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PLAINTIFF'S EXHIBIT

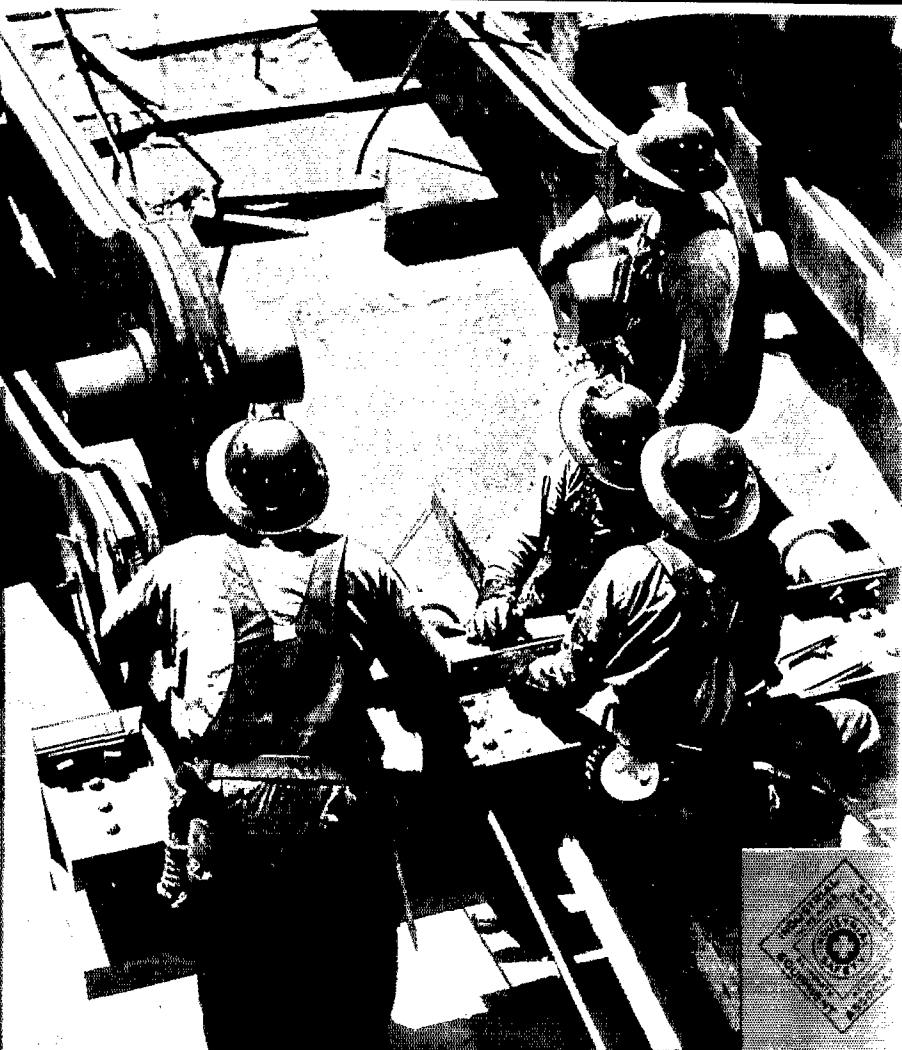
NSC-154

National SAFETY NEWS

Published by National Safety Council, Inc.
FEBRUARY, 1937



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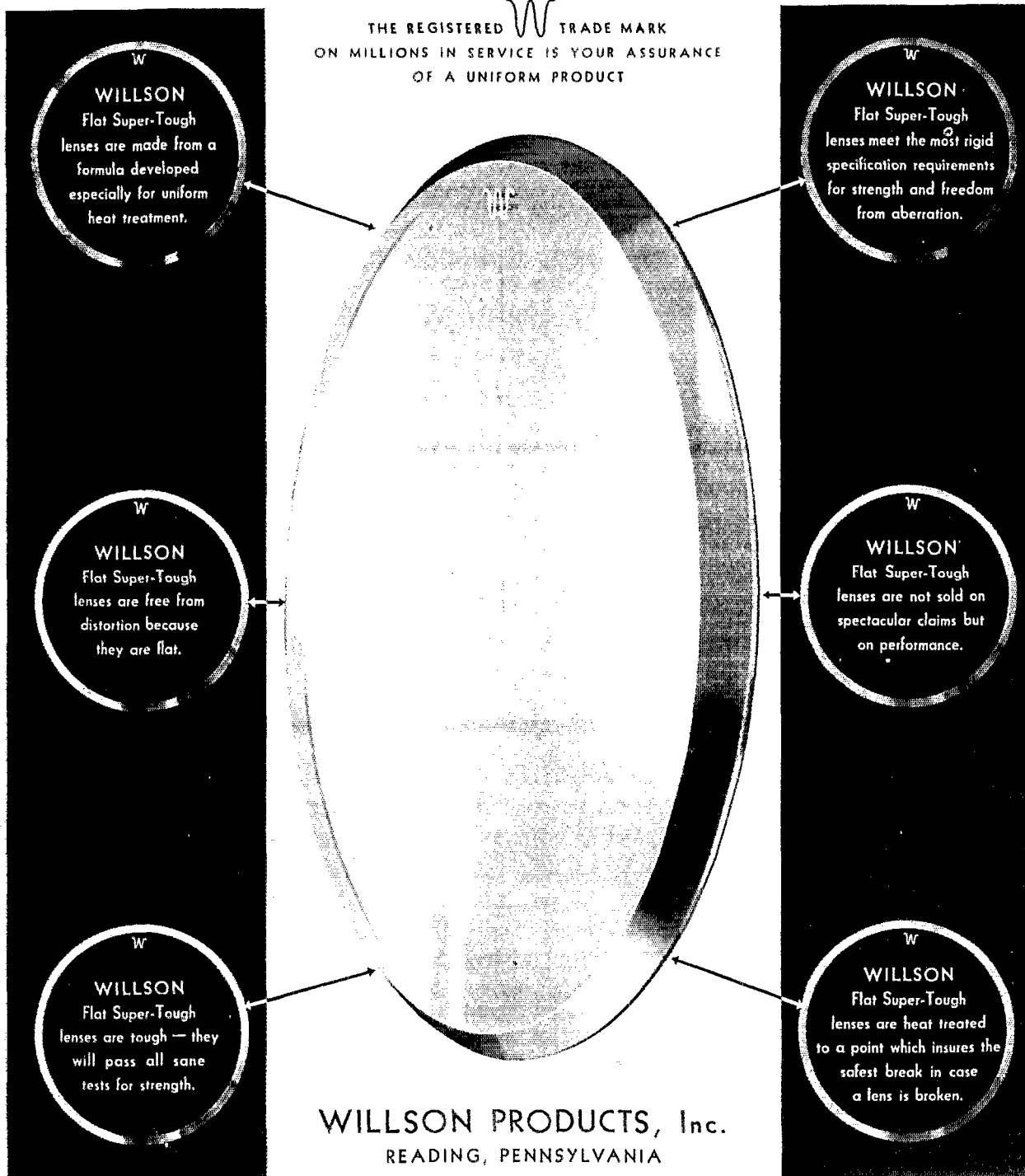
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The NATIONAL SAFETY NEWS is published monthly by the National Safety Council, 20 North Wacker Drive, Chicago, Ill. Yearly Subscription Price \$1.00, Volume 25, Number 2. Entered as second class matter June 7, 1925, at the Post Office at Chicago, Illinois, under the Act of March 3, 1879. Additional entry at St. Joseph, Michigan.

National Safety News, February, 1937

American Cable Division,
American Chain & Cable Company, Inc., Wilkes-Barre, Pa.
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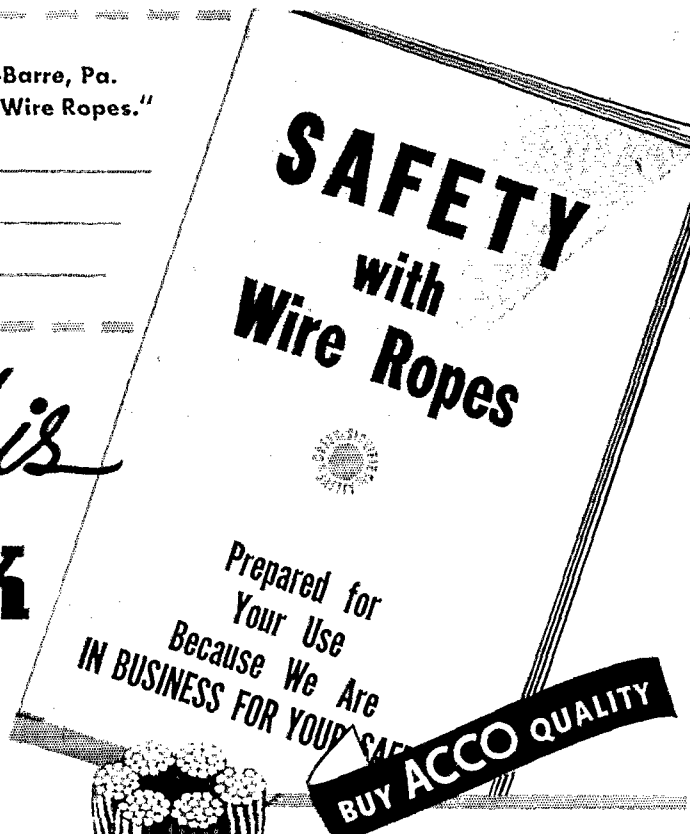
It explains *why* TRU-LAY Preformed wire rope is a safe rope. But far more than being an advertisement this book gives constructive information on rope strengths and working loads, how to make safe splices, how to apply safe attachments, how to avoid crushing, destructive kinks, when to discard ropes—and much other useful information every safety engineer will want to know.

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Foot-conforming—
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Safety Directors! Hy-Test's newest development, *Saf-eze*, makes available to your men a combination of softness, flexibility and comfort hitherto unobtainable in a Safety Shoe!

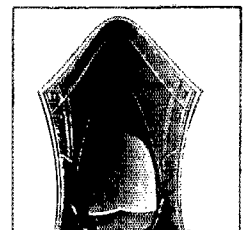
In addition to a *new* comfort last which provides complete toe freedom, Hy-Test has incorporated into the construction of *Saf-eze* a new *one-piece quarter*. No ridge or seam here, to irritate, to cause blisters or sore spots. Instead, a smooth foot-conforming unit which "hugs" the back of the foot almost as closely as the skin of the foot itself.

And Hy-Test's famous safety features have been retained in their entirety. Best known, and most highly regarded among these, is the Isco steel safety *anchor* flange, the highly efficient unit of toe protection that is, in the opinion of most of the industrial world, "tops" in effectiveness.

Our attractively illustrated catalog, detailing the entire Hy-Test line is ready for your inspection. Drop a post card in the mail. Don't delay!

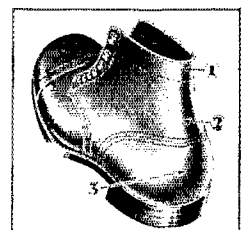
Inside View of *Saf-eze*
One-Piece Quarter

Note the smooth, glove-like inside fit of the one-piece seamless quarter. No ridge or seam to cause friction, blisters or discomfort.



Outside View of *Saf-eze*
One-Piece Quarter

1. No ripping at the back... 2. no binding or rubbing in the tendons... 3. no rubbing in the heel. Smooth, seamless; literally "one-piece."



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pays for itself in a short time, and continues to earn a big investment return for years to come.

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★ This illustration shows the DUPOR No. 24 U. S. Bureau of Mines Approved Respirator with filter pads and newly approved Face Cloth in place. Note how snugly it fits the face and does not interfere with clear vision.



★ Here is an illustration that shows the No. 24 DUPOR Respirator with filter pad removed to show plate extrusions and the minimum amount of dead air space. Easy Breathing Assured!

SAFEGUARDING

Against Silicosis

With COVER'S DUPOR PLATE Respirator

TRADEMARK REG.

APPROVED BY U.S. BUREAU of MINES No. BM2111

The DUPOR Respirator No. 24 provides needed protection against Type A or Pneumoconiosis (SILICOSIS) producing dusts. Exhaustive tests have proved its inestimable value to those who must brave the hazardous dusts characteristic in many phases of industry.

U. S. Approved FACE CLOTH too!

To add to the comfort of every DUPOR Respirator, a Face Cloth is used. It absorbs the friction between Respirator and Face, eliminating all sign of discomfort and possible soreness so common to most respirator wearers. So unusual in design is this Face Cloth that it too has received U. S. Bureau of Mines Approval, as well as the approval of users everywhere!

Revolutionary, new construction has eliminated screw cap lids for filter apertures. Making possible easy passage of air to protected opening and then to interior of respirator.

Safety of construction is the main feature with marginal edge of filter plate curved inwardly forming a secure anchor for filter pads, preventing all leakage. Construction is such that filter pads can be quickly removed for replacement or cleaning. Pads

measure 1 3/4 inches in diameter giving a clear entrance filter aperture of over 24 square inches.

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1. Large Filter Area, securing (a) Easy Breathing (b) High Efficiency.
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4. Good, clear unobstructed vision.
5. Compact. Easily fits the pocket.
6. Audibility and Drainage.
7. Practically no dead air space.
8. Low cost—long life.

The price of the DUPOR Respirator No. 24 complete with two extra filter pads is \$27.00 per dozen.

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Basic Patent No. 2,000,054. Detail Patents Pending and Allowed. Latest Patent Granted Dec. 22, 1936, No. 2,065,501.

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☐ Please rush me one dozen DUPOR Respirators No. 24, for which I enclose check for \$27.00.

Name

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State

SAMPLE OFFER COUPON

National SAFETY NEWS

VOLUME 35

NUMBER 2

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CARMAN T. FISH
Editor

C. F. SCHEER
Associate Editor

STANLEY H. KERSHAW
Poster Editor

C. H. MILLER
Advertising Manager

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13,800 copies of this issue were printed.

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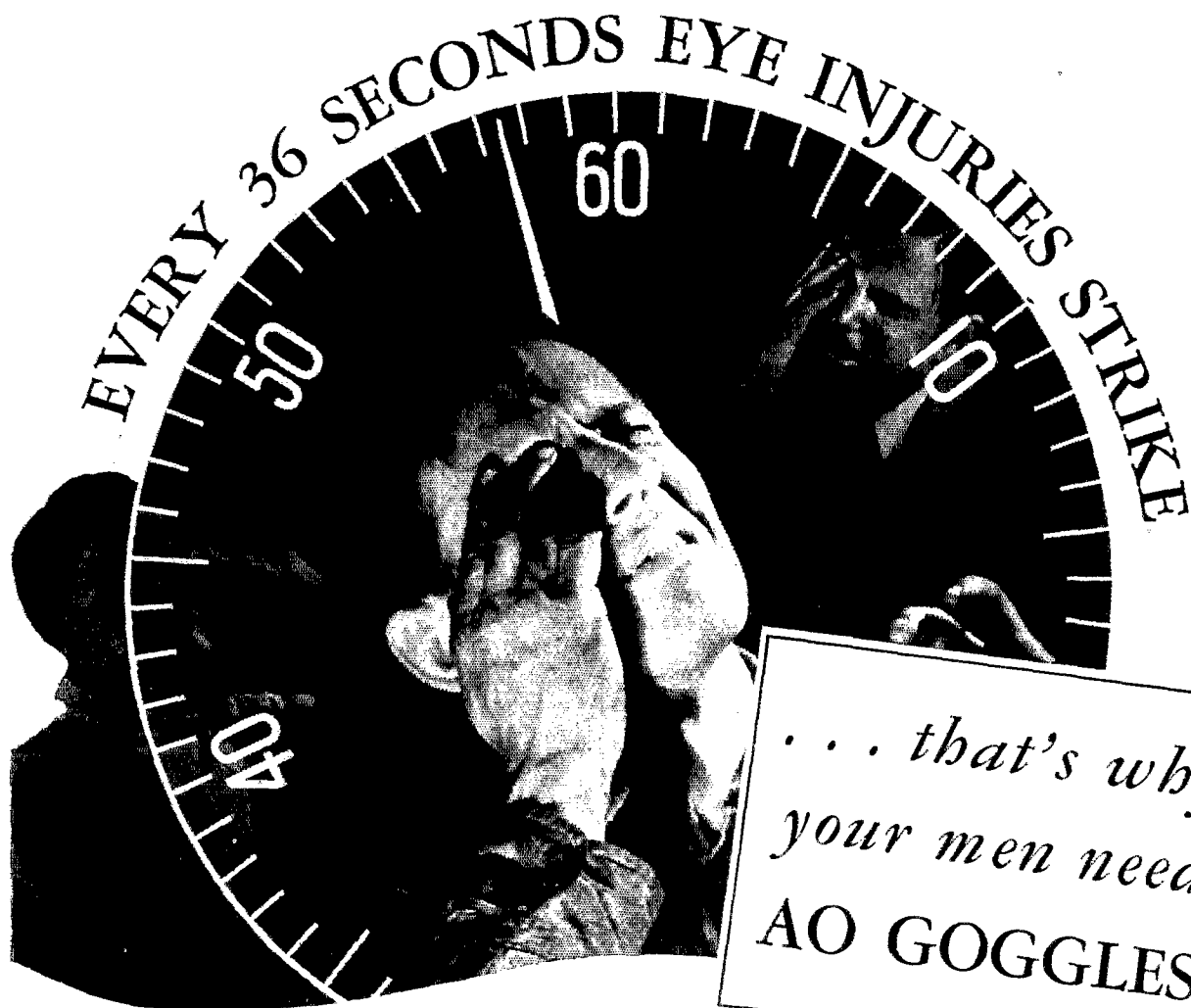
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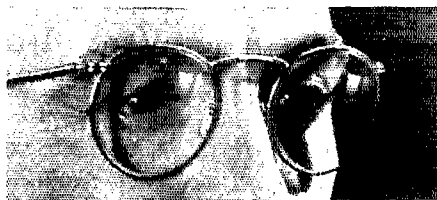


IT is significant that thousands of the eye injuries which Industry pays for every year, occur at jobs that, too frequently, are not considered to be eye hazardous.

