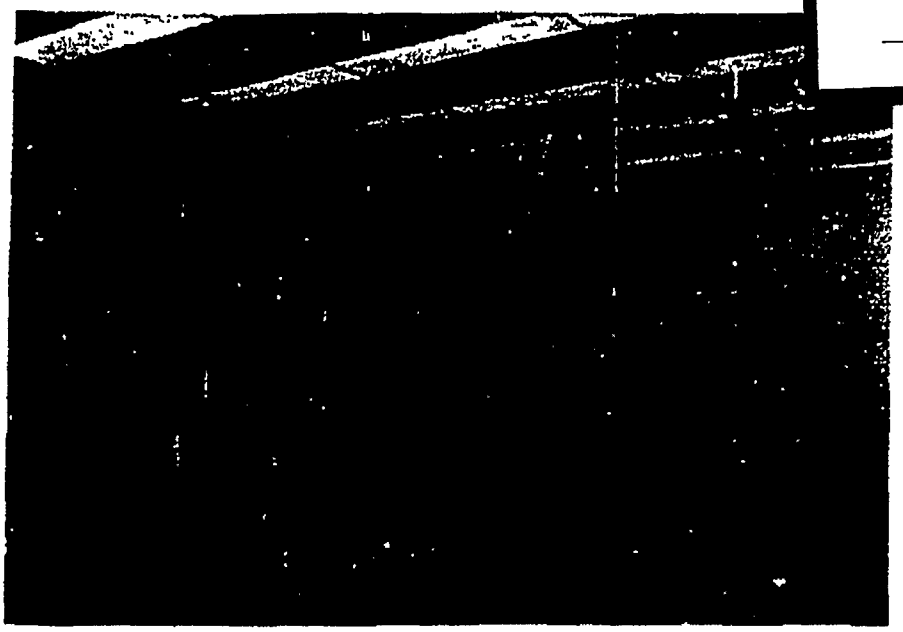
PLAINTIFF'S EXHIBIT

NSC-395



The industrial hygiene laboratory has become a center of research for better working conditions through study of materials used and control of manufacturing processes. (Courtesy General Electric Co.)

The Expanding Field of Industrial Hygiene

By A. C. PABST

Twenty years ago industrial hygiene was a new science. Today the hygienist and the safety engineer are on the same team working for a safer environment

INDUSTRIAL HYGIENE is a field that is closely interwoven with industrial safety. In fact, it can be regarded as a medical engineering phase of safety.

Unfortunately, many people know little about industrial hygiene and the functions of the industrial hygienist. Industrial hygiene is a comparatively new science—practically unknown 20 years ago. Today there are only 800 industrial hygienists in the United States, and a large number of them are not in industry but working for the federal government or state departments.

Usually, the word "hygiene" recalls hygiene courses in school which dealt with personal habits, such as bathing, brushing teeth, cleaning finger nails, etc. People jump to the conclusion that a hygienist in industry must be interested in keeping employees clean. In my initial visit to many of our refineries, it seemed that the first stop in the tour was to visit the locker rooms and to inspect shower and lavatory facilities.

Industrial hygienists are interested in personal cleanliness so far as it is necessary to protect the employee's health. We are more interested in keeping his lungs free from poisonous dusts and gases, his bones free from lead, his liver free from chlorinated solvents, etc.

Hygiene is defined as *that branch of medical science that relates to the preservation of health.* Therefore, industrial hygiene may be defined as the science of prevention and control of occupational illness. It resolves itself into the problem of finding factors or conditions in work places that may cause or contribute to the illness or serious discomfort of employees, and of devising the methods and means of eliminating or controlling such conditions.

The industrial hygienist has

A. C. PABST is Industrial Hygienist, Socony-Vacuum Oil Company, Inc., New York. This article has been condensed from a paper presented at the Petroleum Section, 42nd National Safety Congress.

done much toward bringing medicine and safety engineering into close cooperation partly because his interest overlaps these two fields.

The typical industrial hygienist started out as a chemist or chemical engineer who became interested and studied toxicological effects of chemicals on man. Consequently, he has a good background of chemistry and engineering combined with some medical knowledge—a sort of one-third doctor, one-third engineer and one-third chemist. His objectives are the protection and improvement of the health and safety of workers from all manner of harmful exposures related to occupation.

From this you will note that industrial hygienists and safety engineers have pretty much the same objectives and are members of the same team. Actually, the functions of each are sometimes so inter-related it is not possible to draw clear lines of separation. Nor is it necessary to do so, for if a man's health is endangered by working conditions it is an important part of his safety picture. In many industries, safety and industrial hygiene are combined in the same department.

In the petroleum industry, however, industrial hygienists are usually attached to the medical department and work as closely as possible with the safety department. There is good reason why the petroleum industrial hygienists must lean heavily upon the safety department. In the petroleum industry the concept of industrial hygiene is relatively new and is considerably behind similar activities in the chemical and other industries, consequently, the number of petroleum industrial hygienists is exceedingly small.

