

# MONITOR

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## SCIENCE FOR THE WORKPLACE

### "I'VE BEEN WORKING ON THE RAILROAD"

Leo Seidlitz, Ph.D.

Our Project recently received an emergency phone call from a business agent of the Warehouse Union Local 6—ILWU. Several of the union's members had just become ill while unloading a railroad boxcar that contained cargo from Mexico. The only clue was the discovery of a small cardboard tube labelled "PHOS-TOXIN" bearing a skull and crossbones, found on the floor of the boxcar.

Al Lannon, the business agent, wasted no time in tracking down the hidden hazard represented by this small tube. Having learned from the State Department of Health that "Phostoxin" is a trade name for a fumigant consisting of aluminum phosphide tablets, we then advised the union that these tablets, when exposed to moisture, released a deadly gas, **phosphine**. We also confirmed that the symptoms shown by the exposed men were the same as would be expected from breathing in phosphine gas. Even at very low concentrations, the gas can cause nausea, diarrhea,



Phostoxin tablets frequently come in tubes like this.

difficulty in breathing, fatigue, vomiting, a feeling of coldness, pains in the diaphragm, etc. These symptoms can easily be confused with those of common flu and therefore not be treated as a case of poisoning. As little as 7 parts of phosphine per million parts of air can produce more serious effects. At higher concentrations phosphine poisoning can be fatal. The legal limit (TLV) for phosphine is 0.3 parts per million.

The company claimed that the gas "would dissipate in 4-5 hours," but we were able to supply evidence to the union that the gas could be trapped in the boxcar and therefore recommended that there be adequate forced ventilation reaching all parts of the car before anyone entered.

Upon hearing these facts, Al remarked, "I've got to go down there and tell the men we've got a rolling gas chamber on our hands—we'll quarantine those cars!" Using these facts and other information supplied by the LOHP, the union was able to make the company agree that all cars coming from Mexico would undergo 48 hours of forced ventilation before any worker contact. The railroad routinely places these tablets in all cars which cross the border. Although the doors were taped, no warning was posted on the car or on the waybill.

The union's efforts did not end there. The Executive Board of Local 6 adopted a resolution calling for the ban of uncontrolled use of aluminum phosphide tablets. The local's officers sent a strong and urgent letter about this matter to Federal OSHA with copies to Cal/OSHA, the Federal Railroad Administration, other governmental agencies and officials, occupational health groups and other unions. After describing the recent incident and detailing the hazards of phosphine, the letter ends by stating that:

"We can see that companies may save steps and money by simply dropping tablets on a boxcar floor rather than taking adequate precautions and supervising controlled fumigation. The variables that these tablets are subject to, however, are inducing human suffering, and possibly death. We must wonder how many workers, unknowingly exposed to phosphine, simply went home sick thinking they had the flu, whose symptoms closely resemble those of phosphine poisoning. Sickness, chronic poisoning and possible death cannot be worth whatever small savings a company may effect.

"For all these reasons, we think it reasonable and proper to **ban** the use of aluminum phosphide tablets—"Phostoxin"—in boxcars or other places where variables such as temperature, moisture, nature of cargo, porous packing material absorption, etc. may expose workers to this hazard. If we are serious about reducing occupational death and illness, then immediate action is demanded."

The recent ILWU convention in Vancouver also supported the demand of Local 6 for a ban on the use of aluminum phosphide. As a matter of fact, the union's efforts did not begin with this incident. Longshoremen have been able to enforce their own unilateral ban on phosphine at the docks since 1972. The ILWU's newspaper, "The Dispatcher," in an article describing this event, "Chemical Warfare on the Job," reports that "the chemical first came to the ILWU's attention in late 1972 when the longshore coast committee informed the Pacific Maritime Association that West Coast dockers would not handle grain shipments treated with the stuff . . . the longshore boycott of phostoxin-treated cargoes continues."

## Fired Welder Scores Two Victories

Burt Wallrich, a 38 year old welder, was fired by Campbell Industries on January 22, 1975. He was accused of attempting to conceal a 60¢ item of company property in his lunchbox. However, Wallrich claimed that he was framed and fired because of his organizing efforts to reduce hazardous working conditions at Campbell Industries. The company is located in San Diego and owns two major shipyards. Both yards specialize in building and repairing tuna seiners and employ approximately 1000 workers.