Increased machine speeds, faster cutting feeds and the use of harder steels have created hazards on many machines that have been previously regarded as safe to operate without goggles.

Dig into your eye-accident cost records. Then ask the American Optical Company industrial representative in the

branch office near you to call and discuss an eye-safety program best suited to the needs of your plant. Or write for the catalog that illustrates and describes the complete line of AO Eye Protection Equipment, — goggles that have been developed to protect against every known industrial eye hazard.



The new F-3100 Full-Vue Goggles fit as cool and comfortable as the most popular type of glasses for street wear. High-up end pieces permit full vision . . . printing, note pads are self-adjusting . . . 6-Curve Super Armorplate Lenses have far greater strength than most standard lenses.

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3449

National Safety News, February, 1937

NATIONAL SAFETY NEWS

Published by National Safety Council, Inc.
FEBRUARY, 1937

The Honor Roll

EACH month the NATIONAL SAFETY NEWS publishes a list of industrial units which have operated for long periods of time without a disabling injury to employees. All members of the National Safety Council are invited to send in the details of their records for publication in the Honor Roll.

Reasonable minimum standards have been established—400,000 man-hours or 300 working days, regardless of the total exposure. This permits recognition for the small plant or department whose operation would require several years to accumulate a total of 400,000 man-hours exposure.

A "disabling injury" (formerly a lost-time accident) is one involving loss of time beyond the day or shift in which the employee is injured. If the employee returns to work the following day, the injury is not counted in the record.

Some companies prefer to compile their records according to compensable (seven day) injuries. Records kept on this basis are not acceptable for the Honor Roll. Recently a photograph of a bulletin board submitted by one of our members was shown in the Safety Exchange department of the NEWS. The display contained a report of the number of days operated without a seven-day injury. This item, of course, was merely an incidental item in an attractive display and the picture was published without any intention of giving publicity to the record. However, one of the members who examined the picture closely wanted to know whether the seven-day injury had been accepted as the basis of measuring accident prevention accomplishment. The standard definition of a disabling injury is still used.

While many records of several million man-hours without injury have been reported in recent years, there is still glory for the small plant that celebrates a no accident year.

Perfection

OUR search for perfection in a far from perfect world continues undiscouraged. One of our present problems is to find photographs showing ingenious safeguards or exemplary housekeeping that do not have some glaring hazard lurking in the background. Photographs that will pass the scrutiny of microscopic eyes are never plentiful.

A milk bottle on top of a locker in an otherwise faultless locker room shattered the prestige of the NEWS in the eyes of one foreman. He called the safety director's attention

to the offending photograph. The safety man lied generously on our behalf, explaining that this example of poor housekeeping had been left there to test the readers' powers of observation.

Another picture in a recent issue showed a room whose freshly painted walls and excellent illumination were a delight to the eye. But it did not get past one indignant reader. There was a crack in a glass table top. In the half-tone reproduction it appeared to be a slight scratch on the engraving. But an examination of the original photograph showed that the anonymous critic was right. The degree of hazard was open to argument but it was nevertheless a blemish.

There are methods of conserving the good in a photograph and removing the undesirable. A substandard condition in one corner can be removed by cropping the photograph. An experienced retoucher can make approved guards grow on any machine, and the engraver's air brush can blot out objectionable background and improve the housekeeping generally.

Thousands of readers of the NATIONAL SAFETY NEWS have trained their eyes on find-the-hazard contests. It is a desirable condition when workmen and foremen, as well as safety men, are constantly on the lookout for things that shouldn't be.

Criticism is a wholesome corrective and we hope that our readers will not pull their punches.

In This Issue

A SAVING of \$1,750,000 effected through twelve years of accident prevention work would hardly seem to require any additional benefits to justify the effort. But to the management of Swift & Co. the savings to employees and their families were even more important. Sometimes we wonder whether the companies reporting cash savings would have made them had safety work not been dominated by a humane motive. (Page 11).

If the safety manual prepared by the Union Oil Company had been discarded as soon as it was printed, the work of compilation would still have been worth while. Several hundred men took part in the preparation and the extra thought given to safe practices was decidedly beneficial to the whole organization. (Page 14).

Substandard policies, methods and equipment undermine the safety program. Here are some thoughts for those who are trying to strengthen the weak spots in the safety program. (Page 19).



MANAGING DIRECTOR'S PAGE

Safety's Awards of Honor

AWARDS for safety achievement are a powerful aid in reducing the frequency of accidents. Contests keep safety interest alive; they have done much for the Safety Movement. But these good results must be safeguarded by developing a better understanding of the merit idea back of the award and by a better directed system of contests.

There are divers awards, but many are not well earned. There is too often a large element of luck in the record. For example, a half-sick worker may need only a good bump to put him in the hospital for weeks. On the other hand, I remember one hardy worker with such fortitude that when he had a couple of fingers cut off, he merely wrapped up the stumps and kept right on working; he never lost a day.

With many cases such as these, it is no wonder that the doctor, the claim agent and the safety director are often at loggerheads over the counting of certain disabilities as accidents. The desire to *win a prize* may even be put before the true interest of the worker and a square deal for everybody.

Therefore, many employers and safety men despair of securing an equitable definition of a "chargeable accident" and, even more, a uniform interpretation of such a definition. This situation must be cleared up. If safety records might be compared solely upon number of fatalities due to accidents, the problem of definition would be relatively easy; but deaths form too small a percentage of the total casualties to provide a just basis of comparison. When non-fatal injuries are taken into account, the problem is greatly complicated.

An independent and impartial tribunal should judge the chargeability of each injury and the time losses to be assessed. Their viewpoint should be one of applying the uniform definitions to the case at hand, without regard to contest standing or any other influence. Probably the most competent tribunal would include the doctor and a committee representing the management, the foreman and the worker. The decision should take into consideration the extent of the injury, and the length of time the worker was away from the job or task for which he was hired.

Just as an individual company in a contest should take every precaution to insure the accuracy of its own records, so the ideal set-up would be that any organization conducting an inter-company contest should audit the records of the competing units. The procedure of such tribunals in determining contest standings will never be as accurate as the photo-electric cell in determining the winner of a close race, yet we must work toward that end.

There is no phase of the accident prevention job where over-anxiety to win and positive "chiseling" so destroy the whole object and effectiveness of effort as false records in a safety contest. Wise employers know that accidents can be controlled only through safeguarding, housekeeping, adequate supervision, instruction and proper tools. The

safety contest is just one method of getting everybody to cooperate in carrying out these fundamental things in stopping accidents. When rightly conducted, a safety contest puts a zest and a new element of pleasure into what some workers might otherwise consider merely the common routine of work. It emphasizes the individual part that every man has in safety achievement, and as a result the plant accident record can be brought to a minimum and kept there.

Don't let the possibility of a safety award cheat you, or cheat your conscience, or cheat your employer, or cheat your workers. Make your records as true a picture of your accident experience as the most independent judges could wish them. Prizes are merely symbols; your accident record is the thing that really counts. A safety award is a certificate of progress, and its possession indicates the ability for still greater achievement. But, *no accidents* and *no injuries* must be your objective. Then your greatest possible reward will not be a medal or plaque for winning a contest but rather the knowledge that every employee in your plant leaves his task in safety at the close of each working day.

W. H. Jamerson

INTERESTING ITEMS

The campaign for Uniform Drivers' License and Traffic Laws is now in full swing in most of the 48 states. Our field men are giving a large part of their attention to this big job.

Here are a few high spots of the volume of services to members that went out from Council headquarters during 1936:

- 4,238,700 Safety Posters
- 281 different miscellaneous circulars, leaflets, Safe Practices Pamphlets, booklets, etc.
- 2,550,000 mimeographed sheets (2,050 different jobs)
- 2,220,000 copies of *The Safe Worker* and *The Safe Driver*
- 162,000 copies of the *National Safety News*
- 140,000 copies of *Public Safety*
- 81,000 copies of *The Industrial Supervisor*
- 70 tons of publications and materials shipped by express

Comments on the new presentation of safety posters inaugurated in this issue of the *News* are invited. How do you like the three-color posters reproduced in their original colors? By using more pages and fewer posters per page the appearance of the display is greatly improved and, we feel, the selection of posters made easier. Is the improved service worth the additional expenditure?

The Council's pamphlet, "Saving Lives Through a Drivers' License Law," of which some 20,000 copies were distributed, has been supplemented by two special leaflets. "The Drivers' License Law—a Protection for Rural Areas," explains the value of such laws to farmers and residents of smaller communities. "Campaigning for Drivers' License Laws—Women's Part in the Program" will be distributed by the General Federation of Women's Clubs.

The GREATEST REWARD

By G. F. SWIFT

President, Swift & Co.



Even more important than the impressive cost reduction is the inestimable saving to the employee and his family

REMARKABLE progress has been made within the last 25 years in the field of industrial safety. When I glance through some of the booklets we published in 1911 and 1912, I recall the disbelief—and in some cases open opposition—to our pioneer efforts. There was no doubt then that we should do our work with as much safety as possible, but would a costly (but not expensive) coordinated program be justified by the results?

History has removed all such doubts. Statistics compiled by the National Safety Council, as well as our own records, prove that Safety work pays all the time, and it pays large dividends. It is impossible to

give an accurate estimate of all the lives and limbs saved, all the sorrow and suffering averted, but we do know that in our own plants the number of accidents has been reduced 47 percent over the short span of the last 12 years.

We have estimated conservatively that savings in compensation, medical expense, and operating delays totaled more than \$1,750,000 for this period. This figure omits the greatest reward which, though unvalued, cannot be ignored. I refer to the inestimable saving to the employee and his family.

Here, we believe, is the heart of the entire program—doing all we can by suggestion, education, and protection, to save the employee from unnecessary and preventable accidents. On this foundation of mutual interest is built cooperation and success. It is industry's responsibility to its members.

Does our interest stop when the worker leaves the plant? We think

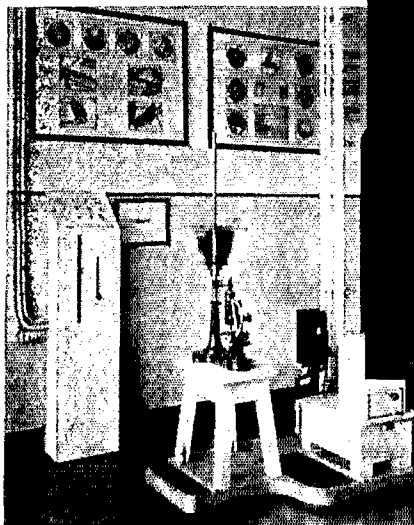
not. The loss is just as great to the employee, and nearly as great to his employer, if the accident occurs away from his place of business. It is in the worker's interest, and our own, to extend the safety program to the street and to the highway. Accordingly, a campaign for the prevention of automobile accidents was started in our organization in September, 1935. Although it is too early to judge the effectiveness of our safe-driving campaign, we believe that it is of great value.

Perhaps industry has a third responsibility—to champion safety in the home. It is an untried field, and certainly a large one according to accident statistics. With no desire to invade the sanctity of the home, this problem nevertheless should be given earnest and careful thought.

May I commend the National Safety Council in organizing, aiding, and abetting the efforts of an entire nation to place a higher value on human life and happiness.

Dr. Lucas with a high power metallographic microscope.

The ultra-violet microscope.



By FRANCIS F. LUCAS

*Member Technical Staff and Head of Microscopic Laboratories,
Bell Telephone Laboratories, Inc., New York City*

HOW FLAWS OCCUR IN METAL STRUCTURES

CRACKS in metal bring to mind fatigue phenomena as the cause. If one arrived at this possible conclusion, he would not be far wrong. To review briefly some of the ideas now commonly held on the subject by metallurgists and engineers may refresh the memory. It may be an aid to a better understanding of the new subject of internal stress raisers and their influence on the propagation and trend of fatigue cracks.

It is asserted by competent authorities that a very high percentage of

metal failures occurring in service are of the type denoted as fatigue failures. All fast moving mechanisms whose loads are either intermittent or reversed cycles of stress may develop fatigue type failures.

Literally thousands of things in every day use, from a giant ocean liner to the hair spring of a delicate watch, may be subject to fatigue type failures.

The advent of the railroad seems to have been responsible for stimulating thought on the subject of the fatigue of metals under repeated stress.

A German engineer prevailed upon Prussian State Railways to undertake such an investigation, and his results have become a classic. His repeated stress tests were reported in the London publication *Engineering* for 1871.

The fracture resulting from repeated stress is a brittle, jagged-appearing one, so that at first engineers and investigators concluded that the fibre of the metal underwent some change. Often the fractured surface appears bright and shining as though composed of large crystals. Observers of these fractures inferred that a change had occurred in the metal and from the appearance to the eye the theory seems to have developed that the metal had crystallized and hence had failed.

No one seems to have advanced any good reason why a crystallized metal should be weaker and more susceptible to cracking than a non-crystalline one, assuming such existed. But the crystallization theory persisted, and it took almost two decades and much microscopy to dispel the delusion. Even today echoes of this old crystallization theory may be heard from engineers.

As a matter of fact, metals are inherently crystalline. The crystals at times may be large and equi-axed or they may be very much distorted by cold work so that they look like fibres, but regardless of how metals are worked or how heat treated, they are still aggregates of crystals and their inner hidden symmetry is crystalline.

Muscles under repeated use tire or

fatigue, and when the old crystalline theory held, it also assumed a gradual change in the structure of metals analogous to the tiring of a muscle. Hence the name "fatigue of metals." It would be better to call these failures progressive failures. They seem to have little or nothing in common with the term fatigue.

There is much yet to be learned on the subject. For example, practically nothing is known about the very early stages of a fatigue failure, nor can one tell when such a failure is about to develop. So far little change has been discovered in the appearance of the metal at the fatigue crack. There is a zone adjacent to fatigue cracks which appears slightly "worked" under the high powers of the microscope, but we have no strong assurance that this state may not be the result of some secondary cause.

If a suitably prepared specimen is placed in a tensile machine and a load gradually applied, stress and strain are proportional within the elastic limit in accordance with Hooke's law. If the load is increased beyond the elastic limit of the metal, the law of proportionality no longer holds. The metal deforms; it elongates, necks down, and gradually the test piece is pulled in two with further increase in load. The reduction in area of the test specimen and its percent elongation are measures of ductility. The tensile strength or load required to fracture the specimen is the measure of the ultimate strength. By this method of testing, the crystalline

structure of the metal is very much distorted.

This sort of test does not determine the behavior of the metal with respect to fatigue, because the way in which the metal is formed, machined and otherwise fabricated into a given part may have a more important bearing on fatigue and endurance properties of the metal than its physical characteristics. The unfavorable conditions introduced by fabrication are called "stress raisers," because they result during use of the part in a localized high concentration of stress.