On the other hand, safety departments are well established, well acquainted and close to the every day problems of the petroleum industry, and have considerably more coverage and manpower. To illustrate, the American Petroleum Institute's roster of safety and fire protection personnel lists some 1200 names, probably not all, in this occupation.

Contrasted to this, to the best of my knowledge, there are at present only 17 industrial hygienists working for petroleum companies—an industry ratio of approximately 70 safety men to one industrial hygienist. Most of the major oil companies now have at least one industrial hygienist and from 50 to 100 safety men, so you can see it is very necessary for us to work with and through our safety people.

Basically, the practice of industrial hygiene in the petroleum industry is the same as in any other industry and it can be boiled down to four general principles:

1. A knowledge of the toxicology of chemicals and materials.
2. A review of all chemicals or materials used and how handled and the tabulation of toxic or potentially hazardous substances.
3. The measurement of worker exposure to hazardous substances.
4. If required, the recommendation and installation of adequate control measures and the evaluation of the effectiveness of such corrective steps.

Toxicology of Chemicals

In regard to Item 1, the Toxicology of Chemicals, it is usually difficult to adequately define a hazardous material because practically anything can be safe or harmful depending upon how or where it is used. For example, air and water are not regarded as harmful, but both are quite deadly under certain conditions—air if injected into the blood stream and water if introduced into the lungs.

In the same manner, the use of carbon tetrachloride in a process having properly designed ventilation would not be hazardous, while the use of carbon tetrachloride for mopping floors would be quite dangerous. Most safety people are aware that carbon tetrachloride is a hazardous chemical because there has been con-

—*To page 103*

Like people, chemicals are of many types and dispositions. Most are uncomplaining, law-abiding citizens who present no special problems. Some are unstable and unpredictable. Some are out-and-out neurotics, requiring a sharp and observant discipline. Others, harmless by themselves, may be influenced by bad company. Still others are troublemakers in solitary, but docile and helpful in tandem. Some are just plain bad actors.

—From a publication by Du Pont's Haskell Laboratory of Toxicology

* * * * * * * * * *

TABLE I—EFFECT OF ALCOHOL LEVEL IN BLOOD*

Ounces of Whiskey Consumed in 1 Hr. or less	*% Alcohol in Blood*	*Behavior*
¾	0.01	Normal
1	0.02	Feeling of warmth, pleasant social behavior.
2-3	0.05	Judgment blunted Boastful, impulsive Officially still sober
5-6	0.1	Fumbling, staggering gait, clumsiness, slurred speech
8	0.15	Officially drunk. Responses and motor coordination strongly affected.
10	0.2	Helpless, nausea
16	0.3	Stupor
24	0.4 - 0.5	Coma
30	0.6 - 0.7	Paralysis of the respiratory center—death.

**Pfizer Spectrum, JAMA, March 27, 1954*

utilizes a minimum of components and controls but to offer a flexible, completely reliable circuit that will fail safe on any conceivable control or power failure. The hydraulic circuit designed on these principles could be termed a "straightforward" circuit, that is, one simple in operation, utilizing standard components and most important, one that can be understood readily by the maintenance men.

Many technical improvements in hydraulic components have been and are being made to meet the demands of fully automatic production machinery. Gasket-mounted control valves and cartridge-type pumps are used almost exclusively. Micronic oil filters with pressure gages to indicate the condition of the filtering element now guard the oil supply to insure trouble-free performance.

Hydraulic cylinders formerly were subject to excessive maintenance due to mechanical failure and seal leaks. Today there are available well-designed units that give excellent service under extreme service conditions. The self-regulating, tamper-proof seals are wear compensating and precision engineered to give years of leak-proof, highly efficient service with minimum maintenance required.

Much has been done to answer the familiar objection to hydraulics, the common old garden variety of leaks. It was expected that dry seal pipe threads would be the answer, but it left much to be desired. Work is being done now on pipe threads using dissimilar male and female taper, and the experimental results look promising. By using steel tubing, modern tube fittings and a leak-proof thread, the objectionable leak will be a thing of the past.

It would be very beneficial to the user if suppliers of hydraulic components would standardize mounting dimension. This would facilitate quick replacements with stock units regardless of make.

