

New approach to occupational safety and health statistics

New mandatory recordkeeping program
covers almost 60 million workers
and will provide Nation
with a more accurate toll
of job-related injuries and illnesses

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THE BUREAU OF LABOR STATISTICS currently is conducting the Nation's most intensive survey of work injuries and illnesses. The new program is authorized by the Occupational Safety and Health Act of 1970 which is designed to strengthen and enforce work-related safety and health standards. Booklets, instructions, and report forms have been mailed to 50,000 establishments, the first group to participate in the Bureau's only mandatory recordkeeping program.

Current estimates indicate that 14,500 Americans are killed and more than 2 million injured on the job every year. But these figures understate the true extent of occupational injury and illness.

Under the act, the Bureau's role is to revamp the Government's approach to collecting work injury statistics. Virtually all employers throughout the country are required to participate. And the records they are maintaining will be more complete than ever before. By including nearly all employers, the Bureau is greatly expanding its statistical universe, to almost 60 million Americans at about 5 million workplaces. Employees protected by other Federal occupational safety and health laws, such as the Coal Mine Health and Safety Act, are excluded from coverage, as are State and local government employees, but participating States will provide comparable coverage for their employees in the near future.

The scope of recordable injury and illness has been widened to present a more realistic picture of the losses incurred. Every work-related injury or illness which involves loss of consciousness, requires medical treatment, or prevents an employee from carrying out all of his regularly assigned duties must be recorded. No longer can the incidence of injury

be masked by transferring the worker to a new job or by retiring or firing him. Only simple first-aid cases may be excluded.¹

The act calls for a rigorous, accurate set of statistics to bolster standard setting and compliance activities and directs the Secretary of Labor, in consultation with the Secretary of Health, Education, and Welfare, to "develop and maintain an effective program of collection, compilation, and analysis of occupational safety and health statistics." The Secretary of Labor has assigned to the Bureau of Labor Statistics the responsibility for this program.

Work injury statistics represent the oldest program in the Bureau of Labor Statistics. The first domestic study in this field—investigating the iron and steel industry accident experience—was carried out by the Bureau in 1910. By 1925–26, the Bureau was beginning to establish frequency and severity accident rates by industry, using State records.

In 1937, the Bureau began compiling data through use of the Z16.1 standard, developed by the forerunners of the American National Standards Institute. The standard was revised in 1945, 1954, and 1967. However, under the Z16.1 classifications, the system was based on voluntary State and company reporting, and it became evident that industrial accident statistics were frequently incomplete.

In 1969, Secretary of Labor J. D. Hodgson (then the Under Secretary) noted in a letter to the Institute that a proposed occupational safety and health act called for a national mandatory system for the collection of safety and health statistics. He asked the Institute to evaluate the effectiveness and applicability of the Z16.1 standard as the standard for such a national system. In response, the Institute formed a study group to "review available reporting methods and standards of reporting injuries on a nationwide basis and if necessary develop a simple method of reporting injuries."² The study group found that for a mandatory national reporting system the Z16.1

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standard with its detailed severity charges for different kinds of injuries and for special exceptions was too complex. The standard was also criticized as too insensitive to measure trends in injury experience.

Exceptions and provisions for transfer to other jobs resulted in extremely low injury frequency rates for knowledgeable firms. In some cases, the Z16.1 standard was used only to make comparisons with experiences of other companies; different definitions of work injuries were used for internal purposes. Finally, the study group found that the standard was not adequate for recording information about occupational illnesses. (In fact, no information on occupational illnesses was recorded.) The group recommended a new comprehensive system.

The proposals were circulated for comments among various associations, the Labor and Business Research Advisory Committees of the Bureau, other Federal agencies, and other interested parties. A Federal interagency committee, established to review these comments, concerned itself with needs of compliance as well as statistics.

The recordkeeping regulations published by the Labor Department in the *Federal Register* on July 2, 1971, incorporated many of the suggestions and recommendations received, including most of the study group's proposals. In the ensuing months, as the recordkeeping system became operable, further revisions were found necessary to avoid undue burden on employers.

The recordkeeping system

The recordkeeping system stipulated under the Occupational Safety and Health Act is designed to obtain reliable, current, and uniform information about occupational injuries and illnesses at the workplace. It is the basic source of data for the statistical program. In addition, the system will provide OSHA and State safety inspectors with on-the-spot records of each occupational accident. The maintenance of records will also serve to heighten employers' awareness of safety and health problems.

The recordkeeping system involves the use of three forms on which to record work-related injuries and illnesses: a log of occupational injuries and illnesses, a supplementary record of occupational injuries and illnesses, and a summary of occupational injuries and illnesses.³ None is a *report* form—all are to remain at the workplace and be available at reasonable times for examination by representatives of the Department of Labor or the Department of

Health, Education, and Welfare, or States accorded jurisdiction under the act. The records are to be retained at the workplace for 5 years.

