

NATIONAL SAFETY NEWS

FEBRUARY 1935

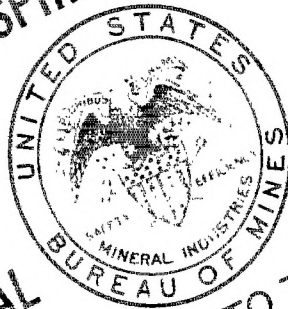


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M·S·A Comfo RESPIRATOR

PERMISSIBLE
DUST RESPIRATOR, TYPE A



NO. 2101

APPROVAL

ISSUED TO THE
MINE SAFETY APPLIANCES CO.
Pittsburgh, Pennsylvania, U. S. A.

Mechanical filter-type respirator approved only for protection against the inhalation of pneumoconiosis-producing or nuisance dusts, as quartz, asbestos, iron ores, cement, limestone, gypsum, coal, coke, charcoal, wood, cellulose, flour, and aluminum.

Approved only when the parts bear approval numbers as follows: facepiece BM-2101, felt screen BM-2101, and replaceable filter units BM-2101.

In making renewals or repairs, parts identical with those furnished by the manufacturer under the original approval shall be maintained.

CAUTION

This respirator is not approved for protection against poisoning by breathing dusts whose main harmful constituents are metals or their compounds, as antimony, arsenic, cadmium, chromium, lead, manganese, mercury, selenium, tellurium, thallium, uranium, and vanadium, or protection against harmful smokes, fumes, mists, gases or vapors, or a deficiency of oxygen.

Follow the manufacturer's instructions for fitting the respirator to the face, for cleaning or changing the filter elements, for cleaning the respirator, and for caring for the respirator while not in use.



Approved!

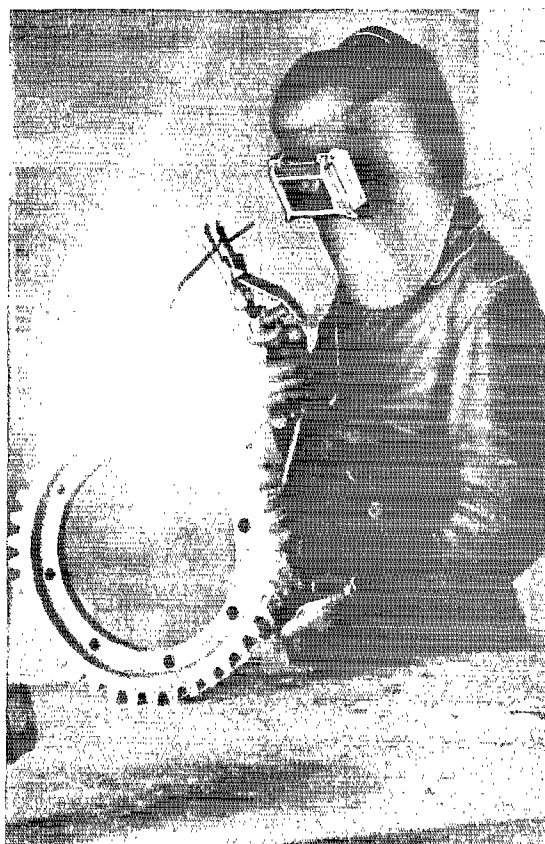
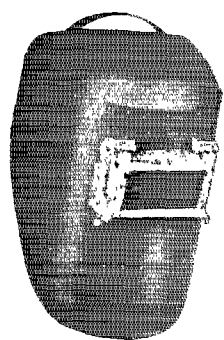
THE M. S. A. COMFO RESPIRATOR HAS

NOW RECEIVED THE APPROVAL OF THE

UNITED STATES BUREAU OF MINES

EXPERT WELDERS

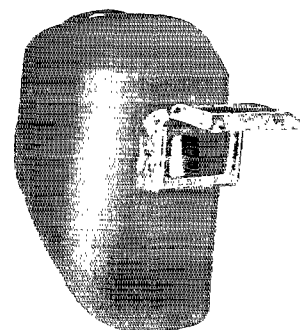
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their approval



FLIP FRONT

Quick—simple
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New **WILLSON**
Welding Helmet
No. 300



Show this helmet to one of your welders, one who takes pride in turning out a good job and who knows that the quality of his work depends in a large measure on the worth of the tools he has to work with. Let him give you his opinion of the worth of its several exclusive features.

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To examine the job, it is only necessary to raise that part of the composition lens holder which holds the clear and clear cover glass. Another clear glass in the stationary section protects the welders' eyes on hot cratering jobs. Slight projections on both lower sides provide thumb space for instant flipping.

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The comfortable, adjustable headgear holds the helmet in three positions by use of a four-sided drum which turns within a substantial straddle spring and holds each positive position.

Composition Glass Holder

The glass holder is molded of a fine grade plastic composition which will not warp or bend. It is not a conductor of electricity and is unaffected by moisture or extreme temperatures.

Willson-Weld Glass

It meets the standard specifications for protection of eyes from harmful rays emanating from welding operations. It may be had in any shade for all welding purposes.

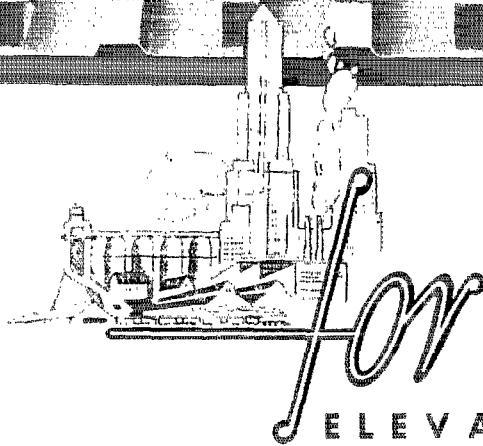
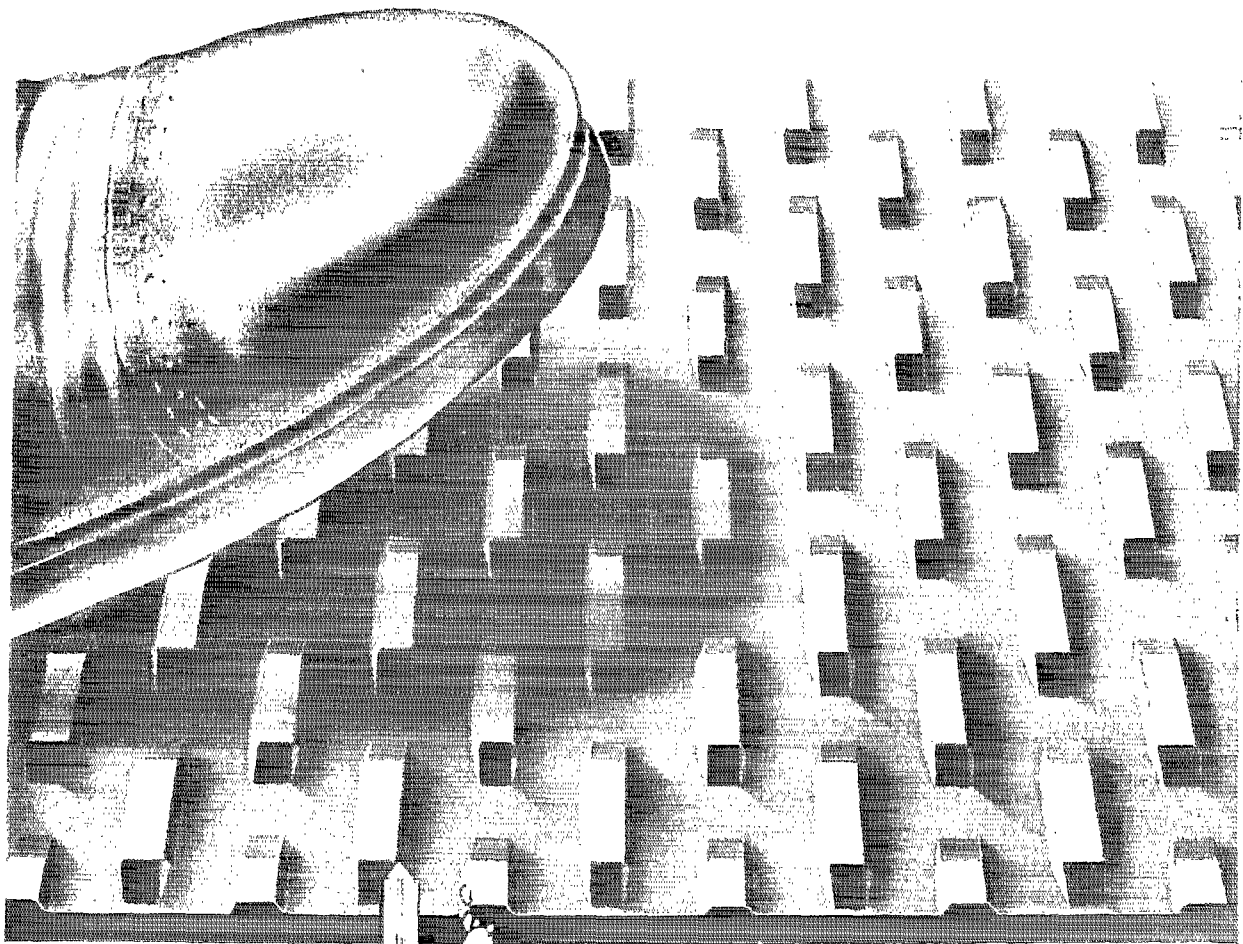
Better Grade Fibre

Made of a more durable black fibre, in improved design with reinforced construction, the new Willson Helmets, No. 300, Handshields, etc., and a lot of tamishment, stand for an illustration of the descriptive of the new welding line, or ask an exclusive distributor in your section. Willson Products Co., Reading, Pa., is represented in 13 Western States by E. D. Bullard Co., 277 Fifth Street, Los Angeles, with convenient branches, and in Canada by Safety Supply Company—Toronto, Montreal and branches.

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FEBRUARY, 1935



SHOP FLOORS
FOOT BRIDGES
STAIR TREADS
TRAP DOORS
ELEVATED PLATFORMS
SIDEWALK OPENINGS

Wherever a hazard for the feet of your workers exists, it can be practically eliminated at little cost by the use of Carnegie Floor Plate . . . Write for widths, thicknesses, and other information.

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301

CARNEGIE FLOOR PLATE

NATIONAL SAFETY NEWS

NOT AN ACCIDENT REPORTED THIS MONTH - AND STILL OUR ABSENCE RECORD IS HIGH...

Infections cause more lost time than accidents—reduce them this way

Do your records agree with the recent exhaustive plant studies which show that one out of every four hand injuries becomes infected? If so, you can readily see that when you reduce your rate of hand infections, you've gone a long way toward lowering the figure at the bottom of your "absence" column.

The obvious way to reduce hand infections is, of course, to make workers report every injury—no matter how minor. Have you found some way of doing this? If you have, scores of plants are eager to learn about it. Unfortunately, in most cases, workers just won't realize the importance

of promptly reporting minor hand injuries.

LAVA SOAP—The Practical Way

But there *is* a practical, proved way to reduce your rate of hand infections—frequent use of Lava Soap and water to wash away the dirt and germs from nicks and cuts.

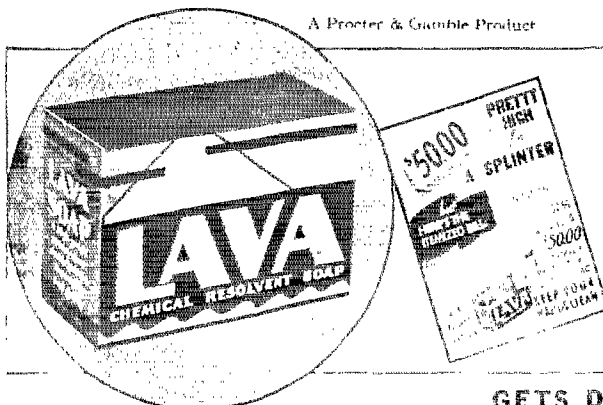
Lava Soap is made by Procter & Gamble especially for extra-dirty hands. It gets any kind of grime in less than a minute. Here's how Lava works. First, its thick, heavy lather gets the surface dirt. Then, its pulverized pumice—so fine that it can't irritate the tenderest skin—gets the ground-

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Outlasts Ordinary Soaps

Scores of plants have found Lava Soap so useful in preventing infections that they are furnishing Lava free to their workers. Lava outlasts ordinary soaps 3 to 1. Works well in any water—hot or cold—hard or soft. Investigate this new soap at once, of reducing hand infections today.

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Safety Directors of leading industrial plants in all parts of the country have requested these posters and are now on our mailing list. A set of new posters is mailed out every two months. They are yours merely by filling out and mailing this coupon to Procter & Gamble Co., Dept. LNS-25, Box 1801, Cincinnati, Ohio.

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Would be interested in Prices on Lava

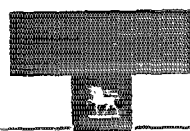
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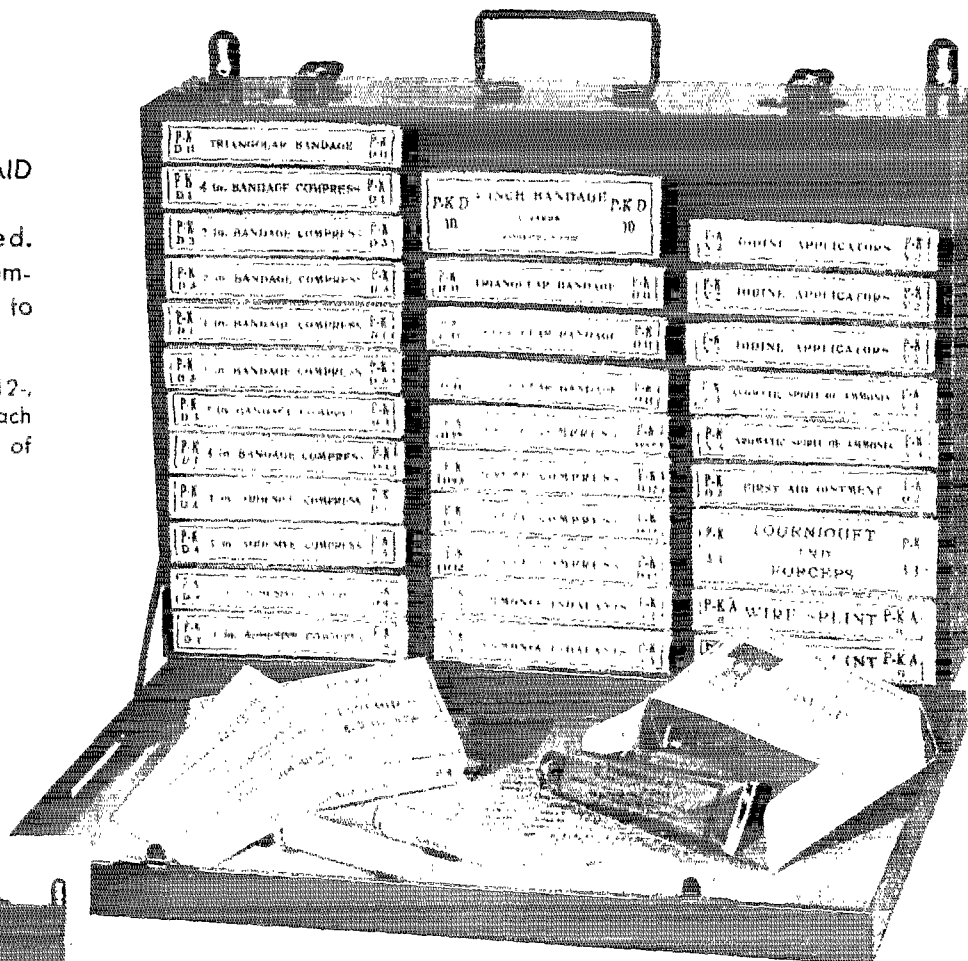
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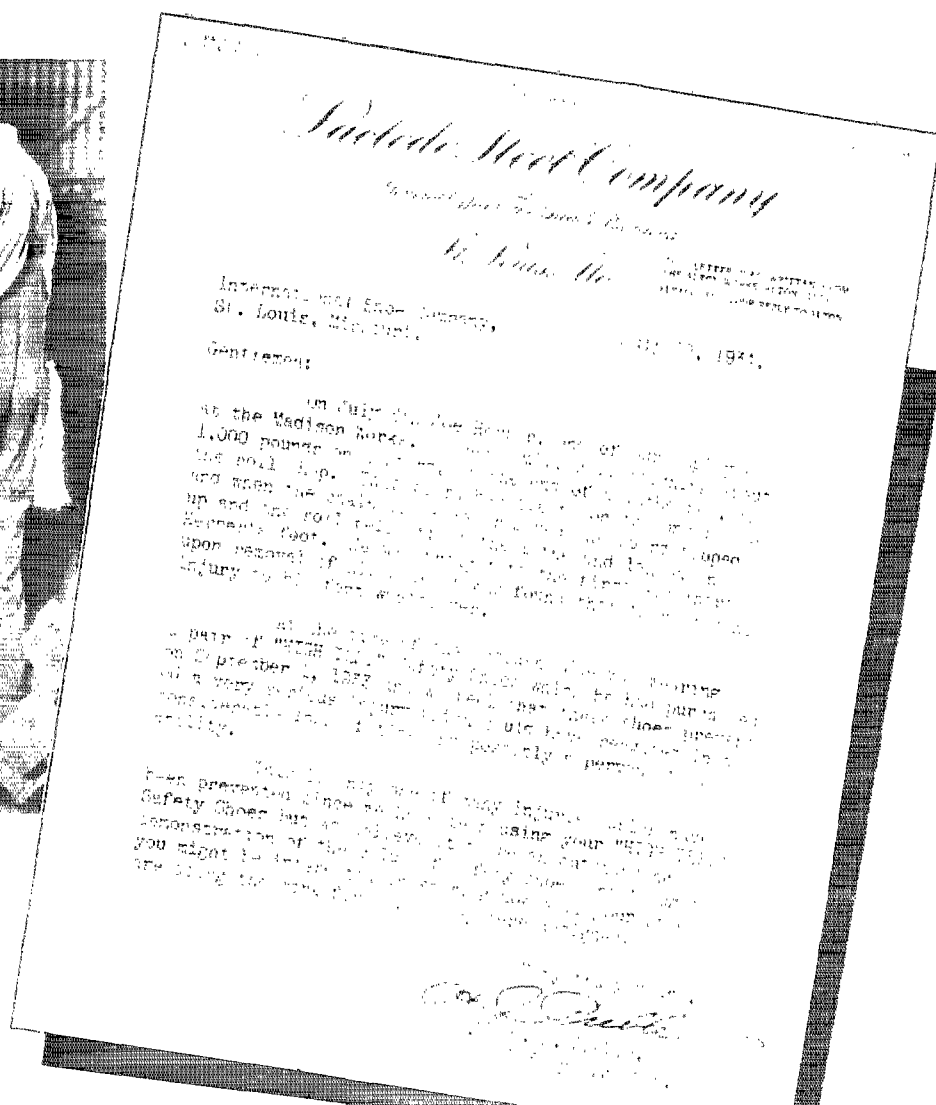
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NATIONAL SAFETY NEWS



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-- Here's PROOF

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Our In-Stock Department can rapidly supply you. Both dress and semi-dress models available, as well as specialized work types for all industrial purposes. Write for further, more detailed information.



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National Safety News

Published monthly in the interest of accident prevention and the health of industrial workers

VOL. XXXI, No. 2

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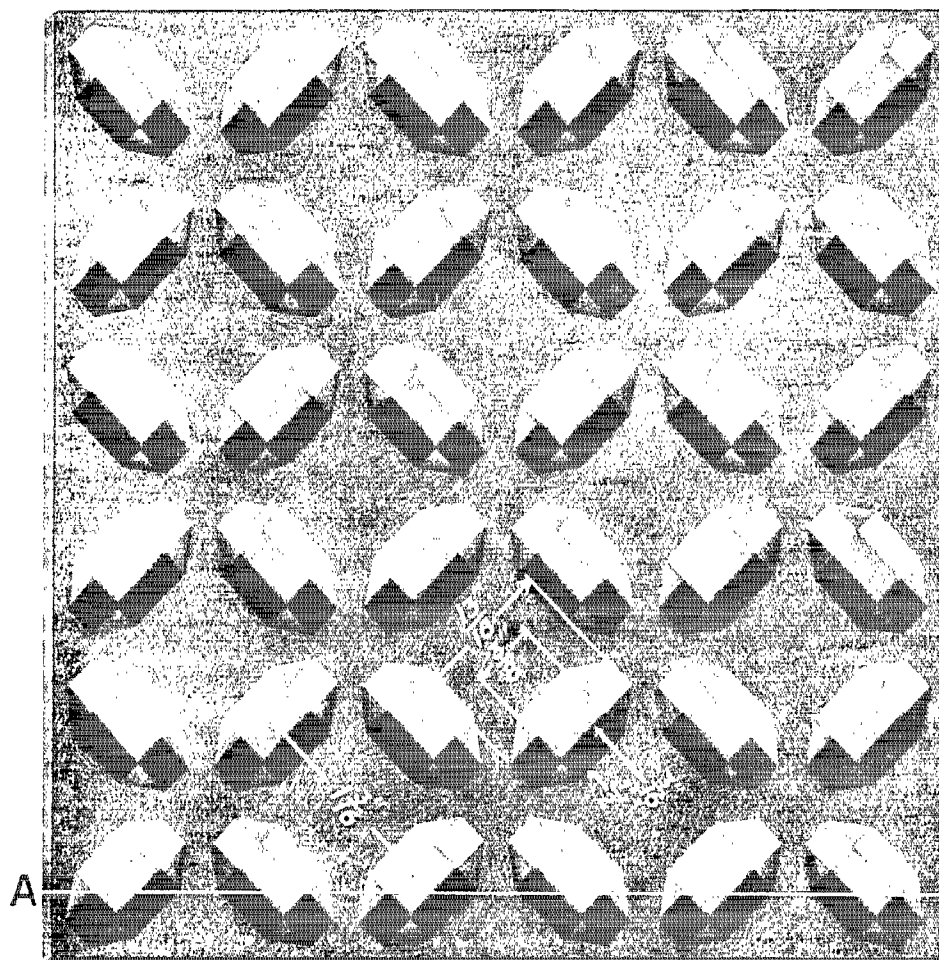
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	1 4	120"	240"	480"	11.25
	5 16	120"	240"	480"	13.80
	3 8	120"	240"	480"	16.35
	7 16	120"	240"	480"	18.90
	1 2	120"	240"	480"	21.45

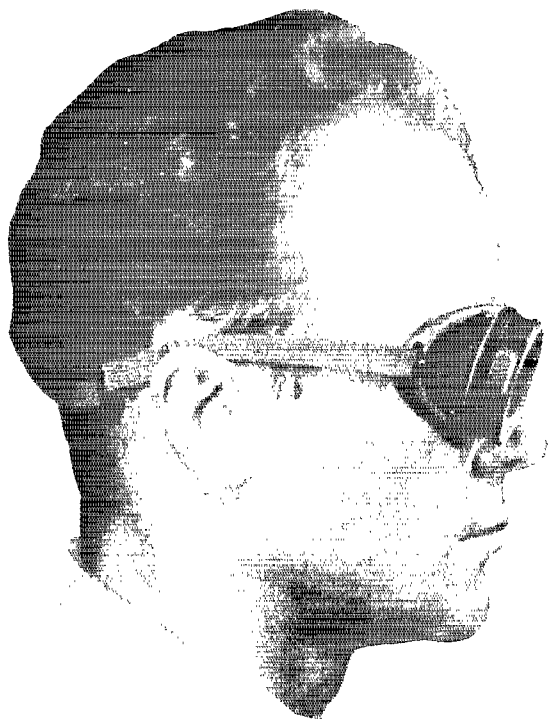
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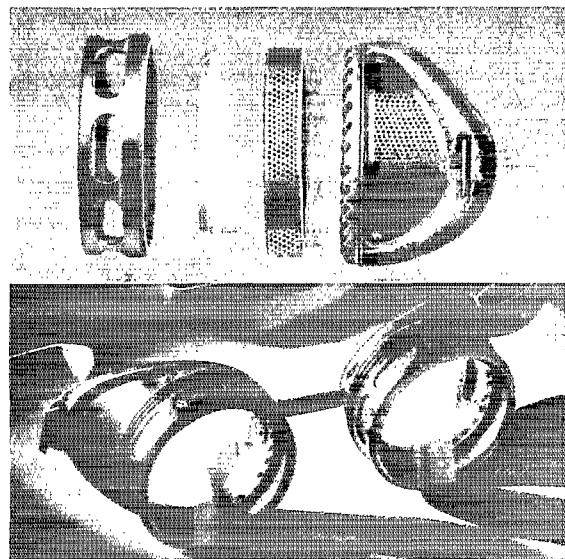
Eyes are cool
and lenses
clear . . .

with  **HOT WORKERS' GOGGLES**

With these new AO goggles on their eyes, men who work in hot, humid conditions see more clearly . . . do better *and* work.

Duralite "50" Hot Workers' goggles have nearly twice the usual ventilation area. Free-flowing air currents keep the eyes cool and the lenses free from sweat, steam and fog under virtually all conditions. Workers no longer run the risk of falls and collisions that sometimes result from fog-clouded goggle lenses. Nor are they tempted, because of that annoyance, to raise or discard their goggles and expose their eyes to the hazard of flying particles. Eyes are cool and lenses clear.

The Duralite "50" Hot Workers' Goggle is one of a complete line of goggles developed by American Optical Company for protection against every known eye hazard. A branch office located near you carries the full line . . . available to you at a moment's notice. Moreover, the AO industrial man stationed there will recommend exactly the right goggle for the needs of each worker. Write or call your AO branch office today.



The AO Hot Workers' Goggle has an extension ring that doubles the ordinary ventilation area without noticeable increase in weight or restriction of vision. Boilermakers, blacksmiths and others say, "No fog whatever. The best goggle I ever wore." Super Armor-plate lenses offer maximum impact resistance. Patented.

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NATIONAL SAFETY NEWS

Published by National Safety Council, Inc.

FEBRUARY, 1935

Vol. XXXI, No. 2

Accident-Proof Highways

ELEVATED highways are being urged frantically as a cure-all for traffic accidents. One of the most fervent advocates of such highways is the *Chicago Tribune*, which lays the blame for the vast majority of highway casualties on the public officials who refuse to build these modern thoroughfares. Editorially, the *Tribune* says:

"Public officials who continue to refuse to build separated ways are becoming more and more guilty of manslaughter. The automobile manufacturers improve their cars year by year. The road builders do nothing to keep pace with them, and if this official attitude continues, the risks of traffic will continue to show an increasing loss."

Anyone who has ever driven from Chicago's Loop to one of the western suburbs will not dispute the need for elevated highways. Existing through streets in every city are inadequate for today's traffic. But no satisfactory plan of financing adequate highway construction has yet been advanced. More taxes? Every municipality already has a staggering total of tax delinquencies, and the heavy imposts on motoring are being diverted from highway construction for more pressing needs.

Automobile manufacturers have certainly progressed more than the road builders, but such a comparison is absurd. Yearly models in highways are hardly practicable, although some roads are obsolete before the bonds are paid off. Modern automobiles with their steel bodies, powerful brakes, safety glass, and general mechanical reliability are wonderful machines but they are just as rough on pedestrians as the old Model T.

We have observed plenty of drivers who find even a four-lane highway too narrow, not to mention those who pass on hills and curves. Some individuals are born with these complexes, others get that way at the wayside inns.

Elevated highways with separated grades are desirable for both safety and convenience but their construction will not lessen the need for training drivers and barring the incompetent and intemperate. In the years that must elapse before the ideal superhighways are available we must keep an eye on the car ahead and be sure that the brakes are functioning.

Disasters in the Making

THE closing months of 1934 were marked by an epidemic of disasters. Scarcely had the public settled back into normal complacency following the burning of the Morro Castle when a hotel fire flamed into the headlines. And on Christmas night a train wreck added its toll to the year's tragedies. In addition there were several grade crossing crashes with numerous victims.

There is no need to resurrect the grim details of the Morro Castle. The official investigation placed a heavy load of responsibility on the officers and crew who failed to live up to the traditions of the sea in an emergency. But how about the public which demands luxury in ocean travel and resents the unpleasant suggestion of danger as exemplified in lifeboat drills?

The burning of a hotel in Lansing, Michigan, furnished another sad story of neglect. Even though the building was not of "fireproof" construction, it would seem that reasonable supervision of the premises and promptness in turning in an alarm would have prevented wholesale tragedy.

The train wreck at Dundas, Ontario, seemed doubly tragic, coming as it did at the close of a joyous holiday. An express plowed through the flimsy wooden coaches of an excursion train, and it does not require a vivid imagination to picture the scene which followed. A Canadian veteran, an eye witness of the wreck, declared that nothing in his war experience surpassed the horror of that Christmas night.

Wooden coaches were responsible for a large proportion of the casualties, as has been the case too often in the past. But back of the disaster was still another story of human failure. A confused brakeman, thinking the excursion train was on the main track, hastily threw the switch when he saw the headlight of the approaching express. His training had not been sufficient to make the right action automatic.

Many a community has a disaster in the making in its midst. The condition may have existed for years, awaiting only the gathering of a large number of people and somebody's neglect to administer another shock to the public. Constant inspection would reveal many of these hazards. Some, however, are quite well known to those responsible.

Happily the human element does not fail in the vast majority of cases. Two recent steamship wrecks which might have involved heavy loss of life were merely unpleasant incidents to the passengers because leadership and discipline prevailed. And the world will never know how many potential disasters failed to make the headlines because some humble individual kept his head and did the right thing.

In This Issue

How serious a factor is fatigue in highway accidents? Interesting facts were compiled in an extensive survey conducted by the National Safety Council. The leading article of this issue is a summary of the facts presented in the booklet, "Too Long at the Wheel," single copies of which may be obtained by members from Council headquarters. (Page 11)

If you are looking for helpful hints on advertising safety to employees you will find several that have proved effective in the Hyatt Bearings Division of General Motors. (Page 13)

"How forcible are right words," says the Bible. "A picture is worth a thousand words," says an advertising axiom of uncertain origin. These statements are not as contradictory as they might seem at first. Both words and pictures are essential in dramatizing accidents. (Page 15)

When the National Safety Council began its series of Safe Practices Pamphlets some twenty years ago, the committee selecting the subjects decided to begin on ladders. Ladders still occupy much of the attention of supervisors and safety men. (Page 16)

The Safety Movement did more than hold its own in 1934. The Annual Report of the Managing Director tells of another year of service to humanity which should be encouraging to all members. (Page 17)

The Managing Director's Page

Gossip

"FALSE alarms and irresponsible or malicious gossip are not unknown in the serious business of preventing accidents. Not infrequently they cause embarrassment to those who are trying to carry on the work and are unjust to public officials and others who are sincere in their efforts to cooperate with the safety movement. This comment is suggested by a letter which was sent to the Council headquarters by one of the great public that is continually writing to urge that the National Safety Council get busy and do its job. The letter reads:

"I call your attention to a state of affairs which, in my opinion, is responsible for more accidents than poor brakes, blinding lights, and other usually recounted hazards.

"I refer to the fact that incompetent drivers and applicants for driving licenses are able to obtain a license, regardless of their proficiency in driving, by the payment of \$3.00 (or more) to the inspector.

"I know personally of three cases where this has been done. The most recent was within the past month, and is rather more incredible than usual. The applicant—a woman—owned a car which is fairly old and which at times, if the clutch is let in too suddenly, completely stops and refuses to be cajoled into starting for at least ten minutes, when it suddenly returns to normal.

INTERESTING ITEMS

The founders of the National Safety Council believed that eventually the safety movement would be directed by state-wide safety organizations. A half-dozen demonstrations have shown the possibilities of this form of organization. The most recent example is to be found in the accomplishments of the Minnesota Safety Council for 1934 and the comprehensive program which this Council has laid out for 1935. The leadership has been resourceful and energetic, and through the governor's initiative and with help from the ERA, the approach has been effective.

The study of the effect of hours of driving upon accidents involving commercial vehicles has been completed, and several thousand copies of the printed report have been distributed. Copies are available on request.

Negotiations are in progress for the organization of a popular safety club among the little folks under the sponsorship of a nationally known juvenile movie star. Watch for the pledge card and safety button.

The Annual Reports of the managing director and the treasurer of the National Safety Council are presented in this issue. Improvement was made in many directions during 1934. With improving business, a larger membership, and more ample financial support, many more lives can be saved.

"Knowing this fact, the woman when taking her test for a driving license, jammed the clutch as described after she had gone half a block with the inspector. Of course, neither his nor her efforts could immediately put the car back into action. She handed him a five-dollar bill and received her license in due course, *without having taken the actual test.*

"This particular driver is inexperienced and exceedingly reckless—a hazard not only to herself and other occupants of the car, but also to other motorists and pedestrians."

* * *

This looked serious so we referred the matter directly to the motor-vehicle commissioner of the state. I have a copy of the sworn testimony given by the author of this complaint. When requested to appear before the commissioner she did not respond. She had to be picked up by the police. Here is her testimony:

"The reason I did not come in answer to that letter was because I could not give you accurate facts. I was told about this by some girl and I don't know the person who had gotten the license. I was very much interested in it; the reason I didn't come in when you wrote the letter was because I couldn't give you the accurate information."

This woman's complaint to the Council was prompted purely by loose talk among her associates. The commissioner of motor vehicles, who is widely known for the efficiency of his department and his tireless efforts to improve the motoring standards of his state, conducted a very thorough investigation of the charges, which proved to be entirely without foundation.

Our whole system of justice is founded on the principle that every person is honest and upright until he has been definitely proved otherwise. Certainly, public officials and employees are no less entitled to this consideration than are private citizens. There are many men of outstanding character and ability in our public life; we would not want any of them if public offices were not regarded as places of abuse and innuendo.