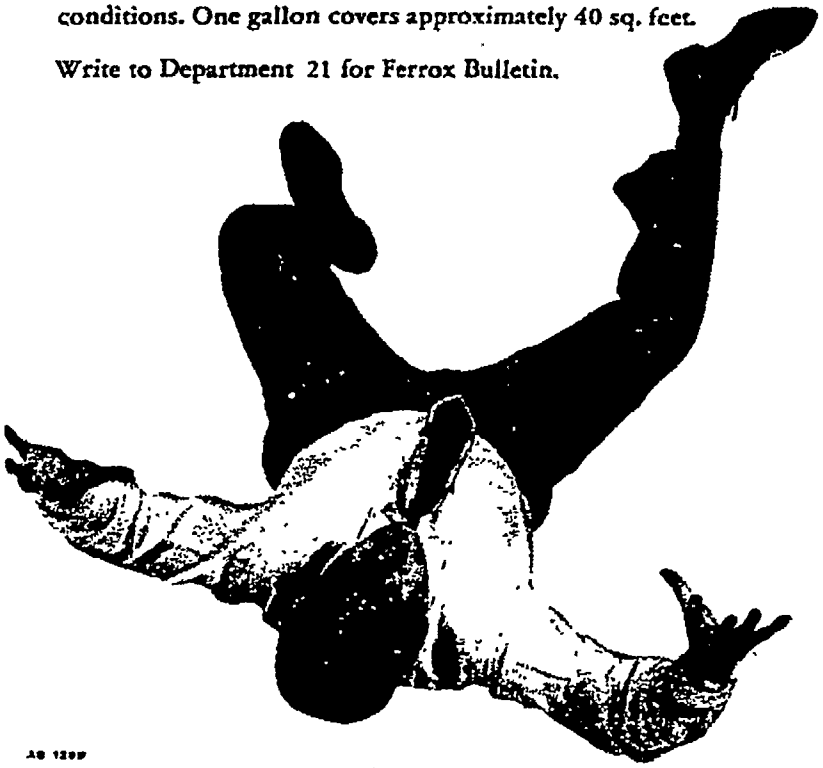
If you want to stay young, associate with young people. If you want to get old in a hurry, try to keep up with them.

Don't Slip up on Safety

FERROX is low-cost insurance

Serious slipping accidents can happen anywhere—on stairs, walkways, ramps, loading platforms, washrooms, machine areas, etc. Low-cost Ferrox provides safe footing on all walking surfaces, wet or dry. It can be trowelled over wood, concrete or metal ... sticks tight ... resists oil, chemicals and weather conditions. One gallon covers approximately 40 sq. feet.

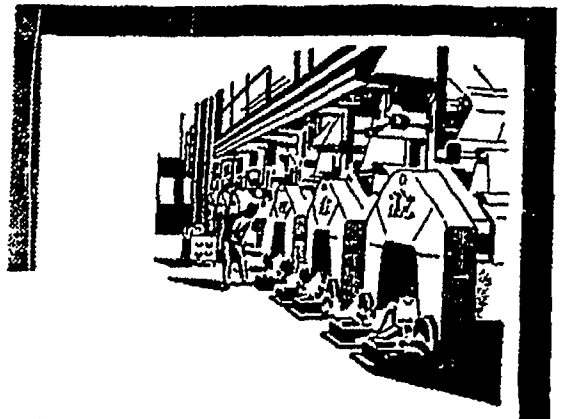
Write to Department 21 for Ferrox Bulletin.



AA 1299

AMERICAN ABRASIVE METALS COMPANY

IRVINGTON 11, NEW JERSEY



The PRESSMAN knows

. . . The man in the pressroom plays a full share in the fast action that makes the American printing industry a marvel of swift and accurate production.

The pressman knows that his footing is safe . . . when he works in the pressroom of one of the great printing plants which have learned the value of ALGRIP . . . the only abrasive rolled steel floor plate in the world.

He may not even know, offhand, the trade name of the flooring underfoot . . . but the man who works on ALGRIP flooring, walkways and crossovers *knows that he won't slip.* The depth-controlled ALGRIP abrasive sees to that.

And his employer knows that his lower insurance costs . . . and saving in lost man-hours . . . are helping ALGRIP to pay for itself.

A.W. ALGRIP ABRASIVE ROLLED STEEL FLOOR PLATE

ALGRIP — *Approved for Safety by Underwriters' Laboratories.*

ALAN WOOD STEEL COMPANY

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Other products A.W. SUPER-DIAMOND Rolled Steel Floor Plate—Plates—Sheets—Strip—(Alloy and Special Grades)

Reader's Point of View

—From page 10

factor in computing uninsured or indirect injury costs.

I have found that the formula of "Indirect costs equal four times the direct cost" to be conservative and I cannot agree that it should be: "Indirect costs equal one-fourth the direct costs." My analyses and reports on these losses have been reviewed carefully by the management personnel of this and other companies where I have been engaged in safety work and in all instances have been accepted.

I would be interested in seeing Mr. Simonds' views on the above.

D. F. WILLIAMS
Service Dept. Director
International Latex Corp.

From London

LONDON, ENGLAND.—At a recent meeting of the London Group Engineering Section, Accident Prevention Council, a copy of the current NATIONAL SAFETY NEWS was shown to me by a visiting member of the United States Army. One article featuring scaffolding was of particular interest to me and I wonder if I could have a copy of this edition.

