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BY THE COMPTROLLER GENERAL

Report To The Congress

OF THE UNITED STATES

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How Can Workplace Injuries Be Prevented? The Answers May Be In OSHA Files

Each year several thousand workers are killed and many others are seriously injured in workplace accidents. Why do these accidents happen? Could they be prevented if Federal or State occupational safety and health standards are complied with?

Although the Labor Department's Occupational Safety and Health Administration (OSHA) and States investigate workplace fatalities and serious accidents, OSHA does not collect and analyze the investigation results to find out how to prevent such accidents.

Such collection and analysis could help OSHA and the States to

- develop standards to cover conditions that can cause death or serious harm,
- alert inspectors to look for hazards when inspecting workplaces, and
- improve programs to educate workers about the causes of fatalities and serious accidents.



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To the President of the Senate and the
Speaker of the House of Representatives

This report discusses the need for the Occupational Safety and Health Administration to refine its accident data collection system and make greater use of the information it collects from accident investigations.

We made this review because of congressional and public interest in the elimination and reduction of hazards which can cause death and other serious workplace accidents.

We are sending copies of this report to the Director, Office of Management and Budget, and the Secretary of Labor.

James B. Stacks
Comptroller General
of the United States



D I G E S T

The Department of Labor's Occupational Safety and Health Administration (OSHA) has information in its files on the causes of serious work-related accidents yet is not using this to develop measures to prevent accidents from recurring.

Because of this, OSHA does not know

- to what extent fatal accidents could have been avoided had safety and health regulations been enforced,
- what standards need to be developed or revised, and
- what violations cause death or serious accidents.

Thousands of workers die each year from work-related accidents, and many others are injured seriously. Many of these accidents are caused by hazardous situations which occur repeatedly and are avoidable.

The Congress intended that OSHA give priority to eliminating or reducing the causes of deaths and disabling injuries. The agency obtains information on accident causes from its investigations. OSHA and State compliance officers investigate over 5,000 serious accidents annually.

These investigations produce the most complete and relevant information available on the causes of the most serious workplace accidents. OSHA codes information developed from its accident investigations and places it in a computerized data system. However, the coded information does not provide the detail needed to identify accident causes and trends accurately.

The usefulness of the data collected is impaired because:

- Some relevant information is not collected or reported, and collected data are categorized in ways that limit their comparability. (See p. 4.)
- Information from accident investigations by State compliance officers is not included, limiting the information about hazards and the potential to identify accident trends. (See p. 8)
- Collection and analysis of data have not been coordinated to insure that the system produces what management needs. (See p. 9.)

Information from accident investigations has not been used in conjunction with other accident data to direct program efforts. With such information, staff that develop or enforce standards or provide training could direct their efforts more effectively toward eliminating the most serious workplace hazards.

GAO found that:

- Workplace hazards causing fatalities were not covered by standards, but could be, for 12 percent of the cases examined. Most of these hazards were not being dealt with in standards development projects. (See p. 12.)
- Emphasis has not been placed on inspecting the types of worksites with the greatest number of serious accidents. The industries in which 30 percent of the fatalities occurred were receiving less than 18 percent of OSHA's self-initiated inspections, and small workplaces received a larger share of inspections than their proportion of serious accidents. (See p. 23.)

--Education and training programs have not been focused on the industries and occupations most frequently having serious accidents. OSHA has access to nationwide information on causes of serious accidents, but it has not provided such information to industries and labor groups so that they can identify and reduce such hazards voluntarily. (See p. 27.)

Accident data and specific information on the causes of serious accidents have been useful in directing the safety programs of State and private organizations. Accidents have been significantly reduced by programs in which accident data and investigation information were used to identify where and why accidents happened. (See pp. 18, 26 and 34.)

RECOMMENDATIONS TO LABOR

To help prevent fatalities and other serious workplace accidents, the Secretary of Labor should direct the Occupational Safety and Health Administration to

- define and designate the responsibility for data collection and analysis, and require that program offices' needs be surveyed and recognized in data systems designs;
- revise procedures for reporting investigation information to better classify and describe hazards causing serious accidents and countermeasures to help prevent similar accidents;
- establish lists of hazards which warrant special emphasis in standards development, enforcement, and education and training;
- provide information on the causes of fatal and other serious accidents for industries and labor groups to use in identifying hazards and preventing accidents;
- have States submit information on State accident investigations and incorporate such information into the data system; and

--require each major program office to report annually on how its activities were directed at areas with the highest number of fatal and other serious accidents and the results of their efforts.

achieved
AGENCY COMMENTS

Labor agreed that information from investigations of serious accidents and fatalities can be useful. Labor said that OSHA was working to improve the accuracy and completeness of its accident investigation information, and plans to develop an approach to investigations which focuses on identifying standards needs.

Labor also expressed some concerns about its ability to collect and use accident investigation data. It believes GAO's report did not reflect sufficiently OSHA's efforts to develop and use accident and fatality data. (See p. 39.)

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ABBREVIATIONS

GAO	General Accounting Office
OSHA	Occupational Safety and Health Administration

CHAPTER 1

INTRODUCTION

A maintenance employee needed to work on a crane's upper structure. A pallet was placed on a forklift and a ladder on the pallet. A forklift driver was elevating the pallet with the maintenance worker on the ladder when the forklift malfunctioned, causing the pallet to tilt suddenly. The worker lost his balance and fell to his death.

Could this accident have been prevented by proper maintenance and testing of equipment, training of workers, creation of awareness of hazardous procedures, or improved worker supervision? Could the Occupational Safety and Health Administration (OSHA) help prevent similar accidents through its standards development, enforcement, or information and education programs?

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Each year several thousand work-related deaths occur in the United States. The Department of Labor estimated that in 1977 4,760 private industry workers died from work-related injuries and illnesses and about 5.3 million were injured. Hazardous situations can cause fatal accidents and a large number of disabling and nonserious accidents. This report discusses (1) the availability and use of accident information to identify workplace hazards which cause serious accidents and (2) actions taken to prevent such accidents.

FEDERAL AUTHORITY AND RESPONSIBILITY

The Occupational Safety and Health Act of 1970 (29 U.S.C. 651) was passed to promote the creation of safe and healthful working conditions nationwide. An estimated 5 million business establishments are subject to the 1970 act. Labor was given primary responsibility for administering the act and delegated this responsibility to OSHA, which was created on April 28, 1971.

OSHA is responsible for establishing national occupational safety and health standards, promoting compliance with the standards through employer and employee information and education programs, and enforcing the standards through workplace inspections. OSHA administers its inspection and related compliance activities through 10 regional offices and 87 area offices.

Also, the act provides that any State may enforce safety and health standards provided that its standards and enforcement are, or will be, at least as effective as OSHA's. As of January 1, 1979, 24 States 1/ were operating under OSHA-approved plans. Federal matching grants of up to 50 percent of total costs are provided to assist in executing approved State programs, including administration, standards development, enforcement, consultation, and training and education. In fiscal year 1978, grants totaling about \$30 million were awarded to States and jurisdictions with approved State plans.

INVESTIGATION OF FATALITIES

The act's primary purpose, as stated in House Report 91-1291, is to prevent death and disability. Accordingly, OSHA procedures provide for the investigation of fatal and other serious workplace accidents.

OSHA's accident investigations are to determine whether a violation of Federal safety and health standards contributed or may have contributed to the accident, whether the accident could have been avoided had proper safety and health regulations been enforced and followed, and whether OSHA standards should be revised or new standards developed to cover hazards contributing to the accident. OSHA investigates job-related accidents if one or more of the following criteria are met:

- There are one or more fatalities.
- Five or more employees are hospitalized for more than 24 hours.
- The accident is of national importance, involves extensive property damage, and could have caused death or multiple injuries.
- The accident is widely publicized.

During fiscal year 1977, OSHA made 57,751 inspections and 1,783 accident investigations involving 1,612 fatalities. In the same period, States with approved plans made about 140,000 inspections and about 3,600 accident investigations.

1/Connecticut's plan covers only the public sector.

SCOPE OF REVIEW

We attempted to determine whether OSHA's accident data system is adequate in identifying actions necessary to help prevent accidents and whether OSHA was using such information to direct its standards development, compliance, education, consultation, and information programs at areas with the greatest potential for preventing serious accidents.

Our review included work at the following offices:

- OSHA headquarters office, Washington, D.C.
- OSHA area offices in New Orleans, Louisiana; Jackson, Mississippi; and Dallas, Texas.
- State occupational safety and health headquarters offices in California and Michigan.

OSHA is responsible for inspections in Louisiana, Mississippi, and Texas; California and Michigan perform inspections under OSHA-approved plans.

Our review included discussions with OSHA and State officials responsible for administering the compliance, safety standards, education, consultation, and information programs. We examined laws, regulations, procedures, directives, standards, and records on these activities. We contacted safety officials in 15 private firms and determined the extent to which they used accident data to direct safety activities and measure results.

CHAPTER 2

NEED FOR BETTER INFORMATION

ABOUT SERIOUS ACCIDENTS

OSHA needs reliable accident information to effectively plan, conduct, monitor, and evaluate its activities. Information is needed to identify (1) the areas where OSHA programs have the greatest potential for helping to prevent serious accidents and (2) the hazards needing abatement. Although accident information available to OSHA could help meet these needs, OSHA's practices and methods of recording, classifying, and collecting the information had limited its usefulness. The usefulness of accident information has not been fully realized because

- some useful data are not collected or reported and collected data are categorized in ways that limit their comparability,
- information from State accident investigations is excluded from OSHA's data system, and
- data collection and analysis activities have not been adequately coordinated to assure the data provided by the system is what the program managers need.

Improvements in data collection methods and policies should help OSHA more effectively direct program activities toward eliminating workplace hazards which frequently cause serious accidents.