An occupational injury or illness must be entered on the Log of Occupational Injuries and Illnesses (OSHA Form 100) within 6 working days after notification of the case. This form contains columns for entering the date of injury (or of initial diagnosis of illness), occupation of injured or ill employee, department to which employee was assigned, nature of injury or illness, and part of body affected. Each case is also to be classified either as an injury or as one of seven classes of illnesses. In the case of a fatality, the date of death is also entered.

When cases involve one or more lost workdays (but not death), the number of lost workdays is entered; nonfatal cases without lost workdays (for example, temporary loss of consciousness) are also indicated. It is hoped this breakdown will eliminate the problem of losing track of accidents which resulted in transfer or termination of employment before lost workdays occurred.

The log provides substantial information about each recordable case and should be of considerable assistance to Federal and State compliance officers. A quick examination of the log will tell, for example, what occupations or departments are incurring injuries and illnesses and will indicate areas to be checked during safety inspections.

The log also acts as a worksheet to organize information needed for the Summary of Occupational Injuries and Illnesses (OSHA Form 102). This form contains a summarization of all log entries for a calendar year and must be prepared and posted by February 1 in each establishment at a location where the employer customarily posts notices to his employees.

In addition to the items entered on the log, additional information must be recorded within 6 days on the Supplementary Record of Occupational Injuries and Illnesses (OSHA Form 101). Such information is chiefly concerned with the accident or exposure which resulted in injury or illness. While use of OSHA Form 101 is not mandatory, all information called for on the supplementary record must be available in some form in the establishment. Nearly all of these items are usually found on workmen's compensation or insurance forms, which may be used as long as they contain all the information required on the supplementary record. Missing items can be appended to one of these alternate forms to make them acceptable.

Location of records

Another important provision of the new law concerns the location of records. Records must be kept at the lowest possible organizational level. This has a twofold purpose: To provide records for the use of compliance officers near the point of operations, and to assure that the statistics accurately reflect the size and activity of the reporting unit. In particular, the system is designed to avoid the pooling of information from large numbers of small establishments into companywide reports; for example, that one report present the combined records of such diverse activities as central office, warehousing, production, and maintenance. Such reports, in which low accident sectors (administrative) dilute high ones (production), may mask important trends. In addition, the pooling of records of several sawmills could hide the fact that one is particularly unsafe.

The basic recordkeeping unit is the *establishment*, defined as a single physical location where business is conducted or where services or industrial operations are performed. Distinctly separate activities, such as contract construction activities at a lumberyard, are to be treated as separate establishments. Firms which are physically dispersed, such as those in construction or communications, may maintain records at the place where employees report each day. In addition, these records must be kept in such a way that they can be available without delay and at reasonable times for examination by compliance officers. The widespread computerization of company records forced some modifications of this procedure; however, even where some central recordkeeping is permitted, copies of all pertinent forms must be present in the establishment within specified periods.

Petitions for variance

An employer may wish to define "establishment" in a different manner, keep records in a place other than the establishment, or keep records different from those required in the regulations. If so, he may petition the appropriate Regional Director of the Bureau of Labor Statistics. He must identify the establishment(s) for which an exception is sought, describe the proposed alternate procedure, explain the reason for the exception, and file a statement that the employees concerned have been notified. To meet the last requirement, an employer has several options. He can give a copy of the petition for excep-

tion to his employees or their authorized representative, or he may post a statement summarizing the petition and specifying where a copy of it may be examined. The employees and their representatives must also be notified that they have 10 working days following receipt of notice to submit a written objection to the Regional Director.

When an employer seeks relief for establishments located in more than one region, the petition must be referred to the Assistant Commissioner for Occupational Safety and Health Statistics in Washington, D.C.

The Regional Director or the Assistant Commissioner, as the case may be, may grant the petition for exception if he finds that the proposed procedure will provide equivalent information and will not interfere with the purposes of the act. Notice of the grant of a petition must be published in the *Federal Register*.

Most employers have now been formally notified that they are responsible for keeping records of work-related injuries and illnesses. The Bureau prepared a recordkeeping booklet which contained the necessary forms, instructions for completing them, a copy of the poster which must be displayed in each workplace to inform employees of their rights and responsibilities, and a summary of the act. Over 5 million copies of this booklet were mailed to employers registered on the Social Security Administration's extensive mailing lists.

Conceptual changes in recordkeeping

All covered employers must maintain records as set forth in the regulations and must comply with reporting requirements if specifically requested. Congress intended the broadest possible coverage for the act and defined a covered employer as "a person engaged in a business affecting commerce who has employees, but does not include the United States or any State or political subdivision of a State." Accordingly, this has been interpreted to include virtually all nonpublic employment.