The facts revealed that Wallrich's firing resulted from his activities in organizing a safety committee among fellow workers and distributing leaflets outside the plant which alleged safety violations. The principal complaint concerned the use of the preservative paint Dimetcote in areas where welding heat caused the paint to give off toxic and noxious fumes.

During the latter part of December, 1974, Wallrich was instrumental in initiating inspections by both Cal/OSHA and Federal officials. As a result, Campbell Industries was required to make respirators available to welders engaged in certain operations. The respirators were equipped with cartridge filters estimated to be worth between 50 and 60 cents. On January 18, 1975, before leaving the plant, Wallrich opened his lunch-box for inspection at the gate. The guard "discovered" one of the respirator cartridges and Wallrich was subsequently fired for stealing company property.

Since that time, Wallrich has received two favorable decisions from state agencies. The first decision involved the California Unemployment Insurance Appeals Board. Campbell Industries argued that Wallrich was not entitled to continue receiving unemployment benefits. The referee rejected that argument and determined that Wallrich was not fired for "just cause."

The second decision involved the California Division of Labor Law Enforcement. After a two-month investigation it concluded that:

"Burt A. Wallrich was discharged by Campbell Industries in a discriminatory manner for his efforts to call to the attention of responsible authorities certain conditions at Campbell Industries and his filing of a complaint with the Division of Industrial Safety . . ."

The Labor Commissioner's office then directed Campbell Industries to immediately reinstate Wallrich to his former position and to reimburse him for all lost wages and benefits caused by the termination. Campbell officials refused to participate in this last hearing, claiming that the state agency did not have jurisdiction because the National Labor Relations Board had assumed authority. However, the Division of Labor Law Enforcement has indicated that it will go to court to enforce its ruling.

So even with these victories, Wallrich still does not have his job back. In response to these recent events he has stated:

"Campbell's refusal to recognize the jurisdiction of the state, in this case, is a serious attack on the entire California OSHA law. The law offers a guarantee by the state that workers will be protected from punishment for filing justified complaints against their employers. Without that guarantee, workers will be reluctant to come forward with information and the whole program will be undermined."

## Industrial Deaths and Injuries Can Be Crimes

Robert A. Heron, Legal Counsel,  
Bureau of Investigations  
Division of Industrial Safety

### Introduction

In 1970 the United States Congress found that personal injuries and illnesses arising out of work situations imposed a substantial burden on interstate commerce in the terms of lost production, lost wages, and medical expenses, and as a result passed the Occupational Safety and Health Act. It was signed into law and became effective in 1971. Congress declared that the purpose of the Act was "to assure as far as possible every working man and woman in the Nation safe and healthful working conditions and to preserve our human resources . . ." The Act covers every employer in the Nation whose business affects commerce and has one or more employees. The Act established the Occupational Safety and Health Administration (OSHA) within the United States Department of Labor.

OSHA implemented the Act by encouraging employers and employees to reduce hazards in the work environment and to start or improve existing safety and health programs by establishing employer and employee responsibilities; setting mandatory job safety and health standards; encouraging the states to assume the fullest responsibility for administering and enforcing their own Occupational Safety and Health programs that are at least as effective as the Federal program; and providing an effective enforcement program.

Simultaneous with the development of the Federal program there occurred in California two industrial disasters in 1971 and 1972 that focused the attention of the public, the legislature, industry and organized labor to the serious problems attendant to work place hazards. The first disaster occurred at the San Fernando Tunnel in Sylmar on June 24, 1971—an underground explosion there killed 17 workers and injured several others. A second disaster killing 6 and seriously injuring 6 others occurred on October 17, 1972, when the Arroyo Seco Highway Bridge collapsed.

The resulting investigations—by the legislature, by the state administration and others—found a need for strengthening professional law enforcement within state government to investigate industrial deaths, injuries and illnesses.

Thus in 1973 the California Legislature passed and the Governor signed the California Occupational Health and Safety Act (Cal/OSHA). This Act allowed

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California, within the guidelines of the Federal Act, to develop and operate its own safety and health program to enforce civil compliance, and created within the California Division of Industrial Safety a Bureau of Investigations to enforce criminal compliance. The Bureau is directed to investigate every industrial death or serious injury to five or more employees, to collect the necessary evidence, to properly prepare the case for prosecution, and submit the case to local prosecutors for review.