Fatigue cracks have a starting point, and where they start we are usually able to say that for some reason a concentration of stress occurred. The particular condition which resulted in a concentration of stress is called a stress raiser.

For a number of years metallurgists have been investigating the effects of different kinds of stress raisers, and they have published much valuable data which would enable engineers and designers of machine equipment to avoid pitfalls which to the metallurgist are perfectly obvious. The metallurgist knows, for example, that if a keyway with a sharp corner is cut in a shaft, a stress raiser of major importance has been introduced, and sooner or later the shaft may develop a crack at a sharp corner of the keyway.

Sharp corners, abrupt changes in cross section, holes, notches, screw

(Please turn to page 60)

Cast iron at 1,000 diameters magnification. Fatigue crack has developed from a small irregularity in the wall of a graphite flake. The crack progressed by way of the graphite flake opposite the crack.

Tool steel at 3,500 diameters magnification. When water quenched to develop hardness, tool steel undergoes a volume change and small quenching cracks may develop.

Cast iron at 4,000 diameters magnification. Fatigue crack has developed from a small irregularity in the wall of a graphite flake.



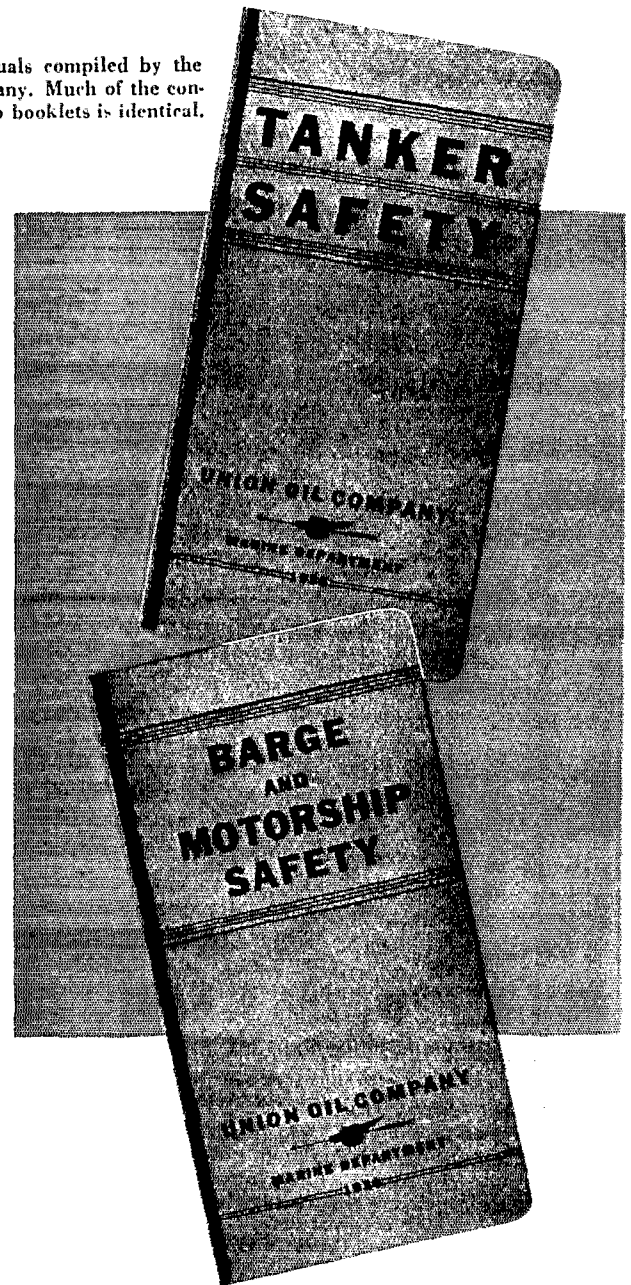
Two safety manuals compiled by the Union Oil Company. Much of the contents of these two booklets is identical.

It's Their SAFETY MANUAL

By **GEORGE F. PRUSSING**

Safety Engineer, Union Oil Company of California

Men of all ranks aided in the preparation of this guide to safe operation



THE great value of a safety manual comes from its making, rather than its use. As an example I offer the experience gained in the development of "Tanker Safety," a pictorial manual of safe operations on oil tankers.

From inception to completion in printed form, this was a 14-month project, employing nearly 500 seamen, licensed officers and shore supervisors. When the idea was sanctioned by the management, it was passed to the masters of a dozen tankers for comment and amplification of its preliminary outline of subjects.

"What would you want to put into

a manual if you had time to write one yourself?" was the question asked. For weeks the list grew as ship after ship sent in its comment.

Then came the culling out, to retain only the more important subjects. We said to the ships' masters, "We propose to show by pictures the right and wrong way of doing those routine jobs that have repeatedly caused injuries. We may also want to break down into elements some complex jobs to show by pictures the right steps to take." More weeks passed, and finally an outline was completed. So far only the supervisors and ships' masters were in the project.

Now it became necessary to go to the ships' safety committees, comprising masters and licensed officers, for details on each subject. "What, for example, is the best way to cast a heaving line, or parcel a hawser, or feel an engine bearing, or, for that matter, to slice an onion?"

At this point argument started and correspondence failed as a medium of exchange. Some one had to record the varying ideas of these men and make possible an interchange by means of photos. For this work a trained safety engineer, skilled in photography, was selected. He had never been to sea professionally but

was quite familiar with general petroleum safety practices.

Armed with camera, lighting equipment and a sheaf of letters from ships' committees, he set out on his travels up and down the Pacific coast. None of his trips was long but on each vessel he worked out a series of posed pictures to be taken at the first port, where quiet waters made photography possible. Then a jump to another vessel and another series of pictures.

At the end of several months each item of the scripts has been photographed and these pictures in turn had been passed back and forth between ships for comment and selection.

It was an interesting revelation to many of the tanker officers that they had never actually planned the sequence of acts involved in the routine performance of a job. Many were unable to tell how they would do a certain piece of work because they had never thought of it in detail but merely as an accomplished fact. The seamen who posed for nearly all of the pictures were green on the job as the result of a recent

strike. Many of them gained their first explicit instruction in the performance of their routine jobs while rehearsing for the manual pictures.

It is part of our regular program of safety to give each ship's master a monthly letter of three pages. The first page is a personal discussion of his job as a supervisor. It deals directly with his conduct of safety meetings of officers. During the progress of the manual this page was used for the discussion of ideas proposed or criticized by ships' masters and officers. The tone of this page of the letter is always frankly confidential—dealing with the ships' masters as a part of the management.

The second page is a detailed outline for the current month's safety meeting. Here is inserted enough material to elicit a free flow of discussion. Added subjects of discussion coming spontaneously from the group are easily fitted into such an outline because the topics are specific and provocative. During the making of the manual the questions raised lent themselves to group analysis by this method. Since the completion of the manual, the discussion has tended

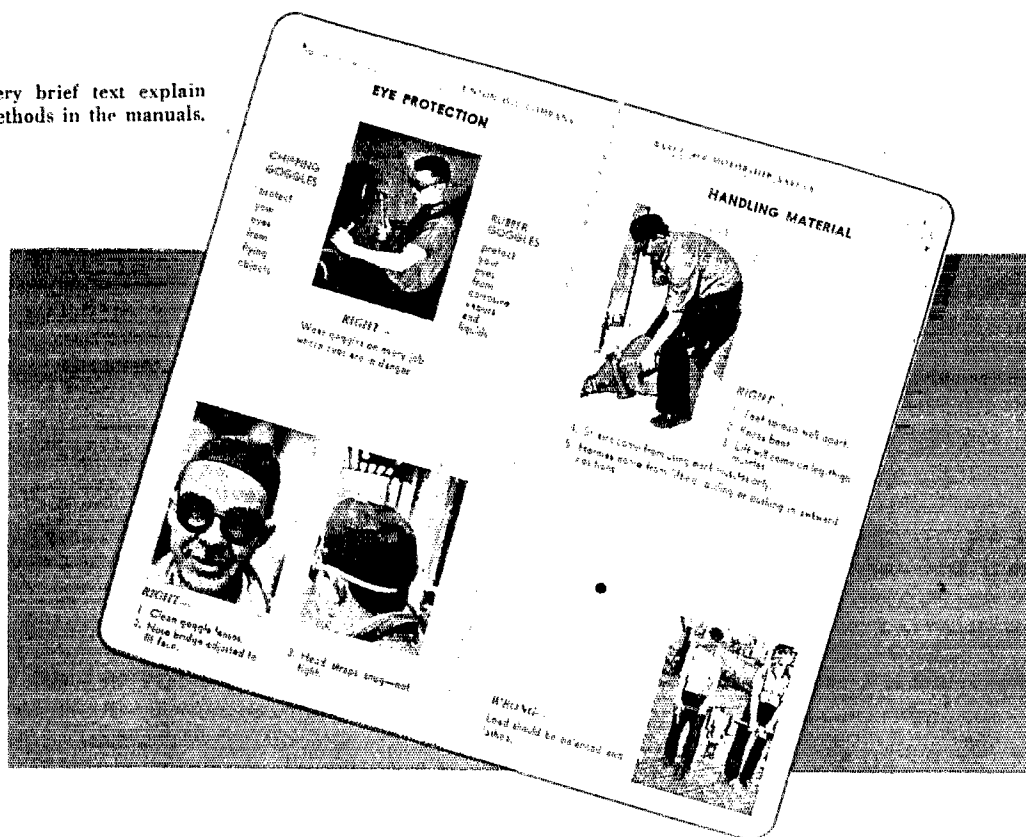
more toward methods of standardizing operations than toward the operations themselves.

The weakest link in the tanker routine has proved to be the instruction of the unlicensed personnel by the officers. Interest in that subject, which had been created by the making of the manual, has been maintained through the medium of the monthly outlines.

The third and last page of the monthly letter is a report form asking certain pertinent questions about the work of personnel instruction, about new ideas or methods and about "gripes" or criticisms. This page is filled out in pencil by the master and goes back to the marine department office. Each one is acknowledged personally.

For a year the making of the tanker manual was a project in safety for nearly 500 men. Once completed it became a text for constant review through the medium of the monthly safety meetings. Its cost was written off as part of the year's safety budget—a small expense when compared with the number of men served and the high average cost of marine injuries.

Pictures and very brief text explain the approved methods in the manuals.





This apparently healthy elm snapped off in a moderate wind.

shedding a couple of large branches. The naturally balanced structure may then continue growing, enduring wind and storms for many years.

However, the fungus which attacked the elm did not confine itself to the heartwood. Examination of the trunk showed that it had been weakened by decay all the way across from inner bark to inner bark, heartwood and sapwood indiscriminately. About an inch of sound wood was left on the west side of the trunk, and consequently the tree fell in that direction. The discolored wood, black lines of

How Sound Are Your Trees?

By MERTON HENRY

ARTHUR Denis Carin Le Sueur, the English arboriculturist, has said that the elm, in all probability, has caused more personal injury and property damage than any other tree. Large branches have been known to drop from elm trees without warning, even in still air, and the elm trees that have fallen on persons or buildings run into hundreds.

The 70-foot elm shown in the photographs stood until recently in the Fieldston section of New York City. Previously it had appeared to be in good health with luxuriant foliage and snug, uninjured bark. The only signs of trouble were a healed over frost crack, a trifling injury, and a small basal cavity one foot wide, two feet high, and four inches deep in a trunk 30 inches in diameter.

The cavity was on the side away from the sidewalk and so would not have been noticed by people passing. There was no fungus growth showing on the bark.

The tree did not have Dutch elm disease nor was it hollow. Yet it snapped off five feet from the ground in a moderate wind while, as is well

known, trees entirely hollow may stand and grow for a century.

A tree is made hollow by the activity of a fungus plant which consumes the heartwood without damag-



Decay within the trunk. The discolored wood, black lines of decay, and insect borings are clearly visible. The small callous roll formed in the short frost crack may be seen at the left. The sound wood is above it and slightly to the right.

ing the shell of sapwood around it. By the time the hollowing is completed the tree has often reduced the stress on its now weakened trunk by



This basal cavity aroused no suspicion of decay within the trunk.

decay, and insect borings are clearly visible in the photograph. The wood was not decayed above seven feet from the ground.

The condition of this tree could not have been determined by inspection of the crown foliage, or bark, or even of the cavity, the edges of which were well covered by a thick callous roll. However, the true condition could have been determined by borings in the trunk and by comparing the tree's behavior in a wind with the behavior of normal trees in the same region or as tabulated by arboriculturists.

This tree happened to be an elm, but decay is not confined to elms.

Was 1936 "Just Another Year?"

The Annual Report of the Managing Director,
National Safety Council



By WILLIAM H. CAMERON

AUTOBIOGRAPHY is the story of a life as the author sees it. This personal record is tremendously significant to the writer of the book, but it is peculiarly his point of view. Any one of a thousand students of the safety movement might give an interpretation of the 1936 record that differed from mine. But I do believe that even the casual observer would agree that there was never more activity or honest endeavor to conquer this complicated problem of accidents than in the year just closed.

1936 was significant for the growing interest in general or public safety. Accidents of all kinds stirred the temper of people; "they can and must be stopped" was the attitude of the public press and of every public and welfare agency. Moreover, there was more interest and controversy in 1936 about what must be done to stop accidents than in other years. There was more argument about speed and speed control than in any year since the advent of the automobile. More discussion developed on other factors in traffic accidents such as drunken driving, vehicular defects and highway deficiencies.

In the other fields, too, public interest in safety expressed itself in no uncertain terms. A series of aviation accidents at the close of the year demonstrated the need for continued concentration on air safety. There was much new legislation in 1936 relating to accidents of different types, their correction and compensation.

Perhaps it could be said that in 1935 there was an emotional surge at the horror of the accident situation. In 1936 there was a new feeling, I believe, expressed something like this: "If we can only decide on the pattern

for controlling accident situations we won't need to bother so much about the record. If we know how accidents happen and remove the causes we will certainly have fewer accidents."

To say that many thousands of employers and employees have maintained their safety activities in a remarkable degree, that our states, cities and towns have taken an increasing interest in street and highway, school and home safety, is to repeat an old story. The National Safety Council's greatest concern is whether it can maintain at white heat enough interest in *remedies* to insure higher standards of protection for all human beings.

The recorded deaths and injuries in 1936 do not show an over-all picture of widespread reductions. The upswing of business and the accompanying advance in travel made it unusually difficult to achieve net accident reductions. It is tremendously important to note, however, that in industrial, street and highway, school and other types of accidents, the organizations which are doing the well-

rounded, the continuous safety jobs are proving that it is possible to reduce accidents to a minimum. It became clearer in 1936 that accidents will never be controlled until we have a *systematic* method of approach. Haphazard safety is about to be recognized as no safety at all.

1936 certainly topped the previous activities of industrialists to stop accidents to workers inside and outside of the plant. The business men of the country are enlarging their safety programs; they are realizing more and more that a trained and valuable worker is worth protecting in his home and on the streets and highways as well as in the plant. Many intelligent employers are conducting employee-driver safety campaigns and are encouraging their workers and their families to observe the rules of safety twenty-four hours a day.

Our By-Laws provide that this report to members shall make detailed reference to the Council's activities and accomplishments during the year.

1. As in other years, I do not hesitate to say that a really significant accomplishment in 1936 was the maintenance of interest and activities among the thousands of members of the National Safety Council. We gratefully acknowledge the achievements of hundreds of organizations which have, among their own members and through cooperation with others, contributed to the advancement of the safety movement. This report could be filled with a list of the cooperative activities by national, state and local governmental departments, insurance companies, transportation companies, and others. The support of the National Congress in New Jersey, the Greater New York

I have an abiding faith in men, and the older I grow the greater is that faith. I believe most men want to do what is right when they know what right is, and that when they do wrong it is more apt to be because of their ignorance on that particular subject than because of any deliberate or wilful wish to do that which is wrong.

—Isaiah Hale, Safety Superintendent, Santa Fe System.

Safety Conference, the many other regional conferences throughout the country, and the thousands of meetings conducted by community safety councils, indicate that this search for the pattern and the sound method of accident prevention must be based on an interchange of experiences, as well as on legal compulsion supported by public opinion. Social welfare institutions do not recover from depression as quickly as some kinds of business, but 1936 showed a considerable advance in safety interest, and in money spent on accident prevention everywhere.