ACCIDENT DATA NOT USED

The Occupational Safety and Health Act of 1970 directs the Department of Labor to "develop and maintain an effective program of collection, compilation, and analysis of occupational safety and health statistics." Primary responsibility for data collection has been delegated to the Bureau of Labor Statistics, but OSHA also has a system which collects information from its accident investigations. The information from these two sources is different in composition and level of detail. The Bureau of Labor Statistics makes a nationwide survey annually and estimates incidence rates on accidents and lost workdays. OSHA uses the annual survey data in establishing its inspection priorities. The data are provided to contractors and grantees for use in

OSHA-sponsored consultation, education, and training programs. The survey data do not differentiate between minor, disabling, and fatal accidents.

The OSHA data system contains information from Federal compliance officers' investigations of serious accidents. Data are recorded for each case investigated. The data system contains information on the (1) number of workers killed or hospitalized, (2) size and type of employer, (3) causal and other factors associated with the injury (i.e., injured part of body, source of injury, type of accident, contributing environmental factors, and contributing human factors), and (4) specific standards' violations related to accidents. In addition, the system can be used to locate investigation case files, which contain the best descriptions available on specific hazards and related factors causing accidents.

The fatality data in the OSHA system provide a different perspective on workplace accidents than the Bureau of Labor Statistics' annual survey. The 10 industries with the most fatalities differ significantly from the 10 industries with the highest rate of lost workdays, as shown below.

Industries With the Highest Accident Incidence (note a)

<u>Ranking by number of fatalities (note b)</u>	<u>Ranking by lost workday rate (note c)</u>
1. Water, sewer, pipeline	1. Water transportation services
2. General building contractors, residential	2. Logging camps and logging contractors
3. Highway and street construction, except elevated highways	3. Special product sawmills
4. Drilling oil and gas wells	4. Cottonseed oil mills
5. Electric services	5. Oil and gas field services
6. Structural steel erection	6. Ship building and repairing
7. Logging camps and logging contractors	7. Tires and inner tubes
8. Blast furnaces (including coke ovens), steel works, and rolling mills	8. Steel foundries
9. Oil and gas field services	9. Secondary nonferrous metals
10. Electrical work	10. Roofing and sheet-metal work

a/Establishments are categorized by industry using the Standard Industrial Classification. The classification enables similar establishments to be assigned to the same industry grouping by being assigned a code on the basis of the principal product produced or services rendered. Establishments are assigned a 2-, 3-, or 4-digit code according to the level of detail considered appropriate, with the 4-digit level being the most detailed grouping.

b/Rankings based on 1975-77 data.

c/Data for water transportation services and oil and gas field services were available at the 3-digit code level only. Rankings for those industries with workplace safety regulated by other Federal agencies were excluded to maintain comparability of data. Rankings are based on 1975 data.

Although OSHA's data system provides more detailed information on serious accidents, it has rarely been used. According to OSHA officials, deficiencies in data classification and coding have precluded effective use of the system. In addition to data classification and coding problems, other important information developed by accident investigations is not being reported into the system. This includes whether the accident could have been prevented by compliance with a standard or whether a new standard is needed. Because this information is not reported and analyzed, OSHA does not know (1) to what extent fatal accidents could have been avoided if safety and health regulations had been enforced and followed, (2) what standards need to be developed or revised, and (3) what standards' violations cause most serious accidents and deaths.

IMPROVEMENTS NEEDED IN DATA CLASSIFICATION

Information about an individual accident case may not be of great significance, but if its characteristics are accurately placed in an information system, (1) trends and similarities can be observed and (2) the system could locate all cases which have a particular element of interest. Changes in OSHA's system could make accident information more accessible, meaningful, and useful. These changes include (1) refining and defining causal factors, (2) preparing concise narratives to describe hazards, and (3) classifying prevention measures.

Refinement and definition of causal factors

The current coding system does not accurately present accident causes. The present codes do not provide definitions to aid in coding similar hazards and, as a result, the same hazard may be coded in different ways. For example, two employers were involved in the same accident, involving an explosion caused by a worker turning on a gas line he thought was an air line. The accident was investigated by a team of investigators, and two separate reports were prepared. On one report the source of injury and contributing human factor were coded "other" and "misjudgment of hazardous situation"; the other report showed "gases" and "malfunction of procedure for securing operation or warning of hazardous situation."

Inspectors can code the information incorrectly because the coding system is ambiguous and categories are not

defined. We discussed 52 cases with compliance officers. According to them, coding errors occurred frequently, as shown:

<u>Code</u>	<u>Incorrectly coded</u>
Source of injury	15 percent
Type of event	6 percent
Contributing human factor	15 percent
Contributing environmental factor	37 percent

The code categories are too broad and do not precisely reflect causal factors. In half of the cases we examined and discussed with compliance officers, they said at least one element was coded incorrectly. Coding precision affects the data system's usefulness for compiling trends and providing a mechanism for reaching individual cases which have elements of interest. Our analysis of fatalities investigated by the New Orleans area office from 1975 through 1977 showed 62 fatalities resulting from explosions, but OSHA's coding system provides no category for identifying explosions. Investigators generally code such accidents as "other." In 1978, an OSHA group used OSHA's data system to study fixed machinery accidents. They located most of the accident cases desired, but due to the broad and poorly defined coding system, some time-consuming manual sorting of cases was required.

OSHA's coding system is basically a summarization of classifications adopted by the United States American Standards Association. The summarization results in a great loss of precision. For example, OSHA has only one category for machines, while the Association's format provides 21 classifications for machine types.

For the accident cases we examined, 63 percent of the time the Association's classifications were more descriptive than OSHA's. Although this comparison shows how the precision of OSHA's coding might be improved, the Association's system should not be considered ideal. That system basically focuses on the accident outcome, rather than describing the workplace hazards causing the accident.

Narrative description of hazards

A concise narrative is needed to describe the circumstances and the cause of the accidents. All factors involved in an accident cannot be adequately coded.

According to some OSHA enforcement and safety standards personnel, a narrative would be extremely useful in carrying out their tasks. Enforcement personnel would know which hazards to look for when making inspections, and standards personnel could develop standards to address specific hazards.

Also, the OSHA study of fixed machinery accidents concluded that the narrative accounts of hazards in the investigation case files provided more detailed descriptions of how occupational fatalities occur than other data currently available to OSHA.

Hazards should be categorized according to prevention measures

The basic purpose of collecting accident data is to determine the frequency for certain types of accidents, the hazards causing the accidents, and ways for preventing future accidents. Formerly, when a compliance officer discovered workplace hazards needing standards coverage, he or she was to note the number of such hazards on the inspection report and submit a description of each hazard on a specially designated report form. However, the reporting was not enforced and the information collected not used. The reporting requirement was discontinued in 1978. OSHA's information system does not provide for collecting data on what measures could have prevented an accident.

Our examination of accident cases showed that information about what could have prevented the accident could be recorded and collected for OSHA's accident investigations. Only 8 percent of the accidents we examined could not be categorized in terms of prevention measures because the cause was or could not be determined. In all other cases, the compliance officers were able to designate the OSHA programs which they believed could help prevent similar future accidents. Such designations should be recorded and collected if OSHA is to improve the use of accident investigation information to direct its programs toward preventing serious accidents.

DATA FROM STATES' INVESTIGATIONS EXCLUDED

Data from the investigations made by 24 States operating under OSHA-approved plans are not included in OSHA's data system. If OSHA acquired the same information from the States that it does from its area offices, the data base on serious accidents would more than double. Accumulating

all accident investigation data would provide more information about the hazards that are causing fatalities and serious accidents and increase the chance of identifying accident trends.

California and Michigan said that providing this information to OSHA would not create any difficulty or undue burden.

NEED TO INSURE DATA SYSTEM
PRODUCTS MEET PROGRAM NEEDS

OSHA has not centralized its data collection and analysis function. No one group is responsible for finding what each program activity needs, designing data systems to meet the needs, and performing special data studies and analyses. During our review, at least three groups were performing one or more of these functions. One office was performing special data analyses at the request of various operating groups; a second was redesigning data system input requirements for accident investigations; and a third was conducting special projects. Without proper coordination, systems may not be designed to make optimum use of data to satisfy program needs.

OSHA's data system has not been designed to collect and analyze all fatality investigation information which could be effectively used to meet the needs of standards development, enforcement, and training and education programs. Safety standards and enforcement officials have recognized the usefulness of an inventory of serious hazards which can be addressed in their programs, but the system does not produce such inventories. In addition, some of the programs have special data needs:

- Enforcement: The compliance officers need to know, by type and size of workplace, which hazards frequently cause serious accidents and can be detected and corrected through inspections.
- Training: To provide training to those who could benefit most, information is needed on serious hazards preventable by training and on the frequency of hazards within each occupation.
- Consultation: The distribution of accidents preventable through consultation is needed by type and size of employer. Information is also needed on hazards within each industry in order to advise employers on individual safety programs.

--Publications: The distribution of information to create hazard awareness requires accident data which reveal trends in such categories as occupation, industry, or type of work operation. In addition, concise accident descriptions are needed to convey the nature and severity of hazards.

--Standards Development: To direct efforts toward areas having the greatest need for standards and to define hazardous conditions needing coverage, an accident data base containing the following elements is needed (1) industrial classification, (2) occupation designation, (3) causal factors, (4) measure of severity, and (5) coverage by existing standards.

Although most of these needs can be met with information available from current sources, no organization has been responsible for defining the requirements and implementing the necessary data system changes.

CHAPTER 3

LIMITED USE OF ACCIDENT

DATA IN DEVELOPING STANDARDS

Safety standards state the conditions and practices which are reasonable and necessary for a safe workplace. They provide guidance for employers and criteria for compliance inspectors in identifying and abating hazards. The usefulness of standards in preventing accidents depends on the extent to which the standards address hazards which cause or contribute to accidents. In 1971, OSHA achieved broad coverage of hazards by adopting national consensus standards and existing Federal standards. These standards were divided into three major categories: construction, maritime, and general industry.

OSHA standards development efforts have been directed at providing coverage of additional workplace hazards, eliminating obsolete or unnecessary standards, eliminating conflicts and ambiguities in existing standards, and revising standards as work methods, procedures, and equipment change. These efforts would be more effective if information gathered during accident investigations were better used.