I am pleased to enclose a brochure on the subject of Home and Industrial Safety which may be of interest, particularly so as this is the first of its kind to be published in this country.

Would you please let me know the cost of a regular subscription to NATIONAL SAFETY NEWS?

JAMES PYLE, *Director*
Sky Press Ltd.

A copy of the March issue has been sent. And thanks for the interesting booklet.

Upside Down

SHEFFIELD, ALA.—We want to be safe, so just for the "right or wrong file," I would appreciate very much to know if the picture on page 204, March issue, was upside down?

CURTIS CLENDENON
Maintenance Supervisor
Electro Metallurgical Co.

You're right; the picture was wrong side up. But don't ask us how it happened.

Flameproofing Fabrics Brings New Hazards

To comply with a federal law passed last year which prohibits interstate commerce of highly flammable wearing apparel and fabrics, manufacturers are impregnating textiles with fire retardants that are in turn providing a hazard to workers handling them, according to Irving Ettinger and Martin Jeremias, two chemical engineers of the Division of Industrial Hygiene, New York State Department of Labor, who have made an extensive research of the problem.

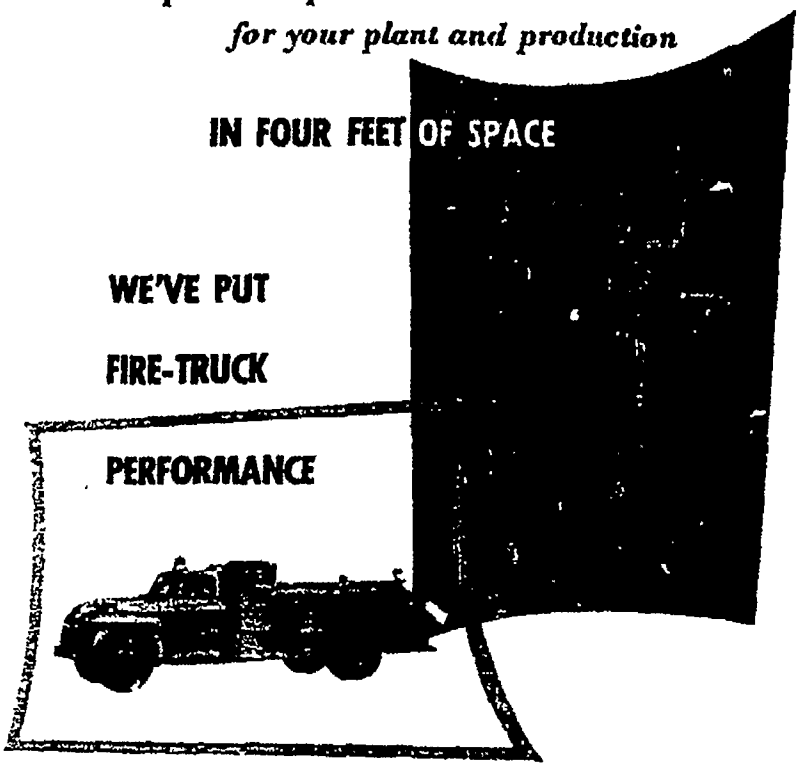
Result of their research was disclosed in a paper read before the American Conference of Governmental Industrial Hygienists at the recent Industrial Health Conference at Buffalo.

Among the fabrics requiring flameproofing treatment, the paper stated, sheer nylon and nylon nettings assumed unusual importance due to the increase in the use of these fabrics for party dresses, veils and petticoats. A survey of mills in the New York area showed that the main flameproofing agent for nylon was urea-formaldehyde. Some formulations included melamine-formaldehyde and a sulfur compound.

Investigation disclosed that the proper impregnating process is not followed in any of the mills. No attempt is made to squeeze out excess unpolymerized resin which breaks down to irritating formaldehyde gas. The researchers point out that the fabric is loaded with as much resin as possible to lend it greater stiffness which gives petticoats the bouffant effect required by present styles. Generally, the net is rolled and shipped without benefit of afterwash or other treatment. During storage some of the uncured resins turn into formaldehyde gas and workers unrolling the cloth become exposed to the gas, causing eye, nose, and throat irritation. In addition, the fabric is so loaded with the resin that during handling flaking occurs, the flakes entering the worker's eyes.

For several reasons mill owners objected to the removal of unpolymerized resin. Reasons were

Here's dependable protection for your plant and production



with JOHN BEAN HIGH-PRESSURE FOG to knock out Fires Fast


Two-Gun Self-Propelled Model


One-Gun Self-Propelled Model


Skid-Mounted Stationary or Portable


Cabinet Type Stationary Model

Now, there's dependable fire control for your plant — real protection for production and profits — in the complete new line of John Bean Industrial Fire-Fighters. Both stationary and miniature mobile models use the same John Bean High-Pressure Fog Pump design "one-man" hose lines and patented Fog Guns as the full-size municipal fire-trucks.