### Responsibilities of Law Enforcement Agencies

The Division is required to promptly investigate every industrial death, injury or illness to determine what caused it and to correct the problem so that it will not happen again. Therefore, the Legislature enacted section 6409(d) of the Labor Code which reads:

“Whenever a state, county or local fire or **police** agency is called to an accident involving an employee . . . in which a serious injury or illness or death occurs the nearest office of the Division of Industrial Safety **shall** be notified by telephone **immediately** by the responding agency.” (Emphasis added.)

Any person who fails to comply with the above is guilty of a misdemeanor.

Police dispatchers and supervisors should have the phone number of the nearest office of the Division available for immediate notification. Each District Office of the Division maintains a 24 hour answering service to receive a report of an injury and to dispatch a safety engineer for investigation.

All deaths, serious injuries or illnesses occurring in or connected with a place of employment must be reported. Serious injury or illness is defined as any injury or illness occurring in a place of employment or in connection with any employment which requires inpatient hospitalization for a period in excess of 24 hours for other than medical observation or in which an employee suffers loss of any member of the body or any serious degree of permanent disfigurement. Serious injury or illness or death does not include any injury, illness or death caused by the commission of a Penal Code violation, except the violation of Penal Code section 385, or an accident on a public street or highway.

### Criminal Penalties Under Cal/OSHA

In addition to any civil penalty imposed upon an employer, both the Federal Act and Cal/OSHA provide for criminal prosecution. Liability is not limited to the actual employer, but includes corporate officers, management officials, or supervisors who have direction, management, control or custody of the work place. If the violation of an occupational safety or health standard causes death or serious injury, the penalty can be a fine of \$10,000 or 6 months imprisonment or both. With a prior conviction the penalty can be a fine of \$20,000 or 12 months imprisonment or both. A felony prosecution can be maintained under section 192 of the Penal Code for involuntary manslaughter if the facts warrant.

Prosecutions are also filed by the Division for violation of section 385(b) of the Penal Code, involving any contact with high voltage overhead conductors. These contacts are required to be reported to the Division even though an injury or death may not result.

### DuPont Studies Chloroprene Link to Cancer

DuPont Company confirmed that it is searching the health records of all present and former employees at its Louisville, Kentucky, neoprene plant because of two Russian studies that found high rates of skin and lung cancer among workers who handle chloroprene, the material from which neoprene is made. DuPont said it began to look into the cancer potential of chloroprene last year following its vinyl-chloride findings. The company stated that a survey of 1300 current Louisville employees and 600 retirees' records failed to show **any significant increase** in cancer. However, the study did find an increase in lung cancer in 1972 and 1973, but cases were not found in 1974.

The DuPont neoprene facility is located literally right next door to the B. F. Goodrich Company vinyl-chloride plant where, last year, the first links between vinyl-chloride and a rare liver cancer were found. DuPont said it had warned its neoprene customers last November that levels of unreacted chloroprene monomer in neoprene could reach high levels in closed spaces. Neoprene is widely used in the automotive industry and in making cable sheaths, hoses, fabrics, adhesives and technical rubber articles.

Disclosure of this and other actions being taken by DuPont, the major producer of this synthetic-rubber material, was made by Dr. William Lloyd, a representative of the National Institute for Occupational Safety and Health (NIOSH). Dr. Lloyd estimated that present and former employees at the plant, which has operated since 1943, could number as many as 60,000 persons. A DuPont spokesman said the number is far smaller. Presently, there are an estimated 2,500 neoprene workers and a larger number of workers who fabricate neoprene into various products in the United States.

Chloroprene has been known to be highly toxic almost since its commercial introduction by DuPont in 1936 and has caused, among other things, liver, lung and kidney damage in humans. However, the Russian reports are the first to link the substance with cancer.

—Wall Street Journal

### Workers' Right to Fight for Safety Upheld

LOS ANGELES—A worker's right to fight for safe and healthy conditions on the job was upheld in an important arbitration recently.