Our review showed that

- accident information obtained during OSHA investigations can be used to identify serious hazards needing standards;
- many hazards causing fatal accidents are not being addressed by current standards development projects; and
- the absence of a systematic approach to identify serious hazards has resulted in projects which do not address specific hazards and the creation, suspension, and/or abandonment of standards development projects without regard to their potential for reducing accidents.

Using accident information to identify areas needing standards has benefited the two State safety organizations we visited.

HAZARDS NOT COVERED BY STANDARDS
AND NOT ADDRESSED IN STANDARDS
DEVELOPMENT PROJECTS

No one knows how many serious accidents are caused by hazards not covered by OSHA standards. However, hazards associated with the most serious accidents can be identified from information gathered by OSHA compliance officers during investigations of fatal and other serious accidents.

Twenty-three fatal accidents, representing about 12 percent of the cases we examined, were caused by hazards which could have been but were not covered by OSHA standards. For example, in one case a worker was backing a forklift out of a warehouse and came too close to the side of a ramp. The forklift went over the edge of the ramp, tipped over, and crushed the worker. A standard requiring barriers along the edge of ramps could be developed to cover this hazard and, if followed, could help prevent similar accidents.

Accident studies by private industries and safety experts have shown that the causes of serious accidents also cause many minor accidents. We believe that the hazards not covered by present standards and not addressed by standards development projects could be causing numerous workplace accidents.

The hazards identified as not being covered by specific standards are listed below.

Hazard

Industrial trucks:

- Unstable work platform elevated by forklift.
- Forklift on ramp without proper barricades.
- Tractor without rollover protective equipment. 1/
- Seatbelt not used by operator of front-end loader. 1/

1/There are applicable standards for the construction industry, but they do not apply to the industries where these accidents occurred.

Cranes or hoists:

- Improper maintenance and/or check testing of electric powered chain hoist.
- Use of "A frame" winch truck near power lines.
- Barricading not used in swing radius of rotating crane superstructure. 1/

Electrical hazards:

- Exposed high voltage rails not deenergized when worker is nearby.
- No lockout procedures during inspection of energized equipment.

Oil and gas extraction:

- Hose rupturing due to improper procedures for hot servicing oil well.
- Equipment left improperly secured on top of oil drilling rig.
- Unguarded rotary of drilling rig.
- Hoisting chain not properly secured around pipe before elevating during oil drilling operations.
- No stanchions on truck to prevent pipe from falling while being unloaded.
- Collapse of oil drilling rigs due to improper erection and guying.
- Rotary clutch engaged while tongs were attached to pipe during oil drilling operations.
- Improper procedures in oil well servicing causing excessive pressure on mud pump.

1/There are applicable standards for the construction industry, but they do not apply to the industries where these accidents occurred.

Other:

- Workers cleaning in a confined space in presence of hazardous gas fumes.
- Unsafe procedures for worker in a confined space.
- Dust explosion in grain elevator.
- Inadequate guarding of roof opening.

Although we reviewed a small number of cases, many of the hazards not covered by standards, when categorized into three groups by (1) industry, (2) type of equipment involved, and (3) type of event (e.g., electrical shock) indicated areas warranting further attention.

For example, the fatalities in two electrical shock cases resulted because equipment components receiving high voltage electricity were not deenergized before work began on or near the equipment. OSHA standards did not cover the procedures necessary to prevent accidents caused by these hazards.

Two crane accidents resulted in workers being crushed between the counterweight and the crane bed or other objects. The accidents, which occurred in operations covered by the general industry standards, are examples of a hazard that can be covered by a standard. Standards are available to eliminate these hazards in the construction industry, but there are no standards to cover the same hazards in general industry operations.

The prevalent grouping of hazards by industry for our sample cases occurred in two oil industry categories: oil and gas field services and drilling oil and gas wells. Again, some of the hazards were not covered by OSHA standards; others were addressed in the construction standards, but they could not be applied to the hazards in these cases. One case, for example, involved an oil drilling rig which was inadequately secured at the base and had inadequate guy ropes. The rig collapsed killing one employee. Two of our cases involved fatalities resulting from collapsing drilling rigs. According to OSHA standards officials, the construction standards should apply to the drilling operations and a section of these standards apply specifically to derricks; however, these standards are not designed for the very large derricks used in oil drilling.

One OSHA standards development official said that the oil industry is one industry which may need specific standards for guidance and enforcement purposes. According to an official from the Department of Labor Solicitor's Office, specific standards coverage for the oil industry would allow more effective enforcement, because some courts will allow the application of OSHA construction standards to oil industry operations but others will not. The industry category, drilling oil and gas wells, had the fourth largest number of fatalities from 1975 through 1977, while oil and gas field services had the ninth largest number.

The potential for using the data system to identify hazards causing fatal accidents was demonstrated by OSHA's recent study of fixed machinery accidents. One purpose of the study was to evaluate OSHA fatality investigations as a source of data on occupational fatalities. The OSHA data system was used to identify 143 cases involving fixed machinery; only 18 of the cases could not be used because of inadequate information. Using the fatality cases, information was collected and analyzed on types of machines involved, factors contributing to the accidents, and possible countermeasures to prevent similar accidents. The study concluded that the cases contained information useful in identifying factors causing accidents, and that similar studies would provide useful information for compliance, training, and evaluation efforts, as well as standards setting.

Hazards not addressed by standards development projects

For the 23 cases where we found workplace hazards could be, but were not covered by OSHA standards, the compliance officials investigating the cases and cognizant standards development officials agreed that potential existed for developing standards to help prevent future accidents. Although these hazards were not covered by standards, only six were being addressed by standards development projects, as shown on the next page.

<u>Area</u>	<u>Cases not covered by standards</u>	<u>Cases covered by standards development projects</u>
Oil industry	9	0
Industrial trucks	4	1
Cranes or hoist	4	1
Electric hazards	2	1
Walking working surfaces	1	1
Confined spaces	1	1
Grain elevators	1	1
Sawmills	<u>1</u>	<u>0</u>
	<u>23</u>	<u>6</u>

One of these six projects had been suspended for about 3 years and was not being actively pursued.

ACCIDENT INFORMATION NOT USED TO
IDENTIFY HAZARDS NEEDING STANDARDS

OSHA has not analyzed accident information to determine which hazards need standards coverage or used accident information to establish priorities. As a result, standards development projects are started without any assurance that they address the hazards most needing coverage, and projects may be suspended or abandoned without regard to the potential for accident prevention.

Although all of OSHA's ongoing projects can be somewhat linked with workplace hazards, only 7 of the 21 standards projects active at the time of our review could be related to specific hazards. The 14 other projects were generally started to clarify existing standards and eliminate unnecessary detail.

Of the seven projects dealing with specific hazards, OSHA initiated three, and four were initiated at the request of industry. OSHA initiated one of the projects in response to tunnel catastrophes that occurred in 1971. According to an OSHA official, the other two, which involve conveyors and electrical hazards, were started based on the knowledge and experience of OSHA standards development personnel.

One industry-requested standard project involves a hazard of being struck by a metal rim while inflating a tire on a multipiece wheel rim. At OSHA's Jackson area office, 2 of the 42 fatalities investigated during fiscal year 1977 involved this hazard. These cases show the potential for OSHA using accident investigations to identify hazards needing standards coverage without being petitioned by industry.

Although several standards projects addressed specific hazards, these were not identified through a systematic analysis of accident causes. Accident data were gathered for accidents involving the hazards covered by two projects to show the injuries which may have resulted from the hazards. However, these data were gathered after the standards were developed when accident information was thought necessary to justify adoption of the standards.

The need for accident data to systematically identify hazards which most frequently cause accidents has been recognized by two of the six groups in OSHA's Office of Standards Development; these two groups are trying to obtain such data. The Office of Maritime Safety Standards has recommended that it be allowed to receive and analyze employers' reports to determine the causes and frequency of longshoring and shipyard accidents. The information, to be obtained from Labor's Office of Workers' Compensation Programs, would be used to identify where standards are needed and to provide a basis for justifying standards development projects. During our review, OSHA had not yet requested the information.

The other group which wanted accident information to develop standards was the Office of Fire Protection and Civil Engineering. This group was responsible for the study of fixed machinery accidents, which was completed during the latter part of our review and had not been used in connection with the standards development projects. Also the group requested OSHA's Office of Management Data and Statistical Analysis to regularly analyze accident data to identify the number, nature, and cause of injuries within various industries and occupations. It believes that accident data are needed for setting priorities in standards development if OSHA intends to work on the worst problems first.

Priority system for standards development projects is lacking

Some projects are given higher priority than others because there are many standards' projects and a limited number of personnel on the standards development staff. A

priority system, however, has not been established which relates standards development efforts to the potential benefits of preventing serious accidents.

A comparison of standards projects active in January 1975 with those active in June 1978 showed that 72 percent had been dropped, consolidated, or suspended, as shown below.

<u>Status of projects as of June 1978</u>	<u>Number</u>	<u>Percent</u>
Standards developed	11	10
Ongoing projects	21	18
Consolidated into ongoing projects	35	30
Projects suspended	36	31
Projects abandoned	<u>13</u>	<u>11</u>
Total	<u>116</u>	<u>100</u>

One suspended project dealt with a hazard which caused an accident in a case examined during our review. The hazard involved the malfunctioning of an electric-powered chain hoist. A draft standard covering this hazard was developed in 1973 and sent to the Solicitor of Labor on April 26, 1974. The draft was returned to the standards group in November 1974; however, the project has since been suspended due to a lack of staff and priority.

According to standards development officials, changes in administration cause changes in priorities. Since OSHA's inception, there have been four Assistant Secretaries of Labor, each with different views on which projects should be given priority. The present Assistant Secretary has emphasized a standards deletion project which was given a higher priority than existing projects. Selecting standards development projects and determining the amount of staff effort to be applied are not based on which hazards not covered by standards do the most harm. Rather, these decisions are based on the requests of interest groups and the shifting priorities set by new agency management. Some projects have been ongoing for many years.