Sometimes these persons who make unfounded complaints are sincere in their desire to correct bad practices. Often, however, they are actuated by less worthy motives. Some persons are born talebearers and derive an unwholesome pleasure in broadcasting gossip that will injure somebody's reputation.

When investigating accidents, accident causes, or rumors of official dereliction, take the time to be fair and just, *and get the facts.* We must listen carefully, investigate eternally, but take nothing for granted.

M. J. Ameros

NATIONAL SAFETY NEWS

Death Stalks the Tired Driver

By HARRY BARSANTEE

"Too long at the wheel" is the story behind many a tragedy on the highway

A TRUCK driver tries to pick up a little income on the side by hauling a load of lumber to a neighboring town for a morning delivery after completing his regular day's work. He is dog-tired, but he needs the money. He drowzes a moment and—crash!

Two young brothers own a truck in which they haul coal. They've got to hustle to make any money in this business. A cold snap has set in and for once there is more business than they can handle. Well, get it while the getting's good. Plenty of time to sleep when business slacks up! The driver's grip on the wheel relaxes, his head lolls sideways out of the cab window. The truck veers toward a telegraph pole. Snap! and a headless driver sits at the wheel of a wildly careening vehicle.

Three college boys leave for home, 300 miles away, after attending a dance. Their conversation is lively for a time. Then one nods and soon another follows suit. The driver, left to his own thoughts, soon becomes weary and



Probably excessively long periods at the wheel during the Christmas rush was a contributing cause when this load of Christmas trees ran off the road.

bored as the miles of pavement flowed under the speeding car. His eyelids become heavy and he slaps his own face to try to keep awake. No use. . . . What's that vague outline ahead? A bridge? Smash! The front axle rips over the rivets of a sloping girder, the car climbs a bit, then slumps over backwards to land bottom up on the pavement. One lad crawls from under the wreckage and lives to tell how his companions died.

In every part of the country such acci-

by week, they drop into the records to become cold statistics on the effect of fatigue on driving.

Good statistics and vital information on the problem have until now been woefully scarce. For this reason the National Safety Council recently undertook a study of fatigue in traffic accidents and the result—a 48-page pamphlet entitled "Too Long at the Wheel"—is now ready for distribution. Single copies may be obtained by members on request.

Since the study was primarily a fact-finding inquiry about this complex accident problem, it is important to understand how the data were gathered. Requests for information were first sent by mail to every state in the Union. Then field visits were made in nineteen states, the District of Columbia, and the Province of Ontario. These involved 9,834 miles of travel by automobile, 615 by truck, 546 by rail and 406 by bus. Records of statistics were obtained from state motor vehicle departments, state police, state highway departments, insurance companies, trucking companies, city police and community safety councils. Information on hours of work were obtained from drivers at trucking terminals and truckers' eating places; from filling station attendants, trucking companies, trucking associations, in-



A one-man business. The owner has his life savings invested in a truck. Periods of idleness may be followed by long hours of driving.



A port of entry on the Kansas border. Trucks entering the state must report here. If the driver shows signs of excessive fatigue or alcoholic indulgence, the truck must stop until the driver is rested.

insurance companies, state highway patrols, state labor commissions, and from teamsters and truck drivers' unions. The source of information was considered in determining its reliability. The trips on trucks and buses were made, of course, to observe actual driving conditions.

The study and report were made by James Stannard Baker, secretary of the Council's Committee on the Driver, and Oscar M. Gundersen, engineer, under the general supervision of Sidney J. Williams, director of the Council's Public Safety Division.

Fatigue is an early section of the study point out, is but one of the many tangible causes of automobile wrecks; however, a study of it is extremely valuable since it is an accident creative condition which would seem to be relatively simple to deal with. While accurate data were difficult to obtain, it is now possible to make what might be termed an "educated guess" that between two and six per cent of the total motor vehicle accidents involve drivers who had either fallen asleep at the wheel or else had been seriously handicapped by fatigue.

What fatigue accidents lack in frequency, however, they make up for in frightfulness! In the crashes thus caused, the driver can make no attempt to put on the brakes or dodge the danger. The car is completely out of control; it careens under full power until the crash! The tired driver accidents usually cause a terrific loss of life and heavy property damage.

Why do people drive until they fall asleep? A separate section of the

pamphlet, which is a fascinating piece of reading, tells why.

In the case of the private driver, it seems to be because so many of us crowd our days with work and our evenings and week ends with social or recreational activities of rather trifling significance; we push on to get some place without any real reason for having to be there at a particular time. True emergencies are rarely to be found among the circumstances of these cases.

In the case of commercial vehicle driver, the reasons for falling asleep at the wheel are much more specific. Not only do operators of trucks and buses put in more hours on the road per week than the private passenger car driver, but they do much of their driving at night and many are subjected to exhausting runs not once a year or once a month, but once a week or once a day!

Bus accidents involve so much publicity that most bus companies are now extremely careful about setting definite limits on hours which their drivers may work. There are still far too many lines, however, particularly those doing chartered bus service and long haul businesses at bargain rates, where the drivers work double shifts or take extra runs, sometimes for two weeks at a stretch.

In the trucking industry, there are two principal reasons for driver fatigue: emergencies and financial necessity. The latter is particularly vicious.

Many absorbing pages of this interesting section are given over to descriptions of the way in which the small one-truck and two-truck outfits operate. One is especially pitiful. It involves, as is

often the case, an unfortunate fellow who has invested his life savings in one truck as a business venture. He is engaged in the freight and hauling business between New York and Chicago. Competition is strong and profits slim; so his wife has joined him. Their only address is "en route." They get loads from brokers at each end of the run and manage to keep going by shaving prices. In summer, one drives while the other sleeps. If the truck is full they must sleep sitting up in

(Please turn to page 50)

GENERAL RECOMMENDATIONS

1. The element of fatigue should be given a more important place on accident report forms used by fleet owners, insurance companies, states and cities. In addition to or in place of the usual items concerning the driver, "asleep" and "extremely fatigued," spaces should be provided for recording the number of hours during which the driver had been on the way prior to the accident and the amount and place of sleep during the preceding 24 hours.

2. There is urgent need for scientific research to determine what effect continuous driving, long hours without sleep, and different mechanical aspects of vehicles have on fatigue and to indicate the recuperative value of various rest periods. Such research should also bring out, if possible, what degree of fatigue is dangerous and how different individuals vary in susceptibility.

3. Companies operating vehicle fleets, and individual truck owners, should voluntarily organize their businesses to avoid excessively long hours of duty for drivers, and thus to minimize the number and cost of accidents which inevitably result from driving while excessively tired. Drivers of private passenger cars should also be brought to realize the danger of driving when sleepy.

4. Every state should limit the hours on duty of all drivers except those of private passenger cars. Such a limitation should cover total working and waiting time and not merely the time spent at the wheel or on the road. These laws should specify also the amount and conditions of rest required to interrupt such a period on duty.

5. There is need for agreement among the states as to what constitutes time on duty and the conditions under which rest may be obtained.

6. Each state should carefully devise and adopt a definite procedure for the enforcement of rules regulating drivers' hours of duty. The authorities responsible, the methods acceptable, and the source of funds for such enforcement should be considered and the proper authority granted to make the legislation effective.

7. As a matter of good management, truck operators should have detailed trip sheets kept so that they can know exactly the conditions under which their trucks and drivers work. Requiring such trip sheets to be kept by certain classes of truck and bus drivers should be considered as a method of enforcing laws or rules limiting hours of duty.

"You Tell 'Em!"

REMEMBER walking down the main stem how that sporting goods window caught your eye? How the old dogs slowed down and you had to drift over. That window magically became a meadow sloping down to a brooklet on the bank of which was pitched a tiny green tent with camp fire and upturned canoe. Round about were scattered all manner of fishing gear and accessories. For the moment you get away from this man made soul destroying thing we call civilization, and you hear the Red God's calling.

Mr. Sporting Goods Dealer has merely dressed up his merchandise in the manner that has proved to have the greatest appeal. He is appealing to a primitive instinct in man—the instinct to "go native."

Seems to me I've heard somewhere that self-preservation is a primitive instinct. If the will to live is more than a passing fancy, why can't we appeal to this instinct through our show windows, the bulletin boards?

We can, of course, but you remember what some wise bird once said about success, "I do not know the secret of success, but I am afraid it is hard work."

All sporting goods dealers don't have attractive display windows. The little shops on side streets are content to throw a mess of fishing tackle, guns, and what have you in a none too clean window. Then they sit down and wait for their regular customers to come in and get their replacement hooks, lines and sinkers. They are not making new converts—merely serving the old ones. Aren't we who are trying to sell safety in somewhat the same position?

We are agreed that all the education in accident prevention acquired by executives, supervisors and engineers is useless unless imparted to the workers. They are receptive; they do not want to be injured. They do not want to lose money because of injury. They offer practically no sales resistance. So what?

Your accident records may be kept in fine shape. You may make studies in accident proneness, you may have your committees working to your entire

By W. J. DENNISTON

*Safety Engineer, Huatt Bearings Division,
General Motors Corporation*



There are many things we can tell employees to sustain their interest in safety. Here are a few of the appeals that the author has used effectively

satisfaction: your foreman's training courses may be hot stuff. But the bird you must reach is the one that gets hurt—the worker.

If you believe the workers are interested in themselves, you tell 'em!

If you think they put the future well being and happiness of their wives and kiddies above the present and immediate pleasure of hell-raising and horse play, you tell 'em!

If it has ever occurred to you that those young and healthy lads running circular saws and power presses might have their style cramped in rumale suit technique by the loss of a hand, you tell 'em!

And if you feel that "Paradise Lost" is no laughing matter—that to have forever blotted out the sight of the earth's new horning each Springtime, the gorgeous flowering of gardens, the glorious full moon, and under that full moon the light that shines some time for

most every man in some woman's eyes—oh hell! If you think the product of the glass eye manufacturers to be inferior to the "windows of the soul," you tell 'em!!!

There are so many things you can tell them, all about the company's product, how its success or failure may influence their lives.

The records in safety being made by their department and other departments in the plant.

And when accidents do happen to their buddies you will find that they are not only interested in how he is coming on but also in just how the accident occurred and what is being done to prevent recurrence.

And really about the only way you can tell them about these things is by way of the bulletin board.

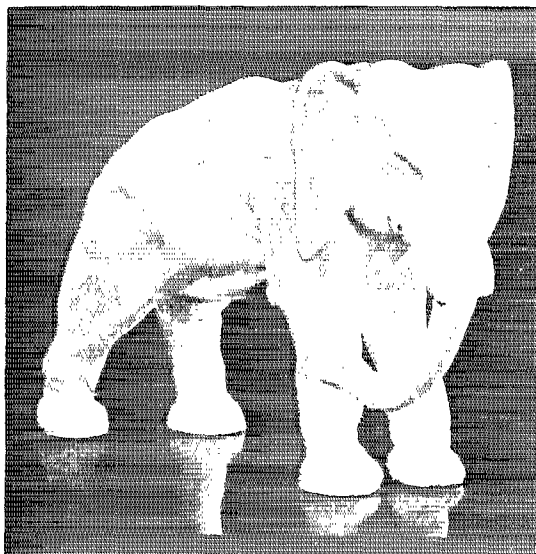
You have in your plant a certain number of bulletin boards placed in what you believe to be the best location to reach your public.

If you consider these boards as high priced advertising space you will naturally give some thought as to the copy you prepare. You will find out as all advertisers do that some ads pull and others go flat, but even your best copy will have additional pulling power if attractively presented.

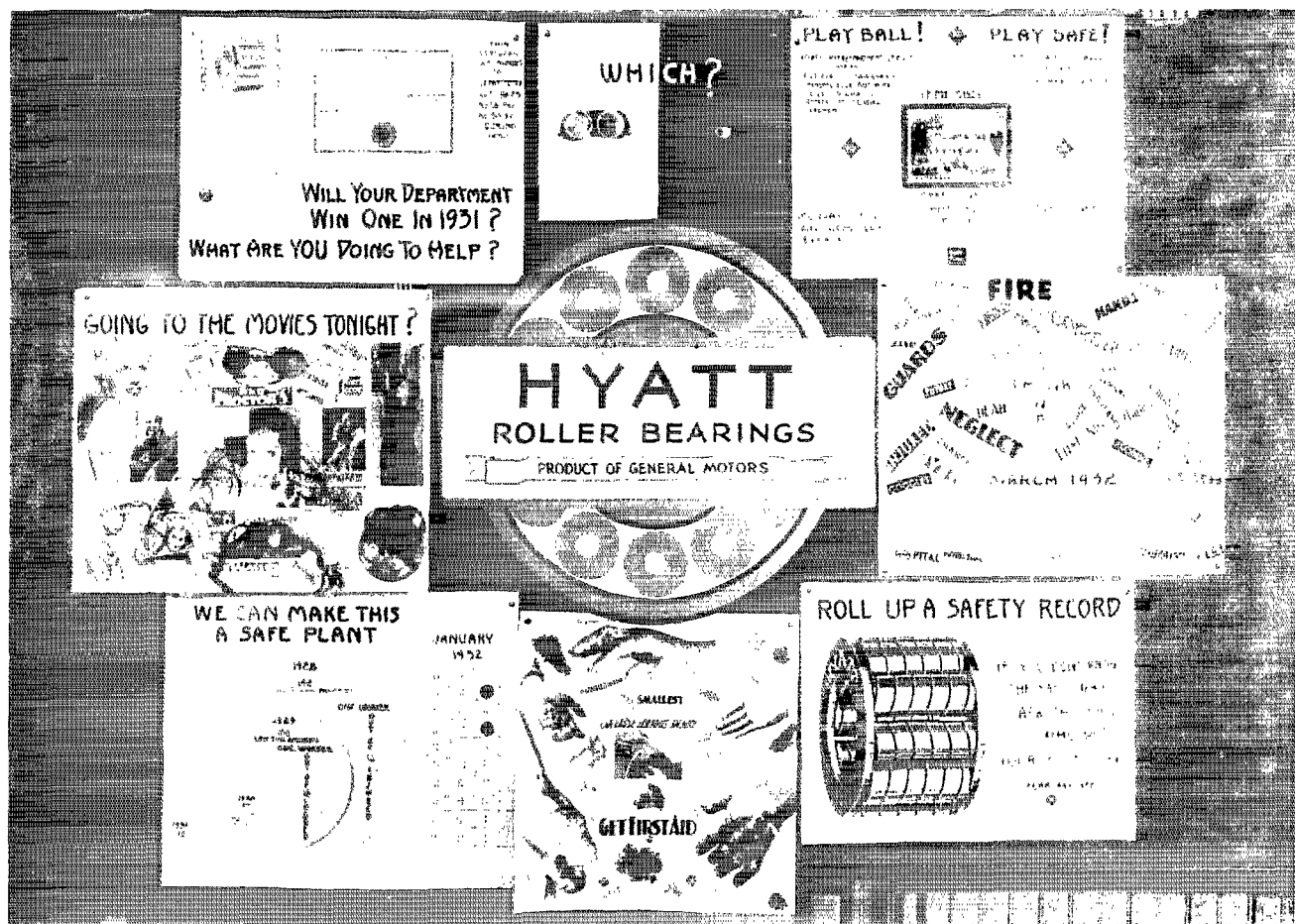
A clean, neatly painted bulletin board is an absolute essential. No matter how good your material, if you put it on an run down, defected looking bulletin boards, it will lose its effectiveness.

Colored backgrounds

grounds immediately make your boards attractive, and if you do nothing more than place your poster material in a clean, preferably enclosed and illuminated standard bulletin board, using vividly colored cardboard backgrounds, you have set an example in good housekeeping and demonstrated the management's interest in your safety campaign.



This white elephant was intended to be the guest of the department having the worst current accident record. But since the entire plant has not had an accident for more than nine months the elephant is under a glass case in the front office.



With just a little more effort you can add to the attractiveness of your display by cutting out of vari-colored cardboard circles, squares, triangles, etc., of various sizes, arranging them in modernistic form for your background.

The show window is ready for the merchandise—what are you going to put in it? Where are you going to get the poster material?

Have you planned your campaign or are you just depending on an assortment of posters being "pretty good?"

Are you going to stick to "general" posters or are you going to use "specific" posters where you can use them effectively?

Are you going to use any gruesome posters?

Is a grin more effective than a groan?

How about an occasional home made poster that just hits home in your own plant?

Are you working in stunts, contests, etc.?

Are you tying in your safety advertising with the plant's product? Scrap? Waste? Quality?

And most important of all, have you tried looking at your bulletin boards through the eyes of a worker? Put

A few home-made bulletin board displays. Hyatt roller bearings are frequently incorporated in the design.

yourself in his place; would it interest you or would you say, "same old hokey?"

"Poster Pete" the animated cutout figure furnished by the National Safety Council can be placed in many word positions on a poster to illustrate a point you are trying to put over.

A pair of shears, some paste and cardboard, plus a supply of the old posters you have used in the past offer possibilities— for instance poster 4143 showing Death hovering over the lad climbing into the moving freight elevator can be used by cutting out this shadowy figure of Death and pasting it in the same position over the chap with an infection, cut from another poster.

Very effective backgrounds can be made in black and white by cutting out your firm name or trade mark, laying it on a sheet of white cardboard and spraying with india ink. When cutout is lifted you will have a striking background for your poster.

Spraying can be done by dipping an old tooth brush in a little india ink

placed in a saucer, and by drawing a knife blade across brush you get a fine spray of ink— with a little practice you can do shading and blending.

Here at the Hyatt Division of General Motors we have been running home made poster contests with very good results.

Another stunt we have used to our advantage is "The Royal Order of the White Elephant." The Royal Order of the White Elephant grew out of a razzing organization in the Sales Department of General Motors and was last year adapted to safety in the following manner.

The foreman of each department one day received in an envelope a picture of a white elephant, without comment.

A few days later a single sheet 8 1/2 x 11 inches with the words in Old English lettering, "The Royal Order of the White Elephant," was received and later the following:

"You are probably wondering what a White Elephant has to do with safety, and in order that you may appreciate why we have adopted the White Elephant as being symbolic of a bad safety experience, the following is a

Please turn to page 3.

Up Above the Floor So High

By CARMAN T. FISH

- Ladders are hazardous but indispensable. A ladder is no safer than its weakest rung or the man who uses it

THE ladder might be called a universal hazard. In one form or another it will be found in manufacturing plants, mercantile establishments, offices and homes. As a means of reaching an elevated position it is far more hazardous than an elevator or a permanent stairway, but often it is the only practical means. There is probably no more used and abused piece of equipment than a ladder. It is simple and looks harmless—but ask the insurance companies.

The manufacturers of ladders are under a handicap from the start. Since a ladder is portable, the weight must be kept down. This eliminates many of the stronger materials, such as steel, except for permanent installation. And since ladders are too often bought on price, particularly for the homes, quality may suffer also. But even the best of ladders will not remain safe very long with hard use and deferred maintenance.

In addition to hazards resulting from structural weakness of the ladder, we must also consider the man who uses it. His footing at best is insecure. Climbing a ladder requires two hands, two feet and undivided attention. If the man on the ladder loses his balance, his first stop is the ground. Trying to carry loads which should be raised by a hand line, reaching too far instead of moving the ladder, and attacks of dizziness all figure in falls from ladders.

Many accidents occur because ladders are not properly placed. If the ladder is placed so that the bottom is too close to the wall, the man on the ladder is apt to be overbalanced

and fall backwards. If too far from the bottom of the wall, too much strain is placed on the side rails. An angle of about 75 degrees from the ground is best.

Well-seasoned, straight-grained wood should be used for ladder construction. For extension and straight ladders, the rails should be of spruce, Douglas fir, or Norway pine. Long-leafed yellow pine is a durable wood, but is somewhat heavier than the others mentioned. For the rungs, oak, ash or hickory are preferred. Straight-grained wood, free from knots, is all-important.

Paint will preserve the surface, but it will also cover up a multitude of defects. Therefore, to protect ladders against the deteriorating effects of water and dampness, they should be given first a coat of linseed oil, followed by a coat of clear shellac.

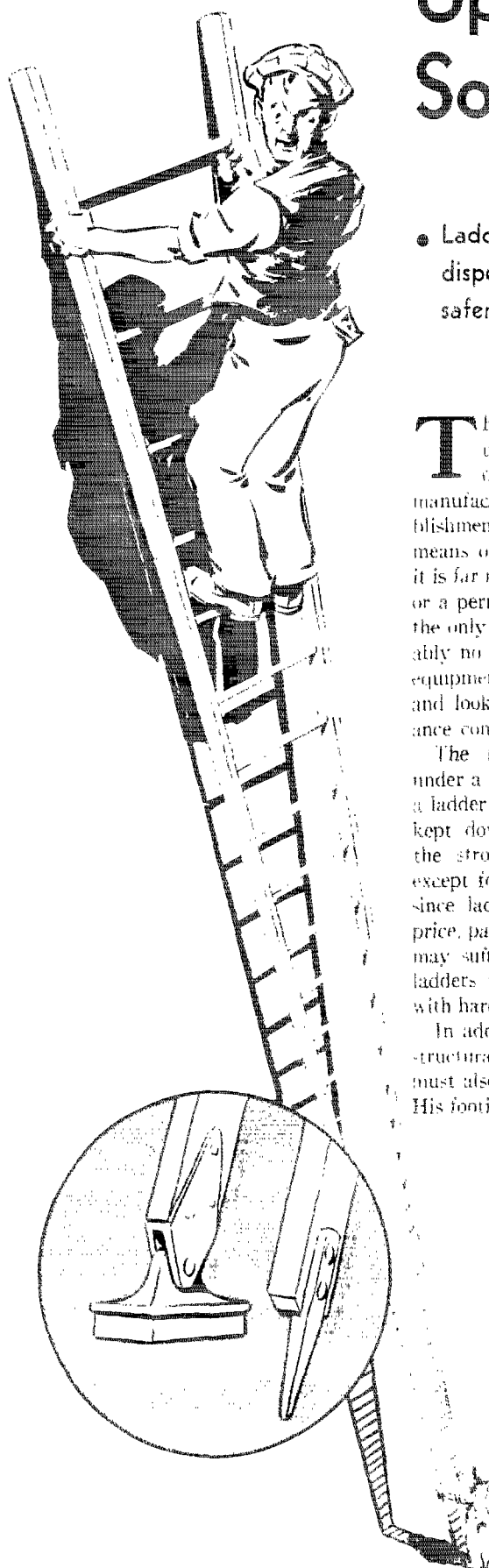
When piled horizontally, ladders should have at least one supporting point to prevent sagging. They should be stored in a dry place protected from the weather.

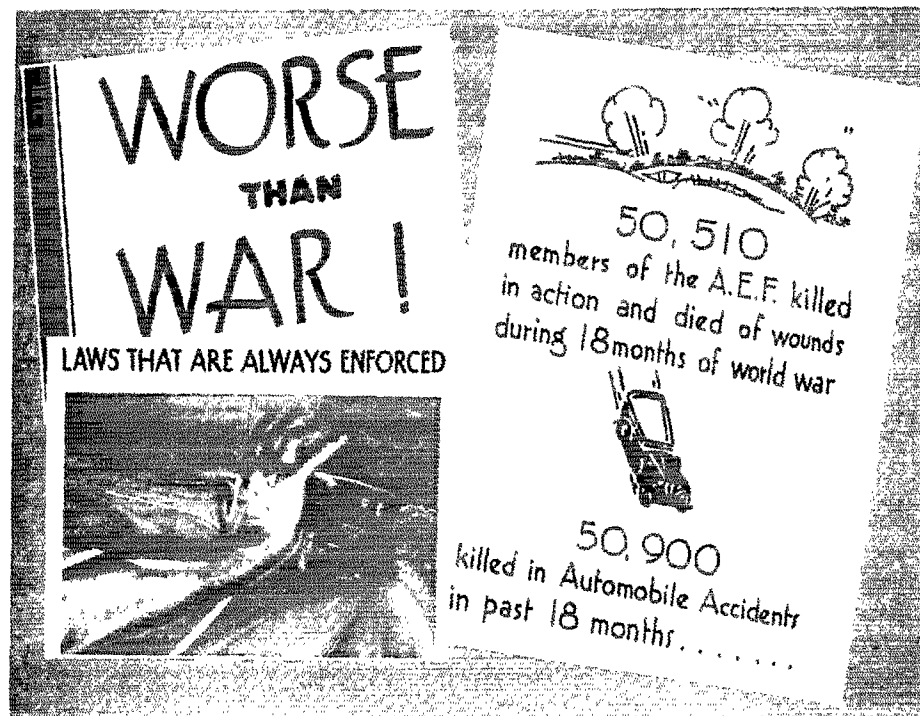
Frequently mercantile establishments use ladders on sidewalks while repairing signs, windows and awnings, or washing windows. Many people have a superstitious fear of walking under a ladder but there are also some who do not watch where they are going and may bump against the ladder. In such cases it is advisable to have a man stationed at the bottom of the ladder or to have the space roped off.

Without special non-slip feet, a ladder is likely to slip on any surface except soft ground. There are three general types of safety feet: (1) Spiked points; (2) abrasive metal soles; (3) corked soles or rubber suction soles.

Conditions under which ladders are used vary so greatly that it is impossible to establish any definite rules. Sharp points will hold securely on wood or hard ground, but many companies object to their use. For wooden floors, cork or lead coated bases are recommended; for iron floors abrasive metal

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tain identities have played in charting the course to be followed in the conservation of life and limb. These identities may be regarded as introverts. I say this because it seems to be their custom to speak and write of the automobile accident problem in such terms as are understood only by members of the charmed circle. What good will it do humanity, as it is affected by the seriousness of the automobile accident problem, if the great mass of the public is kept from an understanding of the causes of street and highway accidents?

Examples of safety publicity that have captured the attention of the public.

Dramatizing Accidents

By G. D. NEWTON

Supervisor, News Bureau, The Travelers Insurance Company

THE AVERAGE person likes to regard himself as an adept in the "art" of expressing ideas. If one can put words together with some semblance of clarity, it seems to be generally accepted that no other ability is required to lift everyday events out of the commonplace and present them to the public in a manner that wins attention. Is it my wonder, then, that so many efforts to influence human conduct fall flat?

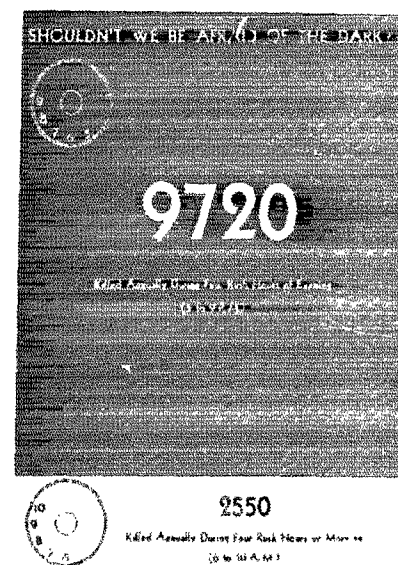
The weakest link in the chain of activities designed to bring about a reduction of accidents is the manner in which the case has been presented before the bar of public opinion. The problem is not so much one of laws, regulations, signs and signals, wide and straight roads as it is of human conduct. Until we realize this fundamental truth, progress in the conservation of human life and limb will remain something devoutly to be hoped for.

Some there are who doubt that human conduct in the use of the streets and highways can be changed much, or better, in spite of what has been accomplished in industry. Consequently they place great reliance on acts of

legislature, mechanical contraptions, signs, and similar methods. I find it difficult to understand how people can put so much faith in these methods when experience is constantly teaching us that laws are useless unless given vitality by mankind, that mechanical contraptions and signs are useless unless the public is willing to conform, and that wide and straight roads often lead to disaster unless those who use them know how to maintain an ample margin of safety.

Unfortunately, so far as safety to life and limb is concerned, cannot be realized by the mere enactment of laws, the installation of mechanical devices, and the improvement of roads. No matter to what extent one may wish to argue this question, sooner or later it is necessary to come up short before the fact that in this problem of accident prevention we are dealing with human beings.

The failure to appreciate this fact explains why so small a part of the public really is concerned about safe conduct while driving and walking. This failure is apparent when we consider the all-important part which cer-



Suppose plant managers in industry were all-powerful in determining rules programs. The resulting program would then be somewhat analogous to that which largely pertains in the field of automobile accident prevention. It is to be admitted that knowledge of all the pertinent facts about a problem, such as the automobile accident situation, should be helpful in the task of influencing human conduct, but mere possession of all the facts does not constitute an open sesame into the consciousness of mankind.

Another theory which we must discard is that the public is supposed to be interested in those things which

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NATIONAL SAFETY NEWS



Were We Worth Our Salt in 1934?

The Annual Report of the Managing
Director, National Safety Council

By WILLIAM H. CAMERON

THREE facts stand out in my mind which seem to merit special emphasis when considering the National Safety Council's experience in 1934. The first is that if we can accomplish as much year by year in the future as we have during the past twelve months we will richly deserve the Biblical recompense: "step into thy reward—thou good and faithful servant!" The year 1934 was one of deepening experience. We look back upon a year of substantial progress in rendering those services to members, to the public and to our government, that should lead to a more intelligent and sympathetic acceptance of the obligations for accident prevention.

The second achievement was the strengthening of the Council as a national organization together with an improvement in its business and financial condition.

The third conviction lies deeper. There has always been recognition of the need for interpreting *Safety*, but as the accident record grew worse during the year, it became clearer that although we must continue to spend portions of our time in disseminating information concerning the methods and technique of preventing accidents, nevertheless the major part of our job is to convince employers and employees, and all of those persons controlling our methods of living, that accidents really can be prevented. This has been said a million, million times, but still relatively few people really believe it. Accidents will continue to occur in all walks of life and under all types of working and living conditions until people believe in safety, until they accept it as practicable and definitely undertake their share of the responsibility for their own safety as well as for the safety of others.

If preventing accidents is not a normal or natural human interest, then the bitter tears of anguish must continue. In the meantime, the National Safety Council must keep boiling over with this message of prevention. Accidents will cease only

when people care enough about their prevention.

But what were the activities of the National Safety Council in 1934 worth summarizing for this review?

1. In spite of a 50 per cent decrease in income during the past few years every established activity has been carried on, and many new enterprises have been undertaken which have resulted in a larger spread of educational material.

2. The 13 dramatic programs presented by the "Old Observer" were faithfully carried out through 56 radio broadcasting stations on a nation-wide basis. Millions of people heard these impressive interpretations. The National Conference on Street and Highway Safety held in Washington last May; feature safety stories in *Liberty*, *Atlantic Monthly* and other influential publications; the substantial growth of the Inter-City National Traffic Safety Contest, and similar activities have put the Council into higher ground and broadened the scope of its humanitarian service.

3. Our five monthly publications were continued; the demands for safety posters per member exceeded any previous year's record. Our statistical publications, seven Industrial Safety Contests, the Annual Congress held in Cleveland, Ohio, the Regional Safety Conferences, and all of the usual, useful and general activities of the Council were carried forward with greater intelligence and determination.

4. Among the new services instituted in 1934 were our new booklet—"This Slaughter Must Stop"; State Automobile Examiner's Manual; "High School Motor Clubs"; "You and Your Job"; "Magic Safety Messages for Payroll Envelopes"; the new series of safety posters—"Life vs. Hazard", a revised and improved speakers' manual, "Speaking for Safety"; "School Buses"; a series of letters for driver-salesmen, twelve in-

dustrial data sheets, and other similar publications.

5. The really significant accomplishment in 1934 was the maintenance of interest and activities among the thousands of members of the National Safety Council. Then too, we gratefully acknowledge the significant achievements of hundreds of other organizations who have pooled their results for the advancement of the Safety movement. This report could well be filled with a list of the cooperative activities by National, State and Local Governmental Departments, insurance companies, transportation companies, and others. The attendance at the Annual Congress in Cleveland, at the Greater New York Conference, and at regional conferences throughout the country indicate that the slight improvement in business and general welfare has generated an increasing willingness to interchange valuable ideas and experiences. A continuation of the depression may slow down the rapidity with which we are expanding, but if enthusiasm, intelligence and money are available to produce the films, literature and other educational aids, to hold meetings, to conduct research, to formulate plans and to develop ideas, we can save thousands of lives and conserve millions of dollars which otherwise will be sacrificed through preventable accidents.

6. Every activity undertaken by the Council benefits American industry directly or indirectly, nevertheless from an industrial standpoint it may be well to emphasize the increasing values of the NATIONAL SAFETY NEWS, the SAFE WORKER, the 20 monthly Industrial News-Letters, as well as that of our ASSE-Engineering Section; the Safety Calendar; the 63 types of safety posters distributed each month; the new and revised Safe Practices Pamphlets; the annual report known as "Accident Facts," and the separate statistical

studies for 32 major industries. Six National Trade Safety Contests, as well as the Steam Railroad Contest, accompanied by the Green Book, were carried through successfully. Altogether 120 trophies and 45 certificates were awarded to the winners in these contests, and hundreds of medals were presented to persons saving lives through the Prone Pressure Method of Resuscitation. The Industrial Health and Safety consultation and publicity services have been maintained and time given to technical research, study and publication of results. The usual work on safety codes, and cooperation with the American Standards Association, with trade associations, and engineering colleges have been continued.

7. A new service known as "Safety Instruction Cards" has proved to be of unusual value in training workers to do their jobs in the best and safest manner.

8. The alarming increases in some types of accidents have helped to bring the ready resources of the newspapers and magazines to our aid. Hundreds of special articles and stories were sent to the editors. In addition to the "Old Observer" dramas, weekly radio broadcasting material was sent to several hundred stations and material has been released through the national news agencies.