Only John Bean High-Pressure Fog, delivered at 600 pounds (or more) nozzle pressure, has such fast triple action — it cools, it smothers, it isolates flames in seconds — makes one gallon of water do the work of ten. Fires in oil, gasoline, lacquers, solvents — in any flammable liquid or material (except magnesium) — are all controlled with amazing speed.

Not only are fires stopped before they become disasters, but the usual losses from putting them out are eliminated or minimized. Because true high-pressure fog makes one gallon of water do the work of ten, you reduce water damage and save down-time on machines and production lines.

The full story is worth your investigation. Write today for your copy of the new John Bean Industrial Fire-Fighter Catalog.

JOHN fmc BEAN

Division of
FOOD MACHINERY AND CHEMICAL CORPORATION
DEPT. IF, LANSING 4, MICHIGAN

an ACCO product

ACCO's Great New Chain...

ACCOLOY X-WELD 125

• *At last*—a chain with welds as strong or stronger than the material . . . welds that won't break when links are bent sharply . . . welds made with two projecting lugs that absolutely prevent dangerous kinking of the chain . . . welds that provide 2¼ times the welded area found in normal flash or butt-welded links. Accoloy X-Weld 125 Chains hang straight as a die. Every link is perfectly formed!

Accoloy X-Weld 125 Chain has almost countless uses: Slings, bundling, towing, general utility chains . . . It can be furnished in special analyses and heat treatments to provide greatly extended life and use on tough jobs . . . corrosive jobs . . . abrasive jobs . . . hot jobs. Specify Accoloy X-Weld 125 for your next chain job for a new concept of chain performance, economy and value. Available in ¼", ⅜", ½", ⅝" and ¾" sizes.

• *Ask our nearest district office for further information on* ACCOLOY X-WELD 125 CHAIN, *or write the American Chain Division, York, Pa., for descriptive bulletin.*

PATENT APPLIED FOR

The Secret is in the Weld!

This Accoloy X-Weld 125 link was ground and etched to show its big welded area —2¼ times the size of welded area possible with other welding processes. This means more than double the security at the weld—and only X-Weld has it!

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American Chain Division
AMERICAN CHAIN & CABLE

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that the added cost could not be absorbed, that nylon could not stand the added handling, that the mills have not the necessary equipment and are reluctant to invest in it and, finally, that the removal of the surface resins would reduce the stiffness of the net. These objections had to be conceded and the more basic approach, the improvement of the raw material used in flameproofing, was sought.

Mill owners have been encouraged to lend their pressure upon resin manufacturers to improve their product. From observation it appears that there has been considerable progress in the last few months and that the industry has succeeded to a large extent in improving its products so that flameproofing materials no longer present the hazard to workers they did only a few months ago.

Baking Industry

—From page 35

which he was injured. These terminologies are important and the rules likewise must be adhered to if we are to have authentic comparisons.

Accident costs are much more difficult to obtain, since they should include both direct and indirect expense. We are often misled by simply taking the direct costs, which are those covered by Workmen's Compensation. The indirect costs, not covered by insurance, are quite frequently the larger.

A study completed by the Workmen's Compensation Board of the State of New York, covering compensation cases closed in 1948, reveal that more workers in bakeries are involved in compensable cases than in any other major division of the food industry. They found that 1,550 cases comprised one-fourth of all compensable food industry cases. Small bakeries, with baking facilities on the premises, selling at neighborhood stores are not included in this study.

The study shows that the average cost of these cases was $504, and that bakeries lead the food industry in the total amount of compensation awards. This study

injuries to 385 or 36 per cent of the bakery workers, were in some manner connected with the handling, or mishandling, of miscellaneous objects. This would indicate a need for training in proper handling which has been effectively introduced in many other industries.

The next leading cause of accidents was working surfaces. This caused 295, or 19 per cent of the bakery accidents in compensation cases.

Accidents caused by vehicles numbered 281, or 18 per cent among bakery workers, a higher percentage than similar accidents in any other food industry. These are a few of the statistics that point directly to the sources of accidents, and where we can initiate training to reduce them.

Some of the specific average costs per case or type of accident in the industry show that the average cost of slips was $470; falls $610; caught in-on-or between $670; and unclassified accidents $1,598. These are a few instances of the exorbitant costs of compensation benefits alone, which do not include medical or hospital expenses, or the indirect costs.

These are the same dollars that we utilize to operate plants, buy equipment, advertising, and to pay salaries. There is no easier way to increase our profit picture than by eradicating accidents and their attendant costs.