ACCIDENT DATA ARE USED BY SOME
STATE SAFETY ORGANIZATIONS
TO DEVELOP STANDARDS

During our review, both State safety organizations we visited identified areas needing standards coverage by using

accident data. Michigan has used accident data to identify the need for standards in 26 areas and has issued standards to meet these needs. Standards were developed, for example, to cover hazards encountered with conveyors, refuse packer units, and tree trimming and removal. There are 14 areas where Michigan has safety standards and OSHA does not.

California also uses accident data to develop standards. The standards development unit reviews all accident investigation reports and suggested standard changes submitted by compliance officers to identify hazards needing standards coverage. Recently proposed revisions and amendments to the State's general industry safety standards include the following:

1. A standard covering the maintenance of pipelines containing hot, poisonous, corrosive, or flammable substances. The proposed amendments resulted from two instances in which workers had been splashed. In addition, a safety engineer had submitted a suggestion for a standards change, and there were reports of other similar accidents.
2. A standard requiring that machinery or equipment be stopped and the power deenergized and that movable parts be blocked or that other lockout procedures be used during maintenance operations to prevent parts from moving. The need for this revision was recognized from the number of injuries and safety engineers' suggestions for standards changes.
3. A new safety standard on trash compactors was written based on the number of accidents involved and the suggested standard changes on file.

According to California standards development officials, compliance officers do not suggest many standards changes. However, if a suggested change or accident investigation report is considered significant, immediate action is taken to revise or develop a standard.

California has initiated studies in standards development based on accident experience involving tire changing, tar kettles, trash compactors, and hydraulic pressure systems. New safety standards were written in the latter two areas, but it is too early to evaluate the effect of these standards on accident rates. However, according to State officials, emphasis on safe procedures and improved standards have produced measurable results in certain areas. For example:

--In 1970, 113 workers were disabled as a result of being struck by part of a crane or by the crane load. In 1973, California established a standard requiring certification of crane capacity. In 1975, 22 crane-related disabling injuries occurred, a decline of 81 percent from 1970.

--In 1971, 17 fatalities occurred involving the rollover of earthmoving equipment. The first major safety order requiring rollover protective structures and seatbelts on certain construction equipment went into effect on April 1, 1971. The result was a significant drop in rollover fatalities--only seven were reported in 1975.

California has developed a system so that industry accident rates can be categorized as (1) preventable by safety standards, (2) preventable by safety training and education, or (3) random and nonpreventable. One objective of the system is to provide a data base for scheduling inspections to high accident rate industries where enforcing standards would help prevent accidents. Also, officials expect that this information will point out needs for new or revised standards.

Both States are continuing to develop their relatively new systems to identify standards needs and measure results to assure they are aiming standards development efforts at the areas with the greatest potential for prevention of serious accidents.

CHAPTER 4

ACCIDENT DATA NOT USED IN

PROGRAMING INSPECTIONS

The abatement of workplace hazards through enforcement of standards is a primary provision of the 1970 Occupational Safety and Health Act. Effective prevention through enforcement requires knowledge of where and why serious accidents occur.

Accident investigation information has not been used effectively for enforcement. Specifically

- fatality information is not given weight in targeting compliance inspections,
- self-initiated inspections are not monitored to assure inspections are performed first at the type and size of workplaces which most frequently have serious accidents,
- industries with the most fatalities are not receiving a proportionate share of inspections, and
- inspectors are not being alerted to hazards which have caused serious accidents in each type of workplace.

Some States which use accident data to target workplace inspections are developing better methods of data accumulation to gauge inspection needs and are placing emphasis on industries which frequently have serious accidents.

NEED TO INSURE HIGH-RISK WORKPLACES ARE INSPECTED

OSHA uses data from the Bureau of Labor Statistics' National Survey to prepare its compliance inspection guide. However, OSHA does not use information from its own fatality data system to better assure that the inspection program is aimed at workplaces with the most serious hazards.

OSHA provides guidance to its area offices for scheduling self-initiated inspections in what is called "High Hazard Industry Inspection Planning Guide (Safety)." This list includes the highest ranked industries in each State according to the average number of anticipated lost workday injuries

per establishment. The use of lost workdays does not provide a measure of severity, however, because a minor injury, such as a sprained ankle, can result in the same number of lost workdays as an amputation or other serious injury. Furthermore, the high hazard list excludes (1) industries which are categorized separately as a national emphasis program (e.g., foundries) and (2) some industries, such as construction and logging, which have mobile worksites. Industries receiving national emphasis are not included because they are already earmarked for inspections. Mobile industries are not listed because a list only provides the company's permanent office address. Area offices may schedule inspections to mobile worksites as part of a local emphasis program, but no national incentive is provided.

Most industries having the highest number of fatal accidents are not included in the high hazard lists because serious accident information is not considered in OSHA's data system and mobile worksites are excluded. The lists provided to the three area offices in our review contained only 4 of the 20 industries having the highest number of fatalities. The 20 industries having the highest number of fatalities from 1975 through 1977 include 13 mobile industries, which accounted for about 31 percent of all fatalities. If these industries are excluded from the lists provided to area offices as guidance, industries with the most fatalities are less likely to receive a proportionate share of the inspections.

Inspection activity is not monitored to assure that self-initiated inspections are directed to the most hazardous workplaces. OSHA initiated an inspection monitoring system in fiscal year 1978, but it does not consider the number of fatal and other serious accidents occurring in specific industries or the distribution of inspections by industry type or size.

OSHA's monitoring system provides for collecting and evaluating inspection activity to measure the achievement of two goals: (1) that 95 percent of OSHA's self-initiated inspections be conducted at workplaces on the high hazard lists, or that have been targeted for national or local emphasis and (2) that at least 70 percent of compliance officers' time is used for inspection activity, instead of training or administration. The 95-percent goal can be achieved regardless of the distribution of inspections among designated high hazard industries; therefore, the monitoring system does not assure inspections are performed first at workplaces having the greatest potential for serious accidents.

INDUSTRIES WITH THE MOST FATALITIES
ARE NOT RECEIVING A PROPORTIONATE
SHARE OF INSPECTIONS

OSHA has not given priority to inspecting the types of workplaces having the greatest number of fatalities. The following table shows that during calendar years 1975-77, industries accounting for 30 percent of the fatalities were receiving less than 18 percent of the inspections.

<u>Industry</u>	<u>Standard industrial classification</u>	<u>Fatalities</u>		<u>OSHA-initiated inspections</u>	
		<u>Number</u>	<u>Percent</u>	<u>Number</u>	<u>Percent</u>
Water, sewer, pipeline	1623	337	6.9	3,739	2.8
General building contractors, residential	1520	220	4.5	8,759	6.6
Highway and street construction (except elevated highways)	1611	167	3.4	1,124	.8
Drilling, oil and gas wells	1381	128	2.6	524	.4
Electric services	4911	112	2.3	336	.3
Structural steel erection	1791	109	2.2	2,530	1.9
Logging camps and logging contractors	2411	106	2.2	376	.3
Blast furnaces (includes coke ovens) steel works, and rolling mills	3312	103	2.1	198	.1
Oil and gas field services	1389	94	1.9	381	.3
Electrical work	1731	<u>91</u>	<u>1.9</u>	<u>5,592</u>	<u>4.2</u>
10-industry total		<u>1,467</u>	<u>30</u>	<u>23,559</u>	<u>17.7</u>
Total for all industries		4,866	100	133,625	100

The table shows that some industries having about the same number of fatalities do not have the same number of self-initiated inspections. The structural steel erection

industry and the blast furnace steel industry have approximately the same number of fatalities (109 and 103, respectively). The structural steel erection industry, however, is receiving about 12 times as many self-initiated inspections (2,530 versus 198). Although the distribution of self-initiated inspections may not need to be equal to the proportion of fatal accidents, the wide disparity does show that a higher priority could be given to workplaces in industries with the most serious hazards.

The size of the workplace should also be considered when deciding where to inspect, because the potential for serious hazards can also vary by workplace size due to the possible levels of supervision and sophistication of safety programs. However, inspections were not distributed by workplace size proportionate to where fatal accidents occurred.

We compared the number of self-initiated inspections to the number of fatalities by industry for workplaces with employees numbering 1 to 19, 20 to 99, 100 to 249, 250 to 499, and 500 and more. Inspections were generally concentrated on small workplaces. In the 10 industries having the most fatalities, workplaces with 1 to 19 employees had 45 percent of the fatalities and received 74 percent of the OSHA's self-initiated inspections. There were significant (10 percent or more) variances between the distribution of inspections and fatality numbers in one or more size groups for 9 of the 10 industries with the most fatalities. For example, about 25 percent of the fatalities in one of these industries (electrical services) occur in workplaces with 500 or more employees, but these workplaces received only 6 percent of the inspections.

ALERTING INSPECTORS TO SERIOUS HAZARDS

Inspectors have not been alerted to specific hazards which have been causing fatal accidents. OSHA has information from its accident investigations which could be used to establish an inventory of these hazards, but such information is not analyzed and provided to compliance officers through training programs or other means. As a result, compliance officers may not be identifying many of the serious hazards before accidents occur.

We reviewed 52 fatality cases to determine the causes and measures that could prevent such an accident. In 35 cases preventive measures could be taken, and about 46 percent of the 35 cases involved hazards that could have been eliminated by compliance with standards. The following hazards, for example, caused fatalities, and compliance officers stated that enforcement activities could help prevent similar accidents.

Hazard

Violation

Cranes should not be operated near power lines.

Employees were allowed to operate crane within the 10-foot minimum clearance allowed between the electric lines and any part of crane.

Employee fell through hole in floor.

Failure to provide adequate guardrails or cover for floor openings.

The hazards causing fatal accidents are not emphasized in inspector training. Courses are designed to provide a general knowledge of all standards. Training officials believe that inspectors are thus alerted to all hazards which can be abated through enforcement. However, fatality information is not incorporated in the training courses to emphasize which hazards most frequently cause serious accidents and where these hazards might be found.

Overlooking serious hazards during inspections was discussed in our report, "Workplace Inspection Program Weak in Detecting and Correcting Serious Hazards" (HRD-78-34, May 19, 1978). The report stated that hazard detection could be improved if better guidance were provided to compliance officers on what to look for during inspections.