9. Because highway accidents constitute our great accident problem today, the Council is ever alert to its responsibilities in this field. All of the general services established over years of trial and experiment have been maintained including the regular publication and distribution of PUBLIC SAFETY. Constant attention was given to State Driver's License Laws; essential statistics were prepared for use in many campaigns; the commercial fleet contests were promoted through hundreds of company members. The Third Annual National Traffic Safety Contest grew in accomplishments. Awards were made at public ceremonies in 65 cities, where prizes were given for first, second and third places in each group and certificates of honorable mention presented to others. These ceremonies were held simultaneously and joined together through a radio broadcasting hookup. Secretary of Commerce Roper and Mr. Floyd Gibbons made interpretive speeches. Continued cooperation was given to the National Conference on Street and Highway Safety. A pioneer study was made on the hours of driving commercial trucks. Other engineering studies, street and highway traffic surveys

have been conducted and attendance at state vehicle administrator's conferences were included in the year's work.

10. The school safety program, financed by the National Bureau of Casualty and Surety Underwriters, was extended definitely into the high school field. All through the year contacts were made with state superintendents of education; the monthly magazine, SAFETY EDUCATION, including poster lesson outlines, were continued and the number of copies printed considerably increased. Contacts were maintained with the National Congress of Parent and Teachers and similar cooperating institutions.

11. The Community Safety Councils have been handicapped by the continued depression, but new councils were organized during the year and continued service rendered by correspondence, conferences, consolidated reports, and personal visits and contacts. The Annual Conference of Managers, the Monthly News-Letter, and similar services were maintained.

12. Our Eastern Office, located in New York, has continued its committee activities, especially among those members representing hotels, commercial vehicles, the stevedoring interests, etc. There have been district meetings, the now regular Greater New York Safety Conference, personal services to the Safety Councils operating on the Eastern Seaboard, the continued accomplishments of the Metropolitan Chapter of the ASSE-Engineering Section and miscellaneous services to members, committees and others, especially in Greater New York.

13. Eighteen Regional Safety Conferences were consummated between the Chicago and Cleveland Congresses. A number of direct services were rendered various departments of our National Government at Washington, including several months of direct service to the FERA in the beginning of the year; the safety engineering survey of five Federal prisons and of the Boulder Dam project. In addition to the hundreds of speeches by voluntary committeemen and members during the year, the staff also made many speeches and were in constant attendance at various committee meetings. Services were rendered to our Pacific Coast members through the Annual Safety Convention of the State of California and at a number of other meetings. The Annual Congress in Cleveland, in which the All-Ohio group played such an important part, brought out an attendance that was equal to the

old-time Congresses previous to the depression.

14. In spite of a reduction in income—just about half of 1929—every essential activity of the Council has been carried on; every call for service met promptly; every request for cooperation promptly filled. The requests for sample publications from many parts of the world, given freely, are opportunities the Council welcomes. The several volumes of printed Transactions were edited, printed and mailed as usual.

15. There are just three outstanding elements in the success of a project like that undertaken by the National Safety Council. The first is leadership, the second is money, and the third is good management. The Council has all of the problems of a complicated business. Our leading committees know how difficult it is to spend our comparatively small income for the best interests of our members and yet stretch a helping hand to many others unwilling or unable to pay their share of the cost. In addition to its regular income many of our industrial members have contributed small amounts during the year to build up a Contingency Fund. The slow but steady growth of the fund has been particularly encouraging because the Council has no capital, nor has it ever been endowed. As I stated at the beginning of this report—enough is now known about the prestige of safety to enable the Council to answer almost any important accident prevention problem, but we cannot adequately publicize, or prescribe without larger money resources. We cannot serve adequately, we cannot grow as we should without adequate funds to pay the accident prevention bill.

16. Among the hangings, burnings, and sponsorship of the year there were several deaths during the year that will mean a loss to the safety movement for years to come. Among these should be mentioned: William P. Munford, James H. Jordan, Thomas J. Haney, Mrs. Marcus Dow, Dr. Calvin W. Rice, W. E. Megraw, Dana Pierce, W. H. Boyre, S. M. Galary.

Although we feel it our duty to remind the members that so much more could be done if the Council was more generously supported with money, we are constantly aware that the priceless resources of the Council are the good will, the services, the enterprise and the capacity of its members and cooperators. Accidents are unnecessary, their cost is terrific, but they can be stopped when employers and the public make up their minds to do so.

Protection Supplements Training

By R. B. ROAPER

Safety Engineer, Humble Oil & Refining Company, Houston, Texas

- Employees never become too proficient to need special protective equipment for certain hazardous operations

PROTECTIVE equipment alone cannot prevent all accidents, nor can the training of employees. No matter how proficient employees may become, certain operations will always require special equipment for their protection.

To determine the equipment required, it is necessary to study past experience in each class of work. Wherever men are prone to receive injuries to certain parts of the body, then protective equipment for that part should be worn as a routine part of the job.

A worker will not wear protective equipment unless he is convinced that he is actually in danger without it. You may produce evidence and issue orders, yet you cannot rest assured that men will always take advantage of such protection. From personal experience I have found that men will subject themselves to extreme hazards rather than wear the equipment provided.

There must be a reason for this attitude. I feel it is due in large measure to the fact that much of the safety equipment in the past was cumbersome

and uncomfortable. Equipment that protects but interferes with the free movement of the wearer will not be popular. Under some conditions it might actually create a hazard.

This situation is being relieved because the makers are beginning to realize that both comfort and protection must be considered. Manufacturers are employing men who have had actual experience on the job as well as technical knowledge. Equipment that will be worn with the minimum of coercion will mean increased sales.

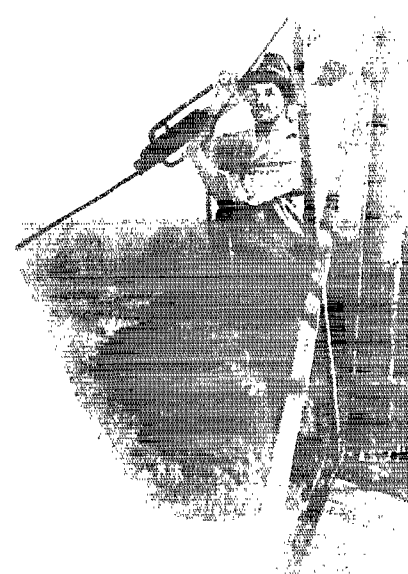
Head Protection

One of the most important innovations in the field of protective equipment are hats and caps made of rigid materials for use where injuries to the head are likely to be frequent. It is hardly necessary to mention that head injuries are usually serious. In some occupations where there is danger of objects falling from a great height, we have found it profitable to insist on the use of head protection. While measures to prevent the dropping of objects should not be neglected, the use of protective headgear must be included in the safety program if head injuries are to be reduced to a minimum.

The producing end of the oil industry has been the last to make the use of these protecting hats compulsory. In our rig building department particularly we found that only through the use of head protection were we able to eliminate injuries from falling bolts, nuts and washers.

I have a record of the head injuries in one Western mining company from 1924 to 1932. From personal knowledge based on a safety inspection of the properties in 1924, this company at that time had been carrying on an intensive safety campaign for several years and had adopted all of the better known safety measures. During 1924, 62 head injuries resulted in a loss of time of 6,532 days. In 1925, 17 head injuries resulted in a loss of 412 days. In 1926, 33 head injuries caused a loss of 199 days. For 1927 the record was 14 injuries and 75 days lost time, and for 1928, 4 injuries

and 27 days lost. From 1929 to 1932 this company has not experienced a disabling head injury. The significant point is that head protection was introduced in the company's mines in 1925 and made compulsory in the fall of 1927.



To the derrick man the safety slide is scarcely less important than a parachute is to an aviator. In the above illustration he is ready to take off; in the lower left, he has finished his descent safely.



In construction work it is practically impossible to avoid having one group of men working above another. Where each group is handling bolts, nuts, rivets, tools and materials, the prevention of head injuries is a most serious problem. The solution is to be found largely in providing protective headgear and seeing that it is used.

Protecting the Eyes

Probably the oldest and most extensively used device is the goggle. There are so many kinds of eye hazards in industry that several types of goggles are required. For example, a different type of goggle is required where there is danger of a heavy impact than for protection against fine particles. A still different type is required for pro-

tection against acids and other corrosive substances. A careful study must be made to select the right type of goggles for each occupation. To avoid the possibility of goggles not being available when needed we provided each worker with a pair for his individual use.

The present trend in goggle manufacture is to embody comfort, wider vision and freedom from distortion along with protection. This should make it easier to secure the cooperation of employees in wearing them, but we still find considerable educational effort necessary. We find it necessary to instruct them in the proper way of fitting and wearing goggles. Most men have the headband so tight that the goggles are uncomfortable.

Respiratory Protection

While improved ventilating systems can be used to reduce the dust hazard in many processes, complete protection is not always possible. In many instances, particularly where the worker is exposed to dust for only short periods, some respiratory protective device must be provided.

In our company we have supplied respirators to each group of workers and spent considerable time in training men in their use. We also emphasized the importance of sending in equipment for replacement when necessary. We found, however, that this equipment was not being kept in good condition, and that reliable protection was not always available when needed. Now the foreman in charge of the unit is made responsible for the equipment. Whenever a crew needs respirators the foreman secures them and satisfies himself that the equipment is in serviceable condition. This is part of his regular duties.

Methods of protection against toxic gases include the removal of gas by exhaust ventilation, taking advantage of natural ventilation in gaging tanks containing toxic vapors, by gaging from the windward side, and by the use of gage wells and automatic gaging devices. However, in the oil industry where sour crudes are handled, it is impossible to operate safely without gas masks. We have spent much time and money in an effort to design a gas mask that would be both comfortable and efficient. The half mask has approached the solution of the problem more closely than any other type, but for work in enclosed spaces we still find it necessary to use the full face mask.

Our experience in the use of gas

masks has paralleled our experience with respirators. Formerly masks were assigned to the various units for their use. No one would assume the responsibility for repairs and replacement or even reporting their condition. The defects were not usually discovered until the safety engineer made his regular inspections. Instruction, appeals and reprimands seemed to do no good. Further investigation revealed that the men did not object to the use of masks but rather to the unsanitary practice of community use of one mask. We then issued a personal mask to each individual and made him responsible for keeping it in a safe and sanitary condition. We have had no trouble since.

In our refineries hose masks for emergency use are kept at specified places and inspected periodically. The face pieces are wrapped to keep them clean and the entire assembly, blower, face piece, trunk and hose, is kept in a weather proof metal cabinet. These are brought in to the safety warehouse for inspection, cleaning and sterilization each time it is used, and periodically whether used or not. Other inspections are carried out at the location.

Hose masks for transient service are kept at the safety warehouse and issued as required. This applies also to fresh air masks used in sandblasting and using compressed air. On this equipment the reduction manifold, gage and safety valve are tested by the instrument shop before being used.

Corrosive Substances

In handling acids and other corrosive liquids it is always imperative that protective equipment be worn. The very minimum protection to be worn by workmen consists of rubber gloves and rubber acid goggles. When this work involves the repairing of acid lines, pumps, etc., considerably more protective equipment is necessary.

Safety in this kind of work is greatly enhanced by releasing pressure from the lines and draining the liquid. Accident records teem with acid burns caused by acid spurting from lines that had supposedly been bled but, due to leaky valves somewhere in the system, had refilled and built up sufficient pressure to cause a spray of acid when the line was opened. Some companies insist that workers opening acid or caustic lines, regardless of the precautions taken to bleed the lines, must wear rubber hoods that cover head, neck and shoulders, rubber gloves and rubber aprons until an opening has been made in the line, after which rubber gloves will suffice,

Safety Belts

There are many types of safety belts on the market today. They are used extensively in oil production as well as in many kinds of construction work. There are few other devices that offer protection to men working at heights, and undoubtedly they have saved many lives by preventing falls. Under certain conditions well constructed scaffolding and handrails will remove some of the hazards. In the producing division of the oil industry, however, it is absolutely necessary for men working on derricks to wear safety belts.

As a result of the compulsory use of these belts by derrickmen, serious injuries from falls have become extremely rare. Derrick slides, or escape lines, are also important. In certain fields where high pressure gases are present the use of safety slides has prevented many fatalities. The escape lines are installed just above the working platform and extend to the ground at an angle of about 30 degrees.

Safety Shoes

The severity of many foot injuries has been lessened by the use of safety shoes. These shoes usually cost no more than ordinary shoes and there is no reason why they should not be used extensively in industry. Their use would effect a considerable reduction in the frequency and severity of foot injuries. In order to afford maximum foot protection, a shoe should have in addition to the safety toe a sufficiently heavy sole, should not have a rubber heel, and should have non-sparking nails if there is any possibility of being worn in a gaseous atmosphere. We have used many brands of safety shoes. It is gratifying to note the improvement in the quality of the shoes offered by manufacturers now compared to those manufactured a few years ago.

Many other types of protective clothing are used for protection against specific hazards. Asbestos suits are used to protect fire fighters and men who work in extremely hot locations. Asbestos or leather gloves, arm protectors, aprons, leggings, etc., are used for protection against extreme heat, flying sparks or molten metals.

At this point let me emphasize the extreme importance of the safety department maintaining a complete inspection and maintenance control over safety equipment. Safety equipment is of no value unless kept in perfect condition.

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How Electric Shock Affects the Body

By W. B. KOUWENHOVEN

*Professor of Electrical Engineering
The Johns Hopkins University*



- Type of circuit, voltage, current, resistance, points of contact and duration of shock all have their influence on the resulting injury

THE discovery that the flow of current of electricity through animal tissue would cause a contraction of the muscles goes back to a fortuitous observation of Galvani (1737-1798). It was the practice of his cook to string frog legs which were being prepared for the table on a brass wire attached to the iron rail of the balcony. The legs swinging in the wind would sometimes come in contact with the iron and seem to resume life with a lively start.

The earliest man-made electric shock of which there is any record occurred in Holland when two Dutch physicists inadvertently discharged a Leyden jar through their bodies. The first fatal electric shock occurred in France in 1879. As the use of electricity has become widespread, the number of fatal shocks has increased until the death rate in this country is one per 100,000 inhabitants. In England and Wales it is less than one-tenth of this rate.

This article deals mainly with the results of a number of experiments made at The Johns Hopkins University.* In these investigations two methods have been employed: (1) To compile and study the data in cases of human injuries, and (2) To study the effects of electric shock on animals. Animals differ widely in their ability to withstand electric currents and it is difficult to apply the results thus obtained directly to man. Dogs are killed by rather

small currents while rats are much more resistant. The difference lies mainly in the behavior of the heart. All animals used for these experiments were completely anesthetized.

The number of accidents involving electricity is apparently increasing. This is particularly true of those caused by contact with low-voltage circuits. MacLachlan^{1,2} in 1930 and again in 1934 published excellent summaries of cases of electric shock. His results show that men are injured more frequently than women, that accidents reach their peak in the summer months, and are more frequent in the early morning and late afternoon hours. The current path through the body is usually from the right hand to the feet.

In every case there are certain factors that influence the resulting injury. These are the type of circuit, its voltage, current and resistance, the points of contact with the circuit, and the duration of the shock.

Types of Circuit

In the experimental studies three types of circuits have been used, continuous or direct current circuits, alternating current circuits of commercial frequencies, and the discharge of an impulse of surge generator. Constant voltage circuits were used wherever possible because they are used in both industry and the home.

Voltage

The individual is subjected to less chance of injury in making contact with a 110 volt direct current circuit than with alternating current of the same voltage. In fact, the writer has been able to learn of only one authentic case of death on a 120 volt direct current circuit. In this instance a man was working inside of a Scotch marine boiler at a temperature of 112° F. He had with him a defective portable light supplied from a 120 volt direct current circuit. In Italy there is on record the

case of a man who was electrocuted on a 46 volt alternating current circuit.

At higher voltages, 1,000 volts or over, the direct current shocks produced greater injury than the alternating current, particularly if the brain or nerves center lay in the path of the current.

A comparison of the two commercial frequencies shows that the 25 cycle circuit has less effect upon the heart than circuits of 50 or 60 cycles.

The public recognizes the danger of high voltage circuits but does not realize the danger that is ever present in the 110-220 volt house circuits. The danger is greatest under damp conditions. Under these circumstances the muscular contraction sometimes maintains the victim in contact with the circuit and he cannot release his hold. On the other hand, when contact is made with a high voltage circuit the contraction often throws the victim clear of the circuit. Low voltage circuits, even if the duration of the shock is only a few seconds, frequently result in fibrillation of the heart.

There is also another factor for which no explanation is known. A number of rats were tested on 500 and 1,000 volt alternating circuits in which sufficient resistance was introduced in the primary of the circuits so as to cause the effective voltage across the animal to drop to 110 and 220 volts respectively immediately after closure of the circuit. Oscillograms showed that the voltage fell within the first cycle. The resulting injury, however, was almost as great as that found with circuits where the voltage was maintained at its full rated value. Apparently the initial shock plays an important role.

Resistance

Most of the resistance that the human body offers to the flow of electricity lies in the contacts with the skin. When the skin is dry the contact resistance

* Presented by the author in this work at the 1934 Langworthy of the School of Medicine and Dr. R. H. Hooker of the School of Hygiene. Funds for the support of this work were made available by the Committee on Physiology of the Conference on Electric Shock.

is very high; some observers rate dry skin at 100,000 ohms per cm^2 . When the skin is thoroughly wet the resistance drops to 1,200 ohms cm^2 or less. This skin resistance is not a true resistance but partakes of the nature of a contact potential drop. A series of tests with thoroughly moistened gauze covered electrodes, using voltages from 120 to 1,200 volts, gave a contact potential drop at the electrodes that varied from 90 to 100 volts irrespective of electrode area or of the circuit voltage.

Once the current penetrates the skin the resistance of the body is relatively low. The fluids are the best conductors. Bone, however, has a high resistance and does not conduct current readily. Another factor not always recognized is that the resistance of the body varies with the size of the animal. The larger the animal the smaller the resistance that it offers to the flow of the electric current.

It is evident that under damp conditions the protection that dry skin offers to the flow of current is lost, and it is this fact that makes contact with low voltage circuits particularly dangerous. In bathrooms no part of an electric circuit should be within reach of the person in the tub.

Current

The sensitivity of persons to electricity varies widely, some being able to detect a current of less than 1 milliampere, others require three or four times that amount to produce sensation. A current of 12 to 15 milliamperes through the hands and arms will stiffen the muscles so as to make it difficult either to bend or to extend the arms and will cause severe pain; however, the subject can still release his hold. An increase of the current to 19 or to 25 milliamperes will produce a complete tetanus of the muscles and the individual can no longer clear himself from the circuit. The pain is so intense that it can be endured for only a few seconds.

A 60 cycle current of one-tenth ampere flowing from the hands to the feet will probably result in the death of the individual. There are two completely attested cases on record in Europe where 50 cycle currents of this magnitude caused death. In both cases, artificial respiration failed to resuscitate the victims.

The current, however, is not the only factor; the path of its flow through the body, the current density, and the duration of the contact are also of great importance. A fat individual can carry

a greater current without injury than a thin person. Although a small current may cause death, it is not safe to conclude that a much larger current of several amperes will make death more certain. The effect of the current upon the heart depends to a large extent upon its value.

Points of Contact

The position of the points of contact with the circuit determines largely the pathway of the current through the body, and the resulting injury. Once inside the body, the current spreads out in a more or less fusiform shape, assuming uniform resistance of the tissues. It is doubtful if the current is of any considerable magnitude in organs that lie far outside of the current path.

A number of experiments were made with rats to determine the resulting injury for various current paths through the body. The circuit voltage used was 1,000 volts and no animal recovered when the brain was included in the circuit. When the brain contact was removed to one fore-leg, 42 per cent of the animals recovered. With the contacts on both fore-legs no animal survived, but when the contacts were placed on the hind-legs 80 per cent recovered immediately.

This series of experiments demonstrated clearly that the injury is less severe when the path of the current does not involve nerve structures and vital organs. Respiration was interfered with when the current traversed the spinal cord or the region of the vagus nerve, but when the current passed only through the posterior portion of the body the injury was slight.

In industrial accidents the current usually flows from the right hand to the feet, and it is scarcely possible that any appreciable amount of current passes through the brain. Both the heart and the lungs, however, lie in the path. A series of experiments were carried out to determine the amount of current that passed through the heart for various current paths. The dog was chosen as the experimental animal.

It was found that when the current flowed parallel to the axis of the body, approximately 10 per cent passed through the heart. When the current path was from fore leg to fore leg—transversely through the thorax—approximately three per cent passed through the heart. When the current path was from hind leg to hind leg, no current could be detected flowing through the heart.

It is clear from these tests that a much larger portion of the current traverses the heart when the current path is parallel to the long axis of the body than when it flows transversely. Slightly more current flows through the heart when it enters via the right hand than via the left.

Duration of Contact

In general, the longer the time that a man makes contact with a circuit, the less is his chance of recovery. Fortunately, high voltage circuits usually throw the victim clear and the duration of the contact is very short. On the other hand, in low voltage accidents, the victim often cannot release his hold. In such cases, the current may flow for a considerable period of time. Artificial respiration should be started promptly.

Surge Generator Tests

A number of tests were made using a surge or impulse generator. Rats were used as the experimental animal. In the case of rats lying on the ground plate, no permanent injury resulted when they received the discharge from the generator. Only a few of them showed evidence of vestibular irritation by running in circles for a few minutes following the shock. This effect, however, soon disappeared.

The experiments with the impulse generator also served to verify the relationship between the current path and the resulting electrical injury. It is of interest to note that the severe muscular contractions which accompany direct and alternating current shocks were not produced by the discharges from the surge generator.

Damage to Nervous System

Dr. Langworthy made autopsies on the majority of the animals tested, and examined sections of their brains and spinal cords. In addition, he studied the nervous systems of men who had been killed by electricity. He found that in injured nerve cells that the nucleus was no longer located near the center of the cell, that nucleolus was swollen, and that there was a loss of granules. Not all of the cells in any one group showed an equal amount of damage. Normal cells were scattered among those that had suffered great changes. Langworthy found similar groups of damaged cells in both animals and humans that had been subjected to electric shock.

It is well known that this type of nerve cell destruction may be caused

(Please turn to page 50)

Training Counts in Fire Protection

By PERCY BUGBEE

Assistant Managing Director, National Fire Protection Association

Apparatus is important but there is no substitute for a trained and alert personnel

IT IS fully as important to train the plant personnel in preventing fires and controlling incipient blazes as it is to construct a building properly and provide adequate fire prevention facilities. There are plenty of examples of serious fires in well built and well protected structures. The really important job of the industrial man charged with fire safety in his plant is to see that the value of fire prevention is fully impressed upon the workers.

To keep this article practical and concrete, I am going to cite a few examples of effective fire-prevention effort in well known industrial plants.

One of the most remarkable fire prevention campaigns that has yet come to my attention has been carried on by the Youngstown Sheet & Tube Company. The campaign was conducted by W. T. Filmer, director of safety and fire prevention for the company, ably assisted by Fire Chief Philip Harty of the Youngstown Works. This company of vast size and with an army of employees had a large number of small fires. During the year 1926 there were 2,274 blazes on the company's properties.

Mr. Filmer and Chief Harty set out to do two things: first, to secure the cooperation of the men in the mills in reducing the excessive number of fires by removing fire hazards; second, to develop the efficiency of the employee fire brigade. A series of meetings was held with employees to demonstrate the practical value of fire prevention work to them and to the industry. The importance of fire prevention in safeguarding life and protecting their jobs was sold to employees in common sense language.

One incident will illustrate the practical importance of the campaign. In one section of the plant the careless use of oil and grease had created a serious hazard. The fire prevention workers pointed out to the superintendent that a more careful use of oil and grease would

not only reduce the fire hazard but would also save money. A saving of \$583 in one month was actually effected through this means.

The fire brigade work of the plant was developed to a high degree. Each department has a fire company with a captain and a lieutenant and from four to ten members, according to the hazard involved. There is a company for each shift and the companies are drilled at least once a month. An extremely practical method of drills is carried out. The chief of the plant fire brigade hands the company an envelope which contains a description of an imaginary fire which might actually occur in some specific location around the plant. The company then proceeds to get out the apparatus and go through such motions as the case requires under the watchful eye of the chief who comments on their methods after the drill.

Did It Pay?

By this simple but effective method, the men are trained to meet almost any condition and they have become enthusiastic in their work. In 1926 the company had 2,274 fires. The number of fires occurring in subsequent years has been: 1927—1,127; 1928—624; 1929—579; 1930—254; 1931—114; 1932—57. The number of fires in 1932 was 24 per cent the number in 1926. It would be hard to convince the officials of the Youngstown Sheet & Tube Company that fire prevention does not pay.

Another large corporation that has realized the value of fire prevention work is the Endicott-Johnson Corporation. Here again the personality and energy of one man have been largely responsible for a remarkable piece of work. I refer to Fire Chief James R. Eldridge, head of the company's fire prevention department. Chief Eldridge has a real department consisting of two assistant chiefs, four captains, four lieutenants, 16 men detailed to ambu-

lance work, six switchboard operators, a fire-alarm supervisor, and 82 full-time firemen. The men also serve as inspectors and watchmen for the plant.

The department has adequate fire-fighting equipment but the actual work of fighting fires has been but one of its duties. This department is constantly inspecting the many buildings which the plant controls. A complete check-up of every section of every building is made by a night patrol of 40 men, and all reports are made at headquarters over a fire alarm system. A daily report on the condition of all fire-fighting equipment is filed by the department inspectors.

Teach Every Employee

It is the responsibility of the fire prevention department to see that every man in the company's employ knows something about fire prevention work. The workers are trained in the use of fire appliances and given frequent fire drills. Good housekeeping has been stressed as an important factor in fire prevention, and special emphasis is placed on the disposal of waste material. Every fire that occurs on the property is recorded and analyzed with a view to preventing the recurrence of a similar fire. As a result of these efforts the total fire loss for the entire group of 34 manufacturing buildings for the five-year period ending in 1930 was only \$14,000, an annual average of less than \$3,000.

Another striking fire prevention campaign is being carried on by the Canadian Car and Foundry Company under the direction of George Greenfield, director of fire prevention. This company has hit upon a novel way of arousing interest in its fire prevention program. In each of the company's four large plants there is a fire brigade. For many years these brigades have held annual efficiency contests for a cup and for cash prizes. An elaborate score system has been developed for each plant, including points not only for efficiency in fire fighting, but also for such items as general housekeeping, care of flammable liquids, obstructions to sprinkler sys-

tems, smoking, etc. The annual competition is looked forward to by the workers and it has aroused great interest.

The duPont Company, one of our largest corporations, might be thought of as an industry of exceptional fire hazard. This company operates plants in all parts of the country for the manufacture of explosives, lacquers, film, paints and other flammable materials. This company has maintained for years a very efficient fire prevention division under the leadership of Harold L. Miner, who is now president of the National Fire Protection Association. The greatest of care and study is given to fire prevention in the duPont properties and the precautions and inspections have few equals for thoroughness.

The fire prevention work of this company was described by Mr. Miner at the Annual Greater New York Safety Conference and published in the NATIONAL SAFETY NEWS of June, 1934, under the title "Fire Prevention and Modern Manufacturing." Let me quote just one paragraph:

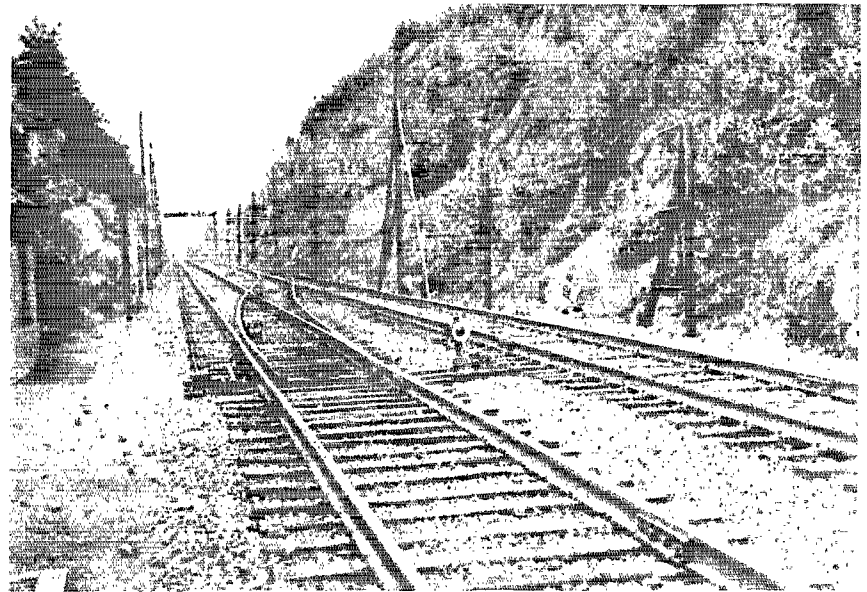
"During the past nine years about 48,000,000 gallons of lacquer and other pyroxylin finishes have been manufactured at one of the duPont plants. The total fire loss during this period was \$2,972. No fires have been experienced with the handling of large quantities of solvents or in packaging operations or storage. None of the fires which occurred was particularly interesting or resulted from any unusual or unforeseen cause. The majority of them were the result of failure of the human element which is so difficult to control in any manufacturing establishment."

Another concern that appreciates the value of fire prevention work is the Sherwin-Williams Company. One of their activities has been the development of a very practical and easily understood inspection form which can be filled out by any foreman who has not had any special training in fire prevention. It contains 46 points which must be investigated and answered. The form is prefaced by the following statement:

"The safety of our property and permanency of employment for those working on the premises depends on the conditions maintained in the various departments and the efficiency of their fire appliances. Therefore every employee, irrespective of position, can contribute materially to safeguarding our mutual interests."

According to the safety division of this company, housekeeping conditions in all plants have improved materially

Fence Protects Trains



TO PROTECT trains from rock slides, the Pennsylvania Railroad has just completed the erection of a huge fence over 1000 feet long and 40 feet high in the deep rock Conewago cut just west of Elizabethtown, Pa., through which the main line high speed trains are operated. The fence is constructed of six-inch mesh galvanized wire and is electrically connected to the automatic signal system.

Numerous experiments have been made by the Pennsylvania Railroad with this means of protection against obstructions on the tracks. In the Elizabethtown cut the method of construction employed was to anchor the ends of the fence to supports made from old steel rails set in concrete. The electric attachments are so placed on these supports that when an object strikes the fence at any point, a small trigger is released which, being electrically connected, automatically gives a warning by setting in the danger position the

roadside signals which regularly govern train movements in both directions.

At the highest point in the Elizabethtown detector fence six small relay boxes have been placed on one of the supports. The electric circuits operating these relays are completed by using the cables which carry the several strands of fence. These, in turn, are connected with the track circuits by means of which the signals are operated.

This latest form of detector fence is such substantial construction that it is able to hold rocks or other material of considerable size and weight, yet it is not intended as a complete barrier. In case rocks or other objects have become dislodged in the side of the cut and obstruct the tracks, the fence forms a point of contact which in turn sets off automatic signals and gives ample warning to the engineer so that he can bring his train to a complete stop and make an investigation before attempting to proceed through the danger zone.

since these inspection blanks were introduced. The work of the inspectors in the safety division has been greatly reduced.

Another interesting plan to improve housekeeping was carried out by the Cadillac Motor Car Company. The plant has a clean-up committee consisting of one superintendent and four foremen who are appointed by the management each week. This committee grades the various departments on neatness,

safety and fire prevention. Inspections are held every Friday. When the tabulation is completed, the department with the best rating is awarded an illuminated clock which it holds for the week. The dial is the following legend: "This was the cleanest department last week and the foreman's name is shown in the center. A fine spirit of competition and some very satisfactory results were secured by this method."

(Please turn to page 12.)

The Company of Survivors

By JOHN W. HAMMOND

Few persons reach maturity without experiencing at least one narrow escape from death or serious injury.

IT'S a great company, a large, all-inclusive company. Practically speaking, we are all in it—every one who has grown to maturity. Judging from the replies which I have received to a question asked of some twenty-five or thirty persons, one could venture the assertion that almost no one lives to be thirty without having experienced a narrow escape from injury or death in some sort of accident.

Try it on your friends. But begin with yourself. Recall those childhood days, or the incidents related by your parents from which you learned of the mishaps you had. I shall do the same—to support my contention that we are all survivors.

I recall with considerable vividness one of my first Christmases. It was in those "good old days" of little tallow candles for Christmas-tree lighting; and



Santa Claus leaned too close to one of the candles on the Christmas tree and in an instant his whiskers were ablaze.

our tree that year had them all over it. My father, rigged up as St. Nicholas with traditional costume and snowy cotton whiskers, was handing out the gifts. He leaned too close to one of the candles and in a moment his whiskers were all a-blaze. In the mad scramble that followed they got the fire out before anything more serious occurred than a generous scorching of skin, but it was a close shave, any way you look at it.

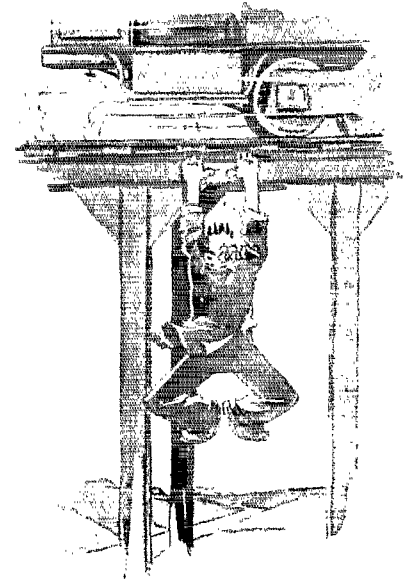
Time went on and I got to be a careless hare-brained urchin of ten or so. One day in crossing a street without looking both ways—it was necessary even then, before automobiles were common—a horse and buggy knocked me down, the horse stepped all over my face and the marks of the carriage wheels were visible on my ankles and chest for weeks afterward. Being tough, like all small boys, I escaped alive but shaky, so to speak; and my face was a weird looking piece of human anatomy throughout the period of convalescence.