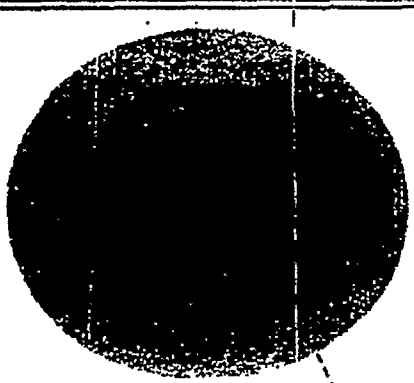
The social effects of accidents have an even greater impact than the economic side, for they involve the human factor. Their consequences embody some of the principles that we as Americans have cherished since this nation was founded. Pursuit of happiness can be greatly affected by crippling injuries. The thousands of accident victims are an ever increasing burden to society, and to state and federal government. Like the eradication of infectious diseases, the prevention of accidents must begin at their sources.

The progress of American busi-

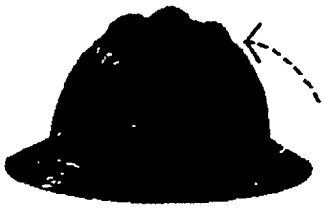
PROVEN BY THE REBOUND!

These Bullard engineering and sales research men are studying not only the impact, but also the rebound of this eight pound ball. Rebound action is the extra safety margin in Bullard safety hats and caps. Their scientifically designed three-ribbed crown not only resists impact but deflects heavy falling objects. This is one of the reasons why Bullard fiber glass hats and caps surpass all necessary industrial tests.

Greater protection plus style, comfort and color make Bullard head protection the best and longest lasting buy in safety hats and caps. Chin straps, winterliners and face shields are available for all styles of Bullard safety hats and caps.



Universal size—replaceable headband



Three-ribbed crown construction

Choice of permanent molded-in colors to identify company or trade. Aluminum hats and caps available also in variety of colors.

EVERYTHING BULLARD IN SAFETY

HARD BOILED

BULLARD

E. D. Bullard Company, 275 Eighth St., San Francisco

ness has been due in many respects not only to raising the standard of living and the means for the worker to earn it, but an interest in his well being, his health and his happiness, his problems and his desires—both on and off the job. The goodwill that emanates from this kind of association is indeed the foundation for sound labor-management relations. There is no question about organized labor's concern for the health and happiness of their members, and they are as concerned with accident prevention as with other benefits.

Through safety programs carefully planned and administered, management can gain the respect of labor. They can serve as a foundation for building attitudes which are necessary for the efficiency of any operation. When management, through a supervisory staff closely associated with workers, exemplifies interest in workers through protecting them, workers in turn are receptive to cooperating in other types of management goals.

Success in preventing accidents has been noteworthy in American business and it has been primarily management's accomplishment. The survival of many a company can be traced to effective loss control, if we would use as a yardstick the business failures following severe losses.

With today's heavy loss settlements and award suits it is conceivable how a small company might well face bankruptcy. Because of the many small bakery operators this problem becomes one of vital importance, for it may mean survival or termination of operations.

Wire from Washington

—*From page 14*

Drug Administration by some $384,000 "solely for activities aimed at protecting the American people from products that are filthy or endanger health" and for one other designated purpose. The Senate must still act on the appropriation. H.R. 5036 (Priest) and H.R. 5094 (Hale) would amend the Food, Drug and Cosmetic Act with respect to new cosmetic ingredients.

S. 1455 (Magnuson) and H.R. 5222 (Klein) seek to amend the Flammable Fabrics Act so as to exempt plain surface scarves which do not present an unusual hazard; these bills were sponsored by the Department of Commerce.

H.R. 5091 (Fino) would require that cigarettes be packaged and marked so as to show the nicotine content of each package.

Marine Safety. S 460 (Magnuson) was reported favorably by the Senate Committee on Interstate and Foreign Commerce. This bill, and the similar H.R. 4653 (Bonner), were introduced at the request of the Treasury Department, to require river steam vessels to have approved life preservers for each person allowed to be carried, including crew.

Hearings have been held on S. 743 (Magnuson), which provides for biennial inspection of hulls and boilers of cargo vessels; a similar bill in the House is H.R. 4651 (Bonner). Hearings were also held on H.R. 4090 (McCormack) concerning radio-call selectors for cargo vessels.

Aviation Safety. The CAB held a public discussion of various portions of proposed changes in the Civil Air Regulations concerning the elimination of the annual inspection of general aircraft.

S. 1119 (Magnuson) proposes extensive amendments to the Civil Aeronautics Act of 1938, including some of its safety provisions.

Farm Safety. The President proclaimed the week beginning July 23, 1955 as National Farm Safety Week.

Government Operations. S. 1309 (Smith and Saltonstall) seeks to decrease accidents in government activities by making each government agency responsible, in its budget, for the cost of payments to injured employees or their survivors. Under present law, the Bureau of Employees Compensation in the Labor Department makes payments. The basic purpose of the bill is to encourage the various government agencies to initiate safety programs.