2. Every Council activity benefits American industry directly or indirectly. Therefore, from an industrial standpoint, it may be well to emphasize the increasing value of the improved NATIONAL SAFETY NEWS; the increased circulation of the SAFE WORKER; the new annual combined industrial News - Letters, together with the regular monthly issues; the Safety Calendar; the 63 types of safety posters distributed each month; the new and revised Safe Practices Pamphlets; the much improved and expanded annual report known as "Accident Facts," and the separate statistical study for 30 major industries. Six national trade safety contests, as well as the Employees' Steam Railroad Contest, visualized by the "Green Book," were carried through successfully. Altogether, 150 trophies and 60 certificates were awarded to the winners of these contests, and hundreds of medals were presented to persons saving lives through the prone pressure method of resuscitation. The industrial safety and health consultation services, and publicity through the national newspaper and magazine press, were maintained to the limit of the Council's resources and much time given to technical research, and the publication of results. The usual cooperation was given to the American Standards Association, to trade associations, engineering schools and colleges, to the federal and state governmental departments, and many others.

3. The record of progress extended in other directions. Our "Safety Instruction Cards"—so important in the technique of industrial safety—were distributed in tens of thousands of copies; safety engineers and others were provided a new pamphlet on "Speaking for Safety;" one of the Council's safety engineers visited and

Safety's Royal Patron



THE safety movement in Great Britain is honored by royal recognition, King George VI being patron of the National Safety First Association. While Duke of York, the king became keenly interested in the work of the Association and as royal patron he participated in many

of its meetings. Since his ascension to the throne he has retained his connection with the Association.

In the above photograph (taken while he was still Duke of York) the King is stopping to visit with a young patient while on an inspection trip through a London hospital.

prepared analytical reports on fourteen Federal Prisons.

4. The increasing interest of the public in safety has helped to bring the resources of the newspapers and magazines to our aid. An entirely new service for newspapers was prepared at great expense and has been used during the year by more than 1,200 papers. More extensive use of our information by the wire news services and closer contact with leading editorial writers throughout the country indicated a strengthening of our position as well as a growing sense of public interest in accident prevention.

5. Because street and highway accidents constitute our most difficult general or public accident problem today, the Council gave more of its time and spent more money on its responsibilities in this field than in any previous year. Through a grant of the Automobile Manufacturers Association and corollary business interests the budget of the Council was

considerably increased—making it possible to employ eight field representatives to organize safety councils, to cooperate in the public safety program generally, and to assist in various state activities for drivers' license law legislation. All of the general services for public safety established over years of trial and experiment were maintained, including the enlargement and expansion of the Council's monthly magazine, PUBLIC SAFETY. Research and promotional literature were distributed generously on state drivers' license laws; essential statistics were prepared for use in many campaigns; the commercial fleet contests were promoted through hundreds of company members; the Fifth Annual Inter-City and Inter-State National Traffic Safety Contest was carried on even more vigorously than previous competitions, and the recipients of prizes in the Fourth Contest participated in a luncheon meeting in New York which brought

(Please turn to page 64)

Weak Spots in the Safety Program

By J. F. KOLB

Director, Department of Industrial Relations, National Metal Trades Association, Chicago

Defects in company policies, practices, equipment and personnel must be corrected before safety work can be effective. Here are a few common causes of failure

THE company which is in earnest about reducing accidents must base its safety program on a comprehensive study of company policies, practices, equipment and personnel. Some of these factors may require adjustment to conform to desirable standards.

Safety programs have been known to fail because company policies were:

1. Inadequate and perhaps treated as matters of expediency.
2. Confusing to line or staff officers because authority and responsibility were not definitely allocated.
3. Not transmitted to employees in easily understood language.

Perhaps a subordinate officer who is interested in enlarging his sphere of influence, hoping to attract the attention of his superiors, has been permitted to work unassisted in developing the safety program. In many such cases lack of preparation has prevented a man from understanding the methods and objectives of industrial accident prevention. Further, uncertainty of position and official cooperation and also foreman reprisal have seriously retarded many programs.

The effectiveness of a safety program is in direct proportion to the interest, support, and leadership of the plant management. Therefore, the manager in cooperation with his staff should develop policies and operating plans that conform to standard practice. Their administration should be delegated to competent personnel.

The policies and plans should in-

dicate the extent of the program, allocate responsibility and define authority. The personnel should be impressed with the importance of safety service to the company and to each employee.

Employees often disregard safety rules because the orders have been passed on to them in a disparaging manner. The impression conveyed is that they can ignore these rules with impunity as far as their immediate superior is concerned. Occasionally clashes have occurred between production foremen, maintenance foremen and the safety director when the machine or the mechanical safeguarding was out of order or the operating practice was unsafe.

In some cases undue interest in maximum production has caused foremen to remove guards deliberately or permit employees to do so.

In other cases they have ordered employees to operate machines which were known to be dangerously defective. Sometimes those in charge of safety, under pressure from certain plant officials, have permitted the operation of hazardous equipment until the results of neglect or insubordination were brought home to the management by a severe accident.

If employees are permitted or encouraged to discard protective devices where the hazard seems slight, they will probably go a step farther and carry the neglect into more hazardous fields—until a major accident occurs.

Regardless of the amount of responsibility reserved to the manager, the company's line and staff organizations should be fully instructed regarding their duties. Periodically some major official should check up on their performance to be certain that their efforts are properly coordinated and producing anticipated results.

Since the line organization is largely responsible for action, and the staff organization for gathering information and assisting the line in disseminating it, we can easily determine any officer's function and responsibility in the safety program. The value of the contacts established and maintained by the line and staff officers in this field will be measurable in terms of red or black accounting and of employee satisfaction or discontent.

The information prepared by the staff should be transmitted unimpaired by the line officers so that employees will accept it in the right manner and make the best possible use of it. When inadequate guarding or defective equipment is reported, the line officers should cooperate fully in

The manager in cooperation with his staff should develop policies and operating plans that conform to standard practice.





Foremen sometimes hesitate to instruct journeymen, fearing that such instruction may be resented.

guarding or rehabilitating the equipment before using it again. They should also insist on the correct use of such equipment.

Further, good management - employee relations help in locating and correcting hazards before men or equipment are damaged. Where effort is properly coordinated employees will be so conscious of the need for safety that they will refuse to operate unsafe equipment or take hazardous short cuts in operation. And an enlightened management will not expect employees to take unnecessary risks.

The increasing mechanization of industry and the employment of large numbers of men of limited training and experience has multiplied industrial hazards. Although some of our newer machine tools are effectively guarded, much of the older equipment is still in use and there is much more mechanical equipment generally. It is evident that our safety activities will have to be intensified if we are to reduce our accident ratios or even keep them at the present level.

Regular and rigorous inspection of equipment will uncover many hazards that can be corrected by mechanical treatment. In many cases these reports can be reinforced by periodic analyses of plant experience, including workmen's compensation and other cases classified as to type, cause, place of occurrence, loss of time, severity, and recurrence. Sometimes a combination of these studies will indicate that the guarding is sub-

standard. Such reports may not indicate the solution, but they will at least direct attention to a problem that must be solved.

Management should take the initiative in promoting these studies. It is not enough to depend upon the reports of the insurance and state inspectors.

Too many accident prevention programs depend on the fear appeal rather than on scientific job training. Perhaps we will never be able to dispense with the fear factor, but its use can be reduced by giving each employee thorough instruction and adequate supervision.

Foremen should receive special instruction regarding the supervision of operators of hazardous equipment. Foremen in turn should take every possible precaution in supervising such employees to make sure that

Undue interest in maximum production has caused foremen to remove guards deliberately or encourage employees to do so.

protective devices are used, even when they are needed for only a few minutes. There is an even larger field for the foreman in instructing workers in correct operating methods.

The most effective fundamental safeguard is training the employee so that he will do the right thing in the right way at the right time. This educational program should include foremen, journeymen, specialists and apprentices. It should be based on the best standards of performance to obtain maximum production with a minimum expenditure of energy and the minimum accident hazard.

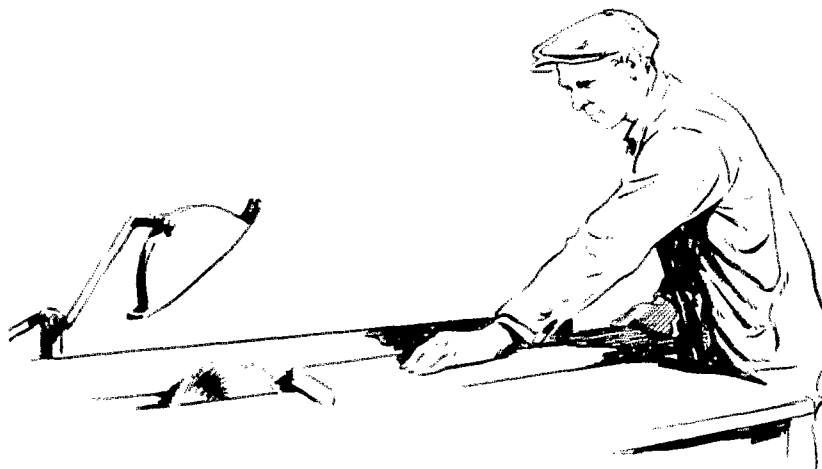
The first step should be a more thorough training of foremen in teaching methods. Few foremen understand the fundamentals of teaching. In many cases they do not understand learning difficulty, the selection and organization of subject matter, preparation and presentation, nor the methods of testing performance.

In the past the instruction of journeymen by foremen has been neglected for several reasons:

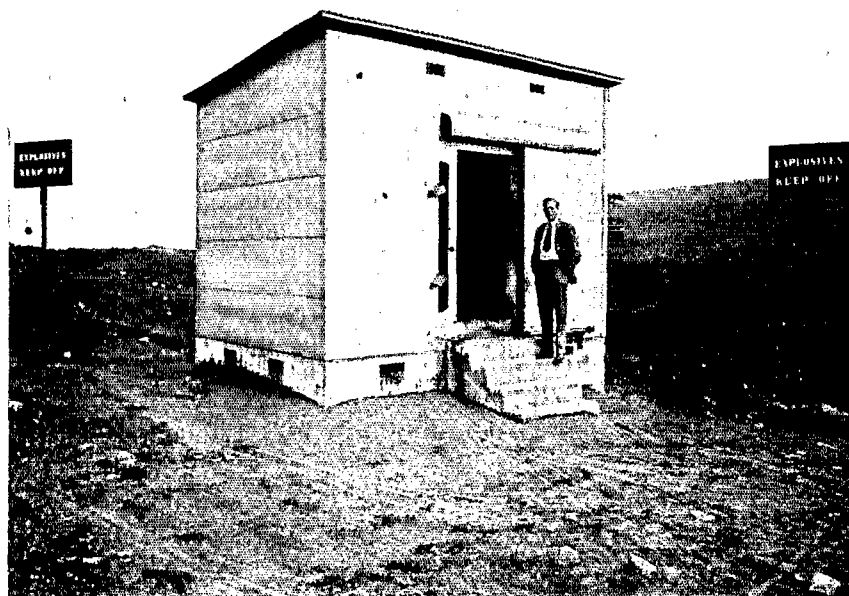
1. Foremen in many cases have assumed that the men had already been properly trained.
2. Foremen lacked ability to impart instruction in certain phases of the work they supervised, and therefore tried to avoid this responsibility.
3. Foremen have been reluctant to attempt instruction of journeymen who they thought might resent such instruction.

Even though many of these men were fairly well trained in the beginning, some have lapsed into inefficient habits of work. If the foreman feels that he is not qualified to instruct men, he should start learning. Finally, a foreman should never hesitate to give instruction in the belief that it might be resented.

(Please turn to page 67)



Bureau of Mines type of lean-cement-mortar explosives magazine at Locust Gap Colliery, Philadelphia and Reading Coal & Iron Company.



Research Develops Safer Blasting Practices

By S. P. HOWELL* and B. L. LUBELSKY†

IN 1930 the Philadelphia and Reading Coal and Iron Company and the Bureau of Mines began a cooperative study of the handling and use of explosives in the mines of the company, supplemented by field tests, principally at the company testing grounds. The investigation, which continued intermittently for about two years, consisted of a detailed underground study of the actual methods of blasting and handling explosives.

At the time the investigation was started, the company had recently substituted all-electric firing for blasting cap and fuse. The company had also begun to substitute the permissible type of explosive, replacing about 2,800,000 pounds per year of a low-grade dynamite. None of this type of explosive was used in 1933 or subsequently. At present, all explosives used for blasting coal in the anthracite mines of this company are permissible.

The first obvious problems were

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*Explosives Engineer, U. S. Bureau of Mines, Safety Division, Health and Safety Branch, Pittsburgh, Pa.
†Explosives Engineer, Philadelphia and Reading Coal and Iron Co., Pottsville, Pa.

(1) Burning explosives in the bore hole; (2) Storage; (3) Electric blasting.

Burning explosives in the bore hole was one of the most common complaints. It was the known cause of many small gas ignitions, and at least a probable cause of many small but expensive mine fires.

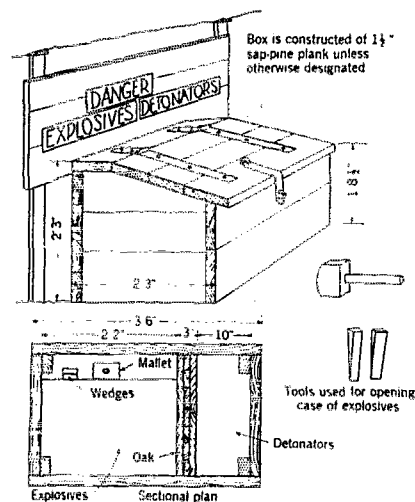
Explosives burning in the bore hole could be traced to several causes: (1) Material which was not sensitive enough to detonate after storage under average conditions in the mine magazine and in underground storage and handling; (2) Material normally sensitive but rendered insensitive by bad storage conditions; (3) Material which was sufficiently sensitive at time of use but failed to propagate because of improper method of charging the bore hole, allowing considerable inert material to get between two cartridges.

Storage

Each brand of permissible explosive was subjected to a storage test in one of the storage magazines. Halved cartridge gap tests were made on each sample when placed in storage. This would be several days after

the known date of manufacture. Each sample was tested weekly thereafter, both normal and crimped end gap tests being made.

It is necessary to understand the difference between these tests. In the normal test, the cartridge is halved and the two fresh ends are faced together. In this test a propagation (or



Sketch showing construction of underground storage box for explosives and detonators.

extension) through the air gap essentially indicates the sensitiveness of the explosive in the center of the cartridge.

In the crimped end test, propagation takes place through the crimped ends instead of through the cut ends. The crimped end test is the important practical one for several reasons. Cartridges in the bore hole are propagated through the crimps, so that any test which does not take the crimps into account is incomplete. The material at each crimp consists of folds of paper and paraffin; two crimps face each other and offer considerable interference to propagation, which is not measurable and in no way indicated by the normal gap test.

It is the opinion of the authors that the crimped-end test is the only informative one for the consumer. It is true that the crimped end test gives

varied and often erratic results regarding the gap through which different samples of the same explosive can be propagated, but this very fact is essential to our knowledge of explosives because the explosive in the bore hole must propagate through the crimped ends, and the minimum gap must be sufficient to insure propagation under all reasonable conditions.

The fall in sensitiveness in the crimped-end test was very pronounced after three months, whereas the fall in the normal gap test was very slow.