The case arose a year ago, on January 18, 1974, when chief steward Jesus Alvarez and 19 other ILWU Local 26 members at Central Bag and Supply refused to work with unsafe machinery. Alvarez was fired, and the other workers were suspended for a period of three weeks. Grievance procedures were begun immediately by Local 26.

The case finally found its way into arbitration several months ago, where it was the subject of lengthy hearings.

Finally, arbitrator Gerry L. Fellman ruled that Alvarez had been fired without cause, and that the proper remedy would have been a two-month suspension. Fellman ordered re-instatement of Alvarez, with full seniority and fringe benefits, and back pay for all time in excess of two months. Seven of the workers were given full back pay for the entire three weeks for which they were suspended, with no loss of seniority or

Continued on page 6

## DOCTOR'S CORNER

### OCCUPATIONAL SKIN PROBLEMS

#### PART I

Phillip L. Polakoff, M.D.

An occupational skin problem (occupational dermatosis) is defined as any inflammation or abnormality of the skin arising directly from the working environment. The term, "dermatosis" can represent a discoloration, a blemish, a callus, an inflammatory eruption or a tumor. On the other hand, the term "occupational dermatitis" refers strictly to an acute inflammatory type of occupational dermatosis.

time from work. It can be safely estimated that, in the majority of plants, at any given time, at least 1% of the workmen will show some form of occupational dermatosis. Thus, one per cent of 80,000,000 workers—assumed to be employed at a given time—equals 800,000 cases of occupational dermatosis at that time.

The number of reported occupational skin conditions by industry groups in California in 1969 shows the number of occupational dermatosis to be highest in manufacturing and second highest in agriculture (see Table II). Statistics from California are presented here because they are among the most reliable, and for all practical purposes the only ones available. Some experts estimate that the cost due to total time lost plus medical care for occupational dermatosis runs to more than \$150,000,000 annually in the United States.

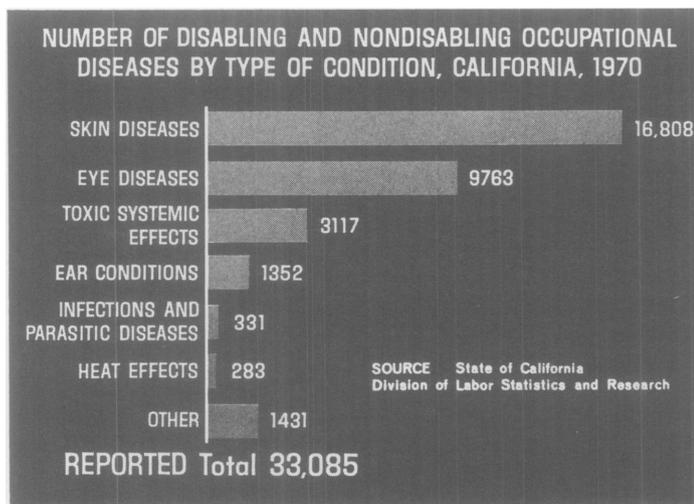


Table I

#### Frequency

Occupational skin disease is the most common industrial illness which attacks the worker. At least two-thirds of all compensated industrial diseases are of dermatologic nature (see Table I). These figures do not include thousands of cases of dermatitis which are not compensated because workers do not lose

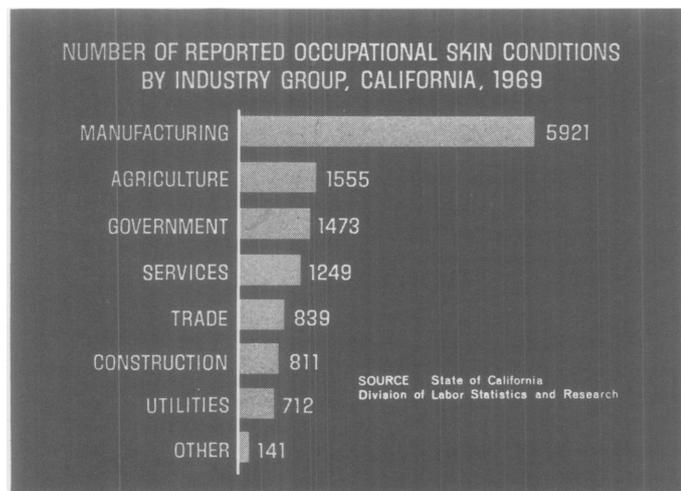


Table II

### COMPENSATION CLAIMS FOR ONE YEAR IN ONE INSURANCE COMPANY

TOTAL CLAIMS	140,000
CLAIMS INVOLVING SKIN	117,997
WORK HOURS LOST (SKIN)	4,649,880
MAN YEARS LOST (SKIN)	2,548

Table III

#### Function of the Skin

There are numerous reasons why the skin can be injured by occupational contactants. First, the skin is the largest organ of the body and makes up the largest surface area in close contact with foreign substances in nature as well as in the industrial environment.