Coming to the next generation, my seven-year-old daughter was stricken with appendicitis in the spring of the year. She survived this ordeal with the deft assistance of the surgeon's knife—medicine and surgery are a power in our favor these days—and came home. The first day after she got on her feet she went out in the yard to swing. Somehow or other she fell and the swingboard came down on top of her, striking her on the head about a quarter of an inch from the temple. There was no human protector near that time, so we'll have to credit the traditional guardian angel.

Recently I have been asking almost everyone in my circle what her narrow escape they could recall. The personal reminiscences which were thereby unloosed would make a fine start for a grand compilation of the frailty of human existence. One man described with graphic detail how he hung by both hands from a high trestle while a freight train rumbled past above him. Another while riding a bicycle had a head-on collision with one of the first automobiles—and he survived only by clinging to the radiator until the autoist could step on the brake. But the bicycle was not so fortunate.

One man told how he was watching his younger brother examine a revolver,

The lad jokingly pointed the gun at this companion—yes, "the same old story"—and pulled the trigger. But the barrel was empty and the elder brother was spared to give "the kid" a stiff talking-



He hung by both hands from a high trestle while a freight train rumbled past above him.

to about the folly of pointing guns at anyone. The boy sat down, crestfallen, and with the gun pointed toward the wall pulled the trigger again, whereupon a bullet buried itself in the plaster.

Another friend smilingly shook his head at my question. Oh no, he had never had a narrow escape. Indeed, he had worked forty-eight years in an electrical plant without an accident. But before he got through talking he had told me how he one day took hold of the iron handle of a railway test car that was filled with apparatus and how the current came on, or was already on, administering a 550-volt shock. For a moment he could not let go of that handle, and only by instantly realizing that he would have to get loose if he wanted to live, followed by a superhuman muscular effort, did he pry himself free—and survive.

One man was thrown from his horse and survived only because he didn't land on a concrete walk and the horse didn't think to kick him. Another fell in the

St. Lawrence River, but fortunately he did it with someone close by to fish him out from the bank. A third told of his weird experience with a car driver who weaved in and out of traffic and would not let him get by until he had missed at

tively that he and his brothers and sisters had come through a variety of epidemics. He gave credit to his mother for making survivors out of them all, but in the list that he enumerated were typhoid, small pox, bubonic plague and a

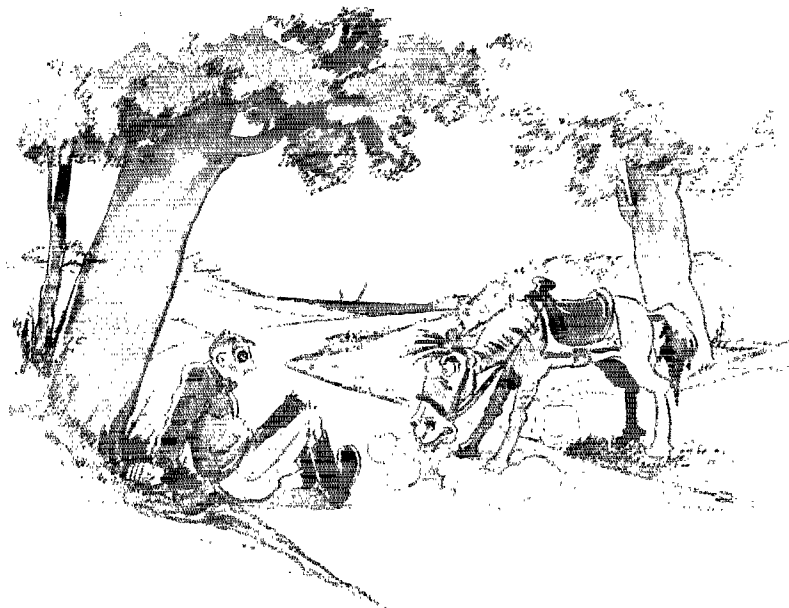
greater or lesser distances, and electricity of lower voltages always near at hand. Fire, water and gas are still with us—all of them friends if under control, but what deadly enemies when they take the bit in their teeth!

What we don't have to contend with are some of the man-made perils of a few centuries ago. These can best be visualized to our modern minds by quoting this passage from an English classic of the eighteenth century, "The Expedition of Humphrey Clinker" by T. G. Smollett:

"The bread I eat in London is a deleterious paste, mixed up with chalk, alum, and bone-ashes, insipid to the taste and destructive to the constitution. The good people are not ignorant of this adulteration; but they prefer it to wholesome bread, because it is whiter than the meal of corn. Thus they sacrifice their taste and their health, and the lives of their tender infants, to a most absurd gratification of a misinformed eye; and the miller or the baker is obliged to poison them and their families, in order to live by his profession.

"I need not dwell upon the pallid contaminated mash which they call strawberries, soiled and tossed by greedy paws through twenty baskets crusted with dirt; and then presented with the worst milk, thickened with the worst flour, into a bad likeness of cream. But the milk itself should not pass unanalyzed: the produce of faded cabbage leaves and sour draff, flavored with hot water frothed with bruised snails, carried through the streets in open vials, exposed to foul rinsings discharged from doors and windows, spittle, spit and tobacco-quids from foot-passengers, overflowing from mud carts, spattering from coach wheels, dirt and trash, and filth, to it by roguish boys, who make the spewing of infants, who are gnawed in the tin measure, which is thrown back in that condition among the milk, for the benefit of the next customer; and, finally, the vermin that drops from the rags of the nasty arab that vends this precious mixture, under the respectable denomination of milk-maid."

Making all allowances for possible exaggeration in a work of fiction, more serious writings dealing with those days afford ample evidence that conditions were just about as Smollett has pictured them. They were undoubtedly worse, if anything, a century or two before, during the gruesome period of the great plagues and the Black Death. In those times, most assuredly there were also survivors. But not so many!



The horse evidently didn't think of kicking him.

least three apparently inevitable collisions. A girl related how she was getting off a street car when suddenly the car started. Only because she was almost off did she escape without anything more than bruises and scratches. One or two others narrowly escaped drowning by staying in swimming too long and having attacks of cramps. One young woman while skating, fell through a hole in the ice and owes her survival to the rescue work of some boys who were skating nearby.

Then there was the fellow who was hit by the fender of a street car and knocked flat on his back. The car was moving slowly the principal reason for his survival. He was hauled out somewhere between the fender and the front wheels. Still another was walking along a railroad track and selected that time and place to become absorbed in thought. Gradually his attention was attracted to a curious singing sound that seemed to come from the rails. It increased in volume until he finally looked behind him and discovered a locomotive and train bearing down upon him at a smart speed. He just had time to step off the track—and whenever he remembers the incident his skin creeps a little and he feels thankful for that one look.

An elderly gentleman recalled reflect-

few others. These epidemics all hit hard, but human beings have a tendency to survive if given a fraction of a chance.

Thus runs the saga of the survivors. When I left off questioning those whom I met the ratio seemed to be heading toward ninety-nine out of every hundred who had survived something or other. And I felt reasonably sure that even the hundredth had probably survived something but could not recall what.

And now that we know we are survivors it must be evident that it should be—that to continue in this beset company involves vigilance.

In some respects modern life is in our favor. In others it is against us. We have high speed locomotion of various sorts to watch out for. We have high-voltage electricity surrounding us at

John Winthrop Hammond, the author of this article, died at his home in Schenectady, N. Y., December 27, 1934. For 14 years he had been a publicity writer for the General Electric Company. He was well known for his writings of the pioneers of the electrical industry, particularly of the late Charles P. Steinmetz.

Hydro-Extractors

Industrial Data Sheet D-Gen. 9

A. Problem

1. What are the hazards of hydro-extractors and what precautions are necessary?

B. Hazards

2. The hazards are:

- Bursting of the basket.
- Possibility of injury to the operator by contact with moving parts of the hydro-extractor or with its contents.

C. Discussion

3. The hydro-extractor, also called a centrifugal extractor, whizzer, wringer, or whistler, is a machine used for separating liquids from solids by the action of centrifugal force. Such machines are used extensively in sugar mills, chemical plants, dye houses, laundries, dry cleaning plants, and in many other industrial plants. They sometimes are used in machine shops for removing oil from metal chips and borings.

4. The hydro-extractor consists principally of a cylindrical metal "basket" which revolves within an enclosing casing known as a "curb." The basket is perforated to permit the escape of the liquid that is separated from the material in the basket. The liquid is thrown to the side of the casing by centrifugal force. Suitable outlets in the curb permit the liquid to drain off to a suitable container or, in some cases, to a sewer line. The basket is mounted on a vertical shaft or spindle and is driven by mechanical or electric power sometimes applied to the upper end of the shaft and sometimes to the lower end, according to the type of machine.

Bursting of Basket

5. The chief causes of bursting or failure of a hydro-extractor basket are:

- Over speed.
- Excessive or otherwise improper loading.
- Excessive vibration.
- Spring or misaligned shaft.
- Defective material, design, or construction.

Over Speed

a. Over speed is one of the most frequent causes of hydro-extractor basket bursting. Therefore, no hydro-extractor

should ever be operated at a speed greater than the manufacturer's rating, which is usually stamped on the inside of the basket in easily visible letters about 1/4-inch in height. The maximum permissible speed is given in revolutions per minute and frequent checks should be made by means of an accurate portable revolution counter to make sure the speed does not exceed the permissible maximum. It is also important that the basket be started slowly and brought up to full speed gradually.

7. When the hydro-extractor is driven from a line shaft, care should be taken to see that the pulley sizes are such that the maximum speed recommended by the manufacturer of the hydro-extractor will not be exceeded when the line shaft is operated at its normal rate of speed.

8. If the hydro-extractor is independently driven by a steam engine, turbine, electric motor, or other separate source of power, the speed governing device on the prime mover should be so maintained that it will at all times prevent racing. No one should ever be permitted to tamper with such a device nor to alter its setting in any way except upon the advice and approval of the manufacturer of the device.

Excessive or Improper Loading

9. The load in the basket should always be properly distributed and should never exceed that for which the basket is designed. When the load in a basket is unevenly distributed the basket will be out of balance and the load may shift as the speed increases and thus produce stresses which may result in injury to the operator or severe damage to the machine.

Excessive Vibration

10. Excessive and dangerous vibration may result from improper loading of the basket, from wear in the bearings or from inadequate or insecure foundation under the machine. Every hydro-extractor should be securely anchored to a strong heavy foundation, preferably of concrete. If the foundation becomes loose or defective in any way, it should be restored to a sound condition and the machine should be reset before it is used again.

Springing or Misalignment of Shaft

11. Springing or misalignment of the shaft is due in most cases to improper loading or to applying the brake too suddenly. Springing and vibration may also be due to the basket being out of balance because of improper repairs and it is for this reason that many users have the manufacturer make any necessary repairs instead of doing such work themselves.

Defective Design or Construction

12. Most baskets are made of copper, steel or monel metal. Boiler plate steel is preferable to cast iron for curbs because should a basket burst, the curb, if of cast iron, may be ruptured and fragments thrown with great force in all directions with serious results to workers and others. The stresses to which the baskets may be subjected make it imperative to use material of the best quality and to allow a high factor of safety.

13. Corrosive or harmful substances introduced into the hydro-extractor as a necessary part of the process, may cause originally good material to deteriorate. The inside and outside of the basket and the inside of the curb are often coated with rubber to prevent corrosive action or to retard it. The rubber is vulcanized in place and in applying the rubber, the work should be done by experts because otherwise there may be leakage and the covering and consequent corrosion which may not be readily detected. It is always best to obtain and follow the advice of a reliable hydro-extractor manufacturer in the selection of such a machine for any purpose.

Possibility of Injury to Operator

14. The possibility of injury to the operator may be largely avoided by:

- Installation of proper safeguards.
- Safe operating practices.

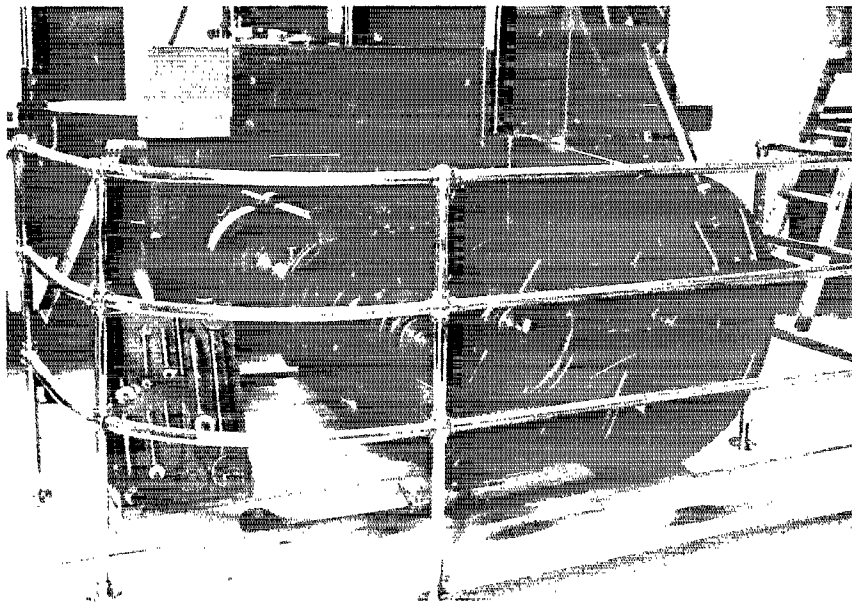
Safeguards

15. Each extractor basket should be equipped with a metal cover which will prevent the operator reaching into the basket for any reason while the machine is in motion.

16. Each hand loaded or emptied
(Please turn to page 60)

THE SAFETY EXCHANGE

"A ROUND TABLE IN PRINT"

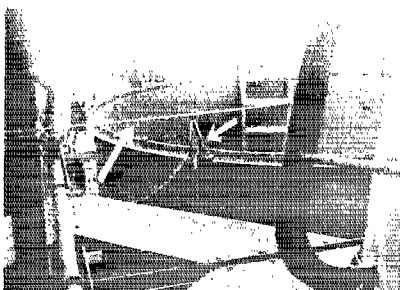


Hand Rail Guards Well This Paper Cutter

The triple railing guard about this paper cutter in a printing plant is well designed to keep everyone away from the gears and other movable parts. The photograph also shows a 1½ inch board screwed to the floor to prevent hand trucks from running into the rail guard; also a rack upon which to place all tools when not in use about the machine.

Safety on the Golden Gate Marin Bridge

The building of the great bridge over the Golden Gate of San Francisco Bay has afforded opportunity for many safety kinks. Here is a photo, taken by E. N. Goldstine, of the State Compensation Insurance Fund of California, which shows a number of safety features about the top of one of the immense steel caissons that later will be filled with con-



crete and support the bridge. A life-line rope and angle pieces convenient for work space and tool storage are provided for those who must walk the narrow steel beams and work above the open cylinder. The rope tied on the wedge-shaped fitting pieces keeps them from falling on anyone below in case they should be knocked off. The work place shown here is about 40 feet above the floor level and the damage done by one of these pieces if it fell would be considerable.

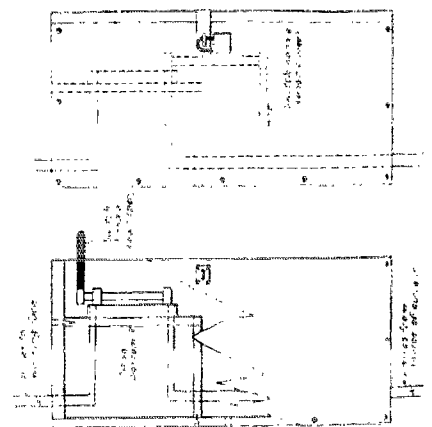
Red and Green Lights Tell the Accident Story

At the entrance to its docks at Galveston, Texas, the Southern Pacific Steam Ship Lines have a large bulletin board displaying green and red lights, three of each in three panels showing the safety record for "Today," "This Week" and "This Month." If an injury occurs today, the green lights are extinguished and the red lights flash on; at the same time the red lights appear in "This Week" and "This Month" and these lights continue throughout the week and month. On the lower portion of the board is a prominent line reading: "We have gone ——— days without an injury." On a certain day recently this figure was 21, showing that the 500 stevedores and longshoremen had worked a total of 21 days, or 84,000 man-hours, without a disabling injury.

The ideas presented here have proved helpful. If you have developed a useful device or method send in a description, illustrated with a sketch, blueprint or photograph, if possible

Switch for Electric Blasting Increases Safety

Here is a safe and reliable blasting switch, designed by F. W. Baker, Hope Metals Co., Winkelman, Ariz. The novel feature in its construction is the double-pole throw switch. This switch, with the throw handle turned at right angles to the switch blades, is placed inside a wooden box in such a way that the door of the box cannot be closed unless the switch is first disconnected. Thus the contact between the blasting machine and the working face remains constantly



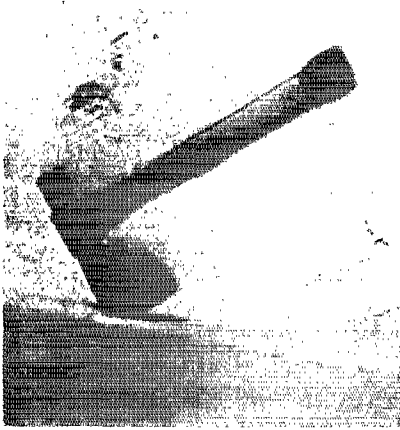
broken. The box, made of one-inch white pine boards, is painted red, with a danger sign stenciled on the door. When not in use it should be kept locked, and the key kept by the man in charge of blasting. Wires from the blasting machine, or any other power source, enter through holes drilled in the bottom of the box, and the contact wires to the working face leave through the box top in the same manner.—*Engineering and Mining Journal*.

Light the Danger Zone with Spot Lights

The suggestion has been made by the Murray Corporation of America that spot lights can often be placed to light up danger zones effectively when they cannot be readily safeguarded otherwise. Such spot lights can also be employed to advantage to light up the vicinity of punch presses and sewing machines where stumbling and falling accidents sometimes occur. However, the lights must be arranged to avoid glare.

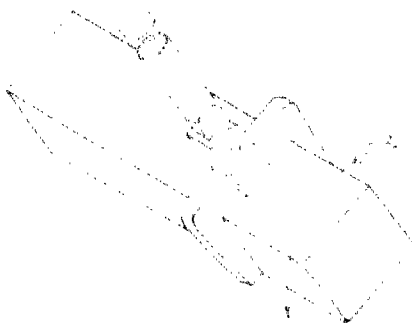
Hatchet Won't Slip from User's Grip

The end of the handle is taped so that it is somewhat larger than the

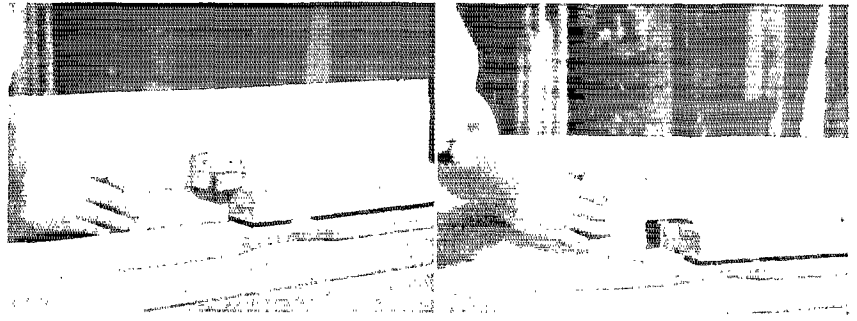


diameter of the remainder of the handle. Should the handle start to slip from the user's grip, the taped end will prevent it flying from his hand and perhaps injuring somebody nearby. The photograph was contributed by W. H. Baker, safety engineer for J. E. Baker Company, York, Pa.

Safety Wrench for Turning Billets



This wrench has a socket joint which permits the handle to "break" at the



A Shaper Accident That Can Be Prevented

The first picture shows a fly cutter operated on a small shaper with a 2x4 as a stop. The part is placed against the stop and then pressed toward the fly cutter which cuts out a section of the moulding. In most factories, perhaps, this would be considered a safe set-up. But the second picture shows the same set-up after an accident which severed several fingers of the employee's right hand. A knot in the wood was the assigned cause; the knot broke and caught between the vertical guide board and the stop, jerk-

ing the man's hand into the cutters. A remedy for such operations requires that a curved block be placed directly above the fly cutter and fastened to the vertical guide. Then, if the moulding should break and the fingers progress toward the fly cutter, the curve on this block would lift the man's hand out and around the fly cutter. A safer remedy would be to have the stop at the end of the table, and then the man would have the pressure on the moulding strip pulling away from the fly cutter. (The pictures are from The Murray Corporation of America Detroit.)

joint when the billet is turned far enough for weight to carry it over, thereby eliminating the hazards and accidents which might result from the use of a solid wrench. This sketch is taken from *Metals Safety*, July, 1934.

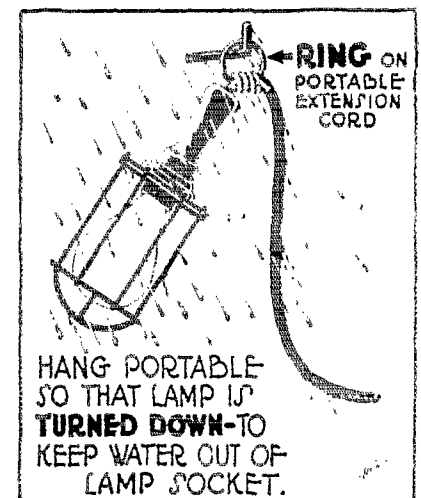
Safety Box for Carrying Soldering Acids

This little metal box with its metal handle and double lid contains two porcelain cups for acid, one of raw and the other of cut acid. The box is used in the International Harvester Company McCormick Twine Mill. It provides a handy and safe way of taking care of soldering acids: when the operator is through using the acid he can close the lid, pick the box up by the handle, and there is little danger of it spilling or splashing anyone while being carried.



Prevent Trouble to Your Portable Lamp

Here is an idea for preventing moisture from getting into the connections of a portable lamp and causing trouble.



The suggestion, worked out by N. Hanson, engineer for the North Western Fuel Co., is that a ring be tied to the extension cord just below the handle of the lamp. When not in use, the lamp may thus be hung so that it will swing in a downward position, minimizing the chance that moisture will get into the connections.

THESE cards are intended for individual distribution. They may be carried in the pocket conveniently; they will slide into most pay envelopes easily. If tacked on the wall over a work bench or machine they will not tear off when a little wind strikes them; several of them can be displayed in a small space and they will fit in a standard card file.

Where data appearing on the cards is needed for permanent posting and the cards are not large enough for the purpose, or it is desirable to include it with operating instructions issued on standard letter size paper, the cards may be photographed or planographed.

These "Safety Instruction Cards" are printed on white card stock, 3 by 5 inches, slightly heavier than government postcards. In any quantity the price is one cent per card (all of one kind or selection) with a minimum order of 25 cents. Stamps or cash may be sent with order, or an invoice will be rendered.

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GLASS TUBING

Inserting in Stoppers and Rubber Tubing



MANY minor injuries to laboratory workers are caused by the breakage of glass tubing when inserting it in stoppers or rubber tubing. Most of these injuries are not serious, but there is always a possibility of permanent injury if a tendon is cut or if the wound becomes infected.

Observe these few simple instructions.

1. Never attempt to insert tubing having a jagged end.
2. Cut the tubing so it has a smooth face, then file again. If it cannot be file polished, then level the edge with a file.
3. Bore the hole in the stopper large enough to obtain a snug fit without forcing. Never rubber tubing which is but slightly smaller in diameter than the glass tube.
4. Use water, soap solution, kerosene, or vaseline as a lubricant and force the tube into the hole by a rotating motion.
5. The stopper should be grasped firmly in one hand and the glass tubing with the other as illustrated. Always aim the tubing away from the nose of the person holding the stopper or rubber tubing.

SAFETY INSTRUCTION CARD No. 287

LINEMEN

Care of Leather Equipment

THE proper care of safety belts and safety straps is very important. Many serious accidents have occurred because these have not been in proper condition. Here are some suggestions for keeping your safety belts and straps in good condition:

1. Regardless of whether or not belts are inspected regularly, you should go over your safety belt and strap each day before using them. An ounce of prevention is better than a pound of cure.
2. Never allow belt to be exposed to excessive heat, for example throwing it over a steam coil or radiator to dry after a day's wear in the rain. It should be wiped off with a clean rag and a light dressing of neatsfoot oil applied. Then allow it to dry at room temperature.
3. Keep belts out of the range of blow torches. They lose an elastic bend far beyond the visible flame, and some straps have been so weakened this way that their entire strength is lost.
4. Never punch extra holes in the safety belt or strap.
5. Belts and straps should never be dropped or thrown from the pole to the ground.
6. If a belt or safety strap is accidentally cut with a sawblade or sharp tool it should be immediately discarded.
7. Belts should be stored in special compartments or hung within the truck. Never throw them on the floor of the truck where they may come in contact with kerosene or sharp tools which may cut or injure them.
8. Do not depend on the hand test for determining the strength of the belt.
9. Your safety belts and straps should be washed and dried at least once every six days.

SAFETY INSTRUCTION CARD No. 288

BRUSH PAINTERS

Lead Poisoning

OBSERVANCE of the following suggestions will help you to avoid lead poisoning:

1. Eat a good breakfast in the morning. Drink milk at meals, and between meals, if possible.
2. Do not eat meals in a room which is being painted.
3. Keep dirty fingers out of your mouth and off food going into your mouth.
4. Wash hands, arms, and face with warm water and soap before eating. Clean lips and rinse mouth before eating or drinking.
5. If you have a mustache keep it short. Do not wear a beard.
6. Keep finger nails clean, and cut short.
7. Do not chew tobacco or gum while at work.
8. Avoid the use of intoxicants as a person using alcohol is more likely to contract lead poisoning.
9. Take a full bath with warm water and soap at least twice a week.
10. Keep bowels moving regularly—at least once a day.
11. Wear a cap, overalls and jumpers while at work. Do not wear your working clothes outside of your working place.

SAFETY INSTRUCTION CARD No. 289

EXPLOSIVE RANGES OF GASES

	Flame Location Per Cent Gas to Air	Electric Ignition Per Cent Gas to Air
Acetylene	5-82	3.7-52.2
Alcohol Vapor		4.0-13.6
Benzene Vapor	2.6-4.8	2.5-4.8
Benzol Vapor	3-6	2.3-6.3
Carbon Disulfide	6 Downwards	
Carbon Monoxide	13-75	16.6-74.8
Coal Gas	8-23	9.0-19.0
Ether Vapor	9 Downwards	2.9-7.5
Ethylene	4-22	4.7-14.5
Isopropyl	3-6	14-6
Hydrogen	7-75	2.5-66.5
Methane	5-13	6.2-12.7
Pentane	2.5-5	2.5-4.8
Toluol	3.5-5	
Water Gas	9-55	12.5-66.6

SAFETY INSTRUCTION CARD No. 290

COMPRESSED AIR

Practical Jokes

COMPRESSED air when misused can be extremely dangerous.

The fellow who likes to play practical jokes and places an air hose against the body of another worker—a practice known as "joozing"—can't possibly realize the danger of this wild prank or he wouldn't do it. The internal injury that usually results is agonizing and is almost always fatal. Some states have already classified the practice as a criminal offense.

Never, under any circumstances, aim an air hose at anyone. Remember that air under pressure will pass right through the clothing.

SAFETY INSTRUCTION CARD No. 291

DRIVING VEHICLES

Setting Out Flares

AS a protection to yourself, your vehicle and others, it is of greatest importance that a warning signal be placed IMMEDIATELY after your vehicle stops on the highway, or not more than five feet off the highway, at night.

Flares should be set out IMMEDIATELY after stopping. Even if the stop is one of only a few minutes.

Carry flares so they are ready for immediate use; keep them in first-class condition. Check supply at beginning of each trip; make sure you have enough to last while any repair is being made.

Observe these instructions:

1. SET FLARES OUT IMMEDIATELY AFTER STOP. No vehicle should be the limit.
2. In setting out flares, place at least one at each end of vehicle, one at each end of each lane, and one at each end of each passing vehicle.
3. Set flares out far enough for protection—about 100 feet in front of vehicle and unless vehicle is carrying immediately one of the carter's high-mast even with your vehicle.
4. When flares are kept in locked boxes, keep the key with the caution key where it will not be forgotten.
5. If truck is carrying flammable, no more should be placed at side of truck. The side flare should be placed in center of road about 50 or 60 feet behind truck.

SAFETY INSTRUCTION CARD No. 292

ACID TANKS

Cleaning Out Large Tanks

Where it is Not Necessary for Worker to Enter Tank

THE cleaning of large tanks is a very dangerous job. It is a job that should be done by a team of workers. It is a job that should be done by a team of workers. It is a job that should be done by a team of workers.

First, be sure you are in the right kind of a fighting non-protective equipment such as goggles and gloves. Then proceed as follows:

1. Remove bottom manhole, and all entering gas through which there might be a leak of acid and fumes in the tank and away from tank.
2. Remove all acid from tank by means of a pump or siphon.
3. Wash tank with water and soap.
4. Wash tank with water and soap.
5. Wash tank with water and soap.
6. Wash tank with water and soap.
7. Wash tank with water and soap.
8. Wash tank with water and soap.
9. Wash tank with water and soap.
10. Wash tank with water and soap.

SAFETY INSTRUCTION CARD No. 293

HANDLING EXPLOSIVES

Preparing the Blast With Cap and Fuse

IN preparing for any shot, or series of shots, local conditions must be considered, however there are these general rules which apply everywhere:

1. Do not use any kind of a water-pump sprayer.
2. Use a suitable under-charge to attach blasting caps to fuse. The use of pier, wire or biting them is extremely dangerous.
3. Take blasting caps from the box with your fingers.
4. Do not use a sharp instrument.
5. Do not try to disintegrate the contents of a blasting cap.
6. Carry blasting caps in a box or bag made for that purpose. Do not carry in your pockets.
7. Handle blasting caps gently at all times.
8. Cut fuse square, perpendicular to the line.
9. Do not cut back of the line of the fuse, but cut it off at the end and held against detaching agent.
10. Do not use any kind of a tool to cut the fuse.
11. Do not use any kind of a tool to cut the fuse.
12. Do not use any kind of a tool to cut the fuse.
13. Do not use any kind of a tool to cut the fuse.
14. Do not use any kind of a tool to cut the fuse.
15. Do not use any kind of a tool to cut the fuse.
16. Do not use any kind of a tool to cut the fuse.
17. Do not use any kind of a tool to cut the fuse.
18. Do not use any kind of a tool to cut the fuse.
19. Do not use any kind of a tool to cut the fuse.
20. Do not use any kind of a tool to cut the fuse.

SAFETY INSTRUCTION CARD No. 294

LOCOMOTIVE CRANES

Steam-driven

Inspection Check List

1. Sign giving maximum safe capacity located in conspicuous place? Clean?
2. Sign giving maximum safe capacity located in conspicuous place? Clean?
3. Cranes well lubricated? Grease in good condition?
4. Machinery, winding sheaves, well lubricated? No excessive wear. No loose parts?
5. All brakes in good operating condition? If crane is equipped with wind for slowing, sure brake is in good operating condition? If crane is equipped with wind for slowing, sure brake is in good operating condition?
6. Cab with floor, roof and windows in good condition?
7. Warning horn, whistle or horn working properly?
8. Boiler safety valve operates freely and is set to blow off at normal safe maximum pressure?
9. Pressure gauge clean and in good order?
10. Water gauge glass clean and clearly visible?
11. Insulator in good operating condition?
12. Latch on weather door operates freely and holds door tight?
13. Signs warning against riding on crane are clean and clearly visible?
14. Steps and platform in good condition?
15. Lighting equipment for night operation or in low visibility condition?