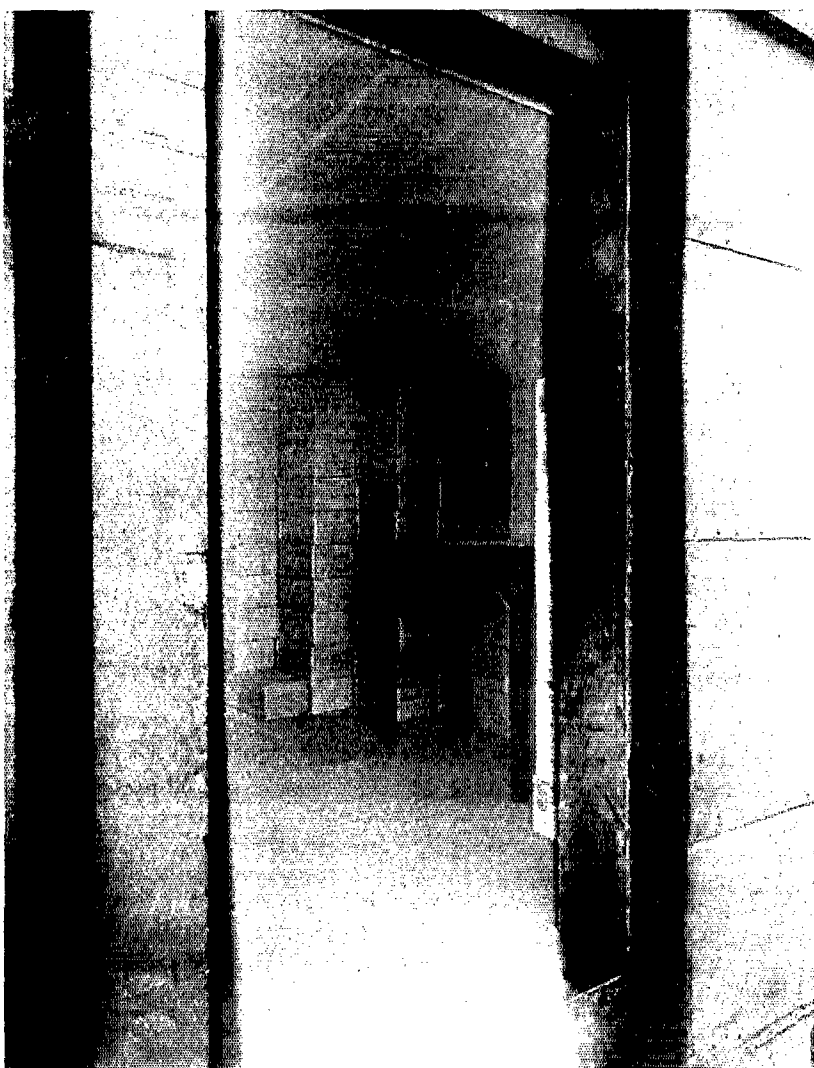
As a result of this information, a general ruling was made that no material would be sent underground if more than three months had elapsed from the date of manufacture. This is controlled by a monthly magazine inventory. The colliery storekeepers report the brands of permissibles and

grades of dynamite in each magazine and the number of cases of each code marking. The storekeepers have no key to the codes but simply send in their report to the explosives engineer who furnishes them with a control sheet showing which codes are to be moved first.

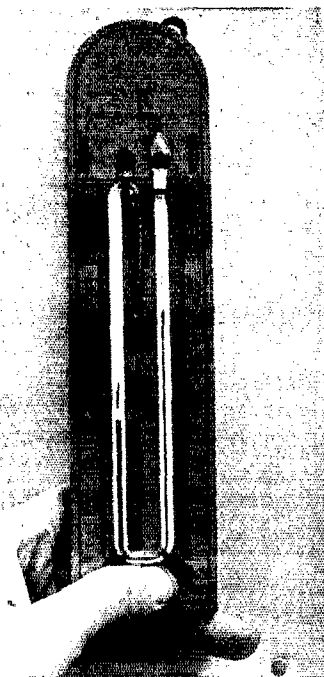
When any code gets beyond the three-month limit, it may be ordered out of the magazine and used on a stripping job where it offers no hazard because of the large diameter hole and its general use in the overburden. At other times small quantities of explosives have been destroyed to prevent their use underground.

The exclusive use of permissible explosives in coal and control of sensitiveness by the crimped-end, halved cartridge gap test has resulted in the almost complete elimination of reports of explosives burning in holes, fewer gas ignitions attributed to explosives, and consequently a substantial reduction in the hazard of mine fires.

Attention was given the temperature at which both permissible explosives and dynamites were stored. The standard storage magazine was a sheet-iron-covered building with four-inch sand-filled walls; in the summer the temperature may go as high as 120° F. and in winter as low as -12° F. (*Please turn to page 70*)



Interior of explosives magazine showing cases of high explosives and table used for clerical work in recording incoming and outgoing explosives.



A minimum-maximum thermometer used in the magazine showing the maximum temperature obtained during the summer of 1935 (85 deg. F.)

Hazard Underfoot



Where smooth, impervious floors are required for sanitary reasons, salt reduces the slipping hazard created by moisture and grease.

By JOHN R. BYERLY

Safety Supervisor, Armour & Co., Omaha, Neb.

SLIPPING accidents are difficult to control in a meat packing plant. The processing of highly perishable meat products involves working conditions and regulations not found in other industries. In the manufacturing processes large quantities of water are used, chiefly for sanitary purposes. Refrigerated rooms are necessary to preserve the products, and much machinery, moving equipment and a variety of utensils are employed.

In handling the various products it is nearly impossible to prevent small particles of fat from the products and drops of oil from the equipment falling to the floor and creating a slippery condition. Some of the fat and oil particles adhere to the employees' footwear and the wheels of moving equipment and are transferred to the stairways and elevator cage floors. Thus a slippery condition in one place will be carried to other sections of the plant if not immediately corrected.

Our floors and stairways are constructed of wood, steel, cement, brick

and asphalt, so we must deal with five different surfaces. Platforms are of steel, cement, wood and asphalt. Ladders of several types are in service.

Footwear worn by employees varies with the occupations, including rubber boots and bootees, leather work shoes and dress shoes. Of our two thousand employees, approximately fifteen per cent are women.

The equipment consists of many types of hand and power operated trucks, conveyors, and elevators.

The following examples will illustrate some types of slipping accidents.

An employee in our beef killing department was assigned the duties of sawing briskets after the floorman had removed the hides and feet. In walking from one animal to another he slipped and fell, and two fingers of his right hand were almost severed by coming in contact with the teeth of a saw. On investigating the accident it was found that the floor was wet and greasy and small scraps cut

from the animals during the dressing operations were scattered about.

The man was not required to work at an excessive speed. In fact, he had stopped to talk with a fellow worker. Then in hurrying to his position he slipped on a scrap of meat and fell to the floor. Haste to make up for lost time was a contributing cause. The floor is cleaned many times during each day's operations.

On our killing floors it was found that some employees had not equipped themselves with knife pouches or knife boxes for protection against cuts when moving from one position to another. Some of them sharpened their knives on steels or stones while walking to and fro in the course of their work. Many serious knife cuts resulted from this practice.

These employees are now required to place their knives in containers and are not allowed to sharpen them while walking. In addition, wherever possible the knife has a guard attached to the handle. Metal arm and finger protectors are provided. Heavy aprons are worn, also safety shoes and hard hats.

Another serious slipping accident, this one resulting in a fatality, oc-

curred in our glue works. An employee tried to enter a moving elevator cage, lost his balance and slipped from the cage floor into the pit. This accident made us realize that it was necessary to make our elevator shaftways foolproof. Each landing had been equipped with gates but we removed them and installed solid wooden doors that could be opened only by the elevator operator after the cage had stopped at the landing.

In many so-called slipping accidents we found other factors involved. Employees contract colds because of different temperatures in the buildings. These ailments affect various parts of the body, and sometimes an employee is attacked by pain when lifting a heavy object or pulling a truck. Quite honestly they attribute the pain to slipping, but often lumbago or some other physical condition is the real cause.

Housekeeping

We all know that good housekeeping is an aid to any business as well as an indispensable factor in accident prevention. So we try to keep our floors, walls and ceilings free from dust, grease, oil, water, ice and other items that do not belong there.

As salt is used extensively in the curing of meats and for refrigeration, it is always available to sprinkle over greasy or wet surfaces to prevent slipping. Of course there are other materials that can be used effectively in many industries but a packing plant cannot use any material or equipment that cannot be thoroughly cleaned after the day's operations.

In cleaning floors we use steam, hot water, soda ash, caustic soda, caustic soaps and tri-sodium phosphate. If properly used, these substances are quite effective in removing dirt and slippery coatings from most surfaces.

Footwear must be suitable for working conditions. Employees working in departments where the floor is unavoidably wet will wear rubber boots or bootees, while those in dry departments will naturally wear leather shoes. However, rubber or composition rubber soles and heels on all types of footwear have been found to create a greater slipping hazard than leather.

The condition of the footwear is also important in the prevention of slipping. In many cases the soles and

heels have been badly worn. In other cases new shoes with too rigid soles have been at fault. High heels and those capped with rubber or metal protection plates have been responsible for many falls.

Then there is the physical condition of the feet and ankles to be considered. Deformities, weak ankles, corns, bunions and callouses are added hazards when the surface underfoot is slippery.

Stairways

Stairways should always be of uniform height and pitch, with good types of treads across the edge of each step. If the stairway is of cement, a coating of carborundum or emery dust is beneficial. Metal or grooved metal treads prevent wear but some types become smooth through constant use and should be replaced or roughed up.

On short, narrow stairways hand railings are often considered unnecessary, but our experience has taught us to install hand rails on all stairways and platforms, regardless of size.

There are many other ways in which persons have been injured by slipping. For example: carrying bundles in both arms, running or jumping, pulling or pushing loads too heavy for the condition of the surface, horseplay, moving heavy objects, slipping off ladders, using makeshift ladders, and day dreaming. Defective vision also makes a worker less sure of his step and less likely to see a slippery spot on the floor.

A common error in many establishments is the failure of employees to

lubricate trucks and equipment properly. If the employees will take time to lubricate properly before using, the hazards of slipping while pushing or pulling trucks will be reduced and the life of the equipment will be increased.

Each month we hold regular monthly safety meetings for supervisors in our plant. Hazards are reported and accidents analyzed. We have an employees representation plan composed of hourly paid and salaried employees. Both the conference board, or main group, and the divisional committee give safety a prominent place in their programs. A safety committee of two hourly paid and two management representatives investigates all accidents and recommends corrections. Our accident review board has been very helpful for the reason that employees who have been injured feel reluctant and perhaps somewhat ashamed when asked to explain before this group the reasons for injuries.

Fraudulent Claims

Once in a while a dishonest employee will claim an injury, frequently attributed to slipping, which did not occur as stated. A recent case will illustrate this point. The stairways in our plant are watched closely for loose objects but some careless person dropped several skewers on the stairway and allowed them to remain there. These are small wooden objects the size and shape of lead pencils which are used to hold meat together.

Another employee stepped on one of these skewers and fell. He did not report the incident but next morning he appeared at the first aid room with a broken collar bone. He produced a witness who had seen him fall on the stairway. The fact that he did not report this injury aroused our suspicion. Investigation showed that the injured employee had actually fallen on the stairway but had not been injured by the fall. The night before he had visited one of the city's amusement parks and in attempting to impress his friends had tried to balance himself on top of a children's merry-go-round. He fell against a steel side brace causing injuries to his shoulder.

Seldom do we have experiences such as this but the incident shows the importance of thorough investigation and taking absolutely nothing for granted.

WILLIE EVERLEARN



Campaign Focuses on Drivers' License Laws

Newspapers lend support to Council's campaign for stricter control of motoring

WITH new broadsides on drivers' license legislation issued by the National Safety Council, and with interested groups in various states calling to the attention of their legislatures the need of driver control, the Five-Year Campaign to reduce automobile fatalities 35 per cent or more by the end of 1940 goes into its second year with quickened tempo.

Never before has the prospect seemed so bright for legislation that would place a check on indiscriminate and irresponsible operation of the automobile. Governors of many states in their messages to the legislatures, now in session, have definitely expressed their sentiments in favor of standard drivers' license laws.

In many quarters newspapers are espousing the passage of a standard law, largely as the result of a new service for editors recently issued by the Council's Publicity Division. This service, a 16-page pamphlet, contains stories explaining the standard law, stories describing its operation in states where it is now in effect, and stories which may be localized by the newspapers to tie up with the community news angle.

In addition to this the Council has published, in cooperation with the General Federation of Women's Clubs, a pamphlet on "Campaigning for Drivers' License—Women's Part in the Program." This eight-page booklet, appraising the standard law and outlining a tentative campaign to promote such legislation, is being issued by the Federation through its branches throughout the country. The Council is also issuing copies through its contact or field men in various states. Copies may also be obtained directly from the Council.

One of the most important of the recent brochures is a four-page pamphlet on "The Drivers' License Law—A Protection for Rural Areas." In past years rural opposition has been one of the foremost obstacles to

the passage of driver control legislation. This pamphlet explains the need of such legislation from the viewpoint of the farmer, pointing out that automobile fatalities are increasing with alarming rapidity on the rural highway and that a proportionate number of both drivers and victims are rural residents. The booklet clears up some of the misunderstanding which has hitherto prevailed regarding the application of the drivers' license law to temporary operation of farm machinery on the highways, age limits of drivers, and fees and costs.

It calls attention to the approval of the standard law in a resolution adopted at the recent 18th Annual Convention of the American Farm Bureau Federation at Pasadena, Calif., which read: "We also recommend that state federations support only state drivers' license laws which provide adequate measures to insure public safety and which are not revenue producing measures."

Governors who have definitely expressed themselves in favor of a standard drivers' license law include

THREE SERIOUS VIOLATIONS



Cartoons add strength to the support given by newspapers.

those of Texas, Mississippi, Oklahoma, Indiana, Maine, Kansas, Tennessee, Nebraska, Illinois and Wyoming.

In Maine license legislation is being drafted as part of a movement started by the Main Highway Safety Campaign. Possible revision of other highway safety legislation is also being considered. A survey of court records is being made to compare the severity of sentences for killing game out of season with the severity of sentences for human deaths resulting from vehicle law violations.

In New York, where a standard law is in effect, the governor's message to the legislature contained a recommendation for compulsory state motor vehicle inspection, legislative investigation of proposed compulsory automobile insurance, or an automobile accident compensation plan as an alternative.

In Florida a bill which incorporates a financial responsibility measure has been drafted, and it is now being analyzed by the Council.

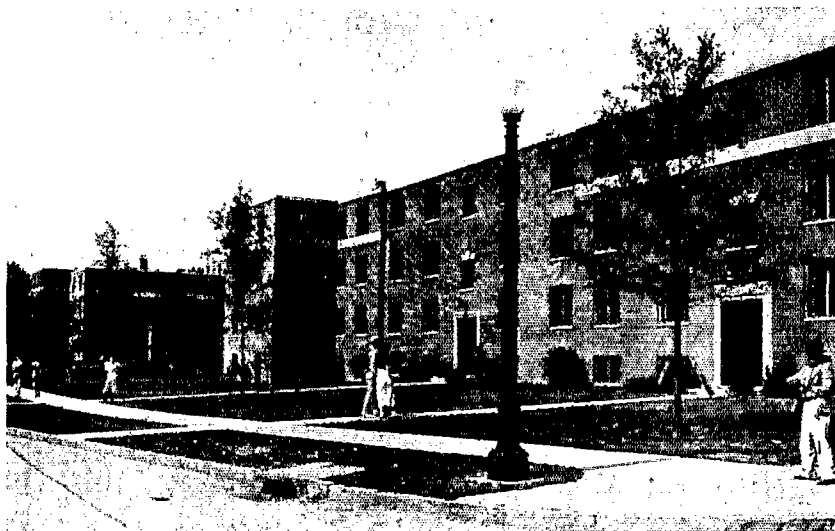
In Indiana both the retiring and the incoming governors have expressed their approval of a highway safety program including a standard drivers' license law. The executive committee of the American Legion for Indiana has adopted a resolution calling upon the legislature to "put teeth" into the drivers' license law.

Similar campaigning is being carried on in many other states. Legislatures are now in session in 42 states. Twenty-three of these have either no license law or a measure which is substandard.

THE HANDWRITING ON THE WALL



Mats of cartoons are furnished as a part of the Council's service to newspapers.



A section of PWA's new Techwood low-rent housing in Atlanta. Formerly a slum, the 11-block area is now marked by trim buildings around grassy yards and recreation spaces. Safety for the occupants has received unusually careful attention in the construction of these buildings.

Home Hazards Avoided in Housing Project

By GUY D. MAYGER

*Chief of the Branch of Plans and Specifications,
Housing Division, Public Works Administration*

UNCLE SAM is making the American home safe . . . at least, he is making 25,000 of them as foolproof as modern science can devise!

Mindful that fatal domestic accidents now take a toll second only to the 36,100 yearly automobile deaths, PWA in constructing 50 low-rent housing projects is leaving no stone unturned to eliminate as many hazards as possible. There were 31,500 lives lost last year by accidents in the home!

