Committee coöperated actively with the Office of Civilian Defense in preparing industrial standards. The related efforts of the American Standards Association in framing emergency safety codes for war production owed much to the collaboration of representatives of insurance carriers.

In 1942 a survey of conditions of health and safety in shipyards was jointly ordered by the Navy Department and the Maritime Commission. Dr. Philip Drinker of the Harvard School of Public Health and John Roche of the National Safety Council were retained to direct this survey. Minimum standards were subsequently formulated on the basis of their reports by representatives of labor and management and by shipyard safety supervisors and medical directors.

American industry had a better safety record during the second World War than during the first because the industrial safety movement had matured in the interim. This movement represents, in the first instance, the direct coöperation of safety-minded employers and workers in the productive process. They would readily acknowledge invaluable research and advice by others: state officials, manufacturers of safety appliances, and employees of insurance carriers. Their investigations and suggestions were especially fruitful during the war production crisis. Wars are fought on transportation, production, and morale fronts as well as on the battlefield. Greater industrial safety contributed directly to these supporting fronts and thus indirectly to the battlefield. The consulting engineer properly argues that workers and em-

⁴ R. L. Leffler, "Production for War," *Proceedings of the Pennsylvania Industrial Safety Conference . . . June 5, 1942*, p. 36.

ployers did the job, but he may also claim a generous share of the credit for the successful defense against rising injury frequency.

THE FUTURE OF INJURY PREVENTION

The attention which organized safety has directed toward the control of occupational disease in the last decade has been instrumental in the growth of the highly specialized field of industrial hygiene. Beginning with the problem of controlling toxic dusts, fumes, and gases, this endeavor is being broadened to cover other factors involved in working conditions, such as noise elimination, proper lighting, fatigue, temperature and humidity conditions, and the like. Absenteeism has been studied and the results have indicated many potentialities that have a direct bearing on accident prevention. Inadequate nutrition has been found to be a cause of accidents, and the value of health and nutrition educational programs is now well established.

Preventive medicine comes into the picture. Workers in good physical condition are better prepared to carry on their activities safely. Preëmployment and periodic checkup examinations are valuable adjuncts in the maintenance of health. Placement procedures taking into consideration the physical condition of workers are another phase of industrial medicine which can be expected to produce worthwhile results in the control of accidents. A program of preventive medicine in industry is warranted from a safety standpoint in that it can be expected to take over a wide range of activities which deal primarily with the indirect causes of accidents—health maintenance, nutrition, placement, and similar phases which have not been a part of conventional industrial safety in the past.

All these new approaches have extended and broadened the scope of the safety movement. The prevention of injuries in industry becomes a coördinated undertaking employing a large company of specialists—doctors, chemists, dietitians, psychiatrists, engineers, educators. A comprehensive safety program for industry in the future must include these contributors.

For fifty years there had been industrial nurses in some plants. The war dramatized the need for maximum attention to the health of industrial workers, and the profession of industrial nursing grew apace. Recently certain compensation insurance carriers,

recognizing this truth, provided a nurses' consulting service similar to the safety engineers' consulting service described above.⁵

Another field of social activity where the safety movement is faced with a test and challenge concerns the gainful employment of physically handicapped persons. In the past, thousands of afflicted or partially handicapped persons have been barred from profitable employment because—to put it bluntly—they were regarded as hazards to themselves and to the persons with whom they might work. Recent events in industry have proven that handicapped persons properly trained and adapted for suitable occupations can be safely employed. This is a social gain; it results in wider utilization of skills and manpower; it adds to the sum of human happiness.

In addition to the placement of handicapped persons, there is the problem of rehabilitating injured persons to enable them to return as promptly as possible to their normal occupations; and in those cases where complete recovery is not possible, to carry on rehabilitation to obtain the maximum partial recovery. Industrial physicians have specialized for years in the treatment of industrial injuries. From their work have stemmed the techniques and procedures now producing such outstanding results in rehabilitation clinics.