Among its various functions, the skin protects, regulates body heat, receives sensations, secretes oils and moisture, absorbs, and manufactures pigment (for skin color). Each of these physiologic actions is important in maintaining a healthy skin. Any deviation of these functions from normal can alter the health of the skin and sometimes that of the entire body.

The structure or anatomical design of the skin (Figure 1) is protective because of its thickness, its durability, and the capacity of certain of its layers to block the entrance of water and water-soluble chemicals. Its thickness and elasticity protect the underlying muscles, nerves and blood vessels. Further, the thickness and color of the skin afford protection against the effects of sunlight and other sources of physical energy. Body temperature is controlled by the excretion of sweat, the circulation of the blood, and the nervous system. The blood, then, is maintained at a relatively constant temperature, despite the fact that the body can be exposed to wide ranges of temperature variations. The sweating process aids in the cooling of the overheated surface by its contribution to evaporation. At the same time, there is "enlargement" of blood

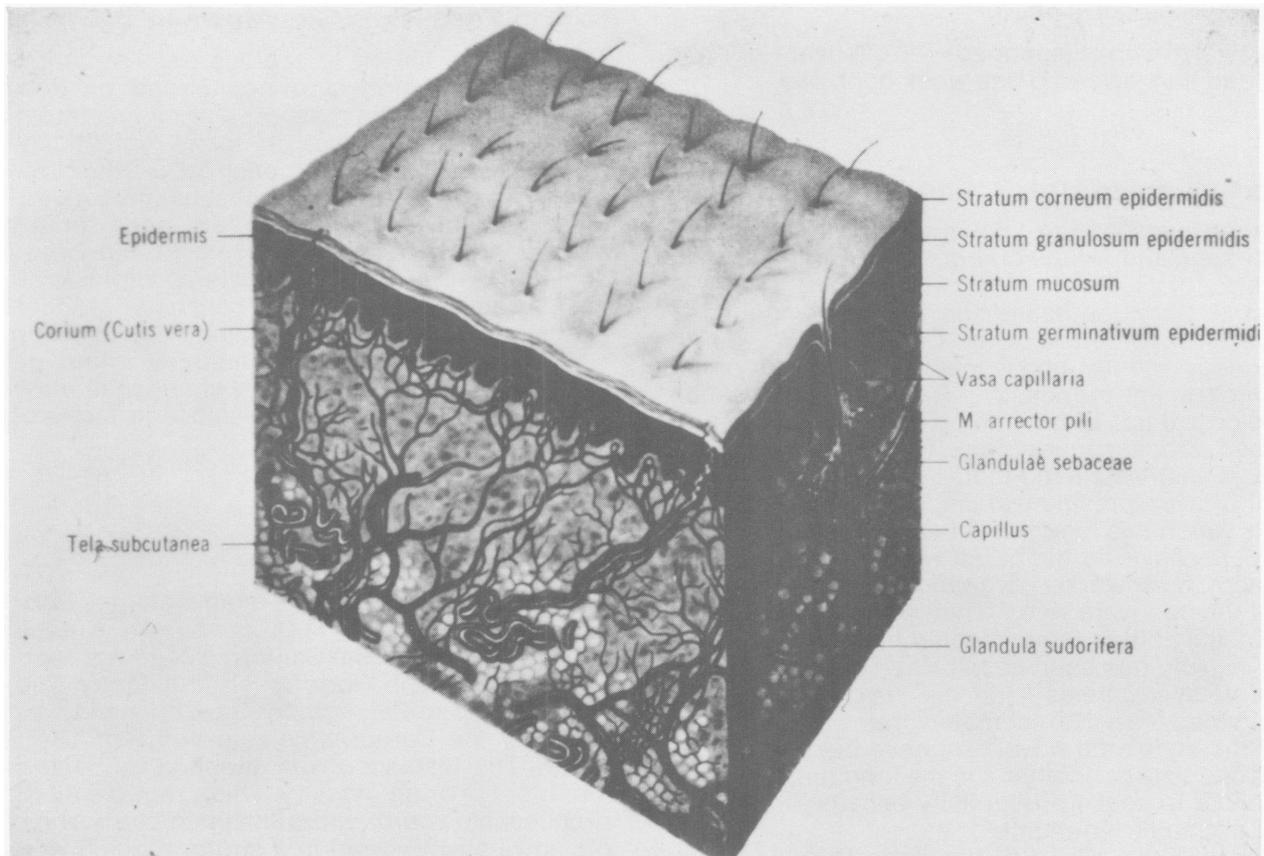


Figure 1

vessels within the skin. Conversely, if the body is exposed to severe cold, the vessels contract to conserve heat within the body.

Many nerve endings and fibers are contained within the skin. These serve as a conducting system so that the individual can differentiate between heat, cold, pain and sense perception. This ability of sensory perception allows one to detect whether a substance is dry or wet, thick or thin, rough or smooth, hard or soft.

The skin also secretes substances by means of the sweat glands and sebaceous glands. The perspiration or sweat contains products from the body's metabolic function. Either excessive or inadequate sweating can be harmful, not only to the skin, but to the general health. The sebaceous glands, located in the mid-portion of the skin, produce an oily material called sebum. The exact usage of sebum by the body is not known, but when it is present in normal amounts it helps to offer some surface protection to the skin.

Absorption of materials through the skin usually occurs when the continuity of the skin is disrupted, such as by a cut, but it can also occur by way of the hair follicle which contains the hair bulb and a portion of the hair shaft. Some substances are absorbed directly through the intact skin.