As a decided contrast to the old slum-type dwelling, all project buildings will be of fire-resisting construction, with exterior walls, floors, roofs and interior partitions all of incombustible materials. There will be no long, dark hallways, insidious fire hazards in the old tenement house, where hallways become cluttered with refuse and invested with vermin. Instead, each apartment will open directly off the stairs, which will form fire-safe towers.

The Housing Division is carrying out very definite improvements in stairways. Steep stairs are avoided and stair landings are broad. Complying with the recommendations of the U. S. Bureau of Standards, the

stair slope is between 30 and 38 degrees, the steps from 7 to 7½ inches high and the steel-protected treads 10 or 11 inches wide. Every flight will have handrails and will be well lighted.

Waste from apartments will be disposed of through convenient openings in the wall to the incinerator below, thus relegating the obsolete "dumb-waiter" to the distant past.

Every dwelling unit in the project will be equipped with the latest electrical and plumbing devices designed to avoid the dangers lurking in every home.

According to the National Safety Council, the bathroom is the scene of more than its share of serious injuries. Slipping as one gets in or out of the tub is the cause of many bad falls. So each tub is supplied with a large-sized grab rail placed securely at the side of the tub. Fixtures will be unbreakable and chrome-plated.

Perhaps the newest precaution is the arrangement which prevents back syphonage—the danger of waste syphoning back into the water pipes. It was not until amoebic dysentery broke out in Chicago during the Century of Progress as a result of im-

proper plumbing that the full importance of this precaution became recognized.

Back syphonage cannot occur when the supply faucet is above the rim of the lavatory or tub. Therefore, Housing Division standards call for faucets raised above the rim of the fixtures. Where flush valves are used, vacuum breakers are installed to prevent back syphonage.

All bathroom chain pull-cords will have insulating links so that wet hands cannot make an electrical contact through the chain. The frequency of such accidents is well known, but often the proper precautions are not taken.

Persons who will live in these projects need have no worries about replacing blown-out electrical fuses. Each apartment or house is to have an automatic circuit breaker to prevent overloading. The current will be automatically restored as soon as any overload is removed.

Neither will housewives in the all-electric developments have to bother their heads on washday about the water in the wash boilers evaporating. There are to be automatic controls on the electric grills, which turn off the electricity after a limited time.

Federal Aid Eliminates 1,032 Grade Crossings

GRADE crossing projects estimated to cost \$27,157,215 had been completed on October 31, 1936, under the federal government's work program, according to a recent report issued by the Bureau of Public Roads.

Projects amounting to \$113,915,136 were under way and others totaling \$24,185,076 had been approved for construction on that date. Completed projects included 510 grade crossings eliminated by separation or relocation, 64 grade crossings reconstructed, and 52 grade crossings protected by signals or otherwise. The projects under construction included 1,032 crossing eliminations.

Taming the Embossing Press

"IT can't be guarded."
This has been said in the past of many machines which now bear reliable mechanical guards, thanks to the spread of organized safety work.

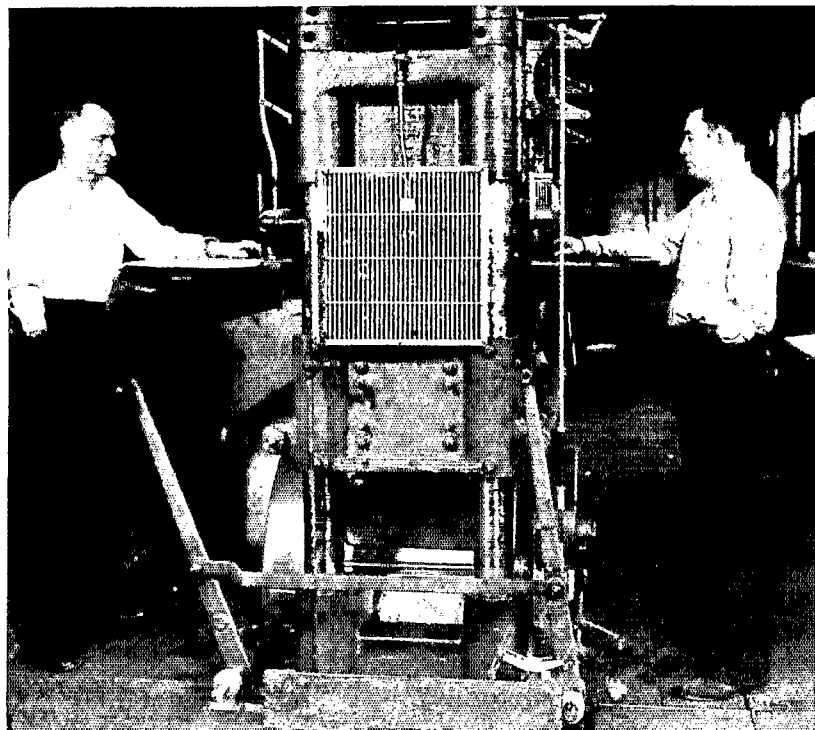
Now one more machine which resisted safeguarding—a leather embossing machine—may be operated safely. The new guard, which will save the fingers and hands of scores of leather workers, has been announced by the Travelers Insurance Company. The basic patents are being given to the public.

The device, invented by O. D. Bayrer, Travelers engineer, was demonstrated successfully last fall before state labor and insurance officials at the Steinhart Leather Company's plant in Newark, N. J. It has been in operation since last July.

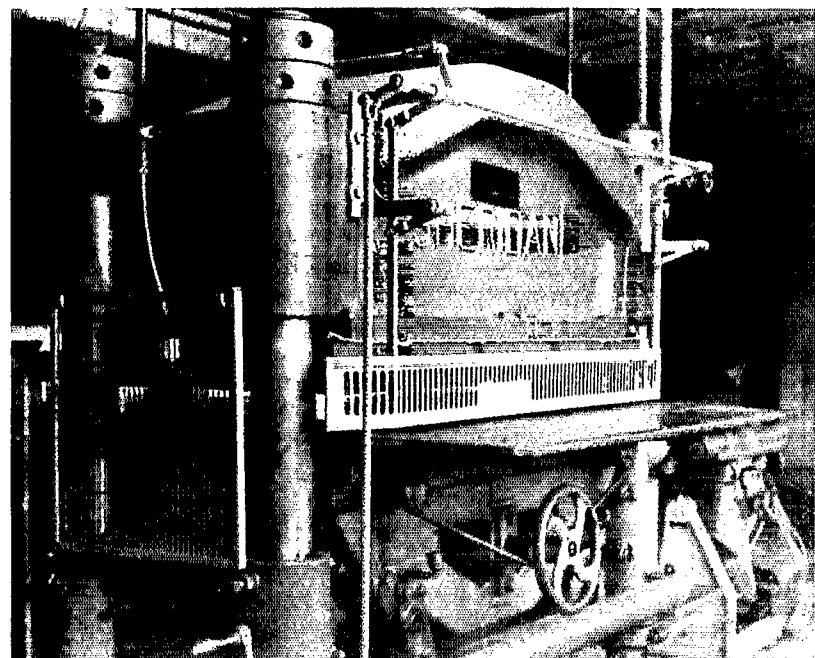
The embossing machine, in operation, brings together two massive steel plates under many tons' pressure, and if a workman is slow in removing his hand after feeding the machine, the member is amputated.

The new guard consists of a gate controlled by a master cam mounted on the bull-gear shaft. The gate is synchronized with the stroke of the platen, so that when the platen is at the bottom of its stroke, and the press is "open," the operator can insert or remove material to be embossed. As the platen is about to begin its upward stroke, the gate descends to a point within one-quarter of an inch of the surface of the working table. If the operator's hand is on the working table, the gate will come in contact with it and will be prevented from closing. This, in turn, will cause the machine to be stopped before any injurious pressure can be applied.

When the gate reaches its lowermost
(Please turn to page 66)



These men present indisputable evidence that embossing machines inflict mutilating injuries. Note the method of mounting the front and rear gate units. Also clearly shown is the vertical tube extending down to the control mechanism. A coil spring mounted on this tube acts as a compensator to reduce the pressure on the operator's fingers when the gates close. The safety device will work without the spring.

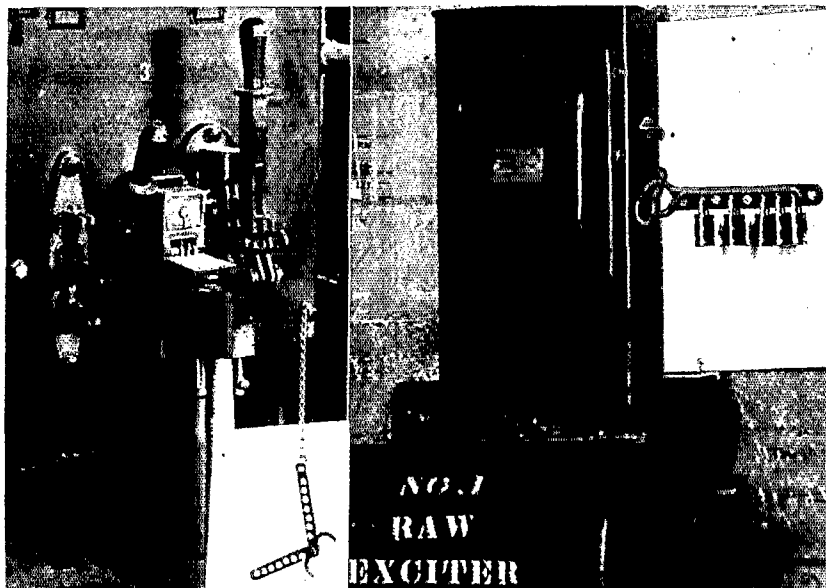


The gate guard has descended close to the feeding table, blocking entry to the danger zone. Any obstruction that prevents the gate closing to the predetermined position will shut off the machine, preventing injurious pressure. A pressure of only a few ounces against the operator's hand will trip the safety device. The overhead connecting rod controls a duplicate gate mounted on the other side of the machine, protecting both operators. End shields prevent reaching into the danger zone from this point. Steam pipes are arranged to minimize the possibility of accidental contact.



THE SAFETY EXCHANGE

A Round Table in Print



Safety Locking Tongs Protect Workmen

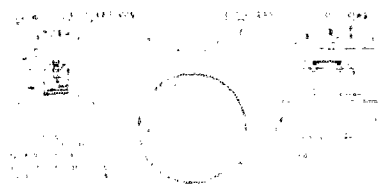
These safety locking tongs provide protection for any number of men working on a machine. Sometimes it is necessary for as many as 12 or 15 men to work on machinery such as kilns, coolers and elevators, and another pair of tongs can be inserted in one of the holes on the handle of the first pair, and so on, indefinitely.

Padlocks carried by the individual workers are inserted through the holes in the handles.

The tongs are about 9 inches long, weigh approximately 14 ounces, and are adaptable to any switch, being attached by chains to all locations where it may be necessary to use them. They were developed by W. E. Bell of the Grinding Department of the Southwestern Portland Cement Co., Victorville, Calif.

Safety Platform Prevents Slipping

Sometimes the large bearing caps of heavy machinery and the machinery itself near the caps are so slippery



with oil that a man might easily slip and fall, incurring serious injuries. To eliminate this hazard the General Petroleum Corporation of California has devised a safety platform consisting of a short plank laid on top of the bearing caps and fastened to the bearing studs by bolts.

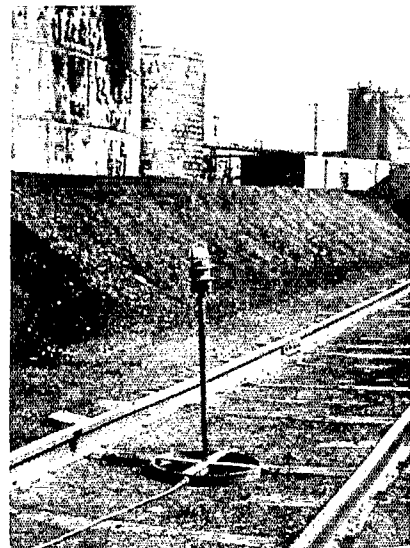
It is recommended that two planks be used, one for each bearing cap on the side where work is being done. The accompanying sketch gives details of the platform.

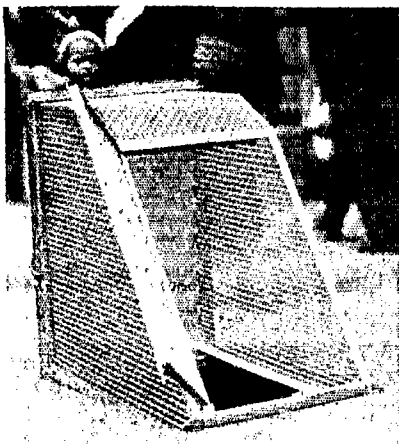
Pay Checks Carry Safety Messages

All workers of the Graver Tank and Manufacturing Co. are paid by check, and on the back of each check is printed a safety slogan. The job is run through an addressograph machine with a red ribbon. As an employee endorses his check, he signs his name right under the slogan. A different slogan is used each payday, and there is no doubt that each worker sees and reads the short safety message.

Extension Stop Light For Railroad Yard

Regulations governing use of stop signs on yard railroad tracks require a red light placed on such signs at night. Ordinarily temporary lights are installed, but these may be dangerous, especially in a gaseous atmosphere. The light illustrated below is vapor-proof and can be installed quickly. It is used by the Standard Oil Company of Indiana.





Manhole Guards Have Safety Entrance

The manhole guard illustrated can be kept in place the entire time the manhole cover is off. One side is hinged and can be opened to serve as an entrance for the men who must go into the manhole. The angle iron frame extends at the base into the manhole.

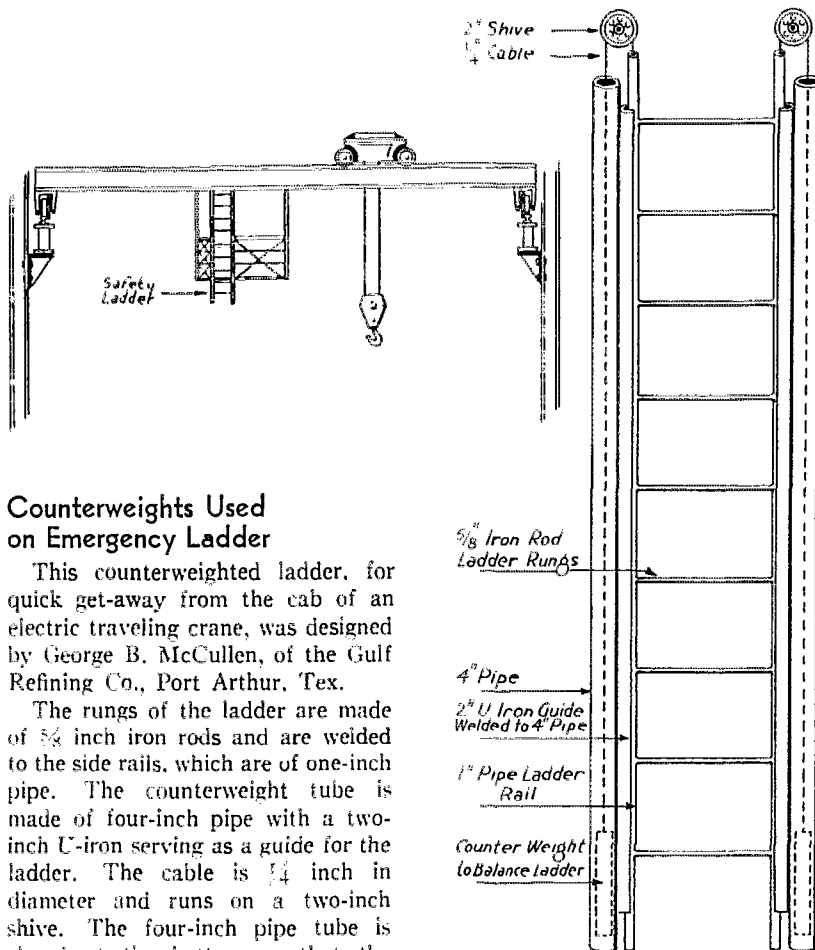
When men are working below, red and white safety flags are hung from the entrance.

Dejected Clock An Accident Reminder

An electric clock is hung in the department having the most severe injury in the past month at the Bendix Products Corporation plant at South Bend, Ind. A printed description of the accident with the injured man's name and cause of injury is placed alongside. The clock, always an attraction, serves as a reminder of the injury and creates discussion which helps to prevent others. It also spurs the foreman on to greater safety efforts, since he is compelled to answer all questions that may be asked and explain the accident.