SAFETY INSTRUCTION CARD No. 295

Annual Report of the Treasurer

National Safety Council

COMPARATIVE BALANCE SHEETS—DECEMBER 31, 1934 AND DECEMBER 31, 1933

Assets					Liabilities				
	As at Dec. 31, 1934	As at Dec. 31, 1933	Increase	Decrease		As at Dec. 31, 1934	As at Dec. 31, 1933	Increase	Decrease
CURRENT ASSETS:					CURRENT LIABILITIES:				
Cash	\$ 1,344.53	\$ 8,543.41		\$ 7,198.88	Notes Payable—				
Notes Receivable	1,765.50		1,765.50		Secured by Collateral		\$18,657.14		\$18,657.14
Accounts Receivable (Including Billings in December for January Dues)	48,797.27	63,724.04		14,926.77	Unsecured	700.00	888.00		688.00
Inventory of Supplies	74,722.69	27,298.07		2,575.38	Accounts Payable	1,983.87	7,225.10		2,241.23
					Accrued Expenses	306.00	293.42	12.68	
			\$ 1,765.50	\$21,701.03				\$ 12.68	\$21,586.37
Total Current Assets	\$ 76,629.00	\$99,565.52		\$22,936.52	Total Current Liabilities	\$ 3,489.87	\$27,065.56		\$23,575.69
Special Cash Fund Representing 5% of the income Cash Receipts from De- cember 1, 1934, in Accordance with Resolution of the Executive Com- mittee, November 19, 1934			\$ 413.54		Deferred Income	9,285.86	9,918.45		632.57
National Safety Council Reserve Fund Investments —Market Value at December 31, 1934, \$36,125 and \$11,595 Uninvest- ed Cash	48,020.00	30,709.00	17,311.00		Funds Held by National Safety Council As Cas- todian for the Accident Preven- tion Equipment Manufacturers Association	5,290.24	4,468.80	821.44	
Cash in Closed Bank	102.26	119.30		17.04	Reserve for Future Service to Mem- bers Less De- preciation of Securities	71,200.00	65,584.00	5,616.00	
Office Furniture and Equipment, Less Depreciation	2.00	2,987.49		2,985.49	Surplus	41,585.52	35,480.65	6,104.87	
Printing Machinery, Less Depreciation	5,707.89	7,584.29		1,876.40	There is a contingent liability of \$25,487.28 for reduc- tion of rental for years 1932 and 1933 dependent upon renewal of lease in 1936				
Deferred Charges	1,655.61	1,544.91	110.70						
			\$20,815.21	\$27,524.16				\$15,547.04	\$22,256.29
	\$135,601.20	\$142,310.51		\$6,709.31		\$135,601.20	\$142,310.51		\$6,709.31

STATEMENT OF REVENUE AND EXPENDITURES

For the Year Ended December 31, 1934

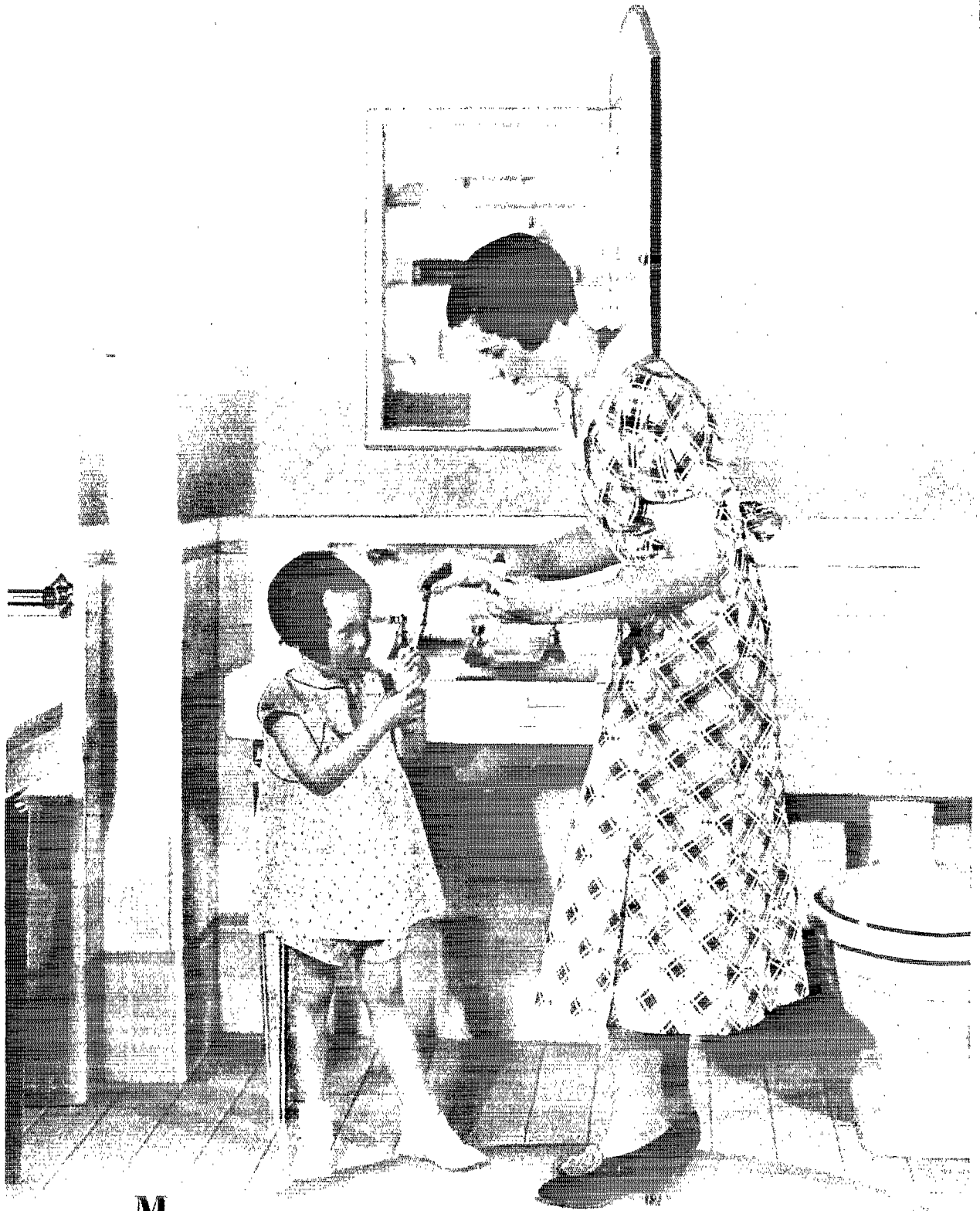
Revenue		Surplus Account	
Industrial Safety Division and National Safety News	\$164,655.62	Surplus, December 31, 1933	\$ 1,180.65
Public Safety Division	65,545.89	Less: Contributions from Members to Contingency Fund	8,495.06
Poster Department	66,456.83	Deficit: Excess of Expenditures over Revenue for Year Ended December 31, 1933	290.35
Miscellaneous Sales, such as Booklets, Bulletin Boards, Safe Workers' Calendar, etc.	110,682.75	Surplus, December 31, 1934	\$ 11,385.37
Congress and Transactions	29,187.80	Expenditures	
Films and Slides	1,054.56	Industrial Safety Division and National Safety News	\$151,007.95
Printing Department Charges to Other Departments	\$32,324.18	Public Safety Division	12,468.00
Deficit: Expenses of Printing Department	28,487.15	Poster Department	69,790.57
Interest—Not	5,837.25	Miscellaneous Expenditures for Booklets, Bulletin Boards, Safe Workers' Calendar, etc.	65,100.62
Excess of Expenditures Over Revenue Transferred to Surplus Account	\$ 2,299.81	Congress and Transactions	15,967.55
	\$445,624.72	Films and Slides	1,290.22
			\$445,624.72

We have examined the accounts of the National Safety Council for the year ended December 31, 1934. In our opinion, based upon the examination, the above Balance Sheet as of December 31, 1934, and the accompanying Statement of Revenue and Expenditure fairly present the financial position of the National Safety Council as of December 31, 1934, and the results of its operations for the year ended on that date.

ARTHUR YOUNG & COMPANY,

Arthur Young & Company,
Certified Public Accountants.

NATIONAL SAFETY NEWS



MERCUROCHROME (*dibrom-oxymercuri-fluorescein-sodium*) is especially useful not only for the first aid station but also for the home medicine cabinet. Even minor wounds may become infected when antiseptic treatment is delayed. The prompt use of an antiseptic is an important preventive measure. Be prepared with Mercurochrome for first aid care of all minor wounds and abrasions. In more serious cases a physician should be consulted.



HYNSON, WESTCOTT & DUNNING, Inc.
Baltimore, Maryland

INDUSTRIAL HEALTH

A Non-Technical Symposium for Physicians and Laymen

Beyond the Nurse's Routine

By OMILEE D. BRADFORD, R. N.

Beloit Iron Works, Beloit, Wis.

PRE-EMPLOYMENT physical examinations have given us a clearer understanding of many accident causes. We are realizing now that we have sometimes placed the cart before the horse. How can the industrial nurse help in correcting this situation?

It is generally accepted that about 85 per cent of our safety effort must be put across in terms of education. If correctable defects as shown by the medical examination point the way to preventing many accidents, who would be better fitted for this type of teaching than the nurse? By virtue of her profession she is schooled to teach the preservation of life from the pre-natal state to old age. The nurse has been in close contact with people in sickness and in health in all the many phases of life. She has ministered to those who are sick in mind as well as in body.

The nurse looks upon those she contacts in her daily work not as individuals discarded as unfit or unsafe because of age or physical impairments but as persons to be taught and nursed back to health and usefulness.

To the industrial leaders, let me say that the nurse, backed by the medical profession, can do much to prevent accidents by teaching that health is the power and the glory of living, and that lack of understanding of the human machine and its requirements is one of the primary reasons for ill health. Through pre-employment examinations we are beginning to realize that correctable impairments of the human machine are responsible for an appalling number of accidental injuries.

We will assume that every industry, whether employing five or 500 men, gives pre-employment physical examinations. The findings compiled in these records, with the cooperation of the management, provide the foundation for the nurse's health building program.

When we began our health program in 1929, I found that most of our employees were not health conscious. They did not realize that they needed medical or dental care. They were interested in crime, sports and their own hobbies but not in their own teeth and tonsils. It was difficult to make them realize that infections in these parts might be causing their lumbago, and not stooping to pick up a rope.

For the benefit of those who maintain health departments but regard the nurse's duties as limited to routine first aid, let me refer to a case history which will illustrate how physical ailments can affect not only the temperament of the individual but the type of work he does. No two persons can be managed the same way. The nurse learns to appraise not only the physical condition of the individual but also his mental and emotional development.

A Friend in Need

One morning Mr. A. came to the first-aid department. I greeted him with a cheerful "Good morning, and what may I do for you?" Through force of habit I scanned his hands for some sign of injury but saw none. But there was fire in his eyes and resentment in his voice as he said, "I hate the word 'safety' and all it stands for. It's the most used and abused word in the English language. Since this shop has gone safety mad it's been going to the dogs and believe me when things pick up these smart Alec foremen are going to have their eyes opened."

When he paused for breath, I said, "Why Mr. A., you seem to have a lot on your mind. Won't you please tell me what is wrong? Perhaps I can help you."

Climbing down a little, he said, "I've had such a headache and pains in my

joints that I haven't been able to sleep for a week, and my hands were so shaky that I made a slip and scrapped a piece of work. So I am sent home for a week - punished as if I were a naughty child, and it's my wife and kids that will have to suffer. Nurse, I don't know what this world is coming to. It looks like a losing battle for the working man."

By this time I had checked over his physical examination record. The foreman had seen merely a negligent workman - rapping a piece of work. I saw a physical wreck on the verge of a complete breakdown. His history read:

Employed 2 years. Lost 20 pounds last year. Much underweight. Vision poor, slightly corrected with glasses but should be rechecked at once. Tonsils - 1 and swollen. Teeth and gums - no dental infection, should see dentist without delay. Heart rate rapid. Blood pressure somewhat elevated.

Diet - 1/2 B. This man is much undernourished. Suggest 1000 calories but all his physical ailments are correctable, and I believe he will prove a good man. Encourage necessary corrective measures. Recheck six months.

I looked into this man's eyes sympathetically and said, "I never interfere with the foreman's decisions because he must know his work better than I do, but I feel dreadfully sorry. I have fallen down shamefully on the job. I should be sent home for a week without pay instead of you. As a union leader I should have been able to make you realize long ago what was needed. It's no wonder you are shaky and don't sleep nights. Please take your punishment, which in your case is a blessing in disguise. Go home and talk things over with your wife. Then come back in the morning and see me." As he left I said, "If you are short of funds, go to your foreman. He is a fine fellow and will OK an advance on your check."

Next morning he was the one with a cheery "Good morning." He said with a smile, "Nurse, you're the best friend a guy ever had. You surely made me see things in the right way. But I didn't tell my wife I was laid off because I scrapped a piece of work. I told her I was sick and wasn't going back to work."

Please turn to page 35

Since 1931... **4** Inland -WAY Floor Plate

Has "Filled the Bill"



**THE NEW
INLAND 4-WAY
FLOOR PLATES**

**IN ANY
DIRECTION THEY ARE NON-SKID
AND MATCH**

No matter at what angle a foot strikes the new Inland 4-Way Floor Plate, there is protection. For this new plate is non-skid from any direction.

No matter how hard—end to end, side to side, or side to end—the pattern on the New Inland Floor Plates turns on the 4-Way pattern for a continuous pattern and neat appearance. And in addition, the design offers ready drainage and sweeping.

Another advantage is lighter weight—due to the increase in strength or safety—because there is no need for a new and better arrangement of the projections. Thus Inland introduces and recommends a better floor plate which provides a new degree of safety, economy, safety, and appearance. INLAND STEEL COMPANY, 38 So. Dearborn St., Chicago.

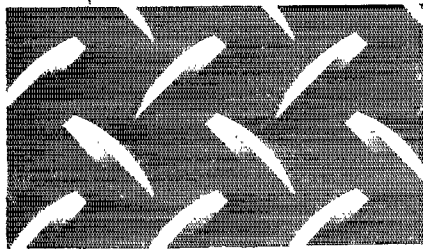
INLAND STEEL
ABLE SERVANT OF THE CENTRAL WEST
Rails, Track Accessories, Bars, Pipes, Rivets, Bolts

INLAND 4-WAY—the most important improvement in floor plate in decades—was announced by Inland in October, 1931.

This new floor plate was far in advance of any plate made; it met the need for a better, more serviceable steel floor plate. Its new 4-Way pattern gave it 4 advantages which could not be secured elsewhere: 4-Way Safety (equal resistance to slippage 4-Ways instead of two); 4-Way Matching; 4-Way Drainage; Extra Stiffness.

Many users of floor plate immediately changed to 4-Way. Many who could see no advantage in the available steel plates over competing material now began to use steel floor plates for the first time—Inland 4-Way.

Today there are hundreds using Inland 4-Way Floor Plate for a great variety of purposes—wherever a foot or wheel may slip. INLAND STEEL COMPANY, 38 So. Dearborn St., Chicago, Illinois.



Inland 4-Way Pattern
Since February, 1932

Remember the First Inland
4-Way Floor Plate Ad?
October, 1931



INLAND STEEL
ABLE SERVANT OF THE CENTRAL WEST

Sheets Strip Tin Plate
Plates Structural Piling

Rails Track Accessories
Bars Pipes Rivets

Mine's Safety Program Includes the Schools

FEW communities offer a greater variety of inviting hazards to children than a mining town. In most cities and towns the principal menace to child life is the automobile. A mining community has vehicular traffic, too, and in addition many other dangers which are unknown in urban centers. These are a source of anxiety to mine officials and parents alike.

Mine property is not fenced in, and tipples, railroad trestles and slate dumps seem to have an irresistible fascination for adventurous youngsters. Blasting caps, which are used in large quantities in underground operations, may fall into the hands of those who do not realize their dangers. Moreover, people in mining communities are somewhat isolated and the facilities for safer forms of recreation are limited.

The Koppers Coal Company felt a real responsibility for the protection of 10,000 children in the 30 communities in West Virginia, Kentucky and Pennsylvania covered by the company's operations. For many years the company had carried on an energetic and effective safety program in the mines and about three years ago it was felt that the safety instruction should be expanded to include the schools and homes.

Miss Florence Houghton, who had recently come to the company as social worker, discussed the problem of safety with many of the school teachers in these communities. Few of them had any knowledge of the subject. Some of them had seen the white belted safety patrol boys in the cities and they knew that automobile clubs provided safety posters for school use, but safety instruction as part of the school curriculum was practically unknown to them.

The safety inspectors for the company visited the schools and gave safety talks before teachers and pupils. The teachers and the county superintendents were enthusiastic about the plan but they had no class room materials and hadn't the faintest idea of how to go about such a program.

Here, it seemed, was an extremely fertile field for the extension of a safety program. Thomas E. Lightfoot, engineer in charge of accident prevention

and compensation for the Koppers Coal Company, turned to the Education Division of the National Safety Council for help and had copies of **SAFETY EDUCATION** distributed among the 340 teachers in the communities. Mr. Lightfoot and Miss Houghton then undertook the preparation of an outline of safety instruction adapted particularly to the needs of a mining community. The first edition of this outline was published and distributed, but the authors were far from satisfied with their first attempt. The pamphlet was then submitted to the Education Division for review and many valuable suggestions were incorporated in the revised edition.

A mining community, you must remember, is in a class by itself. It is neither rural or urban, although it has some of the problems of both. The population of the communities surrounding the Koppers' operations is of a mixed nature, with the Anglo-Saxon strain predominating. Many of them have come from isolated mountain farms and have traits peculiar to mountaineers.

In the past, some of the parents have displayed a stolid indifference toward the safety of their children. If they wanted to play on the tipples and mine cars, the parents seemed to regard the whole matter with fatalistic calm.

Against this obvious handicap there were certain offsetting advantages. The people in the mine towns are much less sophisticated than city folks. Their recreational facilities are less varied and safety presented with entertainment makes a stronger bid for their attention. It was soon found, as has been the case

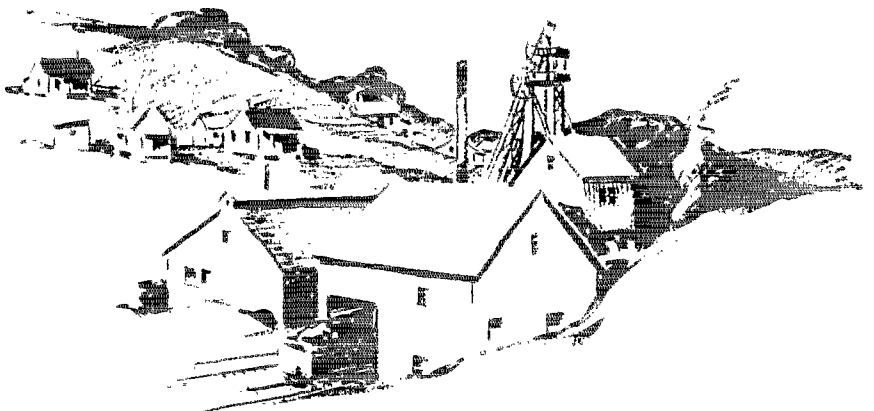
in many an industrial community, that the safety lessons learned in school are carried into the homes. Time after time the mine foremen have reported instances showing that the safety thoughts taught in the classroom extended to the home and down into the mine.

The lesson outline prepared for the guidance of teachers presents a suggested schedule for eight months of the year. The first month includes traffic hazards, and the succeeding monthly lessons cover first aid and safety in the school grounds, home safety, mining town hazards, inside school hazards, town safety, transportation, and summer precautions. The teachers and school superintendents have entered heartily into the program and have welcomed the aid of the Koppers Coal Company. The children have also shown a keen interest in the safety subject matter closely tied up with their every

The copies of **SAFETY EDUCATION** eagerly read by the teachers who find in them many helpful ideas for the classroom. Safety instructions have added much to the school curriculum which is both interesting and practical.

In connection with the school safety program, the company has organized a Junior Safety League. A definite club organization is recommended for schools with officers, committees and regular meetings and a definite program. Every opportunity is taken to stress the slogan of the League, "We're for Safety." More than 10,000 buttons have been issued by the company to members.

The Koppers Coal Company feels that these school safety activities are a valuable part of the whole industrial safety program. While the company has a direct and definite interest in protecting its employees and their children at home and at recreation, it is also realized that many a valuable safety lesson reaches a worker through his children, and also that when many of those now attending school find employment in the mines they will already be safety-minded.

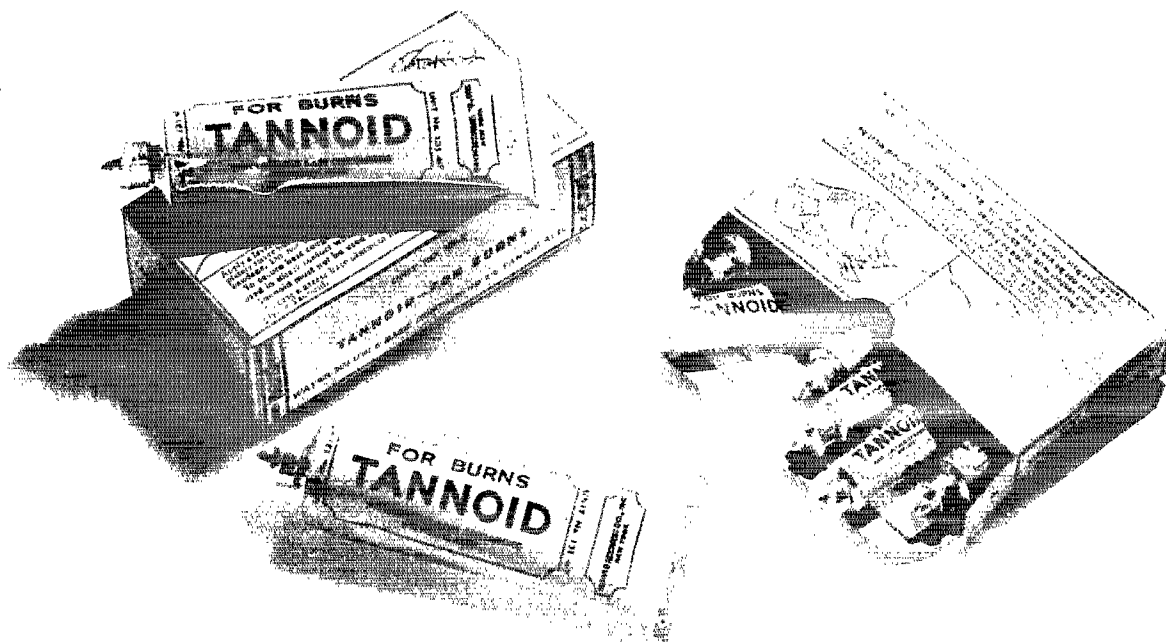


SAFETY



SERVICE

TANNOID — The ORIGINAL water soluble base, tannic acid burn treatment



The double D carton, 2—1½ oz. tubes

The single D carton, 6—½ oz. tubes

The above illustration shows TANNOID in units—for use in Unit Dressing First Aid. TANNOID is also available in ½ oz. Tubes.

THE Tannic Acid Treatment for Burns needs no introduction. Its effectiveness in the saving of life and in the minimizing of scar tissue means a real saving in your compensation.

The Davis Company was first to

make this treatment available to First Aid in the form of TANNOID, the water soluble jelly containing 5% Tannic Acid.

TANNOID is equally effective both in first aid and subsequent treatments.

You may be sure of the value of TANNOID to you. Introduced by Davis in 1926; its regular use in many well known companies since then proves its quality and dependability.

TANNOID was "Years Ahead"
TANNOID is "Time Tested"

Write for your copy of
TANNOID BULLETIN No. 118

DAVIS EMERGENCY EQUIPMENT **CO., INC.**
CHICAGO, ILL. • NEW YORK CITY • HOUSTON, TEX.
DAVIS EMERGENCY EQUIPMENT CO., LTD., San Francisco and Los Angeles, Cal.

*For your
Safety* **WE EXPLODED
IN A FRONT TIRE AT**



"AN EYE TO THE FUTURE — AN EAR TO THE GROUND"

Continental's new "Safety" tires are designed to give you the best possible protection in the event of a tire failure. They are built to last longer, to resist wear, to resist punctures, and to resist the effects of heat and cold. They are built to give you the best possible protection in the event of a tire failure. They are built to last longer, to resist wear, to resist punctures, and to resist the effects of heat and cold.

A DYNAMITE CAP 70 MILES AN HOUR!

"You may never need to drive your car this fast, may never encounter the dramatic emergency described before, but if you do, it is reassuring to know what a vast advance in safety General Motors engineering now provides for you."

IN THE dust and heat the careening cars went flashing by, running the tests on Knee-Action at the General Motors Proving Ground.

No question about comfort—the bounceless, jarless, marvelously poised glide-of-a-ride over even the roughest stretches certainly proved that.

Safety, now—what about that? What happened when the car piled into loose gravel at 60? What happened when it hit a hump in the road or a water-filled chuck-hole? *Nothing!*

Okeh, what's the toughest emergency, then—a front wheel blowout at high speed? Good, try that!

They drove a speeding car over knifelike obstacles set in the road.

The tire let go with a bang. But nothing happened.

Maybe that was because the drivers knew what was coming, had time to get set.

So this time we put a percussion cap—dynamite—*inside* the tire—fired it with a switch from behind the driver when least expected.

Even this time—no violent lurch, swerve, stagger—no steering wheel tug that couldn't be handled—that car with Knee-Action held the road under safe control—simply eased down to a straight-line stop.

It has been said that more than any other people in the world, Americans are proud of a General Motors car—pride that is based on the fact that it is the most advanced in the industry, and of a pride which shows THE PUBLIC INTEREST in its collaboration and its safety.

LISTEN!
General Motors Symphonic
Concerts
Sundays 8 P.M. E.S.T.
N.B.C.-Basic Blue Network

GENERAL MOTORS

A Public-Minded Institution



A book you should read! It tells the full story of how Knee-Action operates, why it was developed and what it does for you. For your copy, address Customer Research Staff, General Motors, Detroit.

CHEVROLET • PONTIAC • OLDSMOBILE • BUICK • LA SALLE • CADILLAC

THE BULLETIN BOARD

A page for those who maintain the Show Windows of Safety

Conducted by STAN KERSHAW

A Poster Contest Always Arouses Interest

THERE is no doubt that our home-made poster contest stimulated interest in safety. It also gave the safety committee a good chance to study the attitude of the workers toward the safety movement," writes W. W. Keen of Thomas M. Royal & Co., Philadelphia.

Lack of artistic skill was no handicap in this contest, for the judges were instructed to base their decisions on two main points: (1) Originality of idea; (2) Forcefulness in putting the idea across.

Such a contest not only stimulates interest in safety in a general way, but also makes it necessary for each contestant to give serious thought to the fundamentals of safety in order to determine the most effective appeal. In addition, it keeps the bulletin boards alive with material of local interest, for much stimulating propaganda may be used while the campaign is in progress. Upon its completion, there are usually enough acceptable posters to last for some time.

In such a contest it is obviously important to keep the rules as simple as possible, and it would appear that the safety committee of Thomas M. Royal & Co., did a good job in this respect. Here is the announcement:

The Safety Committee announces a Home-Made Safety Poster Contest.

Five dollars will be given as first prize. The contest will start September 1 and last until September 30.

Messrs. Humphreys, Godard and Holloway have kindly consented to serve as judges.

Artistic skill will play no part in selecting the winner.

Posters may be any size up to 17 inches.

The only two points on which the posters will be judged are: (1) Originality of idea; (2) Forcefulness in putting this idea across.

Any one free to make the contest his own. The only rule is that it must be put out under the A. D. sign.

Don't be afraid to submit your posters even if they are not perfect. The idea and your method of putting it over are all that matter.

If you have more than one idea, send in as many posters as you want to. The only rule is that they must be about S A F E T Y . . .

Copies of these rules were handed to every employee and the contest was written up in the company magazine. The individual members of the safety committee further stimulated interest by talking up the contest in their respective departments.

Here are some of the poster captions that were entered by the contestants. They serve to give some idea of the thought that some of them gave the subject:

Infection may lead to amputation. Report all injuries and have them treated at once. A tiny scratch without proper attention may cause you to lose an arm. Safety first, last and always. Carelessness is the short cut to the hospital.

You need not be an artist to draw a safety score.

Be a pioneer, blaze a big trail for others to follow.

You can bowl 300 in the safety league.

When a plank becomes a stage, be sure it's not curtain and good night without an encore.

The poster contest idea can be used with much success in almost any company, large or small. It is not costly, and in fact is probably more productive of good results per dollar invested than many other interest stimulating plans.

Making Good Use of the Miniature Camera

THE miniature camera has come into its own and is riding a wave of popularity. It is convenient to carry, it is not costly to operate, it can be used in places where it would be impractical to use a large camera, and enlargements can be made of choice snapshots.

In safety work, these cameras offer a new opportunity, especially now that extremely fast lenses and films are available with which photographs can be

taken under only fair lighting conditions.

The safety man who carries a camera in his hip pocket can take advantage of unusual opportunities to get striking pictures; pictures that will enable him

to put a real kick into his safety bulletin board displays. He can get action shots, snapshots of good and poor housekeeping, portraits of plant personalities, records of good versus bad equipment and a hundred other kinds of subjects.

If it is impractical or too costly to enlarge many of the photos, there is a very effective way to use the small prints. All that is necessary is to obtain one or more inexpensive viewers consisting of a print holder and magnifying glass in a fixed position, and mount these inside and against the glass windows of the enclosed bulletin boards at about eye height.

Everybody will want to stop and take a look at the pictures placed in these holders. If a typewritten explanation is needed for each picture, paste it, or fasten it with adhesive tape to the inside of the window just below or to one side of the viewer.

Safety Instruction Cards for the Bulletin Board

A FEW members have asked "Why not furnish safety instruction cards in poster size for posting on bulletin boards?"

The first impulse is to reply that they are not produced for that purpose, but some members have special reasons for wanting to use them as posters and find that the cards are a little too small for this use.

Since there are important reasons for continuing to issue the cards in the 5 1/2 inch size, it is suggested to all who want some of them as large as posters that they have enlarged photos made.

I defy anyone to look at a bulletin board containing a dozen posters for thirty seconds, walk away, and then tell you more than ten words that are on it.

Don't be afraid to put up items that do not deal with safety. They may be the means of attracting people you would not otherwise reach.

SAFETY NEWS

The latest figures show that over a hundred thousand people were killed in accidents last year in the United States alone. It is safe to say that everyone of them thought that accidents usually happen to the other fellow.

AFTER FIRST AID



**Return for Treatment
Until Your Injuries
Are Entirely Healed**

WHEN IT RAINS



SNOWS



FREEZES



DRIVE SLOWLY

NATIONAL SAFETY COUNCIL

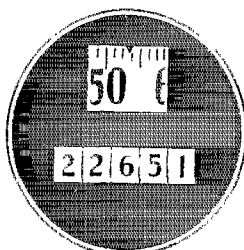
5390-B 17x23 inches 4 units

2473-B 17x23 inches 4 units

5394-B 17x23 inches 4 units

**LITTLE
MISTAKES
CAN
MAKE
BIG
ACCIDENTS**

The **HIGHER** *The*
SPEED



The **WORSE** *The*
ACCIDENT

NATIONAL SAFETY COUNCIL



**A SPRINKLING OF SAND OR ASHES
ON SLIPPERY PLACES MAY SAVE MANY
A PERSON FROM SERIOUS INJURY**

NATIONAL SAFETY COUNCIL

5397-B 17x23 inches 4 units

4357-B 17x23 inches 4 units

4358-C 25x38 inches 8 units

4913-B 17x23 inches 4 units

**YOUR
SAFETY**

**Depends on HOW
CAREFUL
Not YOU ARE
HOW LUCKY**

NATIONAL SAFETY COUNCIL



DON'T RUN!



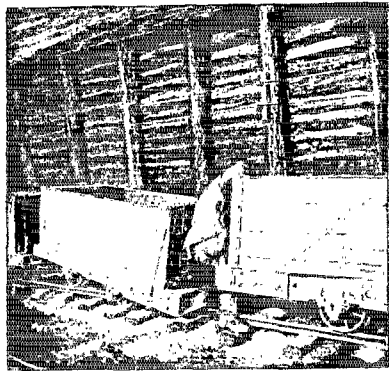
IT'S SAFER

4970-B 17x23 inches 4 units

1791-B 17x23 inches 4 units

2118-B 17x23 inches 4 units

NEVER
ATTEMPT TO UNCOUPLE CARS
WHILE THEY ARE IN MOTION



NATIONAL SAFETY COUNCIL

5398

9x12 inches

1 unit



**LIVE SAFELY
AND ENJOY OLD AGE**

NATIONAL SAFETY COUNCIL

4576

9x12 inches

1 unit

**Some Occupational
Accident Facts**



OCCUPATIONAL ACCIDENTS COST \$50,000,000 LAST YEAR!



ONE OUT OF
EVERY 10 CUTS
AND LACERATIONS
BECAME INFECTED!

IF YOU SUFFER A DISABLING
(lost time) INJURY IN AN OCCUPATIONAL ACCIDENT
THERE'S ONE CHANCE IN 500 YOU'LL BE KILLED
ONE CHANCE IN 1000 YOU'LL BE COMPLETLY DISABLED
THE REST OF YOUR LIFE
ONE CHANCE IN 25 YOU'LL BE PARTIALLY DISABLED THE
REST OF YOUR LIFE

WHY TAKE A CHANCE?

NATIONAL SAFETY COUNCIL

5399

9x12 inches

1 unit

**USE
A
GOOD
LADDER
OR
STAY
ON
THE
GROUND**

NATIONAL SAFETY COUNCIL

4993

9x12 inches

1 unit

**A
THOUGHT
FOR TODAY**

(AND EVERY DAY)

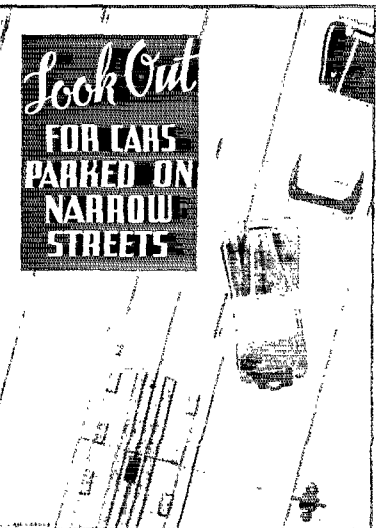


*It's not only the
knowledge of
SAFETY
but the practice
that
counts*

2277

9x12 inches

1 unit

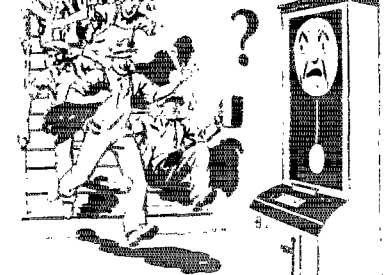


4987

9x12 inches

1 unit

**WHAT'S to be GAINED
by STAMPEDING
at QUITTING
TIME**



AN ACCIDENT!