Pigmentation of the skin is a complex body mechanism which occurs naturally throughout the lifetime of an individual. Sunlight and certain chemicals stimulate pigment formation, but the opposite can occur causing its activity to be slowed down. The pigment contained in certain cells of the epidermis (top layer of skin) is constantly shed by the Keratin layer of the skin (the most superficial layer of the skin). At the same

time, though, pigment serves as a screen to protect against the effects of sunlight.

The waxy emulsion made up of sebum, breaks down products of keratin and sweat, and somewhat slows down the entrance of water and water-soluble chemicals. This emulsion layer is easily removed by soaps, solvents and alkalis, but it is naturally restored under normal conditions. Keratin, the layer of dead cells beneath the surface emulsion, is produced and shed as part of the normal life of the skin. It moderately resists mild acids and water, whereas ultraviolet radiation causes it to thicken. But, it is susceptible to the action of alkali, strong detergents, solvents, and prolonged exposure to warm water.

In the lower portion of the keratin layer is a highly important barrier which prevents the marked loss of water from the skin and the wholesale entrance of water-soluble materials. It can be altered by injury, strong chemical agents which destroy keratin, solvents, and by internal diseases which disrupt the skin. The skin itself permits the ready exchange of gases except for carbon monoxide. The spaces around the skin hairs allow the entrance of lipid-soluble chemicals, fats and oils. The sweat glands offer little if any avenue for penetration.

It is evident that the skin has its own built-in defense, yet, there are a number of direct and indirect causes of occupational skin disease which can disturb this normal defense pattern. Now that the foundation has been poured, in the next issue of the Monitor, Part II of this article will discuss these causes as well as how occupational skin diseases can be prevented.

## RECENT DEVELOPMENTS—Cont.

fringes; twelve were suspended—retroactively—for two weeks, and thus awarded one week back pay.

—*The Dispatcher*

### Short-Handled Hoe Banned in California

The short-handled hoe, known as “el cortito” among Spanish-speaking farm workers, has been banned in California.

The prohibition on use of the tool was announced by Rose Bird, secretary of the California Agriculture and Services Agency, and Donald Vial, Director of the State Department of Industrial Relations, on grounds that prolonged use of the hoe by farm workers to thin and weed crops causes back injuries and, consequently, is an unsafe hand tool.