According to OSHA officials, an inventory of hazards which most frequently cause fatal and other serious accidents would be useful to compliance officers in identifying these serious hazards. Compliance officers are not familiar with the operations and processes of all companies and cannot be trained in all the technical areas required to identify all hazards. Since the compliance officers cannot be experts in workplace operations, they should at least be aware of hazards which have caused serious accidents and which can be found at a particular type of workplace.

Many hazards cited as causing fatal accidents are not cited as serious violations during other inspections. In 8 of the 10 industries having the most fatalities, about 40 percent of the hazards causing fatal accidents in 1977 were cited in other inspections but were not classified as serious violations. This could mean that compliance officers do not perceive that serious harm could result from a standard's violation. Fatality information provides evidence that serious harm can result from violations of certain standards and could be useful in helping inspectors classify the severity of violations.

STATES' USE OF ACCIDENT
DATA FOR ENFORCEMENT

State safety organizations we contacted did not use data on fatal and other serious accidents in setting inspection guidelines. However, California was attempting to establish inspection priorities based on accident incidence rates and accident prevention potential. Michigan divided its inspection resources; one group inspected some high-risk mobile industries which accounted for about 12 percent of the fatalities, and another group inspected general industry. Michigan also informed inspectors of hazards causing fatal accidents.

California used accident data to formulate incidence rates by industry; it then adjusted these rates to reflect the potential for inspections to prevent accidents. This adjustment was based on a study of the composition of accidents within each industry. The ratio was based on what caused the injury (tools, chemicals, etc.) and whether inspections could prevent such accidents. In addition, California places special emphasis on certain types of construction activities--such as projects involving trenching, tunneling, or high scaffolding--which are considered to have a high potential for serious accidents. Although these involve mobile worksites, the State attempts to inspect all such projects.

Michigan officials established priorities for general industry inspections based on a review of workmen's compensation claims. They determined the number of lost-time injuries per employer and the size of the firm. For construction inspections, usually inspectors give priority to inspecting large projects, such as tunnels, waste water plants, power generation plants, and high-rise buildings. Also, the construction division gathers fatality information to determine accident circumstances and types of standards violations. This information is used to direct activities to workplaces where serious accidents are occurring. According to construction division officials, construction fatalities have decreased from 63 in 1966 to 33 in 1977.

These States' methods for using accident data have proven useful in directing inspection resources, although some are new and still in the experimental stage. However, these States recognize that more can be done with accident data to better direct inspections to serious hazards which cause fatal accidents and are preventable by enforcement.

CHAPTER 5

ACCIDENT DATA CAN HELP EMPLOYERS AND EMPLOYEES

PREVENT SERIOUS ACCIDENTS

Serious accidents are often the result of unsafe acts or conditions which cannot be effectively abated through standards enforcement. The greatest potential for preventing such accidents lies in making workers aware of the causes of such accidents, training workers and supervisors in preventive measures, and improving employer programs for the continuing identification and abatement of workplace hazards. OSHA can make a valuable contribution in each of these areas through its consultation, and training and education programs; however, much of the potential has not been realized because OSHA has not effectively used accident information to

- identify the types of workplaces and occupations where the greatest number of serious accidents could be prevented by each of its programs,
- establish a list of hazards which can be used in training and education programs to explain and emphasize how accidents can be avoided,
- provide guidance to grantees and contractors on where their training and consultation services can produce the greatest benefits,
- monitor and evaluate grantee and contractor activities to assure that services are provided first to those with the greatest needs, and
- provide employers information on accident causes so that they can identify and voluntarily abate hazards.

Many private industry safety organizations have used corporate accident data to (1) identify training, consultation, and awareness needs, (2) develop programs to meet these needs, and (3) measure program results.

FATALITY INVESTIGATIONS PRODUCE INFORMATION USEFUL FOR TRAINING, CONSULTATION, AND AWARENESS PROGRAMS

Information collected during OSHA investigations of fatalities and catastrophes includes data on the work environment; actions by the injured, other workers, and supervisors;

and other factors contributing to these serious accidents. If properly analyzed, OSHA could use the information to identify industries and occupations where hazards are causing fatalities and to point out training and information needs of the employers and workers in these areas.

In three OSHA area offices, we examined 52 fatality cases investigated to determine what factors caused the accidents and what measures could be taken to help prevent similar accidents. The factors causing serious accidents generally involved unsafe acts or conditions, as shown below.

<u>Primary factor</u>	<u>Number of cases</u>	<u>Percentage of total</u>
Unsafe condition	3	6
Unsafe act	9	17
Unsafe act and condition	23	44
Neither (natural causes, cause undetermined)	<u>17</u>	<u>33</u>
Total	<u>52</u>	<u>100</u>

Seventeen cases did not contain useful information for accident prevention because fatalities were due to natural causes or the cause was not determined. However, from a review of the 35 remaining case files and discussions with compliance officers and supervisors, we identified individual actions necessary to prevent similar accidents and OSHA's potential contribution through enforcement, standards development, employee awareness, and employer consultation.

Employer consultation, provided by States or contractors funded by OSHA, includes not only making penalty-free inspections, but also providing information to the employer about what kinds of hazards cause serious accidents, how to abate them, and whether or not the hazards are covered by standards. Consultants also can give advice about training that workers might need, effective safety programs, and other specific measures that would contribute to accident prevention.

Employee awareness includes providing information to employees about safe job procedures, the hazards associated with their jobs, and the kinds of preventive actions they must take to avoid accidents. It can be accomplished through formal or informal training programs, on-the-job training, or special information and education efforts.

For the 35 cases reviewed, we discussed with OSHA officials what type of action might have helped prevent the accident. The results are summarized below by occupation of injured worker.

<u>Occupation</u>	<u>Total cases</u>	<u>Enforce- ment</u>	<u>Standards develop- ment</u>	<u>Awareness for employees</u>	<u>Consul- tation for employers</u>
Electrician Crane operator	5	2	1	5	1
Industrial truck operator	3	1	-	3	1
Maintenance Special trades	6	3	3	5	1
Oil drilling operations	2	1	-	2	-
Other	<u>9</u>	<u>4</u>	<u>3</u>	<u>6</u>	<u>6</u>
Total	<u>35</u>	<u>16</u>	<u>9</u>	<u>31</u>	<u>14</u>
Percent	100	46	26	89	40

According to OSHA, human errors or unsafe acts were contributing factors in 86 percent of the preventable cases. Typical unsafe acts included failure to use the safety equipment provided, failure to observe lockout procedures, following unsafe job procedures, and working while unaware of a hazardous condition or situation in the work environment.

According to information provided by the inspectors, enforcement of standards would not have eliminated the causes in 54 percent of the preventable cases. Enforcement may not be effective in reducing accidents caused by some of the factors because:

- Some accidents occur despite employers' compliance with standards.
- Hazardous situations not covered by standards may not be identified during an inspection.
- Inspections generally focus on unsafe conditions; unsafe job procedures may be only spot-checked. Employers have to provide the continuing day-to-day inspections and safety programs that are necessary for accident prevention.

Analysis of fatality cases and prevention measures showed that OSHA could contribute to accident prevention more often through education and information programs. Common factors identified among the cases showed the possibility of using the accident information as an aid in defining training and education needs. For example, three cases involved electricians who did not use proper procedures when working on energized equipment, and two cases involved forklift operators who did not follow correct operating procedures. In addition to identifying what could have prevented the accident, the fatality case files contained detailed descriptions of the circumstances and actions which lead to accidents. This information, if incorporated in training and education programs, could help better explain workplace hazards to workers and emphasize the importance of certain procedures and practices in avoiding accidents.

TRAINING AND EDUCATION PROGRAMS FOR PREVENTING SERIOUS ACCIDENTS CAN BE IMPROVED

OSHA provides consultation services and education and training programs for employers and employees as authorized under the Occupational Safety and Health Act of 1970. These programs are to help employers and employees comply with the standards and to train them in recognizing, avoiding, and preventing unsafe or unhealthful working conditions. OSHA administers onsite consultative services and training programs primarily through grants to and contracts with States and contracts with educational institutions and other non-profit organizations. In addition, OSHA publishes and makes available to the public pamphlets and a monthly periodical which contain information on occupational safety and health.

OSHA has not used the information obtained from accident investigations to help direct its training and consultation programs.

Consultation services

OSHA sponsors consultation programs in 49 States-- 16 under approved State plans and 33 under contract. It awards contracts to private firms to provide consultative services in States where the State has not chosen to do so. OSHA is planning to have consultation services available to employers in all 56 States and jurisdictions during 1979.

OSHA requires States to set priorities for consultations to ensure that the small businesses, particularly those in high-risk industries, benefit from the service. However, OSHA has not used accident data to identify the high-risk industries toward which the States' consultations should be targeted.

California and Michigan provide OSHA-funded consultative services. California did not use accident data to actively seek employers in high-risk industries, and its services were generally limited to inspecting the workplaces for hazards which violate standards. OSHA requires only that the consultant visit the workplace when requested by the employer, make an inspection, and notify the employer of hazards that must be abated to comply with standards. Michigan also provided these services and had a self-initiated program of comprehensive consultative services called the Safety Directors Program.

The Michigan program consists of inspecting the work-site, reviewing the firm's accident record, and using this information to develop a proposal for an ongoing safety program to prevent accidents. The services, which include training for supervisors and employees, continue for several months. After receiving the services, the firm's accident record is reviewed annually for 3 years before the firm leaves the program.

Michigan provides its consultants with data on the accident rates of firms in their area. Consultants use the accident data to solicit firms with the highest accident rates for participation in the Safety Directors Program. According to a Michigan official, about 75 percent of the firms that receive the service are sought out; the others request assistance.

Michigan made a statistical analysis of 124 companies that participated in its Safety Directors Program to determine the effect of the program on the accident rates of the companies 1 year after they completed the program. The study of preprogram and postprogram injury records showed that 81 percent of the companies experienced a decrease in accident rates. The average reduction in accident rates was 38 percent.

Training programs

OSHA administers its training programs for employers and employees mainly through contracts with educational

institutions, unions, trade associations, and States. According to OSHA officials, training priority has been given to high-risk industries and small businesses. However, OSHA has not developed a targeting system to insure that the training reaches those who need it most.