NATIONAL SAFETY COUNCIL

4563

9x12 inches

1 unit

**S L I P S
DO COUNT.**



**KEEP FLOORS
CLEAN!!**

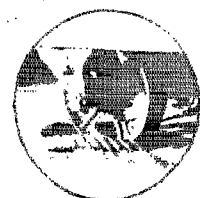
NATIONAL SAFETY COUNCIL

4527

9x12 inches

1 unit

**CHOCK
CARGO TRAILERS**



PREVENT ACCIDENTS



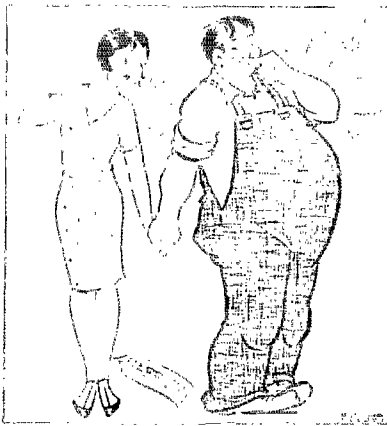
NATIONAL SAFETY COUNCIL

5425

9x12 inches

1 unit

Electronics may be purchased from the National Safety Council for \$2 each



**SOME FELLOWS EXPECT
SAFETY TO SLIP UP AND
MAKE LOVE TO THEM!!**

5368 9x12 inches 1 unit

**PLAY
SAFE
NOW**

**you'll get a
harp to play
soon enough**



NATIONAL SAFETY COUNCIL

4976 9x12 inches 1 unit



THIS MAY TAKE IT!

5385 9x12 inches 1 unit



5393 9x12 inches 1 unit

**TO
SAVE
YOUR
LIFE**

**You can't
beat
SAFETY**

5391 9x12 inches 1 unit

GLOVES
ARE FINE PROTECTION
FOR YOUR HANDS EXCEPT WHEN
WORKING AT MACHINES

*This
one
caught
in a
machine*



4991 9x12 inches 1 unit

**EVER STOP TO
THINK HOW
MUCH BETTER
YOU LOOK IN YOUR
WORK CLOTHES
ON THE JOB
THAN YOU MIGHT
SITTING IN A
WHEEL CHAIR IN
YOUR SUNDAY
BEST?**

Gardner Blee



4988 9x12 inches 1 unit



YOU take your life in your
hands if you use makeshift
or defective scaffolding, rig-
ging or staging. Do not use it.
Be sure to report all such de-
fective equipment promptly.

5001 9x12 inches 1 unit

WHEN ROLLING STOCK



Keep Hands in clear

5007 9x12 inches 1 unit

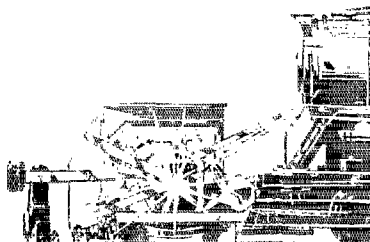
Please copy may be purchased from the National Safety Council for \$2 each

NATIONAL SAFETY COUNCIL

**IF YOU SUFFER
FROM SICKNESS
AND OTHER AIL-
MENTS GET GOOD
MEDICAL
ADVICE**

You Gamble With
Your Future When
You Don't Guard
**YOUR
HEALTH**

5380 9x12 inches 1 unit



**IT'S...Poor
Judgement to
take Chances with
FAULTY BRAKES**

5384 9x12 inches 1 unit

Every Good

**SAFETY
RECORD**

is a

CHALLENGE

FOR A

TESTED ONE

FOR A

5390 9x12 inches 1 unit

AT HOME OR ON THE JOB



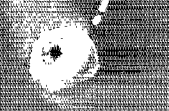
**DON'T LET THE FAULT
IN YOURS**

5393 9x12 inches 1 unit

WOULD YOU

*trade one of
your good
eyes for*

ONE of THESE



4990 9x12 inches 1 unit

**Always Put
Handles on
Files Before
Using Them**



5376 9x12 inches 1 unit

**HE THOUGHT HE COULD
USE A DRILL THAT WAS
SHORTED**



**BUT THEY CARRIED HIM
OFF ON A STRETCHER**

5401 9x12 inches 1 unit

SAFETY



**WHEN YOU BOIL
IT DOWN IT JUST
MEANS
BEING CAREFUL**

5375 9x12 inches 1 unit

**WE ARE INTERESTED IN
YOUR SAFETY AFTER THE
WHISTLE BLOWS**

Because —

We don't want to see you
suffer the hardships of an
accident.

We don't want you to
lose time from work any
more than you want to.

Safety is so disarming ac-
cidents occur outside of
industry.



5342 9x12 inches 1 unit

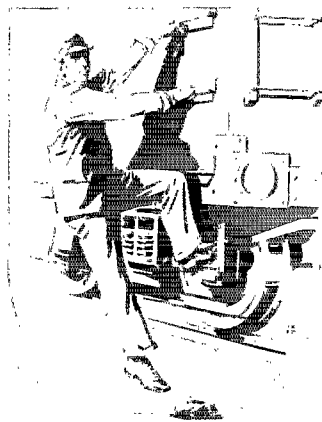
Good housekeeping

Does not mean
cleaning up once
a week or once
a month—

*It means keeping
things cleaned up
all the time.*

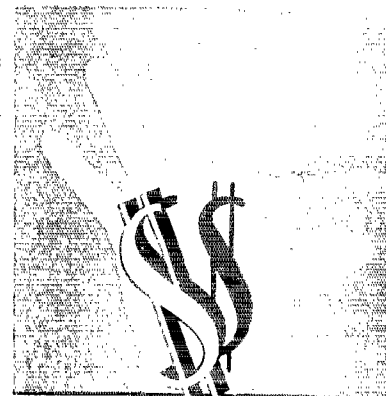
4594 9x12 inches 1 unit

LOOK OVER THE GROUND BEFORE ALIGHTING



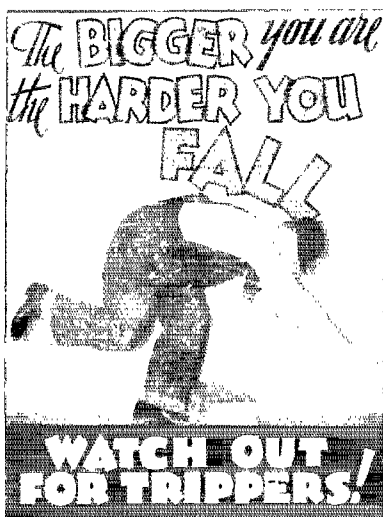
NATIONAL SAFETY COUNCIL

5395 9x12 inches 1 unit

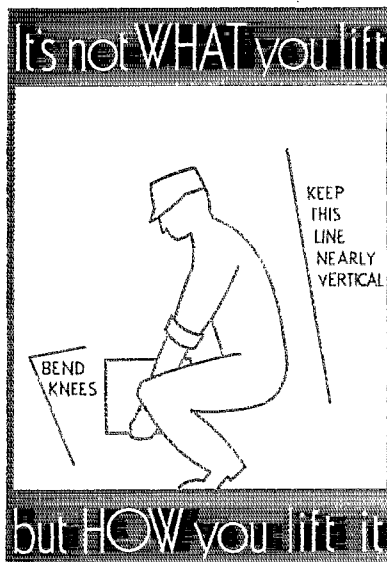


How Much Would You
Take For Your
RIGHT HAND

5381 9x12 inches 1 unit



5377 9x12 inches 1 unit



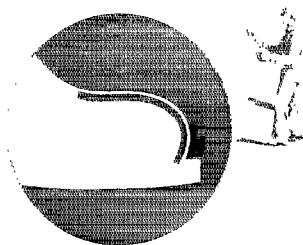
NATIONAL SAFETY COUNCIL

4565 9x12 inches 1 unit



1941-D 12x17 inches 2 units

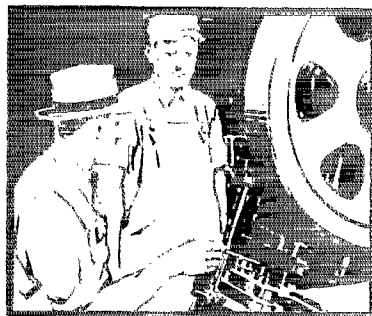
WHAT IS A SAFETY SHOE ?



It is one with a
reinforced toe to
withstand heavy
blows and pressure

IT PAYS TO WEAR THEM

4570 9x12 inches 1 unit



That's Right

Have the foreman explain
what you don't understand

4977 9x12 inches 1 unit

TEST BELT
BEFORE
GOING UP
POLE

BUT DO IT
NOT MORE
THAN 2 FEET
ABOVE GROUND



4228 9x12 inches 1 unit

Electrotype may be purchased from the National Safety Council for \$2 each

NATIONAL SAFETY COUNCIL

HORSEPLAY



**— ON THE JOB —
OFTEN RESULTS IN
SERIOUS INJURY**

5379

9x12 inches

1 unit

4997

9x12 inches

1 unit

5376

9x12 inches

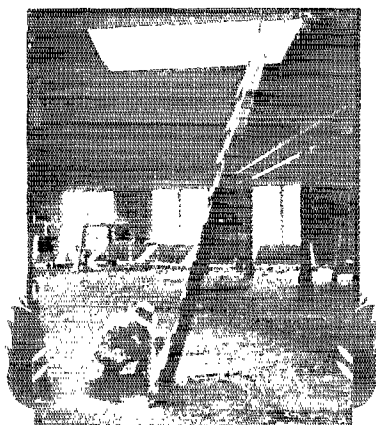
1 unit

... Help the new employee! Teach him the safety tricks of the trade. You may save a life or prevent a serious injury. The new man will appreciate your friendly interest.

**WORK
SAFELY**



FOR THEIR SAKE



**A MINUTE
FOR SAFETY MAY SAVE
SOMEBODY A MONTH
IN THE HOSPITAL**

4112

9x12 inches

1 unit

4448

9x12 inches

1 unit

4889

9x12 inches

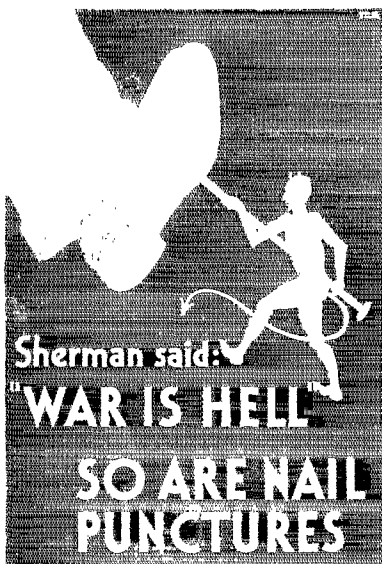
1 unit

**What you
forget for a
moment you
may remember
for a lifetime**

**REMEMBER
SAFETY**



**to return mush-
roomed tools to
the tool room**



**Sherman said:
"WAR IS HELL"
SO ARE NAIL
PUNCTURES**

4440

9x12 inches

1 unit

5384

9x12 inches

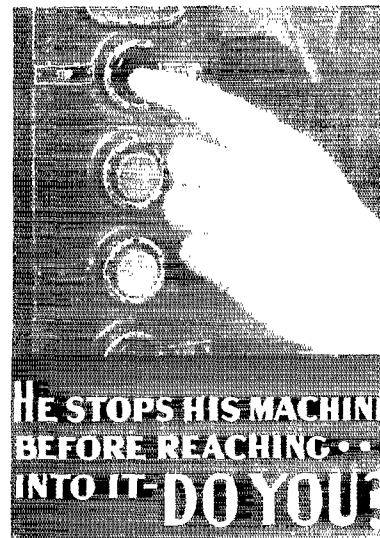
1 unit

5375

9x12 inches

1 unit

St. Patrick will live forever in the hearts of the Irish as a great and noble benefactor. Safety should live in the hearts of all of us as a benefactor to all mankind.



**HE STOPS HIS MACHINE
BEFORE REACHING...
INTO IT-DO YOU?**

FEBRUARY, 1935

Electrotypes may be purchased from the National Safety Council for \$2 each

20,000 Times *Without*



A LITTLE more than four years ago the National Safety Council inaugurated its Vehicle Service, a feature of which is the "No-Accident Driver Award" plan. Since then 17,000 commercial drivers have been awarded the official medal. These drivers have a combined mileage—without a single accident—equivalent to 20,000 times around the earth. Think of it! A grand total of half a billion miles without a single accident involving either injury or property damage!

Industrial members who operate their own vehicles sometimes overlook the importance of safety education for their drivers. Have you ever stopped to figure out just what vehicle accidents are costing your company? And do you know that you can reduce these costs by purchasing this special Vehicle Service? This statement is not guess work. It is based on the actual experience of a great many companies who have found that it pays for itself many times over.

Comparative experience of many companies shows that during each succeeding year a larger percentage of drivers win the coveted medal. The competitive idea seems to spread throughout the fleet until ALL drivers try to, and do improve their record.

Note, to the right, the four-year records of six widely known companies. These figures show the annual percentages of all drivers in each company receiving the "No-Accident

Driver Award," for each consecutive year since they started using the Council's Vehicle Service.

Company	1st Year	2nd Year	3rd Year	4th Year
Wendell Department Store (Chicago)	14%	24%	52%	82%
H. J. Heinz Company (Pittsburgh)	42%	56%	63%	63%
Evening Star News- paper (Washington)	19%	37%	41%	50%
Best & Company (New York)	30%	20%	42%	41%
Franco American Baking Co. (Los Angeles)	28%	40%	51%	42%
Coast Cities Railway Co. (Allen- hurst, N. J.)	14%	22%	38%	41%

Thousands of Vehicles Receiving

NATIONAL SAFETY NEWS

AROUND *the* WORLD *an Accident* ★ ★ ★

THE COUNCIL'S NO-ACCIDENT DRIVERS
HAVE DRIVEN ½ BILLION MILES WITH-
OUT SO MUCH AS A DENTED FENDER

THE vehicle service, outlined below, is available as a purchase of "extra" material by industrial or insurance members of the National Safety Council. Samples and further details will be gladly sent upon request.

General Privileges

Vehicle Service includes participation in the committees and other activities of the National Safety Council and its Delivery, Taxicab and Bus Section. General privileges include five important benefits: (1) *Consultation Service*—Council engineers will furnish special help on individual safety problems reported; (2) *Specific Publications*—technical fleet safety problems are analyzed in Safe Practices Pamphlets and Fleet Safety Memos and these booklets are available on request; (3) *National Fleet Safety Contest*—open to all desiring to compete for national and regional honors; (4) *Special Information*—annually each member receives ACCIDENT FACTS, the national accident statistical summary, and other publications.

No-Accident Driver Awards

Recognition for safe drivers is provided by the Council's NO-ACCIDENT DRIVER AWARD. Available in two styles, a badge Award or a pocket Award—it is accompanied by an official linen certificate card. Only purchasers of this vehicle service can secure these awards. They are not available for separate purchase. Awards may be obtained for all drivers who qualify with records of twelve months without an accident. An accident is defined as "any in which the driver's vehicle is involved, unless properly parked, where such accident results in death, personal injury, or property damage and repairs, or who was hurt, what property was damaged, or who was responsible." At the start of the service one year awards may be given to drivers who have driven the preceding 12 months without an accident. After the presentation, other drivers in the fleet may obtain Awards as quickly as they qualify with perfect year records. At the end of the year, two-year Awards are available for all one-year Award winners who complete a second no-accident year, and so on.

Classification of Services

NUMBER OF VEHICLES:	Total operated will indicate your ultimate rates to right
ANNUAL DUES:	Yearly rate for each vehicle (covers one vehicle and driver)
EXTRA DRIVERS:	Cost yearly for each driver not covered by total in dues above

Table of Annual Cost and Quantities

Up to 50	51 to 100	101 to 200	201 to 300	301 to 400	401 to 500	Over 500
\$1	\$1	90c	80c	70c	60c	50c
50c	50c	45c	40c	35c	30c	25c

Services Provided—

THE SAFE DRIVER:	Magazine for the driver provided on the first of each month
POSTER SETS:	Each set includes metal frame and seven new posters monthly
DASH CARD SETS:	Each set includes metal holder and a new display card weekly
MONTHLY LETTERS:	When dash cards cannot be used, one-month letters are provided
PUBLIC SAFETY:	Magazine of fleet safety news is provided for safety leaders
NATIONAL SAFETY NEWS:	Magazine to give to the fleet superintendent

Each Driver	Each Driver	Each Driver	Each Driver	Each Driver	Each Driver	Each Driver
1	2	3	4	5	5	5
Each Vehicle	Each Vehicle	Each Vehicle	Each Vehicle	Each Vehicle	Each Vehicle	Each Vehicle
1	1	1	1	1	1	1

NOTE: For fleets under 12 vehicles, minimum annual cost: \$12.50. NOTE: One PUBLIC SAFETY and poster set for each 100 vehicles over 500.

This Complete Vehicle Service

FEBRUARY, 1935

THE ACCIDENT BAROMETER

Prepared by the Statistical Bureau, National Safety Council

ACCIDENTAL DEATHS OF ALL TYPES rose about 6 per cent from November to December, to a total of 8,400. This is slightly less than the number that occurred in the same month of 1933, and makes November the second month of 1934 to show some improvement over the previous year. The eleven months' total now stands at 90,300, or approximately 8,000 deaths above the January-November 1933 figure. This probably represents all of the increase for the year, as early reports for December indicate about the same number of deaths as occurred in December, 1933. The preliminary estimate for the year is placed at 99,000, subject to change upon receipt of more reports.

OCCUPATIONAL ACCIDENTAL DEATHS in November probably numbered between 1,300 and 1,400. This is an increase of about 10 per cent over November, 1933, and brings the eleven months' total up to 14,400. The comparable figure for 1933 is 13,500. This advance appears to come largely from increases in employment over 1933. Reports on inter-plant contests of community safety councils show a decrease in frequency but an increase in severity in November from the same month of 1933. The average frequency rate for the eleven months is 14.93, or 14 per cent above 1933, and the average severity rate is 1.01, or 42 per cent over the previous year. Three sectional contests conducted by the National Safety Council indicate that the 1934 frequency rate will be about 5 per cent higher than it was in the same plants during 1933. Reports from Industrial Commissions in 19 states indicate that fatalities in December were 11 per cent more numerous than in December, 1933. If other data substantiate this, December will be recorded as one of the worst months of the year.

NON-OCCUPATIONAL ACCIDENTS resulting in eight or more consecutive days lost time in 1933 outnumbered occupational accidents of equal seriousness by 1 to 1 in three eastern plants where records of both types of accidents are being kept. The contrast is even more striking for accidents causing less than eight days disability. For them the ratio was about five non-occupational for each

All Accidental Deaths	
Annual Totals	
1934	99,000
1933	91,087
1932	89,167
(National Safety Council Estimates)	

occupational accident. It is also interesting to note that there was very little change in these ratios from 1931 to 1933. These data are too few to permit any definite conclusions, but they corroborate other scattered reports that the hours spent outside the plant are the most hazardous of the day.

MOTOR VEHICLE DEATHS again broke earlier records in November with a new high total of 3,720. The October total of 3,470, and the September figure of 3,450 were the previous worst records. Thus, the November record exceeds the next highest month by as much as 7 per cent. The year's total to December now stands at 32,950, or nearly 4,200 in excess of the eleven months' total for 1933. It also exceeds a similar total for 1931 (the former "bad year") by 1,750 deaths or about 5 per cent. Early reports for December indicate that the year's total will be close to 35,500 unless there was a decided change in accident experience in that month due to poor driving conditions.

COMMERCIAL VEHICLE ACCIDENTS were not quite so frequent in November as in October, despite less favorable driving conditions and in the face of the 50 per cent increase in all motor vehicle deaths noted above. The November accident rate for all types of fleets was 1.93, a decrease of 4 per cent from the October rate of 2.02. It is even more gratifying to view the improvement over November, 1933. In that month the average rate for reporting fleets was 2.40, while in November, 1934, the same fleets averaged only 1.87—a drop of 24 per cent. Compare this with the 17 per cent increase in all motor vehicle deaths for the same period.

PUBLIC (NOT MOTOR VEHICLE) DEATHS increased slightly from October to

November, but the estimated advance is less than 100 deaths, placing the total at 1,150. This is slightly under the figure for November, 1933, thus continuing the favorable trend of these accidents during 1934. The eleven months' total is now estimated at 16,700, or only 100 deaths more than occurred in the same period of 1933. If excessive heat deaths had been no more numerous than in 1933, the total for other public accidents in 1934 would probably have shown a reduction.

DEATHS FROM HOME ACCIDENTS in November numbered 2,500, an increase of 100 deaths over October, but a decrease of about 500 deaths from November, 1933. The eleven months' total is now placed at 29,700, or approximately 2,900 more than the similar total for 1933. This increase, it will be recalled, comes chiefly from the excessive heat fatalities of last July and August. The November reports now on file show a predominance of deaths from falls—particularly among persons over 64 years old. Second in importance are deaths from conflagrations, burns and explosions, with a majority in the age group 25 to 64.

LOOKING AHEAD. . . . The February accidental death total will be lower than that for January, chiefly because the month is three days shorter. . . . But there is little improvement at this time of the year in the general accident situation. Motor vehicle deaths, in many ways, show the greatest increase, figures signaling that for all other types of accidents combined, fatal burns or explosions may increase, but the change will be very small. Deaths from falls will increase or decrease according to the importance of weather conditions on steps and sidewalks.

These items summarize briefly the monthly reports collected by the National Safety Council to show current accident trends. Certain of these reports are analyzed more fully in other monthly publications of the Council, devoted to industrial, traffic, commercial vehicle, home, and school safety. In addition to these monthly data, the Council's annual statistical report "Accident Facts," contains very detailed information on all types of accidents.

SAFETY GUARD ECONOMY

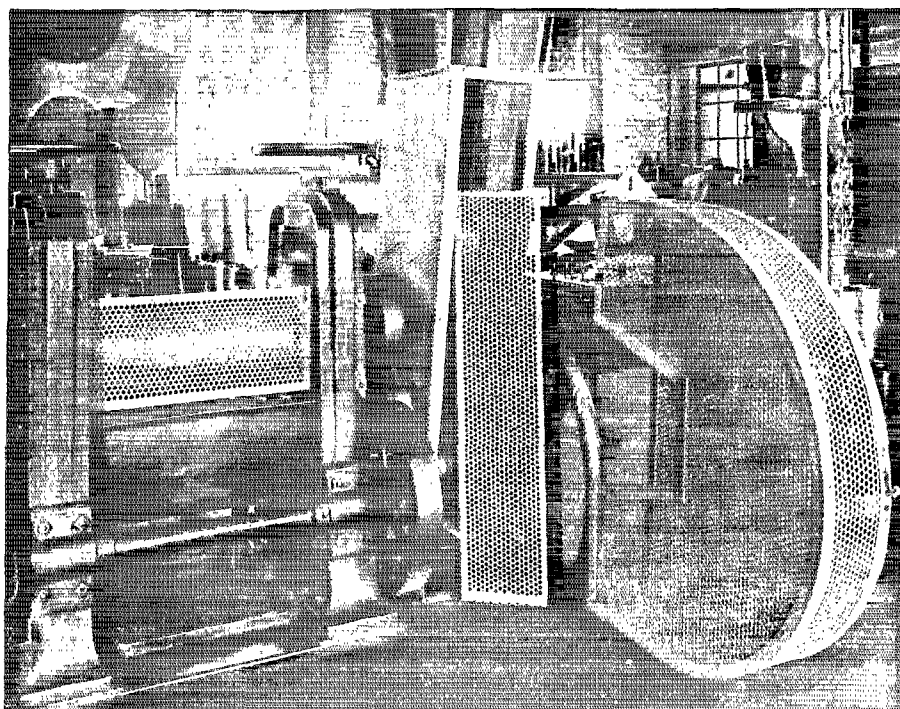
By economy we mean quality and low price. This is really possible because we produce the guard accessories in large quantities, and the quality of these parts is assured for the reason that they are made under the inspection service of the Underwriters' Laboratories.

The use of these parts removes the difficulty from guard making, and your handy man can construct any type of guard during spare time. The greatest expense in guard building is labor. Use your own when not otherwise employed.

Write Us for Information and Sample.

**The
Harrington & King
Perforating
Company**

5645 Fillmore St., Chicago
114 Liberty St., New York



BULB VALVE TYPE No. 4

Has a clear entrance filter aperture of 7½ sq. in. and uses felt filter pads.

Extra Pads, ½ in. thick, 1c each

Extra Pads, ¾ in. thick, 4c each

Price \$18.00 Dozen

Sample postpaid, \$1.50

DUPOR

Reg. U. S. Pat. Off.

The ORIGINAL REVOLUTIONARY Double Filter Chamber RESPIRATOR

Basic and Detail Patents Allowed

The slower speed of the air through the felt filter pads, causes more dust and spray to be caught.

First users of DUPOR are continually ordering more.

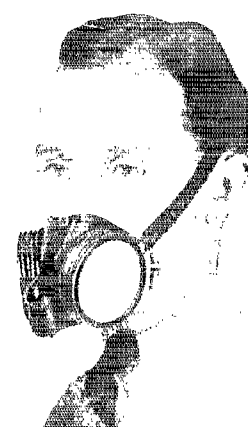
Thousands in Use.

Used in all kinds of dusts. Also, in light fumes, vapors and paint spray free from harmful gases.

Manufactured only by

H. S. COVER

SOUTH BEND, INDIANA



BULB VALVE TYPE No. 6

Has a check valve in each filter chamber, and enlarged adjustable filter chambers of screw cap type and the very large filter aperture of 11½ sq. in.

Extra Pads, ½ in. thick, 3c each

Extra Pads, ¾ in. thick, 6c each

This type fills the most exacting requirements for a Respirator of its kind.

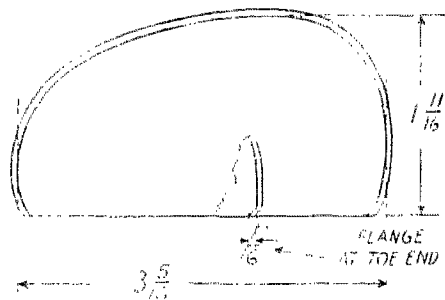
Price \$30.00 Dozen

Sample postpaid \$2.50

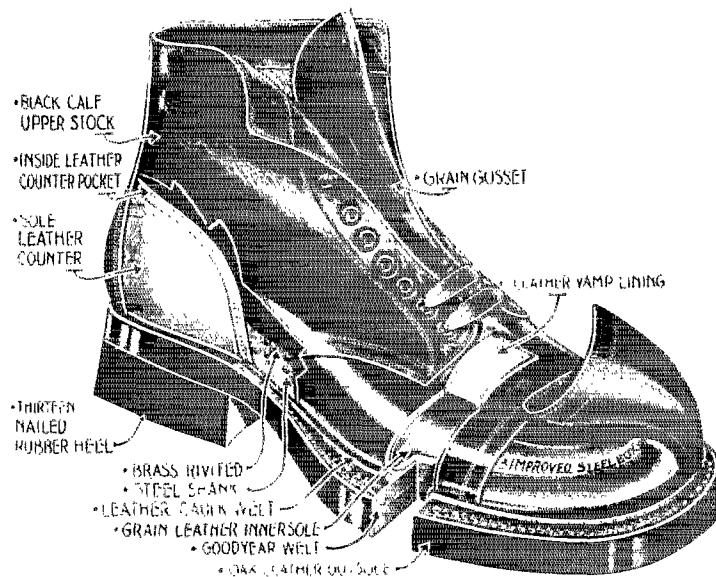
CHIPPEWA-A

FEBRUARY, 1935

U. S. A.



IMPROVED STEEL BOX TOE



ANALYZE

THE

VALUE

LEHIGH SAFETY SHOE CO.

31-33 S. Seventh St.

Allentown, Pa.

INDUSTRY WORKS IN LEHIGH SAFETY SHOES



Close Hopper-Bottom
Car Doors with

EASE and SAFETY

Prevent smashed fingers, strained backs, ruptures and other serious injuries, by using the Prescott Safety Tool—Saves time—is inexpensive.

Write for prices and details

The Trumbull Mfg. Co.
Warren, Ohio

"You Tell 'Em!"

(Continued from page 14)

brief outline of a custom that exists in Siam.

"In Siam the White Elephant is a sacred animal and can be owned only by the king. The White Elephant cannot be used for income-producing purposes or for labor, and furthermore, the White Elephant is very expensive to keep. In Siam, if some of the nobility incur the displeasure of the king, he immediately assigns to that person the upkeep of a few white elephants, and on account of the tremendous expense involved in caring for them, the nobleman soon goes bankrupt. Hence a White Elephant is something to avoid if you don't have one, and something to get rid of quickly if you do."

Included with this message was a copy of the following by-laws and an application blank.

By-Laws

1. Starting with May standings, the club member representing the Department which has the highest severity rating will be visited by the White Elephant. We want to particularly stress upon you that the White Elephant will stay in the Department just as long as it continues to have the highest severity rating.

Each month we will keep you posted to the progress of this particular animal, and just as soon as your severity is better than some other member, you will have the opportunity of visiting the White Elephant with your comments and comments to the Department and the State.

2. The member who has the highest severity rating will be required to display upon his desk a White Elephant.

3. The member who has the highest severity rating will be required to display upon his desk a White Elephant.

4. The member who has the highest severity rating will be required to display upon his desk a White Elephant.

5. The member who has the highest severity rating will be required to display upon his desk a White Elephant.

6. The member who has the highest severity rating will be required to display upon his desk a White Elephant.

7. The member who has the highest severity rating will be required to display upon his desk a White Elephant.

That was nine months ago and peculiarly since the arrival of the White

NATIONAL SAFETY NEWS

Elephant we have not had a lost time injury. May, June and July he spent in the Safety Department and during the month of August he was the guest of the works manager. September on the desk of the assistant general manager and the month of October saw him on the desk of the president and general manager.

There being no one higher that we could stick with him, he is now in a glass case on the Main street of the plant.

Our good record due to the White Elephant?

Of course not, but any idea or stunt that will arouse (impute and maintain interest in safety is a worth while idea, and if you can use this one you are welcome to it.

Christmas Accidents Take Heavy Toll in Britain

CHRISTMAS week of 1934 accounted for the heaviest toll of highway accidents yet reported in Great Britain. During the week 187 persons were killed and 3,630 were injured in traffic accidents.

According to the *Chicago Tribune Press Service*, the holiday spirit was blamed for the increased fatalities, as the country roads were crowded with motorists, racing home for Christmas and Boxing Day (the day after Christmas) and city streets were jammed by shoppers.

London fared better than the country as a whole, with 36 persons killed as compared with 43 in the previous week.

COMING EVENTS Of Interest to Safety Men

Jan. 31-Feb. 1, Ashbury Park, N. J.

Eleventh Annual Eastern Safety Conference. (Buckley Hotel). H. H. H. Secretary, Fred M. Pissolandi, Manager. Newark Safety Council, 111 Blanton Place, Newark, N. J.

Mar. 3-5, New York City

South Annual Greater New York Safety Conference. (Pennsylvania Hotel). Julien H. Harvey, National Safety Council, 11 E. 11st Street, New York City.

May 6-7, Boston, Mass.

New England Safety Conference. (Statler Hotel). Lewis E. MacBrynes, coordinator, Boston Safety Council, 100 Bedford Street, Boston, Mass.

May 16-17, Wintertown, Wis.

Wisconsin Safety Conference. (Hotel Wintertown). W. A. Schumann, National Road Shoe Company, Wintertown, Wis.

FEBRUARY, 1935

Everything
BULLARD
In Safety

BULLARD



Five horsepower horizontal siren for signalling fire calls in a volunteer district. Note parabolic deflector which regulates direction of signal; also tapered stator. Write for catalog.

SIRENS

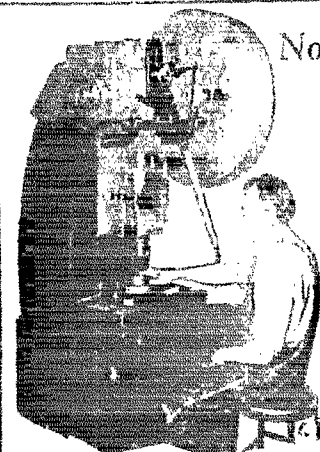
NATION-WIDE SERVICE

EAST NEW YORK: W. S. Wilson Corporation, 124 Varick St.
 PITTSBURGH: Safety First Supply Co., Brady Building
 PHILADELPHIA: J. A. Hunt Co., 200 Sansbury St.
 CLEVELAND: Safety Clothing Co., 104 Payne Ave.
 BRAINTREE, MASS.: Direct Sales Co., 100 President Road

SOUTH CHATTANOOGA, TENN.: J. D. Genter Company, Chattanooga Bank Building

MID-WEST DETROIT: J. D. Genter Company, 100 East Grand Street
 CHICAGO: J. D. Genter Company, 115 South Leavitt Street
 GREEN BAY, WIS.: J. D. Genter Company, 100 W. Main Street
 DULUTH: J. D. Genter Company, 100 W. Main Street
 HOUSTON: J. D. Genter Company, 100 W. Main Street

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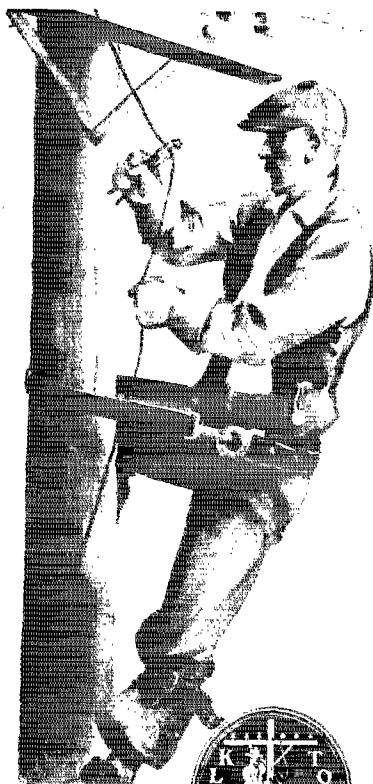
No More Accidents in This Shop!

or in any other where WIESMAN SAFETY PRESS GUARDS are installed on the power presses. The operating principle ABSOLUTELY PROTECTS THE OPERATOR without interfering with his natural working movements. Simple, easy to attach, for all types of presses. Made for right or left hand stroke. Details?

Wiesman Mfg. Co.