Cesar Chavez, president of the AFL-CIO United Farm Workers which has long sought such a ban to protect workers' health, said his office was deluged by calls from happy farm workers wanting to confirm that reports of the ban were true. “They were so surprised,” he said, “they didn't think it would happen.”

Chavez, who has been hospitalized repeatedly with back problems, blames it on the years he used the short-handled hoe. He estimated that about 50 percent of the state's farm workers have been forced to use it at one time or another. “In the long run,” he said, “this should increase productivity because the workers will not suffer so much.”

Richard Wilkins, Chief of the State Division of Industrial Safety which will enforce the ban, said the case against the tool has been clearly established as shown by medical evidence and other expert testimony.

In 1973 the old Industrial Safety Board had rejected complaints by farm workers that the short-handled hoe was unsafe. But the State Supreme Court overturned this ruling. In its decision, the high Court said:

“We hold that any tool which causes injury, immediate or cumulative, when used in the manner in which it was intended to be used, may constitute an unsafe hand tool within the meaning of the (state) regulation.”

The Court sent the matter back to the Division of Industrial Safety, noting that the Division is empowered to determine whether the short-handled hoe is an unsafe hand tool and directing the Division to make that determination.

Wilkins subsequently determined that the short-handled hoe is an unsafe hand tool within the meaning of Safety Order 3316 of Title VIII of the California Administrative Code. In issuing the ban, which went into effect Monday, April 7, Wilkins said, “There is significant causal connection between the use of the hoe and back pain and back injury” because the tool can only be used in a stooped, bent-over posture. He pointed out that there are “reasonable and practical alternatives” to the use of the hoe, citing substitution by the long-handled hoe, use of precision planting, use of herbicides for weeding and the use of mechanical and electronic devices for thinning.

—*California AFL-CIO News*

### Ford Hints Slowdown in OSHA

Look for a fall-off in zealous enforcement of both occupational safety and health and environmental standards. The main reasons: a strong hint from President Ford that there are too many regulations facing American business. In a speech before the U.S. Chamber of Commerce meeting in Washington on April 28th, the President said there is **“the need for a proper assessment, or evaluation of costs and benefits”** in dealing with regulations associated with social issues such as occupational safety, consumer product safety and the environment. Ford stated, **“the question is not whether we want to do something about noise or safety, but whether in making changes in our regulations they would make more sense in terms of costs added and benefits gained.”**

—*Toxic Materials News*

## PROJECT ACTIVITIES

- On April 12, 1975, LOHP staff members Bob Fowler and Phillip Polakoff, M.D. conducted a health and safety workshop at the California Joint Apprenticeship Committee for the Floor Covering Industry. The meeting was held in Bakersfield, California and was sponsored by the Carpet, Linoleum and Soft Tile Setters Union. The workshop was attended by persons from the floor covering industry, union representatives, apprenticeship coordinators and instructors. The primary objective was to develop a strategy which would ultimately lead to the establishment of a Health and Safety training program for the Carpet, Linoleum and Soft Tile apprentices. The preliminary efforts will include compiling background data from questionnaires distributed to approximately 500 journeymen and 100 apprentices in the trade. This data will serve as the basis for future development of occupational health and safety training materials.

- In the November, 1974 issue of the **Monitor**, it was reported that the LOHP has co-sponsored a 1-day seminar on occupational health and safety with the Labor Studies Program of the San Mateo Labor Council. As a follow-up to that meeting, a second general seminar was conducted on April 15, 1975 in conjunction with the Community Services Committee of the San Mateo Central Labor Council. The meeting was attended by approximately 50 rank-and-file members and their families. Speakers and topics included: Phillip Polakoff, M.D. — Overview of Occupational Health in the U.S.; Lawrence Andrus, Cal-OSHA consultant — Workers' Rights under Cal/OSHA; Ernest Norback, Attorney — Workers' Compensation; and Bob Fowler, LOHP — Organized Labor's Responsibility to rank-and-file-members.

- Approximately 40 Shop Stewards of the International Longshoremens and Warehousemen's Union (Local 6), attended a workshop on health and safety on May 1, 1975. LOHP staff member Bob Fowler conducted the session, which included an overview of health and safety issues. A follow-up meeting with the local's Health and Safety Committee is being arranged through Warehousemen Business Agent Avelino Ramos.

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