The handicapped workers came into their own during the war production crisis. The need for rehabilitating injured workers was also highlighted by the return of wounded soldiers from the battlefronts. The Center for Safety Education of New York University, supported by the Association of Casualty and Surety Executives, began studies of physically disabled workers. The Liberty Mutual Insurance Company opened a rehabilitation center for the treatment of handicapped persons at Boston.

This endeavor to minimize the disability resulting from injury includes not only proper medical and surgical treatment and rehabilitation procedures, but also the services of specialists in mental adjustment—psychiatrists. These activities are a test of human knowledge and understanding. The results already being achieved are spectacular.

Projects such as these are coöperative undertakings. They engage—as they should—the interest of entire communities. Their influence on industrial injury rates is of vital concern to employers

⁵ See Chapter XXI.

and workers and to the organizations with which each group affiliates. Regulatory agencies and insurance carriers with their experience and facilities can be and have been of outstanding service. The future of this movement is the principal hope of the workmen's compensation system.

APPENDIX

COMPARATIVE BENEFIT COST OF VARIOUS WORKMEN'S COMPENSATION LAWS
(FIGURES FROM NATIONAL COUNCIL ON COMPENSATION INSURANCE, AS OF
JANUARY 1, 1940)

State	Fatal	P. T.	Permanent		T. T.	Medical and hospital	Total	Benefits provided in law of
			Major ^a	Minor ^b				
New York	1.000	1.000	1.000	1.000	1.000	1.000	1.000	7-1-39
Alabama . . . . .	.424	.322	.553	.750	.795	.912	.741	3-17-39
Arizona	1.089	.897	.773	.867	1.232	.957	.994	6-8-39
California . . . . .	.571	.577	.643	.737	.913	1.000	.828	9-19-39
Colorado . . . . .	.453	.644	.587	.397	.577	.957	.669	8-13-37
Connecticut . . . . .	.501	.341	.807	.741	.783	1.000	.811	7-1-39
Delaware . . . . .	.339	.226	.481	.587	.736	.802	.642	4-12-39
Dist. of Columbia . . . . .	.772	.414	1.016	1.013	.974	1.000	.960	6-24-38
Florida . . . . .	.487	.244	.592	.751	.886	.994	.798	7-1-37
Georgia . . . . .	.393	.242	.506	.683	.704	.969	.717	2-14-39
Idaho . . . . .	.553	.515	.650	.653	.779	1.000	.784	5-2-39
Illinois . . . . .	.539	.625	.748	.937	.883	1.000	.865	7-24-39
Indiana . . . . .	.498	.289	.666	.777	.754	.957	.775	6-7-37
Iowa . . . . .	.501	.292	.523	.550	.645	.994	.709	7-4-37
Kansas . . . . .	.498	.321	.626	.764	.807	.969	.785	6-30-39
Kentucky . . . . .	.495	.305	.455	.578	.856	.957	.734	4-20-38
Louisiana . . . . .	.438	.339	.583	.644	.925	.944	.770	7-27-38
Maine . . . . .	.514	.327	.785	1.220	.866	.784	.829	7-21-39
Maryland . . . . .	.608	.343	.683	.741	1.095	.969	.861	6-1-39
Massachusetts . . . . .	.660	.769	.664	.555	1.046	.994	.841	11-9-39
Michigan . . . . .	.579	.400	.575	.759	.912	.957	.808	5-16-39
Minnesota . . . . .	.754	.511	.868	.913	.984	1.000	.926	4-23-36
Missouri . . . . .	.617	.540	.659	.920	1.127	.944	.892	9-14-31
Montana . . . . .	.628	.359	.524	.444	.837	.963	.744	7-1-39
Nebraska . . . . .	.562	.594	.716	.787	.833	1.000	.830	8-14-37
Nevada . . . . .	.919	.703	.622	.722	1.166	.988	.917	7-1-39
New Hampshire . . . . .	.502	.214	.531	.517	.927	.877	.721	7-1-39
New Jersey . . . . .	.506	.882	.735	.956	.944	.877	.836	8-2-39
New Mexico . . . . .	.467	.411	.601	.524	.827	.957	.738	6-12-37
New York	1.000	1.000	1.000	1.000	1.000	1.000	1.000	7-1-39
North Carolina . . . . .	.793	.294	.633	.805	.885	.988	.855	3-30-39
North Dakota . . . . .	.998	.664	.813	.715	1.169	1.000	.962	7-1-39
Ohio . . . . .	.720	.856	.763	.832	.878	.938	.855	8-28-39
Oklahoma . . . . .	.619 ^o	.418	.745	.856	.956	.938	.851	5-12-39
Oregon . . . . .	.852	.524	.522	.584	.978	.938	.819	6-14-39
Pennsylvania . . . . .	.493	.375	.780	.858	.873	.858	.795	7-1-39