11 South St. Clair St.
DAYTON, OHIO, U.S.A.

KLEINS



"Since 1857"

WHEN you are working fifty feet in the air—on wires that are hot—safety becomes increasingly important. Pliers and belts—all the lineman's equipment must be good. There can be no compromise with quality when life is at stake. Linemen know through years of experience that they can rely on their equipment when it carries the Klein trademark. Klein has represented the maximum in safety—the maximum in quality—since 1857.

A representative picture of safety work. The linemen is being equipped by Mathias Klein & Sons to assist in selling the idea of safety in linemen.

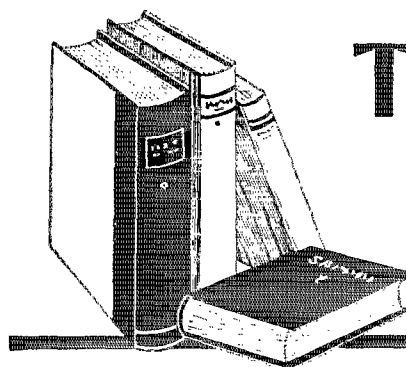
Distributed through jobbers

Four pamphlets of interest to you if you are a lineman or responsible for the safety of linemen. Check the ones you want.

1. *Importance of Protective Equipment*
2. *How to Use Protective Equipment*
3. *How to Use Protective Equipment*
4. *How to Use Protective Equipment*



Mathias KLEIN & Sons
CHICAGO, ILL.
2200 BELMONT AVE., CHICAGO



The Safety Library

by
MARY M. WELLS
Librarian N.S.C.

BOOKS AND PAMPHLETS

Dusts:

Asbestosis. Pt. 1: The collection and counting of dust encountered in asbestos fabricating plants. Published by the Pennsylvania Department of Labor and Industry, Harrisburg, Pa., 1934. Free. (Pamphlet) (Special Bulletin No. 371)

Smelting and Refining:

Gold and silver reduction and smelting. Published by the Retail Credit Co., Atlanta, Ga., 1935. (Pamphlet) (Industry Report)

PERIODICAL ARTICLES

Electric Railways:

Grover, E. E. A national "honor-roll" company's safety methods. In *Electric Traction and Bus Journal*, December, 1934, p. 394-396.

Lighting:

Loew, A. E. Planned street and highway lighting through state codes. In *American City*, January, 1935, p. 95-97.

Mines and Mining:

Employee relations at Hanna Coal Co. In *Coal Age*, December, 1934, p. 487-489.

Glaeser, A. O. Accident prevention in metal mines. In *Mining Congress Journal*, December, 1934, p. 18-21.

Safety at Hanna Coal Co. In *Coal Age*, December, 1934, p. 480-484.

Silicosis:

Quaintance, P. A. Silicosis. A study of 106 pottery workers. In *American Journal of Public Health*, December, 1934, p. 1234-1251.

Suggestion Systems:

Stanchfield, P. C., and Dickinson, G. C. Suggestion systems in 1932 and 1933. In *Personnel Journal*, December, 1934, p. 197-205.

Tank Cars:

White, A. C. Safety in unloading tank cars. Pt. II. In *Chemical Industries*, December, 1934, p. 507-508.

Protection Supplements Training

Continued from page 20

In our company we are continually testing and studying protective equipment so that we may provide our employees with equipment of the highest quality selected particularly for their occupations. We have in Texas, Louisiana and New Mexico six field safety engineers who devote their entire time to the promotion of safety and the inspection of equipment. Our employees are instructed to make weekly inspections of all such equipment and when they find that repairs are necessary, the equipment is taken to the warehouse. One of these warehouses is located in every district in which we operate and maintains a complete stock of repair parts for all protective equipment. Repairs and replacements can be made promptly. Employees are instructed and re-instructed in the use of protective equipment by their supervisors and by the safety engineers.

The compulsory use of safety equip-

ment cannot take the place of a safety program calling for the training of workers in their jobs and the elimination of hazards by other means, but it bolsters the accident prevention program and compensates for the vagaries of human nature.

We all know that men can be trained not to drop objects on themselves and others, and that atmospheres can often be made gas-free. We know that lines containing caustic solutions can be so thoroughly drained that they can be opened with practically no danger of any one getting splashed. We know that there are many other precautionary measures which would make protective equipment practically unnecessary.

But we also know that in spite of the most consistent efforts slip-ups do occur and men are hurt, even when all hazards are believed to have been removed. Hence we must provide personal protective equipment when experience has proved that certain types of injuries are prevalent.

It is impossible to carry on a successful safety program without protective equipment.

NATIONAL SAFETY NEWS

Dramatizing Accidents

(Continued from page 16)

affect its welfare. Some one has said, and quite properly, that "unfortunately the interests of the public are not very interesting to the public." Hence, one of the essential prerequisites in any program of street and highway safety must be the assumption that most persons are not interested in the question.

Anyone who has given any thought at all to the part which public conduct plays in the causes of accidents must confess that too often the subject has been presented in the driest possible manner. To dramatize a problem is to breathe some life into it, to give action to it, to give it a quality of vividness.

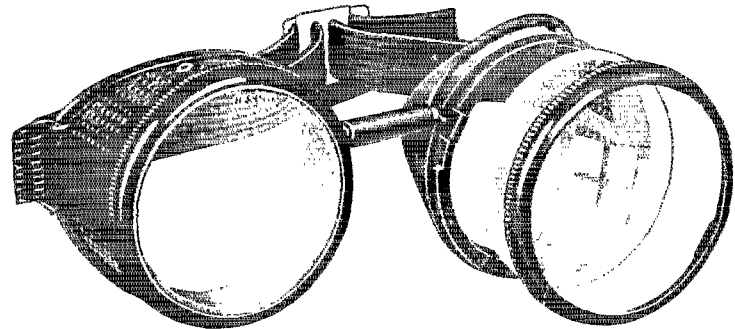
People are moved less by reason than by sentiment. In dramatizing the subject of accidents, we cannot expect to get very far if we merely try to reason the situation with the public, if we merely present statistics, charts based on actuarial studies, or astute factual conclusions. We have to remember that to get anything across to any considerable part of the public, the language of the people must be used. The public will not spend much time on anything that is difficult to comprehend.

The first fundamental in the dramatization of the subject is to get the attention of the public. We must remember that there is a great mass of things clamoring for the public's attention, and to divert some of it to the conservation of life and limb is no easy task. If we are not smart enough to say a thing so it will claim notice, then it would be just as well to leave it unsaid. The study of what interests people and why is as important in the promotion of street and highway safety as the study of physical conditions that may contribute to accidents and the development of ways and means to correct such physical conditions.

It is about time that we realize that the services of practical psychologists are required to get the public to turn its attention to the part which it plays in our toll of deaths and injuries; and to give some heed to the teachings of safety. "The spoken or printed word," said a famous editor, "is an instrument of marvelous power which man alone possesses—an engine of unlimited possibilities." To well chosen words we must add the attention compelling power of oratory and illustrations to carry our message to those who have many demands on their attention and who too often are indifferent to their own best interests.

Shallow-cup Chipping Goggle

WEIGHS LESS THAN 2½ OUNCES



Carried in stock as Style No. 535, this chipping goggle is one of Cesco's latest developments. Industrial acceptance of this new product is based upon the following features:

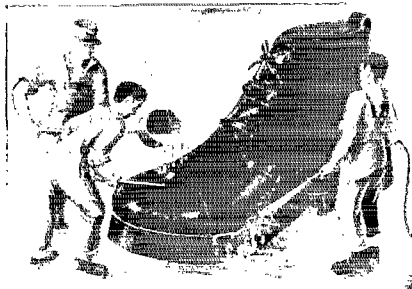
Shallow eye cups and large 50 m.m. lenses increase visual range . . . weight is less than 2½ ounces . . . baffled vents and air channels in eye cup under lens give more circulation of air inside . . . an all-purpose goggle for practically any impact hazard job.

Write for Prices and Bulletin.

CHICAGO EYE SHIELD CO.

2323 WARREN BLVD., CHICAGO, ILL.

WOODEN SOLE PLATER'S SHOE

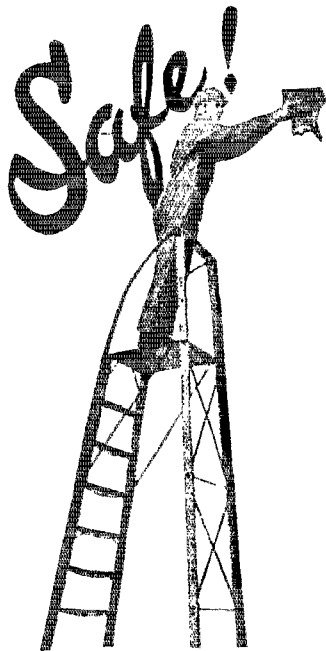


with composition fibre Safety "STRONG TOE" is necessary protective equipment in the plating shop.

The REECE "PERFECT ROCKER" combines comfort with this maximum protection.

REECE WOODEN SOLE SHOE CO., INC., Columbus, Nebraska

His Mind Is On His WORK



NOT on his FOOTING!

A workman using the Dayton Safety Ladder is free to concentrate his mind and both hands on his job. Cut costs and prevent accidents with this moderate-priced ladder, of durable airplane spruce, that stands without wobbling or tipping. It is made in sizes 3 to 16 feet.

Write Dept. NSN-2 for
Details.

THE DAYTON SAFETY LADDER CO.
121-123 West Third St. Cincinnati, O.

DAYTON

Safety Ladder

(Patented)

Stock carried on Pacific Coast by F. B. Bullard Co., Los Angeles and San Francisco, and by 160 other distributors from coast to coast. Made and distributed in Canada by Percy Herment Ltd., Toronto.

How Electric Shock Affects the Body

(Continued from page 22)

by heat and other agents, and that if the circuit is left closed for any length of time there results a great rise in body temperature. In the tests conducted with the impulse generator the total amount of energy was so small that there was no measurable rise in the body temperature. The examination of the brains and spinal cords of these animals showed pictures of cell destruction similar to those observed in the other studies and proved that an electric current can produce definite changes in the nerve cells.

In accidents where contacts are made at two points on the same leg or arm, none of the current flows through the brain. Such shocks, however, give rise to nerve stimuli which are transmitted to the brain. When these are very strong they may produce a condition of shock to the nervous system akin to that caused by major operations or injuries.

Irquhart¹³⁻¹⁴ has demonstrated clearly that the passage of an electric current through the body may cause a block in the nervous system and inhibit respiration. If artificial respiration is promptly applied and continued for a sufficient time, the respiratory centers may recover their functions and set the lungs again in normal operation. Our experiments confirmed these results, and also emphasized the fact that an animal is not out of danger when breathing is first started.

A few of the injuries that resulted from the electric shock experiments are discussed briefly below:

1. Hemorrhages. In a number of the animals of various ages were found in the medulla oblongata and in the fourth ventricle of the brain. Similar hemorrhages are found in cases of electrocution. Also, in many of the animals bleeding following the shock was observed in the lungs due to the rupture of blood vessels in the pulmonary area, and in a few cases when artificial respiration was started there appeared some blood and frothy liquid at the nose or mouth of the animal.

2. Priapism and Emission. Priapism was noted in many of the male rats shocked with the high voltage direct current circuit and also in some of the alternating current tests. Emissions were very common among the males subjected to the alternating current.

3. Permanent Disability. In only rare cases do individuals who have recovered from an electric shock show any evidence of permanent disability. Emission burns may require a long time to heal, and in some cases caught in the current may cause a lasting irritation. Contracture of the muscles are reported in a few cases. This latter phenomenon was noted in only one of our experimental cases. Some individuals are nervous for a considerable time.

However, it is difficult to say just how much of this is due to actual nerve cell damage and how much should be ascribed a wish for compensation. Panse¹⁵ has reported some twenty-nine cases of muscular atrophy following electrical accidents. The disability may develop soon after the injury or after a period of months. This data of Panse is interesting but it must be examined critically. Neville and de Morsier¹⁶ also discuss this topic.

4. Ventricular Fibrillation. In electrocutions and also in cases of accidental shock it has been definitely established that the human heart may be thrown into ventricular fibrillation by an electric current. The human heart seldom recovers automatically from this state, and death ensues.

Recovery by Countershock

A weak current will throw the heart into ventricular fibrillation, while a large current will inhibit the action of the heart and hold it quiet as long as the current flows¹⁷.

Experiments¹⁸ were made in which the electrodes were applied directly to the heart. It was found that a current of 7 to 10 milliamperes was sufficient to produce fibrillation, while a current of approximately one ampere would bring the ventricles to rest, the heart resuming normal beating when the circuit was broken.

Tests were made on intact animals¹⁹ with the electrodes placed on either side of the chest. The heart was first thrown into fibrillation by a low voltage shock and, after waiting the desired length of time, a countershock of 6 or 7 amperes was given. Following the countershock the ventricles were quiescent for a brief period, then the heart action began and circulation was re-established.

It is well known that the heart and respiratory center in the medulla are particularly susceptible to injury from electric currents. It is evident from the report of electrical accidents and our experimental studies that death may occur from a number of causes. Death from asphyxiation may be caused by the prolonged contraction of the muscles during the passage of the current, or by failure to start artificial respiration promptly. Another cause is the fibrillation of the heart; under this condition circulation ceases. Death may be due to the destruction of the nerve cells of the respiratory center. The Joule effect of the current flow may raise the body temperature above safe limits. Burns and other complications may also result in death. Nevertheless, it should be kept in mind that in the majority of electrical accidents death is only apparent.²⁰

NATIONAL SAFETY NEWS

Artificial respiration should be started immediately a victim is cleared from the circuit. It should be continued until the patient recovers or until the cessation of life is evidenced by the onset of rigor mortis. MacLachlan reports a successful case of resuscitation following an eight hour application of the Schaefer prone pressure method.

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Safety Instruction Cards

(Continued from page 56)

Office and home	1
Driving rules	1
Out storage rules	1
Colors and signs	1
Outing rules	1
Parking regulations	1
Plans and permits	1
Personal safety check list	1

FEBRUARY, 1935



LONG WEARING

WHY DENY

YOUR MEN THIS

SAFER FOOTING



GRO-CORDS are widely used in Dairies, Iron and Steel Foundries, Railroad Shops, Auto Factories, Gas and Electric Plants, Ice and Fuel Stations, Stone Quarries, Mines, General Warehouses.

IN HUNDREDS of plants, Safety Directors are reducing the heavy toll of sprains, strains, broken bones, hernia and more serious injuries resulting from slipping accidents.

Their simple, inexpensive method is to insist that workmen wear *Gro-Cord Raw Cord Soles and Heels*. *Gro-Cord Raw Cords* are made with sturdy cords embedded upright in live rubber. Cord ends, kept bare by wear maintain constant non-slip friction between sole and flooring.

Workmen prefer *Gro-Cord Raw Cords* because they wear longer and are more comfortable. Easily fitted to any shoe, or manufacturers can supply them on new footwear. A complete line of safety rubber footwear, *Gro-Cord* equipped, is also available. Write for sample soles to test on your OWN shoes.

The Lima Cord Sole & Heel Co., Dept. 2F, Lima, O

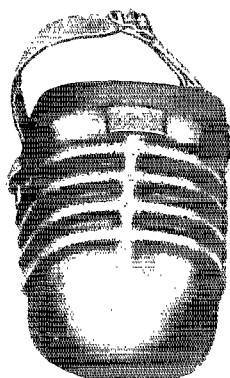
Only Protected by Patents—All Infringements Will Be Prosecuted

GRO-CORD

NON-SLIP SOLES AND HEELS

Protect the Feet with—

SANKEY FOOT GUARDS



Made of 16-gauge steel, or Rigidium, an aluminum alloy. Sankey Foot Guards are light in weight, comfortable to wear and permit free and easy movement of the feet.

Built for strength—will withstand an impact of 300 foot pounds. Designed so that the floor or ground takes the force of the impact in case of falling objects.

Write for Your Sample Logos.

ELLWOOD SAFETY APPLIANCE CO.

Ellwood City, Pennsylvania

Death Stalks the Tired Driver

(Continued from page 12)

the cab; if it is partly empty, they make a bed on the load in the truck. When they get a load they drive continuously until it is delivered and then apply immediately to a broker for another. In winter, they sometimes stop over night in a tourist camp when they become too tired to go on; in the summer they often sleep in the grass by the roadside. They live in constant fear of an accident, which would ruin them.

This is not an isolated case. A little worse than average, perhaps, but duplicated in many of its essentials a thousand times over. Obviously this puts highway trucking in a sad state. What is said about it today may not be true tomorrow. The little financial epidemics of over-enthusiastic truck sales companies pass on from one part of the country to another. Independent haulers will carry one thing—tires, cigarettes, clothing, office equipment—over one route for a few months and then if "business conditions" look better somewhere else, they will shift the scene of their activities. If their day's work consisted of the "run" alone, the situation would not be so bad, but often they must wait many weary hours, sometimes all day, for their load, after which they start out on a trip that may take all night or longer. In many cases, too, they do the loading and unloading.

The following log of a fruit hauler from Michigan into Chicago is typical: Starts loading at 5 p.m. and leaves for the city two hours later with a load of fruit. Makes two or three short stops en route to eat and buy gasoline. Arrives at market about 2:30 in the morning. Has completed delivery of his cargo by 4:30. Gets something to eat, services the truck, and perhaps sleeps in the cab a little while before driving to a place where he thinks he may be able to pick up a return load. At 8 o'clock he starts back empty. Arrives about 1:30 in the afternoon and sleeps at home until five when he starts out to repeat the performance of the day before. He may do this as much as five days a week.

In many trucking operations an attempt is made on the part of the drivers or haulers or both to keep the vehicle in as nearly continuous motion as possible. This is most commonly practiced in the rush season in coal hauling, stock hauling, produce hauling, and the movement of household goods, the last operation

perhaps consisting of a trip from Texas to New England. The practices in these cases are as follows:

1. If the driver is alone he drives until he is sleepy, pulls up at a filling station or a wide spot in the road, sleeps until he awakes, drives on until he is sleepy, sleeps until he awakes and so on until his destination is reached. There may be a week or ten days of this, and truck drivers have reported as much as two or three weeks of it on a schedule which resembles nothing so much as a marathon. For the most part, the drivers try to combine their sleeping with stops for food and gasoline.

2. If there are two drivers without a sleeper cab, the situation is probably even more hazardous, because the only sleep the men get is while the vehicle is in motion. Sometimes the man sleeping has to do so sitting up, but often he manages to slouch in a corner and sometimes to lie down with his feet behind the driver and his head on the seat at the right side of the cab, if it is wide enough. In this case the only stops made are for food and gasoline.

3. In a well equipped sleeper cab, continuous driving is on the same basis, but the rest obtained is much more effective, particularly when the driver and helper have their schedules carefully planned.

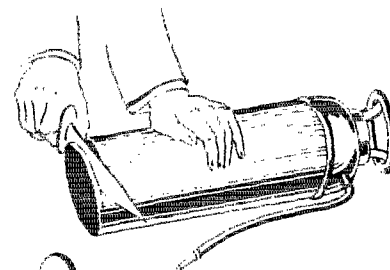
Methods of combating sleep are many and varied. Short naps in restaurants seem to be about all that some drivers need. Coffee and coca cola are old standbys. Some drivers take pills labeled "No-Doz" or "Stay-Wake," or some such trade name, which seem to help. Others talk or sing to themselves, and many welcome hitchhikers who will engage them in conversation and thus keep them from falling asleep. Most of them make a practice of light eating.

For the most part, the actual operating schedules of trucking companies show little reason for drivers being on duty to the point of exhaustion, but in practice, the waiting time, the loading, and the delays on the way so frequently and so greatly modify these schedules that they are no satisfactory guide to the actual conditions the drivers must face.

Alcohol is mentioned in the report but not stressed. The majority of drivers do not consider beer intoxicating and in summer, particularly, a driver may take several glasses during a day. Of course, this does not produce intoxication, but in many cases it undoubtedly causes extreme drowsiness.

Carbon monoxide, noise, and boredom are also mentioned as frequent causes of sleepiness.

SLICE DOLLARS OFF FIRE EXTINGUISHER MAINTENANCE COSTS



HERE is a way to wipe out your fire extinguisher maintenance costs. Old fashioned soda acid extinguishers must be refilled every year, but the NEW Kidde extinguisher is good until used. Instead of a dollar a year for maintenance, the NEW Kidde extinguisher will cost you nothing.

The Kidde extinguisher is discharged by pressure supplied by a cartridge of carbon dioxide gas. It contains no acid. It discharges only pure water. The Kidde extinguisher has all the effectiveness of soda acid extinguishers and meets the requirements of insurance authorities. It is labeled by the Underwriters' Laboratories and the Factory Mutual Laboratories.

Why buy old fashioned fire extinguishers that cost money and trouble each year for maintenance? The new Kidde extinguisher costs no more initially and costs nothing to keep up. Write for a free copy of the folder, "The Fire Extinguisher that Saves Recharging Dollars," Walter Kidde & Company, Inc., Bloomfield, New Jersey.



NO ANNUAL RECHARGING



KIDDE PURE WATER FIRE EXTINGUISHER

M^AN D M

RAIL CLAMPS

PROVIDE SAFE CONDITIONS

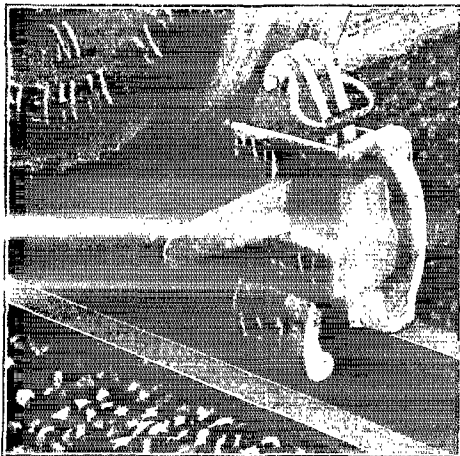
Eliminates the dangerous practice of placing blocks of wood under the car wheel for bracing.

Recommended as the surest and safest possible stop for use on runways in repairing a crane, on loading platforms, temporary sidings, car stops, on air ferries, under tipples, and for cars on grades.

Rigidly constructed of open hearth annealed cast steel, tool steel key. Made to fit any rail from 40 to 110 pounds.

*Easily and quickly removed
Guaranteed against breakage*

Used and recommended by leading steel companies, manufacturing plants, mines, grain elevators, cement plants and quarries.



Style 4--\$15.00 Each

Our Engineering Department will design clamps to meet special track conditions. Let us have your operating problem and we will make recommendations.

**INDUSTRIAL PRODUCTS
COMPANY**

Accident Prevention Equipment

**800 W. Somerset St.
Philadelphia, Pa.**

Within the last three or four years, the report states, an attempt has been made in 42 states and the District of Columbia to limit the hours which drivers of certain trucks and buses may work. There has been a sad lack of foresight shown by legislators, however, and as a result there is little uniformity in the laws. Furthermore, not much is said in the laws about how they shall be enforced or who shall enforce them and as a result there is much "buck passing." As a matter of fact, the majority of truck drivers, and many of the trucking companies, are not aware that such rules or legislation exist!

SUMMARY OF CONCLUSIONS

1. Many motor-vehicle accidents happen because drivers fall asleep or become so tired that they cannot drive safely. Such accidents are much more liable to cause death (particularly of the driver) and serious injury or damage than the general run of motor-vehicle accidents.

2. "Fatigued" or "asleep" accidents are more likely to occur to truck drivers than to those of private passenger cars.

3. Drowsiness is often contributed to and complicated by other factors, especially alcohol and carbon monoxide.

4. Driving excessively long hours is a common practice on American highways; but starting trips after considerable periods of wakefulness (occasioned by work or even waiting) is equally important in producing dangerous fatigue.

5. Although 12 states and the District of Columbia have laws or regulations to limit the hours which certain classes of drivers may be on duty, there are only a few places where anything is done to enforce such rules, and in many states there is no attempt whatever at enforcement.

6. Violations of these rules are most common and serious in long-haul, for-hire trucking, particularly among drivers who own their own vehicles; although flagrant offenses often occur in other types of trucking and are not uncommon in some kinds of bus operations.

7. For purposes of safety legislation, the total hours on duty, including time for loading, unloading, and waiting, are the important factor—not merely the hours actually at the wheel.

8. Dangerously long hours for professional drivers can be avoided by careful organization and planning, including preparation for the busy season, good maintenance of vehicles, adjustment of schedules to permit relays of drivers to handle long hauls, and arrangement of loading and unloading to avoid unnecessary waiting by drivers.

9. Most of the well run truck fleets, particularly those in which the management is actively interested in reducing accidents, and many of the individual truck owners have already adopted these safety measures voluntarily, and the only effect enforced legislation on hours of duty will have on them is to reduce competition from and chance of collision with trucks whose drivers are working dangerously long hours.

Hydro-Extractors

(Continued from page 27)

hydro-extractor should be provided with an interlocking device connected to the belt shifter or other starting mechanism to prevent the operation of the machine while the cover is open or unlocked and to hold the cover closed and locked while the basket is in motion. This device, however, should not prevent the movement of the basket by hand to insure even loading.

17. In sugar mills, hydro-extractors are usually loaded and discharged automatically or by mechanical means while the machines are running at reduced speeds. The possibility of an operator being caught is considered by many authorities as nil. Therefore, in sugar mills covers of the hydro-extractors are usually not provided with interlocking devices.

18. All starting and stopping devices should be so located that they can be operated from in front of the machine and in no way interfere with the guarding of the belt and pulley. (See Note W)

19. All belts, pulleys, gears, sprockets and chains should be enclosed so no one can come into accidental contact with them. (See Note W)

20. Tight and loose pulleys should be equipped with a permanent belt shifter provided with means to prevent the belt from creeping from the loose to the tight pulley.

21. On motor driven machines all starting and control devices should be of a type listed as standard by the Underwriters' Laboratories. All electric wiring should be in accordance with the requirements of the National Electrical Code. (See Note X)

22. When flammable liquids are handled in hydro-extractors, there is the possibility of fire or explosion because of static electricity. In such cases all parts of the hydro-extractor, including the belts and pulleys, should be electrically grounded and the tools used in loading and unloading, and the metal of the basket should be of non-sparking material. (See Note Y)

23. Hydro-extractors used in chemical processes where poisonous fumes may be generated, should be ventilated to the outside to prevent the fumes escaping into the work room.

Safe Operating Practices

24. The brakes on hydro-extractors are powerful in action and if they are applied too rapidly, the sudden slowing

down is likely to produce severe stresses in the basket which might cause it to fail. Therefore, except in case of emergency hydro-extractors should be slowed down gradually.

25. Operators should never attempt to oil hydro-extractors while they are in motion.

26. Operators should not wear loose or torn clothing. Where there is a possibility of injury because of acid or other chemicals, suitable protective clothing should be worn. (See Note Z)

27. Operators should never attempt to add to the load or to lift the cover while the hydro-extractor is in motion.

28. No person should remove or change in any way any safeguard except for the purpose of immediately making necessary repairs or adjustments, and when such repairs or adjustments are completed, the safeguard should immediately be replaced in proper order.

29. Thorough periodical examinations by qualified persons are essential for safety. The frequency of such examinations depend upon the amount and type of use to which the hydro-extractors are subjected. When corrosive substances are handled, it is advisable to occasionally dismantle the hydro-extractors to facilitate the inspection and to make certain no part has been dangerously weakened by corrosion.

30. The high speed at which hydro-extractors are usually operated and the stresses to which the various parts are subjected, make it imperative that no hydro-extractor which is defective or not in safe running condition for any other reason, should be allowed to be operated until the defect has been properly corrected.

NOTE W. For further details on mechanical starting and stopping devices, including belts, pulleys, etc., see National Safety Council Safe Practices Pamphlet No. 15, "Starting and Stopping Devices," No. 16, "Belts and Belt Guards," and No. 18, "Construction of Machine Guards."

NOTE X. For further details on ladders, electric wiring, etc., see National Safety Council Safe Practices Pamphlet No. 20, "Electrical Equipment," No. 21, "Ladders."

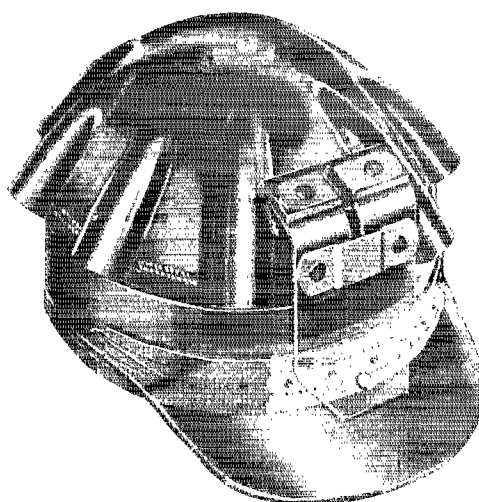
NOTE Y. Complete information on the elimination of static electricity in the operation of hydro-extractors will be found in "National Safety Council Safe Practices Pamphlets No. 22, "Static Electricity," and No. 23, "Safety in Dry Cleaning and Dyeing Establishments."

NOTE Z. For further details on suitable clothing, see National Safety Council Safe Practices Pamphlet No. 16, "Protective Clothing."

National Safety Council, Inc.
20 North Wacker Drive
Chicago, Illinois

FEBRUARY 1935

COOL CAPS and HATS



for
COMFORT
HEAD EASE
and SAFETY

Travel the world over and you will find that COOL CAPS and COOL HATS fit every cranium comfortably. This is because of the Flexible Ventilated Forehead Band which conforms comfortably and without irritation to every size and shape of head.

Note—The flexible ventilated forehead band is found only in Cool Caps and Cool Hats!

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**DANGEROUS DUST DEPOSITS
ARE EFFECTIVELY REMOVED
WITH HOFFMAN HEAVY DUTY
VACUUM CLEANING EQUIPMENT**

Some classes of dust lead to serious impairment of health when inhaled regularly; others are highly explosive under certain conditions. Regular floor cleaning, plus an occasional cleaning of overhead structures with Hoffman equipment gives you maximum protection at low cost.

**Write for New Illustrated Booklet
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Air Appliance Division • 111 Fourth Ave., New York, N. Y.
Engineers and Manufacturers of Pneumatic Systems



"STEEL-GRIP BRAND O. K."

Skillful purchasing agents annually save thousands of dollars for their companies by knowing when and where to buy. In certain basic commodities, price is the all-important and determining factor.

The purchase of safety wearing apparel, relatively insignificant in its effect on the P. A.'s budget, is however a very different and a very important matter. In the case of an accident, either lost time or lost life, the correct choice of protective clothing must be the sole guide. Price matters little.

So, Mr. Safety Engineer, on your next requisition to the purchasing agent, specify STEEL-GRIP safety clothing and make the notation, "STEEL-GRIP BRAND O.K." And when you talk with the P. A. tell him why.



INDUSTRIAL GLOVES CORPORATION

725 GARFIELD BLVD.
DANVILLE, ILL.

Chicago Detroit
Philadelphia

Training Counts in Fire Protection

(Continued from page 24)

One of the best examples of forethought in saving an industrial plant from a conflagration was cited by C. W. Mowrey before a meeting of the Massachusetts Safety Council. The Waterbury, Conn., had near one of its main buildings a row of two and three-story wooden buildings which were used for storing patent medicines and which were known to contain several hundred gallons of alcohol.

The clock company realized the seriousness of the exposure. They equipped the windows with wired glass and installed rows of open sprinklers. They instructed the watchmen in the use of open sprinkler systems, providing bags of sawdust for use in case of leakage around the windows. Cans were stored on skids and many other precautions taken. Within two years the expected fire came. It occurred at 3:00 o'clock in the morning. The trained watchmen acted promptly. Although the fire lasted four hours and the wind was blowing the flames toward the plant, the Waterbury Clock Company suffered no loss and business was resumed as usual next morning.

During the past few years there has been a considerable increase in the number of training schools for firemen and plant watchmen. The industrial plant should take advantage of these schools for its own men, not only for the valuable training received but also to stimulate their interest in the work.

Plant fire brigades can be made an asset to those participating, rather than a chore. The men selected for a fire brigade should receive some form of recognition or compensation, and membership should be made a matter of pride rather than drudgery.

There is real value in holding fairly frequent demonstrations of the use of various types of extinguishing equipment which workers may see and participate in. It is understood that there is no "best" fire extinguisher. Each type has its best function and should be made to serve that purpose, not used indiscriminately. You can never tell when any employee may have to use an extinguisher, and all workers should know when and how to use the various types.

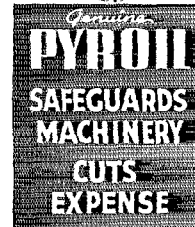
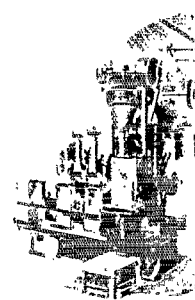
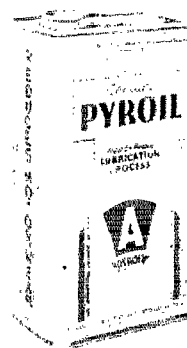
For those who are seeking ideas on demonstrations and instructive programs, I would suggest getting in touch with the National Fire Protection Association Committee on Visual Education.

This committee is under the chairmanship of Richard E. Vernor, Western Actual Bureau, 222 West Adams Street, Chicago. The committee has much interesting material and is always glad to help anyone interested.

New York Makes Progress in Public Health

HEALTH records of New York City for 133 years, recently published by the city's Department of Health and quoted by *The Week's Science*, show that the city was comparatively healthy from 1800 to 1832, extremely unhealthy between 1832 and 1854, and progressively more healthy since that date, especially since 1891.