Generally, the training programs have taken a broad approach to identifying target populations and have not effectively targeted particular industries. For example, one contract, which accounted for 70 percent of safety training funds for 1975 through 1977, provided for training and consultation to be delivered through community and junior colleges. OSHA provided the schools a list of 28 industries which had training priority because their injury rates were higher than the national average. The list contained major industry groups identified at the 2-digit level of the standard industrial classification codes, which is a more general classification than the 4-digit level.

The 2-digit standard industrial classification codes are inadequate for targeting high-risk populations for training and consultation because of the variations among the industries within the group. For example, the lead battery industry (standard industrial classification 3691), considered a high hazard industry, would be missed if the 2-digit code were used, since the electrical and electronic machinery, equipment, and supplies group (standard industrial classification 36) has an illness/injury rate that is below the national average.

Although most of the trainees under the community and junior colleges contract were employed in small- to medium-sized firms, OSHA data showed that 45 percent of those trained in the program from 1975 through 1977 worked in industries with accident rates below the national average.

An examination of OSHA's training courses and publications indicated that OSHA does not offer any training in 3 of the 10 industries with the highest number of fatal accidents. They are drilling oil and gas wells, oil and gas field services, and logging camps and logging contractors.

OSHA does not analyze fatality data and provide the contractors and grantees information on the hazards causing serious accidents and on occupations which should be targeted for training. According to OSHA officials, recognizing hazards generally comes from understanding standards and the hazards they cover. However, many fatal accidents are caused by human error, and the programs should also address hazards associated with these accidents.

Accident data could be used to highlight the hazards in occupations which are most susceptible to human error accidents so that employees could benefit from awareness programs. For example, fatality data from the three area offices we reviewed indicated that the following occupations had fatalities which could not have been prevented through enforcement alone, but might have been prevented by training to improve job skills, job procedures, or awareness of hazards:

<u>Occupation</u>	<u>Number of cases</u>
Electricians	5
Crane operators	3
Forklift operators	3
Front-end loader or tractor operators	2
Maintenance	2
Special trades--roofer, carpenter	3

Except for a course in longshoring safety, OSHA training programs and educational materials currently distributed do not specifically address any of these above occupations. During our review, the Office of Training and Education was acquiring slide-tape programs dealing with recognizing hazards involving cranes and hoists, material-handling vehicles, and and electricity.

ALERTING EMPLOYERS AND EMPLOYEES TO SERIOUS HAZARDS

OSHA has information on accident causes that could help firms prevent serious accidents. Through fatality investigations, OSHA has specific data on (1) the industries and occupations in which accidents occur, (2) the conditions or equipment involved, and (3) the type of action that could be taken to remedy the situation. If this information were released to employers, it could help them in voluntary actions to prevent these accidents in their businesses.

In our interviews with private firms in New Orleans, Dallas, and Jackson, 80 percent indicated that OSHA's accident information would benefit their safety programs. The information most frequently requested was the causes of accidents in the particular industry and ways to control the hazards. In addition, several firms wanted to know the work processes and equipment involved in the accidents. Officials of some firms said that OSHA has access to nationwide fatal accident information while they do not. They said that if OSHA furnished them with this information, they could use it to make adjustments in their job procedures and equipment or to make employees aware of hazardous conditions.

OSHA has a program to provide information to employers and employees about OSHA activities and to encourage voluntary compliance with workplace standards through pamphlets, leaflets, information sheets, news releases, and a monthly magazine. In addition, OSHA has distributed about 2 million copies of a "Handbook for Small Business" to inform small businesses about OSHA and procedures for organizing a workplace safety program. However, except for a few hazard alerts, OSHA does not usually provide information to employers about specific hazards or causes of accidents.

Generally, OSHA's informational materials do not use accident data, but are related mainly to standards and informing employers and employees about the agency, recordkeeping requirements, and their rights and responsibilities under the act. The monthly OSHA magazine highlights industries and their problems, but the articles published usually have a special topical interest or are related to OSHA's current standards activities. Of the hazards in the fatality cases we reviewed, only three were covered by articles in the publication during 1975-77.

OSHA's release of fatality information to specific industries could help increase the awareness levels of employers and employees so they can abate hazards voluntarily, before an inspection or an accident.

PRIVATE FIRMS USE ACCIDENT DATA

Successful private industry safety programs place great emphasis on training, education, and awareness programs. Information on the most frequent and severe accidents is gathered and used to direct these activities to the hazards with the greatest potential for accident prevention.

We interviewed safety directors and corporate safety officers from 15 firms in New Orleans, Dallas, and Jackson to obtain information on how they used accident information in their safety programs. Officials in all of the firms said that they investigated all serious accidents to identify the cause and to determine what corrective action is needed to prevent future accidents. Safety officers said that they used local accident data to program corrective action--such as improved job procedures, counseling, awareness, and training--to where the accidents were happening. At the corporate level, the data were analyzed to determine (1) what incidence and severity rates for the firm were, (2) where accidents were happening, and (3) where corporate assistance was needed in the form of consultation for managers or corporate-wide

training programs. One company used accident information to select 10 plant locations where accidents most frequently occurred. These sites were targeted for most of the corporate safety office's efforts.

About half of the firms had ongoing safety training programs for supervisors and new hires; also, 73 percent scheduled safety meetings for workers. Specialized training in job operations was offered in several firms as a result of accident data revealing specific hazards.

Over half of the firms published safety bulletins to inform corporate units about the kinds of accidents occurring in similar operations in the firm and to motivate employees to improve their safety records. The bulletins contained accident statistics and frequency rates, described disabling and nondisabling accidents resulting from specific hazards, and included the supervisor's recommendation for action to prevent future occurrences. Also, four firms issued safety alerts when necessary to appropriate plants or divisions, notifying the managers of unsafe conditions or procedures that had been discovered at other sites and directing them to take corrective action at their plants.

Information on accident frequency and severity has proved beneficial in directing training and awareness programs to prevent accidents. The following are examples of the programs initiated in some firms in response to accident rates and the results achieved.

<u>Problem</u>	<u>Corrective action</u>	<u>Results</u>
High incidence of burn injuries among first-year personnel.	Awareness program using photographs of burn victims with a statement about the cause of the accident and how it could have been prevented.	Burn injuries for first-year workers reduced by 60 percent.
In one division, eye injuries numbered from 40 to 50 in 1974.	Instruction course in eye protection was initiated. Use of safety glasses was mandatory.	Eye injuries dropped to 12 during the year after the start of the program and have leveled off at 8 since then.
In 1968, many injuries occurred and 30 vehicles were damaged in tow truck accidents.	Drivers were given specialized training and were certified as tow truck drivers.	During 2-year period following the start of the program, 80,000 tows were made with no injuries or damages.
Twenty-five workers were identified through accident data as having high frequency accident rates.	Counseling program started with 19 of the workers; injuries were discussed and analyzed and need for training or medical attention considered. Workers were made aware of behavior that caused the accident.	Reductions of 79 percent in accidents among the counseled group by the end of the year. No improvement was noted among the six workers who were not counseled.

The firms used various methods to solve their problems due to the type of industry and accident involved. Training, awareness, and consultation were used, and safety rules were enforced. However, all of the firms used accident data to identify safety hazards in their workplaces and develop measures to prevent accidents.

CHAPTER 6

CONCLUSIONS, RECOMMENDATIONS, AGENCY

COMMENTS, AND OUR EVALUATION

CONCLUSIONS

Thousands of serious accidents are investigated each year by OSHA and the States. These investigations are made to determine whether (1) the accidents could have been avoided had proper safety and health regulations been enforced, (2) standards need to be developed or revised, and (3) violations of standards contributed to the accidents. The investigations produce the best information available on the specific hazards and related factors causing serious accidents. Despite these investigations, OSHA has not effectively used the data it and States have collected to attain the objectives of the investigations. OSHA does not know (1) to what extent fatal accidents could have been avoided if safety and health regulations had been enforced and followed, (2) what standards need to be developed or revised, and (3) what standards' violations cause most serious accidents and deaths.

The information acquired from accident investigations has not been fully used due to OSHA's practices and methods of recording, classifying, and collecting information. Data collection and analysis activities have not been adequately coordinated to assure the data system products meet program management needs. Factors for coding information are too broad and poorly defined, and causal data have been inaccurately recorded. Accident prevention measures are not being categorized, and concise narrative hazard descriptions are not being prepared, although such information would be valuable in directing program activities. Also, OSHA's exclusion of States' accident investigations limits the data system's information about serious hazards and the potential to accurately reflect accident trends.

The identity of serious hazards needing standards coverage is contained in accident information obtained during OSHA investigations. However, OSHA has not effectively used this information in selecting standards' projects and establishing priorities. Two-thirds of the standards projects were started to clarify existing standards or eliminate unnecessary detail and do not address specific hazards. Our review of accident cases showed that about 12 percent involved hazards not covered by standards, and 74 percent of these

hazards were not being addressed in current standards development projects. The absence of a systematic approach to identifying serious hazards has resulted in standards projects which do not address specific hazards and the creation, suspension, and abandonment of standards development projects without regard to their potential for reducing accidents.

Information from accident investigations has not been used effectively in enforcement activities to optimize the potential for abating hazards which cause serious accidents. The locations of fatal accidents are not considered when targeting inspections. The inspection activity is not monitored by industry and workplace size to assure that inspections are conducted first at locations most frequently having serious accidents. As a result, the types of workplaces where most fatal accidents occur are not receiving a proportionate share of inspections. The industries in which 30 percent of the fatalities occurred received less than 18 percent of OSHA's self-initiated inspections, and small workplaces received a larger share of inspections than their proportion of serious accidents. Also, the probability of inspectors identifying serious hazards at workplaces is reduced because they are not alerted to hazards which have caused serious accidents in each type of workplace.

The greatest potential for accident prevention is in the areas of employee awareness of hazards, training of workers and supervisors, and improvement of employer programs for the continuing identification and abatement of workplace hazards. Although OSHA can contribute in each of these areas, much of this potential has not been realized.