APPENDIX (Continued)

State	Fatal	Permanent Partial		T. T.	Medical and hospital	Total	Benefits provided in law of	
		P. T.	Major ^a Minor ^b					
Rhode Island . . . .	.686	.476	.982	1.158	.924	1.000	.958	4-27-37
South Carolina . . .	.794	.319	.663	.843	1.102	.988	.906	7-1-37
South Dakota . . . .	.378	.178	.554	.687	1.042	.920	.779	7-1-39
Tennessee . . . . .	.420	.269	.454	.580	.719	.833	.656	4-22-33
Texas . . . . .	.638	.319	.561	.716	.906	.981	.808	5-1-39
U. S. Long. Act. . . .	.772	.414	1.016	1.013	.974	1.000	.960	6-25-38
Utah . . . . .	.626	.702	.631	.550	.989	.969	.814	5-9-39
Vermont . . . . .	.320	.184	.503	.477	.678	.710	.578	7-1-39
Virginia . . . . .	.487	.304	.569	.710	.772	.969	.757	6-21-38
Washington . . . . .	.927	.607	.554	.642	.920	1.000	.853	6-8-39
West Virginia . . . .	.724	.799	.701	.895	.932	.988	.886	3-11-39
Wisconsin . . . . .	.816	1.073	1.645	1.228	1.248	.969	1.145	9-15-39
Wyoming . . . . .	.609	.366	.755	.588	1.025	.994	.841	2-23-39

^a Major permanent partial disability is defined as the loss or loss of use of a hand, arm, foot, leg, or eye and the loss of hearing in both ears. Also partial loss of use is related to the benefits for total loss of use.

^b Minor permanent partial disability is defined as loss or loss of use of thumb, finger, toe, etc.

^c A figure based on actual experience has been substituted for the Oklahoma fatal value. This departure is necessary because of peculiarities in the law.

Source: Table and explanation supplied by A. Z. Skelding, actuary, National Council on Compensation Insurance.

Examples of Use of Table

The figures shown in column (7) for Georgia and New York are .717 and 1.000 respectively. This indicates that, on the basis of this table, the ratio of Georgia benefits to New York benefits for all kinds of injury is $\frac{.717}{1.000}$, or that Georgia benefits average $\frac{717}{1000}$ of the New York benefits.

The figures shown in column (2) for Colorado and Montana are .644 and .359 respectively. This indicates that *on the average*, and on the basis of this table, the Montana benefits for permanent total disability are $\frac{359}{644}$ of the corresponding Colorado benefits.

Caution:

The index numbers shown are subject to qualification and limitation because of the many elements entering into the computations which are not subject to exact mathematical valuation. In addition, the index of cost under the "Total" column is a weighted average and is correct in a general way only. The distribution of accidents by type of injury varies between states and will, there-

fore, be somewhat different in each case from the national distribution or from the distribution of any other set of weights which might be used to obtain an average. For these reasons the index numbers of this table cannot be interpreted as representing without qualification a mathematically exact comparison of the benefit provisions of the various compensation acts. Accordingly, when using this table or quoting therefrom, it is essential to realize its limitations.

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