The law's definitions of recordable occupational injuries and illnesses represent the most dramatic change from the Z16.1 standard. The definitions of recordable cases start with specific instructions from Congress; that is, the act says employers shall record and report and the Department of Labor shall compile statistics on work-related deaths, injuries, and illnesses, other than minor injuries requiring only

The safety law in brief

The law which is designed to protect the American worker at the workplace is the Williams-Steiger Occupational Safety and Health Act of 1970. Key aspects of the law—standard setting and enforcement, intergovernmental cooperation, research, and statistics—represent a radical change in the approach to occupational safety and health. The main thrust is that every employer must ensure a place of employment free of recognized hazards.

Developing and enforcing safety standards at the workplace is the responsibility of the Secretary of Labor. (Safety and health standards are sets of rules for avoiding hazards which have been proved by experience or research to be harmful to the safety or health of workers.) Within the 2-year limit set by the act, the Secretary may accept existing Federal standards, such as those affecting contractors under the Walsh-Healey Act. Or he may promulgate as occupational safety and health standards any national consensus standards, such as those developed by the American National Standards Institute or the National Fire Protection Association. (Some standards apply to all employees. An example would be those dealing with fire protection. Many standards, however, apply only to workers engaged in certain types of work, such as handling compressed gases.) If there is conflict among standards, the Secretary of Labor is to select the one which offers the greatest protection to employees.

To provide for instances of grave danger to employees, the act also allows for the creation of emergency temporary standards effective immediately upon publication in the *Federal Register*; they must be replaced by permanent standards within 6 months.

The Secretary may also promulgate, modify, or revoke any occupational safety or health standard when presented with justifying evidence. He is empowered to set up an advisory committee of not more than 15 members (at least 1 of whom is to be selected by the Secretary of Health, Education, and Welfare) to study the available information and submit to him its recommendations regarding the standard within 90 days, or, in special cases, within 270 days.

The proposals will be published in the *Federal Register*, and within 60 days after a period for

public comments the Secretary must decide on the standard.

Finally, the new law provides machinery for employers to petition the Secretary for a temporary variance from a standard while they seek to comply with it.

The Secretary of Labor is responsible for enforcement of the act. Authorized representatives from the Departments of Labor and Health, Education, and Welfare may enter an establishment at any reasonable time. Two persons, representing the employer and the employees, may accompany the inspector on his visit. Significantly, warning of an impending visit by an inspector is prohibited except by approval of the Secretary.

Noncompliance with standards or failure to maintain adequate records or to satisfy posting requirements may result in written citations describing the violation and fixing a time limit for correction. The law requires that employers post citations prominently at or near the site of the alleged violation. Civil and criminal penalties up to \$10,000 and/or 6 months' imprisonment may be imposed for violations of standards, rules, or orders.

Employers may contest citations, penalties, or abatement periods if they notify the Secretary within 15 days of receiving notification of an alleged violation. Appeals are to be handled by the three-member quasijudicial Occupational Safety and Health Review Commission, whose rulings may be appealed to the U.S. Court of Appeals.

The act encourages the States to assume responsibility for developing and administering occupational safety and health laws and for carrying out their own statistical programs. Any State may adopt a plan for developing and enforcing standards if it meets Federal criteria.

Federal interagency cooperation is involved in areas specifically excluded from the act and regulated by other government occupational health and safety standards. For example, the Department of Health, Education, and Welfare, working through a new National Institute for Occupational Safety and Health, is carrying out research and related activities, including work on occupational illness, an area heretofore largely ignored.

first-aid treatment. In addition, the act specifically includes medical treatment cases; cases in which there is a loss of consciousness; cases in which there is a restriction of work or motion; and cases in which there is a transfer to another job. All of these cases, as defined in the act, are "recordable" occupational injuries and illnesses.

These recordable cases are divided into three classes—fatalities, lost workday cases, and nonfatal cases without lost workdays. Under the new system lost *workdays*, not calendar days, are counted; likewise, those cases where a worker is put on a temporary job and those where an injured employee can work at his own permanent job but either cannot perform all of the functions or cannot perform all day.

The former concept that no time was lost (hence, that no injury was to be recorded) as long as the employee could carry out another established and available job has been eliminated; any change in occupation caused by an occupational accident or illness is now considered as recordable. This change alone should result in a substantial increase in recorded occupational accidents and illnesses.

Another significant change in the recording procedure is the elimination of the old time-charge system. The Z16.1 standard assigned fixed-time charges for fatalities and permanent disabilities and measured time lost for other injuries in terms of calendar days; under the new system, the exact number of lost workdays is to be recorded. Recording procedures concerning fatalities are also changed. Unlike the old system, which arbitrarily assigned a charge of 6,000 workdays per death (the estimated equivalent of 20 years of lost workdays), the new system requires no time-charge for fatalities. In cases where an employee dies after returning to work as the result of a lingering illness or injury, employers are required to correct their records.