Three major health catastrophes are recorded since 1800—the three great cholera epidemics of 1832, 1849 and 1854. In the first and worst of these years almost 5 per cent of the city's population died. In addition to these deaths, the city lost many thousands of people who moved away in an effort to escape the cholera, the cause of which was then unknown. The second cholera epi-



This famous lubrication process is the best method of protection which can be given bearings, gears, pulleys, and machinery and equipment—especially under conditions of extreme operation. The use of Pyroil is a definite economy. Measurably cuts expense. Effects decidedly greater efficiency. Simply add Pyroil, by the ounce, to regular oils and greases. Mail Coupon for "Industrial Brochure" and many interesting facts. No obligation. Manufactured and Guaranteed by Pyroil Company, W. V. Kidder, Pres., 395 LaFollette Ave., LaCrosse, Wis., U.S.A.



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Pyroil Company, 395 LaFollette Ave., LaCrosse, Wis., U.S.A.
 Please send me a copy of the Pyroil Industrial Brochure. Also, the Industrial Brochure. No obligation.
 Name
 Address
 City State

demic, in 1849, was somewhat less severe. The third one, in 1854, was still milder, although this was accompanied by a smallpox epidemic which again raised the city's death rate for that year to nearly 5 per cent of the population.

New York's last cholera epidemic was a still milder one in 1866, after which smallpox took first place among the city's epidemics. Serious epidemics of this disease happened in 1865, 1872 and 1881. Since then smallpox also has been almost wiped out with the introduction of compulsory vaccination. The last serious epidemic of diphtheria was in 1887 and the last epidemic of measles in 1891. Since 1891 New York has experienced only one severe epidemic of any kind, the influenza epidemic of 1918. This accounted for about two deaths per thousand population. Improvement of general health is shown by the fact that the total death rate in 1933 was almost exactly 1/5 of that of 1832, the city's unhealthiest year.

Beyond the Nurse's Routine

Continued from page 34

until I had my teeth planked out and my eyes tested."

I agreed with him that he had done the right thing, for I have felt that a man should not take home his shop worries, for his wife has plenty of troubles at home. Neither should the wife save up all the shortcomings of the children to tell her husband when he comes home from a day's toil.

This employee had all the necessary medical and dental work which not only improved his health but made him a safe and reliable worker. Today he is one of our best boosters for health improvement.

Let me refer to another case which shows how faulty diet habits can make a man a serious accident risk.

One day a foreman brought a half hysterical man into the first aid department. "Here, Nurse," said the foreman, "find out what is wrong with this man. Is he crazy? He wants to throw up his job because he can't sleep nights."

On talking with the patient I found out that he was a slave to black coffee. He drank from three to five cups during the night while working and two more cups with his breakfast before retiring. In trying to sleep he found himself a mass of twitching nerves which he tried to quiet by drinking more coffee and smoking one cigaret after another. Substituting milk and coffee with the caffeine



Safety
Officials:
Write for
FREE
Sample.



Mercurochrome - Iodine - Metaphen - Merthiolate - Ferric Chloride - Iso-propyl-alch.

SAF-T-OP

"The High-Speed" Antiseptic Applicator

Speed is an essential part of good antiseptic technique. The sooner antiseptic is applied to wounds after injury, the less chance there is for infection.

Saf-T-Tops offer a most convenient method of quick disinfection for employees before going to the first-aid station. They can be carried in the pocket, tool-kit or hand bag ready for instant use. The patented applicator tip feeds like a fountain pen, applying solution exactly where needed. Six solutions available:

Robert A. Bernhard

Mfg. Chemist

153 Anderson Avenue - Rochester, N.Y.

Install JUNKIN NON-REPEAT Triple-Interlock SAFETY GUARDS

*They pay for themselves
out of accident compensa-
tion savings*

When you buy JUNKIN SAFETY GUARDS, you are buying protection, and thereby eliminating the possibility of accidents which take a costly toll in compensation.

Human hands have no spare parts. Why permit your press and shear operators to risk hands that cannot be replaced? Even compensation never pays for such loss.

JUNKIN SAFETY GUARDS—adaptable to all types of stamping presses, shears, etc., retain their safety features over the full range of work handled. Machines cannot be operated until the guard is entirely safe, or repeat an operation unless the guard has dropped to the "SAFETY" position.

These and other features are fully described in literature which will be sent promptly on request. Write for it today.

JUNKIN SAFETY APPLIANCE CO.

930-936 West Hill Street

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Minimizes Scarring!

AN OUTSTANDING FEATURE OF



TREATMENT FOR BURNS

An easy spreading lenitive ointment successfully used by physicians and hospitals for many years in the treatment of burns; as a local application to denuded and painful lesions of the skin—cuts and bruises. Packed in $\frac{1}{8}$ oz., $\frac{1}{4}$ oz., 1 oz., and 2 oz., tubes; 1 lb., 5 lb., and 10 lb. tins.

KIP GENTIAN (Spray)

Represents the lenitive oils of Kip and Gentian Violet in solution. Recommended as a spray for extensive burns where open treatment is indicated. Forms light, tough, elastic eschar which inhibits germ growth. Anodyne, non-toxic bactericidal and bacteriostatic in vivo. A powerful antiseptic for scratches, cuts and bruises, and ringworm. May safely be used orally as a swab in the treatment of Vincent's angina, and affections in which staphylococci and B. diphtheriae are causative agents. Packed in 1 oz., (with glass applicator), 4 oz. (with glass applicator and spray) pint, quart and gallon bottles. Introductory outfit, 4 oz. bottle, with applicator and spray complete \$1.50 postpaid.



KIP CORPORATION, LTD.—919 E. PICO BLVD.
LOS ANGELES, CALIFORNIA
(MAKERS OF ANTI-PYREXOL AND PYROL)

KIP PRODUCTS ARE DISTRIBUTED BY SELECTED FIRST-AID EQUIPMENT HOUSES
THE KIP COMPANY

Real Comfort in this dressy SAFETOE SHOE



Comes in widths
A to D

Comfort along with Safety is one of the main characteristics of Brownbilt Safetoe Shoes—Stock No. E6 is also a good-looking dressy shoe. It is made of Black Calf, has leather lined vamp and quarter, perforated tip, steel box toe, steel shank, heavy single oak sole, leather base rubber heel and is made by the Goodyear welt process. The wide range of widths assures an accurate fit.

We carry a complete line of Safetoe shoes in stock to meet practically every requirement. Write for special illustrated Safetoe catalog.

Brown Shoe Company St. Louis

Manufacturers of every kind and type of shoe worn in America, including the famous Buster Brown shoes for boys and girls.

removed saved this man's health and retained an expert machinist for the company.

There has never been a time when the teaching of mental hygiene has been as important as in the past few years. The world is full of tragedies, many of which are due to ignorance of some fundamental principle of mental health.

The nurse can render important service in the accident prevention program by developing a consistent health program which will safeguard men and women and enable them to live happy and useful lives.

PERSONALS

A. R. SMALL has been elected president of Underwriters' Laboratories succeeding the late Dana Pierce. Since January 1, 1924, Mr. Small had been resident vice-president in New York City.

Mr. Small graduated from the University of Maine in 1904 with a degree of Bachelor of Science in Civil Engineering, and in 1929 the University conferred upon him the professional degree of Civil Engineer. Immediately after graduation he was employed by the New York Fire Insurance Exchange. In October, 1906, he joined the staff of Underwriters' Laboratories in Chicago as assistant engineer in the newly created Electrical Department under Mr. Pierce. In 1908 he was made special agent and in 1910 was appointed superintendent of the Label Service Department which he had organized. He continued in charge of the label service after election as vice-president in 1916 until his transfer to New York. For several years he has served as chairman of the Electrical Committee of the National Fire Protection Association. He has also represented the Fire Protection group of the American Standards Association.

ROLAND JONES, of the Surtz Manufacturing Company, Chicago, and a former General chairman of the Wood Products Section, NSC, is now recovering at his home in Gary, Ind., following a major operation.

WILL COOPER, formerly treasurer of the National Safety Council, has been appointed mechanical superintendent of the Davis Store and the Merchandise Mart, Chicago, in addition to his present responsibilities with Marshall Field & Co.

HONOR ROLL

Details of no-accident records in excess of 400,000 man-hours, or 200 working days, are invited for this department

American Locomotive Co.

With an average of 191 employees, the Montreal plant of the American Locomotive Company operated January 7, 1933, to July 29, 1934 without a disabling injury. The exposure totaled 577,645 man-hours.

The McIntosh & Seymour Corp., a subsidiary at Auburn, N. Y., with 347 employees, operated 500,159 safe man-hours between May 17, 1933, and January 25, 1934.

Bethlehem Steel Co.

The following records are reported by Cambria Plant of the Bethlehem Steel Company at Johnstown, Pa., as of January 26:

Roll Shops—90 employees, 954,800 man-hours; May 9, 1929, to date, unbroken.

Rod and Wire Division—410 employees, 832,000 man-hours; December 14, 1933, to date, unbroken.

Wheel Division—190 employees, 659,500 man-hours; March 1, 1933, to date, unbroken.



Frank

Knee Leggings
Hip Leggings
Spat

The standard protection for thousands of workmen in hundreds of plants.

Our complete line of Safety Clothing also includes asbestos helmets, suits, mittens, gloves, aprons, etc. Every item is expertly made from highest quality materials.

Write for New Price List.

THE SAFETY CLOTHING CO.

Manufacturers
3804 Payne Ave. Cleveland, Ohio

"Everything from a finger
cut to a complete asbestos
suit and helmet"



Steam Department—155 employees; 555,000 man-hours; August 19, 1932, to October 2, 1934. Terminated when employee dropped piece of pipe on foot, fracturing bone.

"An accident in the Roll Shops would parallel the unpardonable sin," writes H. W. Darr, supervisor of safety.

Brunswick Laundry Co.

The Brunswick Laundry Company, Jersey City, N. J., has operated from October 1, 1932, to November 30, 1934, without a disabling injury. With an average force of 677, the laundry has operated 2,782,653 man-hours.

du Pont de Nemours & Co., E. I.

The Dye Works Construction of E. I. du Pont de Nemours & Co., at Penn's Grove, N. J., has operated 235 days, with a total exposure of 629,500 man-hours, without a disabling injury.

Faber Pencil Co., Eberhard

From July 30 to December 31, 1934, Eberhard Faber Pencil Company, Brooklyn, N. Y., operated 451,838 man-hours. Average number of employees was 547.

Fouke Fur Co.

No disabling injuries occurred during 1934 in the plant of the Fouke Fur Company, St. Louis, Mo., and the record was still intact on January 7. The plant, which dresses and dyes sealskins, employs an average of 155 workers and operated 323,289 man-hours during 1934.

Inland Steel Co.

No disabling injury has occurred in the Roll Turning Shops of the Inland Steel Company at East Chicago, Ind., since October 15, 1928. During this period an average force of 57 employees worked 1,041,867 man-hours. Supervision, safety meetings, posters and the incentive of a good record are the essentials of the company's program.

Panhandle Power & Light Co.

The National Safety Contest in the Public Utilities Section got the Panhandle Power & Light Company started on its safety drive, and after about seven months the interest of employees in maintaining the record provided efficient incentive. The company, which has its headquarters in Bouzer, Tex., operates two steam turbine plants serving 30 towns in the Panhandle of Texas. The last accident occurred in May, 1933, and the 150 employees have accumulated 429,583 safe man-hours at the time of reporting.

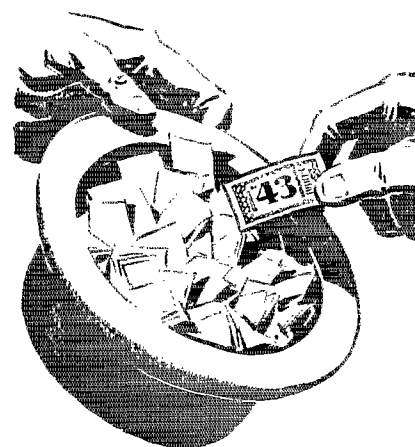
Cinarron Utilities Company, an affiliated company, serving several counties in Texas and Oklahoma with electricity, gas, water and ice, has a clean record dating back to September 1, 1932, with an exposure of 161,557 man-hours. Average number of employees has been 27.

Republic Steel Corp.

On January 2, 1935, the Buffalo plant of the Republic Steel Corporation had completed 224 days without a disabling injury. On that date a fractured leg terminated 2,179,121 accident-free man-hours.

Youngstown Sheet & Tube Co.

The Electrical Department of the Youngstown Sheet & Tube Company at East Chicago, Ind., has operated since July 11, 1930, without a disabling injury. On November 30, the total exposure stood at 531,151 man-hours. Competition with other units of the company has proved helpful in maintaining interest.



It's a Lottery —So Be Sure About Your Fire Protection

WHAT a chance you take by depending on inadequate fire extinguishers is shown by a recent analysis of fire losses. Out of every hundred severe fires that occurred in industrial plants, it was found that 43 plants never resumed operations.

Yet, if you have lacquer, gasoline or oil hazards in your plant, it is easy to get the protection you want and pay for. LUX extinguishers will put out all the different kinds of fires in flammable liquids which foam or carbon tetrachloride extinguishers will, and more besides.

LUX extinguishers—whether gasoline or lacquer fires burning on the ground, in tanks or upon any surface. Furthermore, LUX will put out fires in flammable liquids streaming through the air from leaking pipes, overflowing tanks or spilled containers against which ordinary extinguishers are ineffective. With LUX you have protection against a wide range of flammable liquid fires, not just a few.

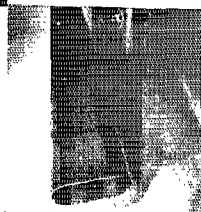
Write for information to Walter Kidde & Company, Inc., 70 West Street, Bloomfield, New Jersey.

2 Reasons Why You Can't Go Wrong With LUX



The new Super-LUX extinguisher contains 30% more extinguishing agent than many other carbon dioxide extinguishers of equal size and weight.

The new oval shape of the LUX discharge horn gives longer range, a wider blanket of gas and a more effective discharge of snow.



LUX For All Electrical and Flammable Liquid Fires

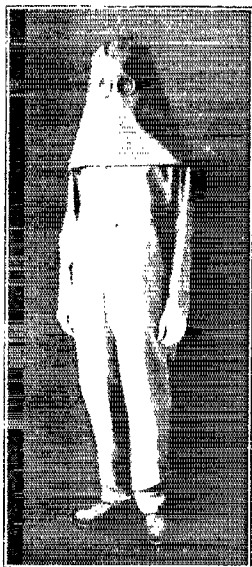
WITH THE MANUFACTURER

Manufacturers are invited to send in announcements of new products, or improved special features. Only items which can be considered as "news" to our readers will be published

IPCO Acid Suit

A new style of one-piece suit has recently been designed by the Industrial Products Co., 800 West Somerset St., Philadelphia, Pa. It is intended for protection from splashes and sprays in inspecting and repairing acid equipment, pipe lines, in cleaning tanks and for general emergencies.

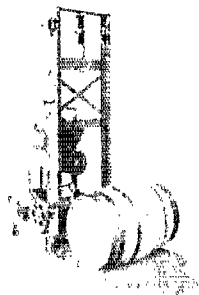
Manufactured of double coated rubber-



cloth with all seams cemented. Closes by means of talon hookless fastener protected by fly-front which fastens down with snap buttons. Hood is attached with two snap buttons on back and front—is completely detachable so that suit may be worn with or without hood. Hood is fitted with clear faceted glass roof lenses.

Portable Elevator for Barrel Handling

This new elevator, just announced by Barrett-Cravens Co., 125 W. 30th St.,



Chicago, Ill., is designed especially for the handling and piling of barrels. It may be either hand or electrically operated. For

hand operation has cut gear fully enclosed in oil, governor control and two speeds. For electric operation has ball bearing mechanism, ball bearing motor, direct drive, electric brake integral with motor, "dead man" cable control, top and bottom limit stops and 25 feet of heavy insulated electric cable.

Elevator furnished for capacities of 500 or 750 pounds. Overall and lifting heights to specifications. Standard hinged height. Platform is 30 x 30 inches and when lowered is only 1 1/4 inches off the floor. Also furnished with 6-inch Hyatt equipped base wheels, removable steel barrel incline, auto-steer and automatic floor lock.

New Goggle for "Hot Workers"

The new Duralite-50 Hot Workers' Goggle is designed for men who work in confined spaces or where temperature or humidity is high. The manufacturers say this new goggle practically doubles the area usually allowed for ventilation. The extra ventilation in back of the lenses



keeps them free from fogging and steaming—and also keeps the area around the eyes cool and so prevents perspiration from obscuring the vision.

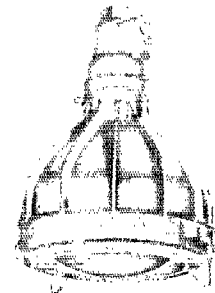
The hazards of stumbling, falling or colliding with objects because of obscured vision due to fogged lenses, are avoided by this new goggle. Manufactured and marketed by the American Optical Co., Southbridge, Mass.

Benjamin Explosion Proof Fixture

A new explosion proof fixture has been announced by the Benjamin Electric Manufacturing Company, Des Plaines, Ill. This new fixture is listed by Underwriters Laboratories for class I, group D hazardous locations—atmospheres containing vapors of gasoline, naphtha, petroleum, alcohol, acetone, lacquer solvents and natural gas. The manufacturers state this new fixture combines efficiency and improved quality illumination with dependable protection against explosion hazard. This fixture has been strengthened in every part to withstand the tremendous pressures of internal explosions without breaking down or permitting flame, hot gases or sparks to escape and ignite surrounding atmosphere.

A non-tarnishing, aluminum alloy reflector is totally enclosed within the body of the fixture where it is protected against injury and adverse atmospheric conditions. It is an integral part of the fixture

with nothing to obstruct free circulation of air. Reflector design permits the use of



a minimum of exposed glass yet provides a wide, even distribution of light. Fixture can be furnished with pendent or ceiling hook for 150 or 200 watt lamps.

Carbon Dioxide Fire Extinguisher

Walter Kidde and Co., 140 Cedar St., New York City announce an addition to their line. This is known as Eyrant Model 2—carbon dioxide unit. The unit is small in size, light weight and designed for numerous risks. Among other



uses it is particularly adaptable for automobiles, small incipient fires in all flammable liquid and electrical equipment fires. The manufacturers state fires are completely extinguished in between five and fifteen seconds and the effective range is as high as five feet from the discharge horn.

This unit needs no recharging until used, is harmless to any material it may touch, has no odor and leaves no trace or residue after use. The extinguisher is supplied, as illustrated, with a clamp type of bracket suitable for mounting on automobiles or at any desired wall point.

NEWS ITEMS

Mine Safety Appliances Company, Braddock, Thomas and Meade Sts., Pittsburgh, Pa., announce that they have received formal notification from the United States Bureau of Mines giving approval of their Comfo Respirator under schedule No. 21 pertaining to the procedure for testing filter type dust, fume, and mist respirators for permissibility.

Macwhyte Company, Kenosha, Wis., announces the appointment of Brown-Wales Company, 493 C St., Boston, Mass., as distributors for Macwhyte products, including preformed and internally lubricated wire rope for hoisting, shovels, cranes, draglines, mixers, pavers, water well and blast hole drilling, ship rigging and elevators.

Protective Equipment Inc. 634 Orleans St., Chicago-Ill., have appointed T. J. Starszak, 3155 S. 7th St., Milwaukee, Wis., as their sales representative in this territory. Mr. Starszak has had a number of years' experience in industrial safety.

[Statements published on this page are based on the claims of the manufacturer. While the National Safety News cannot guarantee these statements, they are believed to be accurate.]

Illegal Riders Present Problems for Railroads

A SERIOUS but little known problem for the railroads has been created by a floating population estimated at 500,000 men, women and children. The Association of American Railroads estimates that this number of men, boys and women is now engaged in hopping freights. More than 200 of these non-paying passengers have been counted on one freight train, and under such circumstances, there is very little that the train crew can do. Commenting on the situation, the *Punxsutawney* (Pennsylvania) *Spirit* commented as follows in a recent editorial:

Illegal train riding or "riding the rods" had been virtually abolished throughout the United States when the depression struck and the jobless struck out. It is a practice easily controlled when people can afford to pay their way and the railroads can afford to police their yards and lines adequately. At times when there is no affording anything, the railroads are at the mercy of transients.

When the railroad managements speak of this as a perplexing problem they are not thinking of lost passenger fares, but of the danger to their employees, equipment, passengers and freight, as well as the danger to the train riders. Hundreds of illegal riders are dying or being maimed in train wrecks and other accidents on railroad property. They are killed by low bridges, by falling between cars, or while boarding or leaving trains and in other ways.

Wrecks are being laid to illegal riders who tamper with connections or brakes, and attacks upon trainmen have been reported, yet the rods can do little about it. It is a riddle which will find its own answer when the jobless return to work.

FEBRUARY, 1935

Trade Publications

for your

SAFETY EQUIPMENT LIBRARY

Safety Information on File

Every Safety Executive should have for ready reference up-to-date information on all types of equipment relating to safety and industrial health. We will gladly help you build your Safety Equipment Library. The publications listed below will be sent free and without obligation to readers of NATIONAL SAFETY NEWS. Indicate the items you wish; fill out coupon and mail to us.

1. **Exidust Industrial Stationary Vacuum Cleaning Systems.** Bulletin No. D-1. This bulletin completely illustrates and describes heavy duty vacuum cleaning systems for industrial uses. Systems are built in sizes ranging from 5 to 100 horse power. Allen Billmyre Corporation.
2. **The Kirk Interlock System.** Bulletin No. 1349. Illustrates and describes the interlock method of accident prevention. These devices are applied to associated equipment in such a manner as to prevent or allow operation of the equipment only in a prearranged sequence. Railway and Industrial Engineering Company.
3. **S. V. E. Picturol Projectors and Picturols.** Information on projector outfit for film stereopticon views, screen and films. Comes complete in small easily carried compact case. Society for Visual Education, Inc.
4. **Firemen's Electric Lantern.** Interesting little folder illustrating and describing a new electric lantern especially built for firemen. Throws a powerful, pure white combination spot and diffused light. Equipped with waterproof non-shorting switch. Justrite Manufacturing Company.
5. **Holcomb Perfected Foundry Safety Leggings.** Folder shows a line of knee and hip leggings designed to protect the legs and feet. Furnished in asbestos, chrome leather and fireproofed duck. Holcomb Safety Garment Company.
6. **Superior Solid CO₂ Band Saws.** Folder illustrates and describes three machines especially designed for cutting solid CO₂. All moving parts are completely guarded. Equipped with automatic table. Jones Superior Machine Company.
7. **Keep Air Moving with Propellair Fans.** This folder covers a variety of industrial uses where these fans have been installed to meet special conditions. Illustrates the models that are most often used in industrial ventilating and exhausting. Propellair, Inc.
8. **Union and Columbia Carboy Inclinator.** 4-page folder illustrating and describing two types of carboy inclinator designed to meet requirements where safety of carboy handling is essential and desired. The Inclinator Company.
9. **New Allsafe Control for Paper-Cutting Machines.** Folder describes this machine designed to provide maximum safety in paper cutting. Constructed so operator must keep both hands on push buttons during the entire cutting stroke. American Allsafe Company, Inc.
10. **Reece's E-Z Walking Wooden Sole Shoes.** An interesting little folder describing types of wooden sole safety shoes constructed for various industrial purposes. Reece Wooden Sole Shoe Company, Inc.
11. **101 Uses for the Air-Acetylene Flame.** This 8-page folder points out that the air-acetylene flame does not take the place of the oxy-acetylene flame, but serves as a supplementary tool for use where lower flame temperatures are required.
12. **Healthguard Sand Blast Mask.** Folder illustrates and describes this mask designed for sand blasting or any work where harmful dusts are encountered. Also contains extracts from a laboratory report dealing with efficiency. Chicago Eye Shield Company.

NATIONAL SAFETY NEWS

20 North Wacker Drive
Chicago, Ill.

February, 1935

Please have sent to me the publications I have checked:

Name
Title
Company
Address

Up Above the Floor So High

(Continued from page 15)

is widely used. For concrete floors, lead, cork or abrasive is recommended. However, no one type of base can be depended upon under all conditions and sometimes the only safe way is to station a man at the foot of the ladder.

The step ladder can be another source of grief, particularly where the purchasing department reads the catalog from right to left without regard for specifications, and where maintenance is nobody's responsibility.

Industrial step ladders lead a strenuous life and require a high degree of structural strength and rigidity, as well as a solid foundation. The higher the ladder, the stronger should be the construction. A ladder four feet high might be quite safe while one ten feet high of the same material would have a most uncomfortable sway on the top step. Step ladders should never be more than 20 feet in height.

Unlike other portable ladders, a step ladder is intended to be used as a working platform at any of its steps. At best, the ordinary step ladder provides a

precarious footing, particularly on the top step. When much work must be done from a step ladder, a safety platform ladder is the logical equipment.

A regular system of inspection for ladders is most important. All workmen should be instructed to return to their foremen any damaged ladder instead of putting it back where another worker might get hold of it. If a damaged ladder is beyond repair, the foreman should complete the job of demolition so that nobody will put it back into service with makeshift repairs. If a ladder is to be repaired, it should be marked with a conspicuous tag.

The first Safe Practices Pamphlet issued by the Council was on the subject of ladders. This pamphlet has been revised several times and a new edition, incorporating recently developed standards is being reviewed by the committee.

No. 51 of the Council's series of Safety Instruction Cards lists the following precautions to be observed in climbing ladders:

1. Keep both hands free for climbing whenever possible.
2. Never place a ladder in front of a door without first locking the door or placing a wedge on guard.
3. Use ladders with safety feet in preference to those without, but be sure the safety feet are the kind that will prevent slipping on the surface the ladder rests on.
4. Always face the ladder while climbing either up or down.
5. Keep your eyes on the ladders while you climb. There might be a broken or loose one which slipped up during inspection.
6. If your shoes are greasy or muddy or otherwise slippery, clean them before you climb.
7. Tie a ladder at the base to keep it from slipping on extra slippery surfaces or if someone holds it.
8. If you are going to have a ladder placed in a place for repeated climbing, fasten it in position.
9. Beware of the ladder that has been set out in the weather, especially when it is water-soaked.
10. When you use a step ladder, make sure that it is fully opened before climbing.
11. Do not lean too far out or stand on the top step.

PRESENTING New Justrite Safety Cans!



Waste Can!

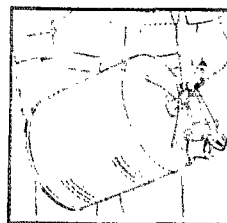
JUSTRITE'S Automatic Safety Waste Cans give you safety, economy, efficiency. Opens with foot, closes automatically. Leaves both hands free—a great feature. Reduces insurance rate. Capacity 6, 8, 10, 14 gallons.

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Janitors Asked to Correct Slipping Hazards

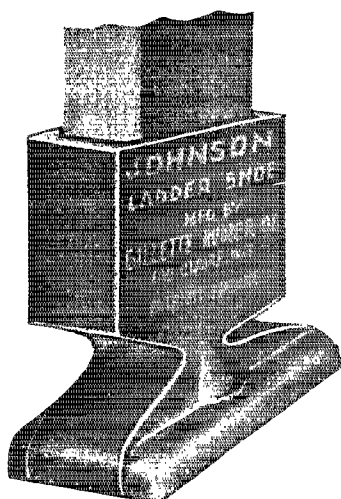
EACH member of the Chicago Flat Janitors Union has received a card from the union president, Jerry J. Horan, requesting him to spread ashes on places on streets, alleys and sidewalks that are not clear of ice in order to make it safer for pedestrians and vehicles.

"We want to show that we are with Mayor Kelly in his 'Keep Chicago Safe' campaign," Mr. Horan said.

NATIONAL SAFETY NEWS

KEEP OUT OF THE WHEEL CHAIR

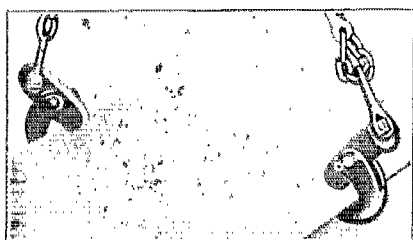
By Using
JOHNSON LADDER SHOES
Try a set today!



Shoes for straight ladders
per pair \$1.65

Shoes for step ladders
set of four \$6.00

Johnson Ladder Shoe Co.
Eau Claire, Wisconsin



Boiler Plate Can Be Handled Safely

BOILER plate can be handled safely with Never Slip Safety Clamps. Old-fashioned clamps or hooks, which have a tendency to slip, cause accidents to men. These clamps make carrying work over the heads of workmen safe. No time lost in adjusting the hold or forming a balance.

Made for horizontal and vertical lifting

Write for details

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Grand Central Annex, New York City

FEBRUARY, 1935

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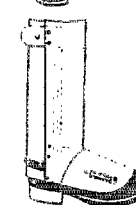
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High powered beer recently caused the loss of a plate glass window in Pawhuska, Okla. While a truck was delivering the brew, a bung was blown out and shattered an 8' x 100 inch window two doors away.

HOLCOMB PROTECTION



Perfected SAFETY LEGGINGS and SPATS

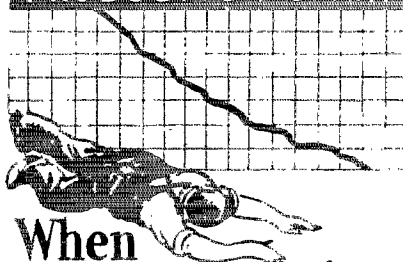
These high grade products all designed for comfort, freedom of movement and proper fit. On with a snap—off with a pull. Workers like to wear Holcomb Safety Leggings because they provide maximum protection.

We manufacture a complete line of Safety Garments for all industrial hazards. Made of asbestos, fireproofed duck and chrome leather.

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When a Workman falls Production falls with Him

Slippery walking surfaces cause more than accidents and injuries. They trip up production, too. Avoid this double danger by covering floors and stair treads with **PLASTIC FUT-SURE**. Economical to buy—easy to apply. Permanently SAFE! Descriptive folder and prices gladly mailed.

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FOR SAFER WALKING SURFACES

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G

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Polmosan Safety Equipment
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The Safety Clothing Co.
Safety Equipment Service Co.
Wilson Products, Inc.

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Wilson Products, Inc.

Mats—Standing Safety

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Harrington & King Perforating
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Industrial Products Company

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Industrial Products Company

Respirators

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Hishinger-Kochler Mfg. Co.,
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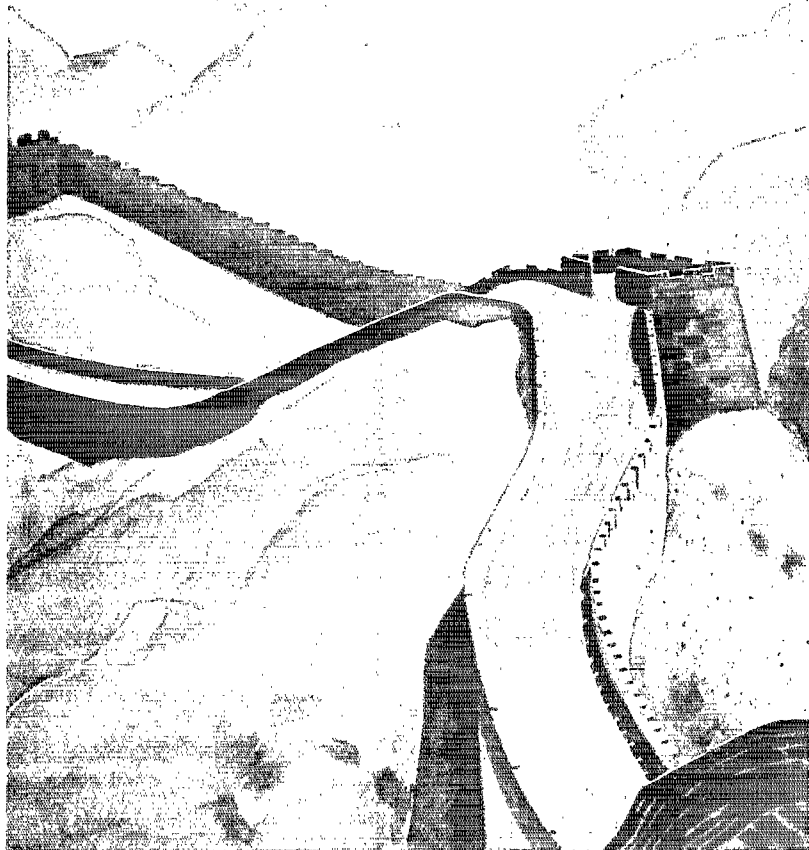
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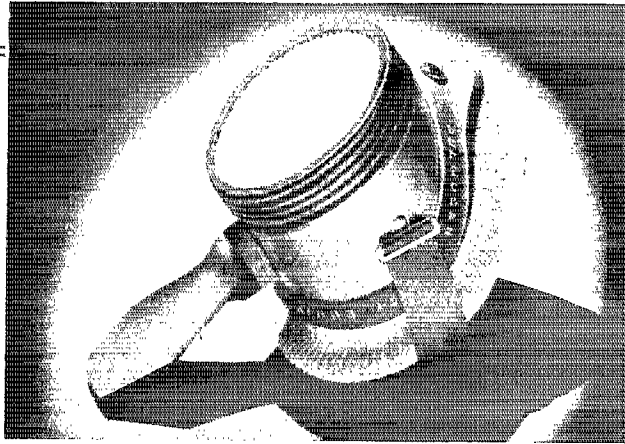
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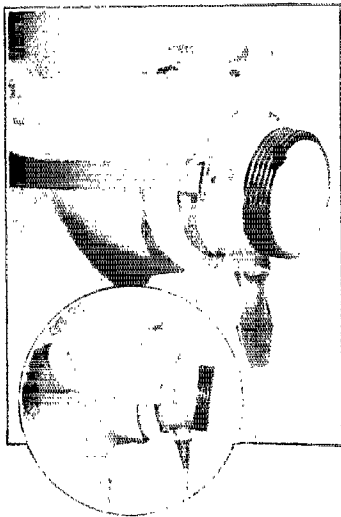
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