OSHA has not identified the types of workplaces and the occupations where the greatest number of serious accidents could be prevented by each of its programs. A list of hazards has not been used in the training, consultation, and awareness programs to explain and emphasize how to avoid the accidents. Guidance has not been provided to grantees and contractors on where training and education services can produce the greatest benefits in reducing serious accidents. OSHA does not monitor and evaluate grantee and contractor activities to assure that services are provided first to those with the greatest needs. Information on accident causes has not been provided to employers and labor groups so that they can identify and voluntarily abate serious hazards.

State and corporate accident statistics and specific information on serious accidents have proven useful in directing

the safety programs of State and private organizations. Accidents have been significantly reduced by programs in which data from accident investigations were used to identify the location of prevalent accidents and their causes.

RECOMMENDATIONS TO THE
SECRETARY OF LABOR

To help prevent fatalities and other serious workplace accidents, the Secretary of Labor should direct OSHA to refine its data collection system and make greater use of information on serious accidents. OSHA should

- define and designate the responsibility for data collection and analysis and require that program offices' needs be surveyed and recognized in data systems designs;
- revise procedures for reporting investigation information to better classify and describe hazards causing serious accidents and countermeasures to help prevent similar accidents;
- establish lists of hazards which warrant special emphasis in standards development, enforcement, and education and training;
- provide information on the causes of fatal and other serious accidents for industries and labor groups to use in identifying hazards and preventing accidents;
- have States submit information similar to OSHA's on State accident investigations and incorporate such information in OSHA's data system; and
- require each major program office to report annually on how its activities were directed at areas with the highest number of fatal and other serious accidents and the results of their efforts.

AGENCY COMMENTS

Labor agreed that serious accident and fatality investigation information can be useful. Also, Labor said that it was working to improve the accuracy and completeness of accident investigations and plans to develop an improved investigation methodology.

Labor expressed several concerns about its ability to collect and use the accident investigation data and believes our report did not sufficiently reflect its efforts to develop and use accident and fatality data. (See p. 43.)

According to Labor, OSHA's efforts to obtain pertinent accident causation data should not be limited to the approximately 2,300 fatalities or catastrophes it investigates annually. It pointed out that such investigations

- may not identify some industries with high injury rates,
- do not identify health hazards with long latency periods, and
- may result in erroneous conclusions because they are done after the fact and conditions may change or memories err.

Labor believes that accident data, such as States' workers compensation data, appear to offer greater promise than data from OSHA accident investigations for identifying the worst establishments and the causes of injuries. Labor discussed several studies OSHA has started on accidents involving specific types of equipment, such as power saws and scaffolding. A series of such studies is planned.

We agree that OSHA's efforts to analyze accidents should not be limited to information from accident investigations. Our report addresses the need to make greater use of data already gathered during accident investigations. It does not state, nor is it intended to imply, that other sources of data be ignored. We agree that accident investigation data have limitations. They may not identify some industries with high injury rates; however, other sources provide OSHA with such information. Not all investigations will result in useful information because of such reasons as poor memory or lack of witnesses. However, many investigations should produce valid results. For example, OSHA was able to make good use of fatality investigation data in its study on fixed machinery accidents. We did not suggest that accident investigations are of value in identifying the latent effects of health hazards.

Labor said that, before substantially increasing the resources OSHA applies to accident investigations, it must evaluate the potential benefits against the competing demands on compliance officers' time.

We do not advocate spending additional time on accident investigations. Although considerable time has been spent on accident investigations, little use has been made of the data gathered. Since OSHA investigates virtually every known work-related fatality where it has jurisdiction, it could hardly make more investigations. It should take little, if any, additional time to assure that appropriate data are gathered and properly classified during its investigations.

Labor stated that our report contains inaccuracies regarding hazards that we assert are not covered by standards. For example, Labor said that an unstable work platform elevated by a forklift, which we indicate as not being covered by a standard, is covered by a specific standard (CFR 1910.178 (m)(12)). We determined whether a hazard was covered by a standard initially on the basis of a review of the investigation file and discussions with OSHA field officials. We later confirmed each case with OSHA headquarters personnel. Regarding the forklift example, the employer was cited for violating the general duty clause, which according to OSHA's field operations manual, should only be used " * * * where there are no specific standards applicable to the particular hazard involved." An OSHA headquarters official confirmed that no specific standard applied to the hazard.

Labor said we did not adequately reflect OSHA's past use of fatality and other accident cause information for training and education purposes and pointed out four instances where such data were used. We agree that such data have been used in some instances. However, our review indicated this use was limited. Only two of the instances mentioned by Labor (grain elevator explosions and a cooling tower collapse) involved the use of data from accident investigations. The other two instances involved the use of lost workday statistics and did not include causal data.

Labor said that our recommendation that each major program office report how it directed its activities at areas with the highest number of fatal accidents is one management technique. However, OSHA uses a management-by-objective system to evaluate its performance.

We believe our recommendation is consistent with management-by-objectives and that trying to reduce workplace fatalities would be a valid objective.

Labor said that many of the States investigating accidents are presently unable to provide information in a form compatible with OSHA's system. It concluded that a unified Federal/State data system would take time to accomplish.

We agree that OSHA should ensure that its system is designed to make best use of accident investigation data before requesting States to supply information in a compatible format. Meanwhile, OSHA should consider using the data available from those States that do have compatible information, particularly when studying the causes of specific types of accidents.

STATES' COMMENTS

California said its Consultation Service group was working with the State's Division of Labor Statistics and Research to develop a list of small employers in high-risk industries. (See app. II.) California plans to use the information to guide promotional efforts to employers who would be high on a list reflecting fatalities, serious injuries, and lost time injury rates.

California said it is also planning to (1) analyze accident investigation reports for selected industries and will summarize and publish the information in short narrative form for use by its consultants and the public, (2) develop profiles of targeted industries that will serve as a source of information on problems that can be expected within a specific industry, and (3) evaluate photographs of standards violations in inactive compliance files and will consider using them in training and promotional publications.

Michigan said it had used accident investigation data in setting inspection priorities and was now addressing the need for (1) better classification and description of hazards that cause serious accidents, (2) identification of hazards that warrant special standards, enforcement, or education and training emphasis, and (3) providing industry and labor groups information on the causes of fatal and other serious accidents. (See app. III.) Michigan said that it had reviewed workers compensation reports to determine if the accidents were standards related, published fatality statistics by industry grouping and case studies of fatal accidents which should have been prevented, developed articles on specific hazards, and discussed the need for better documentation on proposed standards.

Although it has had some technical problems gathering and interpreting fatality data, Michigan said that the impact of such accidents demands a more vigorous and consistent response from all occupational safety and health programs.

U.S. DEPARTMENT OF LABOR
OFFICE OF THE SECRETARY
WASHINGTON

March 7, 1979

Mr. Gregory J. Ahart
Director
Human Resources Division
U.S. General Accounting Office
Washington, D.C. 20548

Dear Mr. Ahart:

Enclosed, as requested, is the Department of Labor's response to the draft GAO report, "Injuries in the Workplace--Why Do They Happen and How Can They Be Prevented?".

Sincerely,



R.C. DeMarco
Inspector General-Acting

Enclosure

The Occupational Safety and Health Administration's
Response to the Draft GAO Report
"Injuries in the Workplace - Why Do They Happen and
How Can They Be Prevented?"

Occupational Safety and Health Administration (OSHA) generally agrees that serious accident and fatality investigation information can be useful in our standards development, enforcement, education, and training activities. Unfortunately, many of the report conclusions tend to overlook past OSHA uses of this information and our present efforts to develop accident and fatality data to better meet our needs.

The report fails to recognize a major limitation in utilizing OSHA accident investigation information in that only about 2,300 such Federal investigations are conducted annually. OSHA investigations are limited to fatalities and catastrophes (five or more hospitalized workers) which are reported to us by employers or brought to the agency's attention by other means. While this information provides indications of serious hazards which need attention, we do not feel that our efforts to obtain pertinent accident causation data should be based solely on the limited number of fatality/catastrophes OSHA is able to investigate. Further, the report's emphasis on fatalities ignores the fact that counting fatalities may not identify some industries with high injury rates; it is also clearly inadequate as a technique for identifying hazards which have a long latency between exposure and onset of disease. Therefore, OSHA is pursuing other avenues, in addition to accident investigations, for causal information. These approaches, based on relatively large data bases, are making it possible for OSHA to draw more valid generalizations regarding the prevalence and severity of hazards.

We are utilizing the annual BLS-OSHA survey to identify industries with high injury rates. This approach is the most efficient method yet available to target our inspection resources. The BLS Supplemental Data System (SDS), under development since 1973, is just now producing its first reports. This system is enabling the identification of the kinds of injuries occurring in high risk industries, the equipment and substances involved, and the relative frequency of accident types. SDS data are helping OSHA to focus on industries and types of accidents which, because of their frequency and severity, warrant detailed analysis.

The SDS system is based on state workers' compensation data and, thus, is in effect an accident-based data system. It and other data sources are being developed in the hopes of improving OSHA's system of targeting inspection activities. OSHA is actively committed to testing various means of increasing the effectiveness of its enforcement strategy,

including trying to demonstrate the possibility of using data, such as workers' compensation accident data, as a means of selecting the worst establishments. Though fatality information is important, using accident data to identify the worst establishments and the causes of injuries appears to offer greater promise than the GAO suggestion of concentrating heavily on fatalities and serious accidents.

OSHA has begun a series of studies on injuries involving machines and power transmissions utilizing State Workers' Compensation First Reports of Injury. A completed study which identifies hazards in various types of band saw operations and suggests control measures is about to be distributed. Tabulations were recently completed on an OSHA-funded BLS survey of employees involved in ladder accidents. An analysis is now being prepared by OSHA that identifies the specific hazards in using ladders. This information will soon be sent to our standards, training and compliance offices. Similar surveys are currently underway for workplace injuries involving welding, scaffolds and power saws. OSHA is convinced that these are important sources of injury cause information. The GAO report overlooks these information sources by focusing only on fatality and catastrophe data.