The reporting system

The new reporting system is also conceptually different from the old system. First of all, the base for reporting injury frequency rates will be 100 full-time employees as opposed to the million employee hours previously used.⁴ Second, as a result of the changes in recordable injury and illness classifications, all Z16.1 measures such as severity rates, average days charged per permanent-partial disabling injury, and so on, will no longer be available. In their place will

be a series of OSHA-based measures, such as injury and illness incidence rates, lost workday cases, and number of lost workdays.

Regulations concerned with reporting requirements and the report form were published in the *Federal Register* in late 1971. The report form OSHA 103, which is mailed to establishments selected to participate in the surveys, collects the information found on the yearly summary form (OSHA 102). In addition, it collects information concerning the establishment's principal product or service, employment size and hours worked, and medical provisions in case of accidents. Employers are required to return the completed OSHA 103 to Washington or the participating State within 3 weeks.

Data collection

The Bureau is using a mail survey to collect data for the second half of 1971. The survey covers 50,000 establishments and data collection began in February 1972. The first annual survey will cover more than 200,000 establishments, with data collection beginning in January 1973.

Panels in each annual survey period will be divided into two groups: The national direct sample, in which establishments in States not participating report directly to the Bureau of Labor Statistics, and the cooperating State sample. In both cases, the source for sample selection will be the State unemployment insurance files or similar records. In each survey, all employers with 100 employees or more will be required to submit a report. Those with fewer than 100 employees will be sampled by size each year on a rotational basis.

The survey will produce injury and illness incidence rates and other measures for manufacturing at the 4-digit Standard Industrial Classification level and for nonmanufacturing at the 3-digit SIC level. (SIC levels are numerical assignments to levels of industry; thus, the more digits in an SIC code, the more specialized the industry it describes.) Mining and Federal Government employees will be excluded from the surveys, and agriculture, forestry, fisheries, and State and local government personnel will be excluded from the first survey. Occupational injury and illness data for many of these industry sectors will be available, however, from other surveys or sources.

Federal grants are available to States that wish to participate in the program. The initial phase, plan-

ning grants, is designed to assist States in preparing their statistical programs for participation in the annual national survey. The Federal share in the planning grants is generous, covering up to 90 percent of the planning budget. As of January 1972, 48 States, three territories, and the District of Columbia had submitted project statements and been authorized planning grants.

Operational grants will be assigned to States as they join in the annual collection of work injury and illness statistics. These grants will be assigned on a yearly basis and will follow a 50-50 Federal-State formula. Federal assistance is also available to States on a 90-10 basis for experimentation and demonstration projects relating to the statistical program.

The Bureau's regional offices are playing an important role in the statistical program. A chief function is to assure the adequacy and quality of cooperative State data by providing training and assistance and monitoring State agency operations in the survey.

Research and special studies

Research under the Occupational Safety and Health Act plays an important role in the Bureau's program. This research will fall primarily into three categories.

First, there will be the traditional cause and rate studies. These will examine characteristics of the injured worker (focusing on age, sex, occupation, and exposure time) and the accident itself. "Situational studies" will provide in-depth information about accidents involving a particular machine or tool, exposure to certain substances like toxic chemicals or

flying pieces of metal, and potential environmental hazards.

Measuring and evaluating the impact of the occupational safety and health act will be the second area of research. Findings will be reviewed by the Secretary of Labor in making his annual progress report, required by the act.

The final broad area of concern will be the socio-economic cost of occupational accidents and disease. While consideration will be paid to the costs of these accidents to industry groups and the economy as a whole, much attention will focus on the company and the individual involved—lost production, retraining, curbed earning power and ruined careers, and family adjustment to a disabled breadwinner. □

FOOTNOTES

¹ First-aid treatment is defined as "one-time treatment and subsequent observation of minor scratches, cuts, burns, splinters, and so forth, which do not ordinarily require medical care." (From *Definitions* on back of OSHA No. 100.)

² *Proposed National System for Uniform Recording and Reporting of Occupational Injuries and Illnesses* (New York, American National Standards Institute, 1970), p. 10.

³ Copies of these forms are available free of charge from the Bureau of Labor Statistics, Washington, D.C. 20212, or from any of the regional offices.

⁴ The incidence rate is calculated as:

$$\frac{N}{MH} \times 200,000$$

where

N = number of injuries and/or illnesses

MH = total hours worked by all employees during reference year

200,000 = base for 100 full-time equivalent workers (working 40 hours per week, 50 weeks per year)