You can reduce this danger zone under any hoist, crane, or other lifting equipment with Bullard-Burnham safety hooks. A pushbutton safety gate makes it impossible for loads to jar loose until the hook is manually unlocked, and also acts as a constant safety gauge indicating whether or not the hook is sprung. Notice that the safety gate leaves the hook's throat 100% clear. The heavy duty safety gate is non-corrosive brass with a stainless steel lock pin that will last for years.

E. D. Bullard Company, 275 Eighth St., San Francisco

Hook on load block

Hook with jaw and jaw-type ball for link chain

Hook with adapter nut for all types of pulleys

EVERYTHING BULLARD IN SAFETY

Write for complete data and specifications

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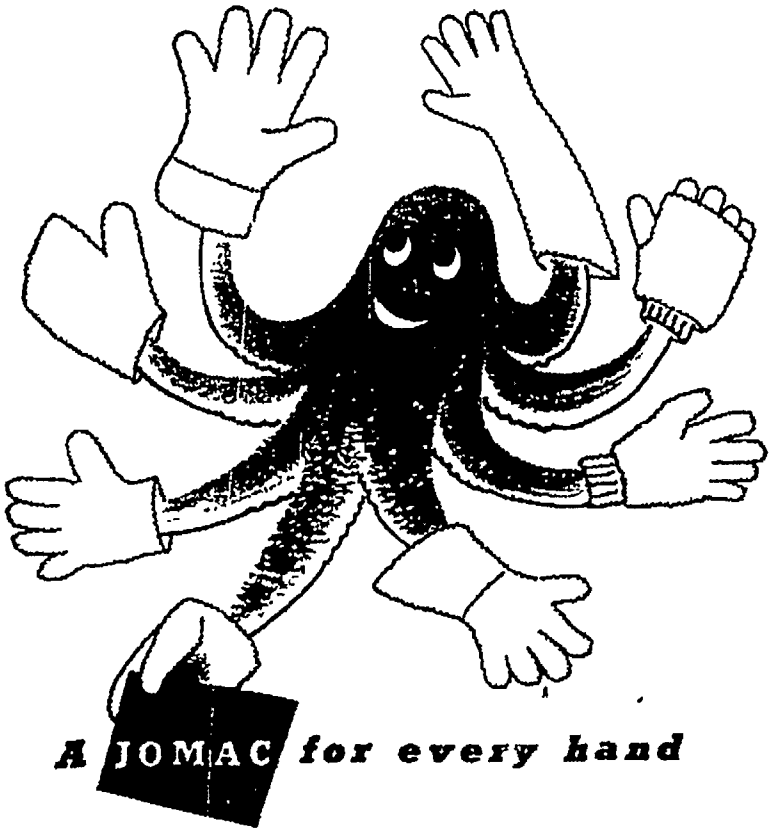
A hand for every JOMAC



A JOMAC for every hand

The features you want in a work glove—protection, safety, durability, full finger control, lower cost—are the very factors that govern the design of Jomac® Work Gloves. Describe your plant operations, temperature conditions, etc., and we'll gladly recommend an economical Jomac for the job, and send you a free sample pair. Jomac Inc., Department D, Philadelphia 38, Pa.

Jomac Hand Guards can be worn over gloves, if desired, to provide extra protection against abrasion, sharp edges, or heavy blows. Available rubber-lined to protect from grease or oil. They can be reconditioned repeatedly

It pays to keep JOMACS on hand

JOMAC

Industrial Work Gloves

Outwear ordinary work gloves by 900%

PLANTS IN PHILADELPHIA, PA., AND WARSAW, IND.

First Aid

—*From page 33*

Much controversy about equipping the first aid kit with such a snake bit kit is voiced by many, on the grounds that the danger is either non-existent or extremely remote. However, if the danger is there, some precautionary measures, including a snake bite kit, should be provided. Frequency rates are very low, but why increase the fatality rate by not having adequate equipment ready for treatment?

About the most common type of injury occurring in all types of industry and all locations is burns. In most cases where burns are limited in scope, effective first aid treatment can be given by manual application of an approved first aid medication.

However, where burns are likely to be severe and widespread, burn first aid facilities must be fast, dependable and effective. The prime duties when giving burn first aid are to relieve pain, prevent shock and prevent infection. All these things must be accomplished in a minimum amount of time to limit the severity of successive complications. In treating burns care should be taken that injured areas are not touched by the hand.

The type of treatment to be used for all burns should be prescribed by the medical director of the company. The proper first aid treatment will save him valuable time and prevent unnecessary pain and succeeding complications to the patient. There are complete burn spray first aid kits available combining spray applications, materials for limited manual application, as well as bandages and other items for first aid treatment at the scene.

Needless to say, no first aid equipment will give complete satisfaction unless used by properly trained persons. The most critical time is directly following the injury due to the bleeding, shock and other complications. The importance of swift action is verified in a part of the definition of first aid: "Temporary aid and comfort given to the patient to

avert further complications in an emergency until professional medical attention can be obtained."