OSHA is also developing its capacity to utilize fatality investigation information. In August 1978, OSHA completed a special study of occupational fatalities related to fixed machinery. This study utilized our fatality/catastrophe investigation reports and highlighted problem areas in standards-setting, compliance efforts, and safety inspection training. In addition, fifty-eight case studies are included in the report giving specific information on serious hazards associated with fixed machines. The results are being used in our National Office and have been sent to all OSHA Area Offices. This is seen as the first of several such studies. A similar study of fatalities involving scaffolding equipment is nearly complete and ready for distribution. Another study of fatalities associated with ladders is also underway. These studies are part of a series OSHA has initiated using current fatality information to more effectively focus standards-setting priorities, compliance efforts, and compliance officer training. These studies are being conducted by OSHA's Office of Statistical Studies which has the responsibility for conducting safety and health data studies to meet OSHA's program needs.

While the GAO report is concerned only with possible benefits of thorough accident investigation programs, OSHA must weigh the potential benefits of increasing the use of our limited resources in a comprehensive accident investigation program against the loss of compliance officer time for other activities. OSHA is facing many demands for compliance officer time. We are mandated to be responsive to employee complaints. Some argue that OSHA should be conducting more thorough follow-up inspections on all serious citations. OSHA is also being

criticized for not conducting more scheduled inspections in high-risk industries. At the same time, OSHA is attempting to further increase its coverage of workplace health hazards. We recognize that benefits are accrued from accident investigation and reporting; however, we are not certain that accident investigation information is as immediately applicable as GAO asserts. One substantial limitation, not addressed in the GAO report, is that accident investigations are done after the fact, conditions are changed, and memories often err in recounting events. Therefore, even very thorough accident investigations sometimes result in erroneous conclusions regarding causal factors and appropriate remedial measures. Before committing substantially more OSHA resources to accident investigations, we must evaluate potential benefits against competing demands on enforcement resources to determine the most efficient use of compliance officer time. OSHA efforts to assess efficient means to improve the usefulness of fatality and accident investigation information are described below.

As OSHA has begun utilizing our fatality information and providing the results to our Area Offices, we have found that the comprehensiveness of subsequent fatality/catastrophe reports are improving. However, we are taking further steps to enhance the accuracy and completeness of our fatality investigation information. We have included in our FY 1979 Research and Evaluation plan a project to develop an accident investigation methodology that focuses on identifying standards needs in addition to providing a basis for citations. This effort will enable OSHA to better identify research needs in the area of safety standards. In a related approach toward improving OSHA's accident investigation information, OSHA is considering a pilot demonstration project in selected Area Offices. First, we would evaluate the actual degree of useful data our compliance officers can obtain during accident investigations. We would also evaluate the accident investigation procedures in state OSHA programs. Second, this information would be used to determine how our current investigation procedures and reporting forms may be improved. Third, if substantial changes were to be made, we would begin an accident investigation and report training program for our compliance officers. We believe these steps would lead to more comprehensive and consistent OSHA accident investigation information which in many respects goes beyond the GAO report recommendations for better use and collection of fatality data.

We agree with the GAO recommendation to include state data in OSHA's fatality reporting system. Unfortunately, our inquiries indicate that many of the twenty-one state programs, unlike the two states examined in the report, are presently unable to provide information in a form that is compatible with the Federal system. Before requiring comparable information from 18(b) states, we are interested in improving the Federal fatality information system. In any case, the problems encountered thus far indicate that a unified federal/state data system is likely to require some time to accomplish.

[See GAO note.]

Moreover, there are inaccuracies in the GAO report regarding hazards they assert are not covered by OSHA standards. For example, GAO maintains OSHA has no standard covering unstable work platforms elevated by a forklift. CFR 1910.178(m)(12) specifically addresses hazards associated with this kind of operation. The GAO report also does not acknowledge OSHA standard 1910.217(g) which requires employers to submit reports of power press operator injuries directly to OSHA's Office of Safety Standards Programs. Upon receipt, the reports are reviewed and periodically an analysis is made of the adequacy of the current standards dealing with this hazard. The information is also communicated to the OSHA compliance and training offices.

While OSHA is expanding its present effort to utilize fatality and other accident cause information for training and education purposes, the GAO report does not adequately recognize OSHA's past applications. We have used accident investigation data in training compliance officers, in educating employers and employees, and in providing guidance to consultants. Such data were used in the development of training and education materials in the grain elevator program. We also used such data in our response to the Willow Island cooling tower collapse. Data from the Study of Occupational Safety and Health Training Program Alternatives and Priorities, completed under contract in October of 1977, have been used in our training and education activities. In addition, the severity of risk of illness or injury and the number of persons at risk was a major factor used in the grant award process for OSHA's New Directions training and education program.

The final GAO recommendation for annual reports from each major OSHA program office on how its activities are directed at areas with the highest number of fatal and other serious accidents is one management technique. However, the agency tracks its progress toward the goal of

GAO note: Material deleted at request of the Department of Labor.

focusing resources at the most serious hazards through a Departmental management-by-objective system requiring quarterly review and an overall annual evaluation. The agency is working to make this management system more effective. It is a useful tool for following our progress in targeting enforcement activities to better concentrate on high risk industries; eliminating many standards not related to serious hazards; improving our capacity to address serious health hazards; and increasing our educational and training efforts for employers and employees in high risk industries.



STATE OF CALIFORNIA—AGRICULTURE AND SERVICES AGENCY

EDMUND G. BROWN JR., Governor

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February 20, 1979

Mr. Gregory J. Ahart, Director
United States General Accounting Office
Human Resources Division
Washington, D. C. 20548

Dear Mr. Ahart:

Thank you for the opportunity to review the GAO report, Injuries in the Workplace -- Why Do They Happen and How Can They Be Prevented? As Ms. Fowler told Mr. Trahan on the telephone a few days ago, several CAL/OSHA staff members have reviewed the report and found that it satisfactorily reflected information provided your staff when they visited this State.

The CAL/OSHA Consultation Service, however, thought it would be in order to provide some updated information on its plans to reach high risk industries and to utilize accident and injury data. The reference in the draft report to consultative activity in California is based on its operations relatively soon after California obtained a section 7(c)(1) contract from Federal OSHA late in 1977.

More recently, the Consultation Service has been working with the Department's Division of Labor Statistics and Research to develop a list of small employers in high risk industries. The information is to be used to guide promotional efforts and to target field action. As now planned, the list of employers would be categorized by fatalities, serious injuries, and lost time injury rates. Whenever possible, the percentage will be indicated of injuries or fatalities that are determined to be inspection preventable. In line with targeting efforts of the Consultation Service, the Division of Labor Statistics and Research will be coordinating some special studies and developing special work injury reports.

Depending on the availability of future staffing, the Consultation Service has under consideration some other plans for using accident information as well as certain other data that is developed in the course of compliance activities. Among these plans are the following:

- a review of accident investigation reports in order to select those reports on accidents involving targeted industries. These reports would be analyzed and summarized in short narrative form and would be published for use by the consultants and made available to the public;
- development of industrial profiles of targeted industries by supplementing relevant published information with updated data resulting from compliance or consultation surveys. As with the summaries of accident reports, the profiles would be a ready source of information on problems that can be expected within a specific industry;

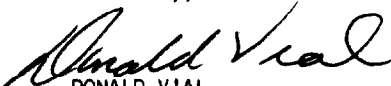
Gregory J. Ahart

February 20, 1979

--evaluation of photographs of standards violations in inactive compliance files. These photographs are a potential resource for use in training programs and promotional publications.

We thought that you should be aware of these plans in order to have a more current view of the CAL/OSHA Consultation Service efforts to target its activities and to make use of information to improve its program.

Sincerely,


DONALD VIAL
Director

STATE OF MICHIGAN



WILLIAM G. MILLIKEN, Governor

DEPARTMENT OF LABOR

309 N. WASHINGTON, BOX 30015, LANSING, MICHIGAN 48909

C. PATRICK BABCOCK, Director

March 5, 1979

Mr. Robert F. Hughes
Assistant Director
United States General Accounting Office
Washington, D.C. 20548

Dear Mr. Hughes:

Thank you for the opportunity to respond to the proposed report on the need for the Occupational Safety and Health Administration to improve its accident investigation data collection system and to use the information to help prevent fatalities and other serious workplace accidents. In our opinion the report is well written and most timely.

The recommendations which specifically interested the Michigan Department of Labor were the following:

1. OSHA should better classify and describe hazards that cause serious accidents and develop the countermeasures to help prevent similar occurrences.
2. Identify hazards which warrant special emphasis in standards development, enforcement, and education and training.
3. Provide information on the causes of fatal and other serious accidents to industry and labor groups for their use in identifying hazards and preventing accidents.

We have been addressing these issues most recently by reviewing all Workers' Compensation First Report of Injury reports to determine if the accident was standards related; publishing monthly statistics on occupational fatalities by industry grouping; publishing illustrative fatal case studies on accidents which should have been prevented; developed detailed informational articles on specific hazards, such as overhead power lines, etc.; and have met with our standards promulgation commissions to discuss the need for better documentation on all proposed standards.



Mr. Robert F. Hughes
Page 2
March 5, 1979

We are appreciative of the report's favorable explanation of Michigan's use of accident investigation data in the Safety Enforcement Program. We have previously used this data in the establishment of inspection priorities which are based on the number of lost-time injuries per employer.

Although we have some technical problems with certain aspects of the reliability of gathering and interpreting fatality data, these accidents having such high impact features demand a more vigorous and consistent response from all occupational safety and health programs.

Sincerely,



C. Patrick Babcock
Director

GAO REPORTS ON RELATED SUBJECTS

1. Report to the Congress: "Better Data on Severity and Causes of Worker Safety and Health Problems Should Be Obtained From Workplaces" (HRD-76-118, Aug. 12, 1976).
2. Report to the Congress: "States' Protection of Workers Needs Improvement" (HRD-76-161, Sept. 9, 1976).
3. Report to the Congress: "Workplace Inspection Program Weak in Detecting and Correcting Serious Hazards" (HRD-78-34, May 19, 1978).

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