The ideas presented in the SAFETY EXCHANGE have proved helpful. If you have developed some useful device or method, send in a description, with illustration, if possible. Devices known to be available commercially are not included



Counterweights Used on Emergency Ladder

This counterweighted ladder, for quick get-away from the cab of an electric traveling crane, was designed by George B. McCullen, of the Gulf Refining Co., Port Arthur, Tex.

The rungs of the ladder are made of $\frac{5}{8}$ inch iron rods and are welded to the side rails, which are of one-inch pipe. The counterweight tube is made of four-inch pipe with a two-inch U-iron serving as a guide for the ladder. The cable is $\frac{1}{4}$ inch in diameter and runs on a two-inch shive. The four-inch pipe tube is closed at the bottom so that the counterweight cannot fall to the floor in the event that the cable breaks. The counterweights are heavy enough to compensate for the weight of a

man, yet light enough to permit a fairly rapid descent to the floor in case of an emergency.

Electric Car Used To Transport Injured

This type of electric motor car is used at the open-cut copper mine of the Utah Copper Company, Bingham Canyon, Utah. The door of the car having been too small for the passage of a regular army stretcher, a side opening was made so that an injured man could be moved on a stretcher directly into the car, then transferred to the company hospital.



Safety Instruction Cards

Practical Information for the Man on the Job

SAFETY Instruction Cards are published primarily for the instruction of workers in safe operating methods. However, their distribution among foremen and operating executives is also advisable. These cards present a wealth of practical information in concise, readable form.

New cards are issued each month, and many of the previously issued cards are being revised and placed in stock. Members are invited to submit suggestions for new subjects or for the revision of cards previously published.

Miniature reproductions of 12 cards added to the list during the current month are shown herewith.

Following is a list of previously issued cards now carried in stock:

Subject	No.
Acid and caustic pipe lines, opening flanged joints	117
Acid, sulphuric—handling	242
Acid Tanks, Repairing	124
Cleaning out large tanks	293
Air hoist operation	142
Ammonia burns, rescue and first aid	361
Ammonia hazards	372
Aprons, protective	225
Artificial respiration	165
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Boilers, low water	239
Boxes and crates, shipping	366
Bricks, how to pile	242
Broken glass, how to dispose of	244
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Cleaning with distillates	315
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Cold chisel, cutter or punch head, proper shape for	28
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Couplings, link and pin	46
Crane and hoist operators, advice to	58
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Electric motors, starting	60
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Excavation Workers	322
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Preparing blast with cap and fuse	294
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Files	174
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(Please turn to page 32)

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.

DISMANTLING DEFECTIVE POLES (Supporting the Pole)

USE one of the following methods of procedure, which are listed in the order of preference:

1. If a pole service is available use it to support the old pole.
2. (a) Set the new pole alongside the old one.
(b) Lash the old pole to the new one with at least $\frac{3}{4}$ inch rope in two places—one four feet above ground and the other three-quarters of the way up.
(c) Use the figure-8 type of lashing and tie with a square knot.
(d) Do all lashing from the new pole.
3. (a) Before climbing brace the old pole with four pike poles.
(b) Guy the old pole four ways with temporary guys of $\frac{3}{4}$ inch, or larger, rope; fasten rope to pole by two half-hitches on pole and two on line.
(c) If special anchorage is necessary drive a digging bar so that, when securely driven into the ground, the bar will make an angle of 90 degrees with the guy.
(d) Make your anchorage fastenings taut and secure.

Guard against a possible kick-back when releasing the last strain on the pole.



SAFETY INSTRUCTION CARD No. 45
Revised Jan., 1937



FIBER ROPE INSPECTION (To Detect Acid or Caustic Burns)

ACID, acid fumes or strong alkali can quickly injure fiber rope so that it is unsafe. If exposed to these dangers, the rope should be inspected frequently—daily is not too often.

1. Look for abrasions and broken fibers on the outside.
2. Untwist the rope in several places, if the inner yarns are bright and unspun, the rope strength has been largely preserved.
3. If black or rusty brown spots are noted on the rope, they may indicate acid or caustic burns. Unwind from the rope a piece of yarn 8 inches long and break it with your hands, if it breaks with little effort, the rope is unsafe.
4. In general, a rope that has lost its pliability or in which the fibers have lost their luster and appear dry and brittle should be viewed with suspicion and replaced with a new rope.
5. New manila fiber rope is yellowish in color with a silvery or pearly luster; new sisal fiber rope is a yellowish white color, sometimes with a slight greenish tinge; hemp is of a dark grey color.
6. Always use a rope you are sure of.



SAFETY INSTRUCTION CARD No. 72
Revised Jan., 1937



OFFICE ACCIDENT CAUSES

WORK in an office is more dangerous than is commonly supposed. Here are some frequent causes of injury:

1. Crowding on stairs, at elevators, and at entrance doorways. High heels are especially dangerous on stairs.
2. Walking without looking where you are going—around corners, into open doors, while reading correspondence, etc.
3. Climbing on chairs, boxes or other makeshift supports.
4. Leaving desk drawers or file case drawers open to be stumbled over; leaving loose objects on chairs or on the floor.
5. Tipping back too far in any chair.
6. Straining at tight windows; lifting improperly, or lifting too heavy loads. (See Safety Instruction Card No. 55.)
7. Piling objects on shelves or elsewhere insecurely.
8. Failing to cover the points of pins in pinning papers together. (See Safety Instruction Card No. 281.)
9. Using knives, scissors or shears carelessly.
10. Taking chances with unguarded electric fans. (They should be guarded completely.)
11. Tossing burnt matches, cigaret and cigar stubs into waste baskets; also broken glass.
12. Throwing objects out of the window.



SAFETY INSTRUCTION CARD No. 77
Revised Jan., 1937



These are miniature reproductions

DRILL PRESS OPERATORS

1. Use drill properly sharpened to cut to the right size.
2. Never attempt to hold the work under the drill by hand; clamp it securely to the table before starting the machine.
3. Run the drill only at the proper speed; forcing or feeding too fast may result in broken or splintered drills and serious injury.
4. If the work should slip from the clamp, never attempt to stop it with your hands. Stop the machine to make any adjustment or repair.
5. Do not leave the chuck wrench in the chuck.
6. Use a stick or brush to remove chips from the drill—never your fingers, cotton waste or a rag. File or scrape all burrs from the drill hole.
7. Be extremely careful when reaching around the revolving drill; wear snugly fitting clothing, and keep the sleeves short so they cannot catch in the drill. Wear a cap if your hair is long.
8. Do not wear gloves while operating the drill; if handling rough material use gloves only when the drill is not running.
9. Always stop the drill if you leave the machine.



SAFETY INSTRUCTION CARD No. 87
Revised Jan., 1937



AFTER THE MOTOR CAR ACCIDENT

If involved in a motor car accident, whether you were to blame or not, it is a criminal offense to leave the scene without establishing your identity.

1. Get any injured person to the hospital or into the hands of a doctor as soon as possible.
2. Do not smoke about the wreckage; there may be spilled gasoline.
3. Write down the license numbers of other cars involved; also the names and addresses of their drivers.
4. Get the names and addresses of all injured persons and names and addresses of passengers in the other cars.
5. Get names and addresses of any witnesses of the accident.
6. Do not discuss blame for the accident with anyone.
7. If persons have been injured, or if your vehicle is badly damaged, promptly notify your supervisor co-operate with the police fully.
8. Make out the required reports of the accident.
9. Make a rough drawing of the scene of the accident; position of the cars involved, and set down other details; this may be useful if legal action should later develop.



SAFETY INSTRUCTION CARD No. 183
Revised Jan., 1937



FIRST AID FOR EVERY MINOR INJURY

VERY likely you can remember some friend or acquaintance who had a bad case of blood poisoning. Usually he neglected first aid for some slight wound and it became infected.

You also may think that because you are well and strong you should pay no serious attention to little cuts and scratches. It may seem silly to stop work for such small injuries.

But no matter how healthy you are you cannot afford to take chances with infection. The small wound may be unimportant at first; but DELAY in caring for it can make it serious.

1. Stop whatever you are doing long enough to get the right kind of first aid treatment.
2. Do not touch an open wound, or work it out, or use a rag to wrap it up. A little bleeding helps to flush out harmful germs.
3. Never put adhesive tape over an open wound.
4. Do not suck a wound, except perhaps in rare instances of snake bite or dog bite. (See Safety Instruction Card No. 201.)
5. Do not break blisters.
6. Permit no one but a physician or qualified nurse to remove particles from your eyes.
7. Don't use a knife or pin to remove a splinter; have the nurse or doctor do it.



SAFETY INSTRUCTION CARD No. 233
Revised Jan., 1937



Actual size of cards 3x5 inches

HANDLING LEAKY CHLORINE CONTAINERS

1. Keep on the windward side of the leak.
2. If leakage is extensive, warn all persons in danger to move to a distant or higher location.
3. When attempting to plug a chlorine leak, wear a gas mask and protect hands and body with thick loose-fitting gloves and a long apron of leather or other non-porous material.
4. Water sprayed under slight pressure on the escaping liquid will form chlorine hydrate and slow up the evaporation of gas temporarily.
5. If the leak is above the liquid, however, gas only will escape, and water will be ineffective; turn the container so that the leak is below the level of the liquid, then apply water as above.
6. If water is not immediately available, remove the container to some safe low spot, or dig a trench to confine the liquid and reduce the area from which evaporation takes place. Earth, lime, wet or dry hogging, or a blanket thrown on the liquid will act as an absorbent and retard evaporation.
7. Dry ice (solid carbon dioxide) if available and packed around a leaking container also will greatly retard evaporation.



SAFETY INSTRUCTION CARD No. 379



BARRING DOWN LOOSE MATERIAL FROM ABOVE

1. Take down all loose bad roof, ribs, or face material before starting regular work.
2. Set additional timber adjacent to the material to be taken down if this is likely to increase your safety.
3. Be sure you are in the clear and have an unhindered line of retreat before starting to take down loose slate, coal or other material.
4. Use only a proper bar when barring down—preferably a straight iron bar blunt on one end and not less than four feet long.
5. Do not use a pick for barring down overhead material.
6. Stand in a position where the falling substance cannot trap you or squeeze you against the fence, rib, cars, gas, timber, or other material.
7. Where safety will permit, be sure that all tools or other objects which might fly or otherwise cause injury if struck by falling material are in the clear; however, never go under dangerously loose material to remove tools or other property—your life is worth more than any equipment.



SAFETY INSTRUCTION CARD No. 380



GASOLINE SERVICE STATION (Some Lubrication Cautions)

1. Keep in the clear when guiding a car onto the lubrication hoist. Make sure engine is stopped, brakes are set and wheels blocked before operating hoist.
2. Never permit anyone to remain in or near the car while it is being raised or lowered.
3. Do not attempt to hoist a loaded truck.
4. When operating a lubricating gun, never shoot the grease into your hand; never point it at anyone.
5. Use wrenches that fit; never use a defective wrench.
6. Take time to use tools correctly.
7. Grease on tools or on the hands is a frequent cause of tools slipping; use a wiping cloth frequently. Clean tools daily with kerosene or other fluid of high flash point.
8. See that everyone is in the clear before lowering the hoist; remain at the control valve while the car is slowly lowered.
9. Observe if the differential plate and front jacks or knee-action plates are in the clear, and see that no one is endangered when the car is backed away.



SAFETY INSTRUCTION CARD No. 381



BEWARE OF THE DOG

THERE is a knack in handling dogs. If a vicious dog rushes toward you, keep your head.

1. Do not run; any dog will chase anything that runs from him.
2. Stand still, facing the dog, feet together, hands on chest; if there is no salient part of you to bite, he may stop, puzzled by your attitude.
3. Speak to him calmly, confidently.
4. If he quiets, extend your hand, palm up, slowly, and try to make friends; if he growls and crouches, however, keep still — he might leap at your hand.
5. After an interval, as opportunity presents, take a short step backward, slowly; stop at once, and wait a long interval before taking another step backward.
6. Dogs sense fear and hate it — they either see or smell the evidence of fear your body gives off; try and meet the dog's hostility with a brave front.
7. If your technique fails and you are bitten, get the service of a physician promptly.
8. If no physician can be had, and your lips can reach the wound, suck it out thoroughly; then bathe it in lukewarm water and paint with iodine.



SAFETY INSTRUCTION CARD No. 382

WHAT IS BLIND DRIVING?

YOU are driving rapidly at night. Assume that suddenly your headlights show an obstruction on the road. You make every effort to stop, but cannot — your car hits the obstruction.

You may not have realized it, but you were driving more or less BLIND. Engineers call it "overdriving your headlights."

For example: An average man requires $\frac{1}{4}$ second to realize danger and actually get his brakes to working then, good brakes require time to stop a car. At 40 miles an hour, the average whole stopping distance is 128 feet; at 50 miles, 186 feet; at 60 miles it is 251 feet.

But other factors also enter — road surface conditions; visibility through rain, fog, snow; eyesight and health of the driver, fatigue, sleepiness; and finally, length and accuracy of the light beam, clean lenses, etc.

The finest headlights often lose 40 percent of their effectiveness in six months.

In short, you might as well be BLIND as to drive at night at a pace faster than will permit you to stop in less than the distance you can see and understand what lies ahead.



SAFETY INSTRUCTION CARD No. 383

HOME ELECTRIC APPLIANCES (Some Fire and Shock Hazards)

1. Use appliances made by reliable manufacturers.
2. Select extension cord bearing Underwriters' Laboratories label, and fittings marked with current rating and meter's name.
3. Do not patch a cord; get a new one.
4. Do not tinker with defective appliances, wall switches, or house wiring; get an expert repair man.
5. Lifting an electric appliance by the cord may injure the wiring or connections.
6. Do not set electric appliances on the kitchen stove, kitchen sink, or other grounded metal; never touch two appliances, or an appliance and a pull-chain switch or other grounded metal at the same time.
7. Use no electric appliance in the bathroom. If bathroom light has a chain switch, attach a ribbon or cord; never touch a lamp chain or any electric appliance with wet hands.
8. See that the radio is properly grounded.
9. Use only rubber insulated extension cord on the washing machine; have floor entirely dry while operating the machine.
10. Never replace an electric fuse with a penny or other makeshift; this will overload the wiring. Use only a 15 ampere fuse. If the fuse blows out again, call the electric company to find the trouble.



SAFETY INSTRUCTION CARD No. 384

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FIRST AID IN INDUSTRY

Preventing errors is an important job in industry. Even slight mistakes are sometimes costly. So it is with injuries; a minor wound if ignored may lead to serious infection.

The first step in preventing infection is to report all injuries promptly, because delay increases risk. Prompt thorough cleansing and application of an effective antiseptic is the first defense.

Mercurochrome is especially useful in first aid work, because application is not painful, with the result that injuries are usually reported more promptly. Mercurochrome is non-irritating and exerts bactericidal and bacteriostatic action in wounds.

Mercurochrome should be used in the first aid care of all minor wounds; in more serious cases, a doctor should be called.



This seal denotes acceptance of Mercurochrome by the Council on Pharmacy and Chemistry of the American Medical Association.