Every work group, regardless of size, should have the services of one or more persons skilled in first aid. Experience of many industries shows that the injury frequency declines in direct proportion to the number of workers trained in first aid techniques. Thorough training and first aid knowledge create safety minded employees who instinctively avoid unnecessary hazards. In nearly every community there are agencies which can assist in training workers in first aid.

Green Cross News

—*From page 10*

Glass Works, was elected president, succeeding Harold S. Stanzler. Nineteen Pawtucket and Blackstone Valley plants received trophies and other awards for outstanding safety records last year.

Manager John Booth reports an enthusiastic crowd of 150 industrial leaders, supervisors and safety directors attended the dinner.

Stockton Contest Grows

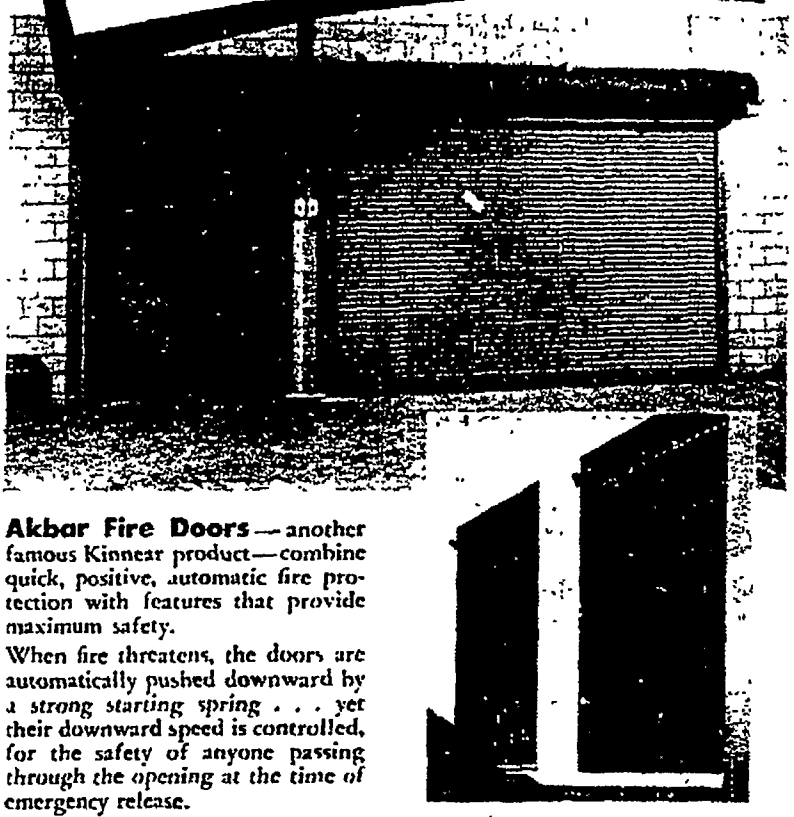
A healthy and encouraging increase in the number of plants in the San Joaquin County Safety Council's Inter-Plant contest (Calif.), brings the total up to 82 participating companies in the current competition. There are now eleven divisions, including canneries, dairy and bottling, wineries, wood and paper products, metal fabricators, ceramics, petroleum distributing, public utilities and governmental agencies and miscellaneous, the last two classifications having two divisions each.

Farm Tractor Safety

Approximately 2,000 High school students and representatives of various 4-H Clubs, farm bureaus and other agricultural organizations of Fresno County and five other nearby counties in Southern California, witnessed a spectacular farm tractor safety demonstration in Fresno on March 10. The Davis branch of the University of California, in cooperation with the Fresno County Safety Council,

"AKBAR"

The Kinnear Steel Rolling Fire Door with EXTRA SAFETY Features



Akbar Fire Doors—another famous Kinnear product—combine quick, positive, automatic fire protection with features that provide maximum safety.

When fire threatens, the doors are automatically pushed downward by *a strong starting spring . . .* yet their downward speed is controlled, for the safety of anyone passing *through the opening at the time of* emergency release.

As another safety measure, Akbar Doors feature *separate* counterbalance and starting springs. For emergency exit, the doors can be opened *after* automatic closure.

Another Kinnear device stops the door at sill level *even if the sill is burned away.* This assures maximum closure of the doorway area, even under adverse conditions.

When not in use, Akbar Doors remain coiled overhead, out of the way. Approved and labeled by Underwriters' Laboratories, Inc., they have saved as much as one third of their cost *per year* in reduced insurance rates. They are built any size, to fit each specific opening—for either old or new buildings.

Akbar Doors can also be used for regular daily service, with Kinnear Motor Operators for electric push-button control if desired. Where maximum fire protection is not essential, *nonlabeled* Kinnear Steel Rolling Doors are recommended. Write today for catalog or specific information.

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