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BALTIMORE

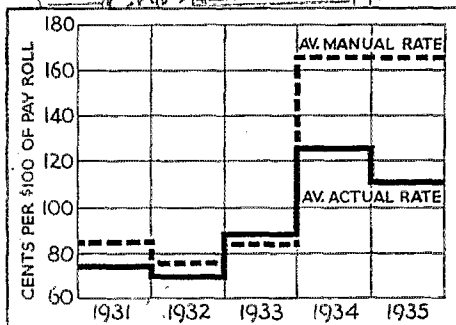
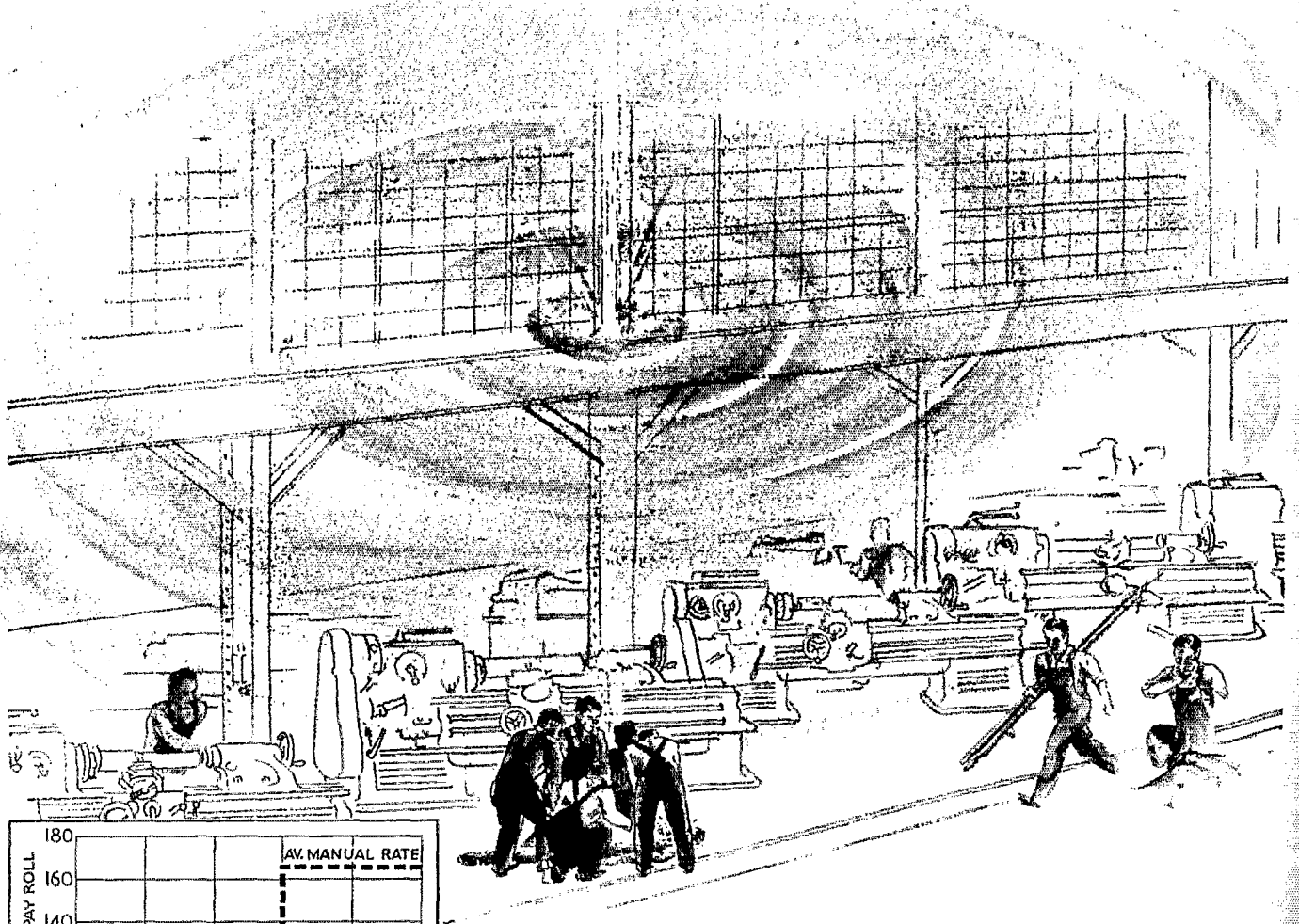


MARYLAND



An Accident

... and the injured man



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Spreads

is not the only one to suffer

Production Delays, Spoiled Work and Increased Insurance Costs Add Burdens to Operating Expense

A crash — a cry or a curse . . . and the smooth stream of production suddenly halts . . . men leave their machines . . . the clock races on . . . the damage is repaired and the injured man taken away — and slowly the stream of production resumes, hesitatingly, haltingly . . .

The effects of an accident spread, and the injured man is not the firm's only loss. But the accident losses that no insurance repays — *can be prevented!*

The type of safety-engineering American Mutual provides its workmen's compensation policyholders regards *safety* as a form of production *efficiency* — efficiency in plant operations, layout of machines, the attitude of workers themselves. By searching out fundamental accident causes, our engineers can plan an economical course of sound safety practice — that results in far fewer accident losses, reductions in insurance costs, and increased production.

THIS IS "PRODUCTION-SAFETY"

We think of the plant as a whole. Searching out not only the obvious danger spots, but the fundamental causes of accidents, wherever they lurk in the plant or the working force . . . our engineers can plan for the entire plant's safety.

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Management and workers building safety together. Safety begins at the top, works down through the operating force. We furnish organizing experience to help you help those who are under your management.

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Surplus to policyholders: \$4,384,566.63 As of Dec. 31, 1935
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INDUSTRIAL HEALTH

A Department for Physicians and Laymen

Conserving Eyesight

A complete program of eye conservation includes protection against injury, correction of errors of refraction, and skilled medical service

By FORREST F. SLYFIELD, S. B., M. D.

Ophthalmologist, Duluth, Missabe & Northern Railway Company

FOUR prime factors in conserving vision are:

1. Periodical visual examinations.
2. Eye protection.
3. Enforcement of safety rules.
4. Skilled treatment of injured eyes.

Visual examination should be made of all applicants for employment, and there should be periodical re-examination of old employees. Ordinarily re-examination should be made every two or three years. Re-examination is also essential after illness or injury, or when a worker is reemployed after employment with another employer.

All visual examinations should be made by competent ophthalmologists. An ophthalmologist (eye physician) is qualified not only to prescribe corrective lenses but also to make a diagnosis of any disease that may be present and advise the correct treatment.

Medico-legally the visual records are of value to the employee as well as to the employer. They eliminate disputes as to the exact status of the employee at the time of employment.

Workmen with good vision are more alert and less prone to accident. Most individuals with defective vision due to refractive errors may obtain normal vision with corrective glasses.

Where one eye is normal and the other defective, it has been my observation that the defective eye is the

one which suffers injury most frequently. This is due to the slowing of the winking reflex in that eye.

Eye fatigue can incapacitate a person for work as readily as a wound. Eye fatigue often causes blurred vision, headaches or inflammation of the eyelids. It is a frequent cause of mistakes and poor workmanship. This is especially true in detail work.

Defective vision and the resulting eye fatigue often cause a man to appear dull and stupid. His mental aptitude is reduced and his reaction time is slower. It takes him longer to coordinate movement of the muscles of his limbs after visualizing impending danger.

The Accident Prone

Where a man is accident prone, make sure that he has not defective vision, as well as other physical defects. The field of vision may be contracted. Depth perception may be absent. Such conditions are an important element in the causes of accidents.

Perhaps the most serious accident is the penetration of the eye by fine splinters of wood. It is often most difficult to remove these. There is marked danger of infection, in addition to the more frequent formation of a corneal scar. The iris or lens or both may

be torn. If the lens substance is injured, traumatic cataract develops. Where large corneal ulcers occur due to infection, following deep corneal injury—impaired vision results, if in the healing process a scar develops. If infection invades the deeper structures as the posterior chamber—panophthalmitis is the usual result, necessitating enucleation.

Among woodworkers in large car shops, the greatest hazards are apparent in the use of the following tools and machines: Hand or power screw drivers, planers, power drills, and circle or rip saws; wherever compressed air is used, either for cleaning surfaces or as in air hammers. Acid is often used in paint removal and acid splashed into eyes is disastrous.

In blacksmith shops, at forges and punch machines constant precautions are necessary to prevent eye injury. Hammering hot welds is often accompanied by flying particles of hot metal.

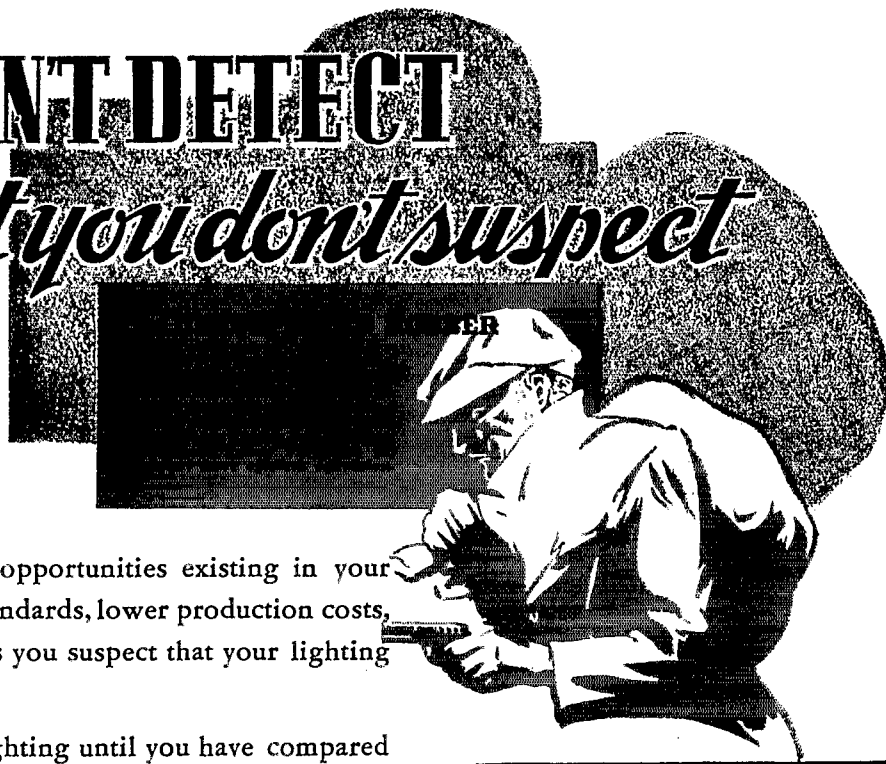
The use of suitable goggles is the best protection and the greatest factor in conservation of vision. For the man with normal vision, goggles with a heavy plain lens are usually satisfactory. In the cases of defective vision which can be corrected with lenses, special protective lenses are now fitted in the goggle frames.

Intensive light glare causes a temporary central scotoma or blindness, which in itself is a cause of accidents.

Proper illumination of workplaces is important, and lights should be so installed that glare does not affect the eyes of the workman. The light should be directed toward the bench, or the object at which our vision is directed, and not into the eyes.

There are many diseases which affect vision. I will mention only a few of them: diabetes, nephritis (Bright's disease), arteriosclerosis (hardening of the arteries), anemia,

YOU CAN'T DETECT *What you don't suspect*



You can't detect all the opportunities existing in your plant to improve work standards, lower production costs, and promote safety unless you suspect that your lighting isn't all that it should be!

You can't suspect your lighting until you have compared it with present Better Light-Better Sight Standards. To do this your lighting for each plant location should be carefully checked with modern lighting layouts for identical locations. With these lighting layouts as a standard of comparison, you can, quickly and accurately, have your entire plant lighting checked up with the most approved principles of modern industrial lighting.

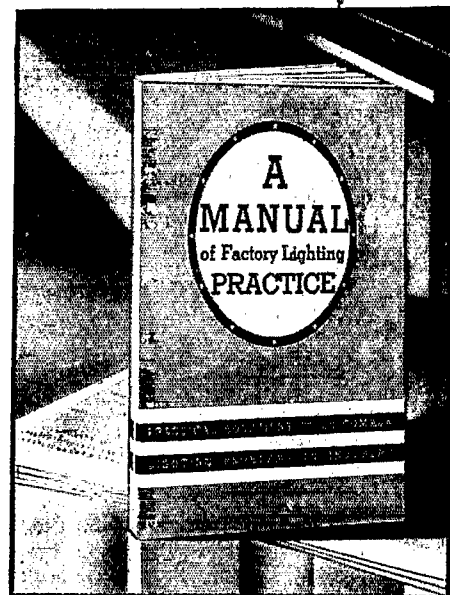
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brain tumor, and syphilis and gonorrhea. Focal infection, as sinusitis, abscessed teeth and infected tonsils, often plays a part in the etiology of eye affections.

To fit corrective lens goggle frames, the oculist should have a suitable set of trial frames. The side screen should be adjusted so that no foreign bodies can enter the eye under the screen edge. In the case of the shopmen employed by the Duluth, Missabe and Northern Railway Company, every man is required to come in personally after the goggles are returned by the optical house, so that I may be certain that the lenses are correct and the frames adjusted. This practice has cut down the excuses for not wearing goggles due to improper fitting or possible mistakes in corrective lenses.

Protective guards on stationary machines as hand saws, strippers, ribbon saws, etc. serve to prevent eye injury.

It is my opinion that goggle frames should not be worn over regular glasses. First, because a blow upon the goggle frame is likely to cause breakage of the lenses in the glasses frame and result in injury to the eyes from the broken lenses. Secondly, the spectacle frame is easily bent out of shape by the goggle frame over it, causing distorted vision and headaches where astigmatism is present. Thirdly, with the exception of welders goggles, I do not favor more than one glass or lens as a protective medium.

When an Injury Occurs

When an eye injury occurs, the earlier treatment can be instituted by an eye physician, the better will vision be conserved. Many eyes are seriously injured by so-called eyepick experts in shops. They naturally do not use a local anesthetic in their attempt to remove a foreign body. In their efforts they usually scratch the cornea or gouge it more deeply than the foreign body does.

The oculist uses an anesthetic, has the proper instruments, knows the correct medication to allay inflammation, and he is a trained physician. Foreign bodies are removed with eye spuds, forceps or the magnet. Burned or oxidized corneal areas are removed with special burrs. Where steel particles have entered an eye, it is removed with the magnet. Non-magnetic foreign bodies, splinters of wood

have to be removed with forceps, with the use of a fluoroscope or with direct illumination.

After the removal of the foreign body, the inflammation caused by the trauma, penetration or infection must be combated. Conjunctivitis, iritis, subconjunctival hemorrhage, hemorrhage in the anterior or posterior chamber, torn iris, or deep laceration of cornea or sclera, all require careful treatment. Whether or not the injured workman shall immediately return to work, is subject to the judgment of the ophthalmologist. At all times, he must bear in mind the danger to vision in returning a man too soon to his regular duties.

Do not delay early treatment in cases of apparently trivial affections of the eye. Conjunctivitis, caused by dust irritation, strong fumes, vapors from chemicals, paint, turpentine or acid fumes, is manifested by lachrymation (tears) smarting or burning sensation, inflamed lids, blurred vision and often pain.

Where injury occurs, a record of vision must be made if possible immediately. This is just as important for trivial foreign body injury cases as the more severe. It is of inestimable value where malingering is later attempted or exaggeration of a defect occurs.

The periodical re-examination enables the oculist to note any diminution of vision and if unable to correct it with lenses, make an ophthalmoscopic and split lamp examination to determine the presence of disease and note pathology. Beginning diabetic, nephritic retinitis or retrobulbar neuritis are commonly observed early in the disease. Focal infection, as abscessed teeth, infected tonsils or sinuses, is a frequent etiological factor in iritis.

Enforcement of Rules

Where diabetes, nephritis or other general disease is affecting vision, the employee is referred to the general physician for proper treatment. The field of vision has to be taken in cases of failing vision. This is accomplished with the perimeter. Normally the largest field of vision is for white, then blue, red, and green. In disease, the field of vision for colors contracts earlier than for white. Optic atrophy and glaucoma cause contracture of the field of vision.

Enforcement of safety rules and

constant inspection by safety engineers are leading factors in saving sight. Frequent safety meetings with discussion of safe practices and education as to methods of preventing eye hazards, play an important part. Attendance at safety schools should be requested. Often practical suggestions are made by workmen.

Gruesome Lessons

Whenever a serious eye accident occurs, although it may be gruesome, safety committeemen may capitalize the case and show how it could have been prevented. Likewise where goggles have been broken, but eyes saved through use of shatterproof lenses, display the goggles and advertise the fact that another eye has been saved. Have the oculist speak before your safety meetings. He can do much to teach the men the precautions necessary to save eyes and conserve vision.

Periodical goggle inspection is imperative. When lenses become pitted, blurred vision results and an artificial astigmatism sometimes is brought about and headaches occur from their use. Pitted lenses should always be turned in and replaced. If corrective lenses, then order on the oculist's prescription, or if in use more than two years order a re-examination.

Lenses should be free from imperfections, ridges, pebbles, or scratches. Where astigmatic corrective lenses are mounted in goggle frames they should be diamond marked and the workman instructed as to the correct position of the diamond mark.

The industrial ophthalmologist should make a tour of the plant to learn the exacting and hazardous conditions under which the men labor.

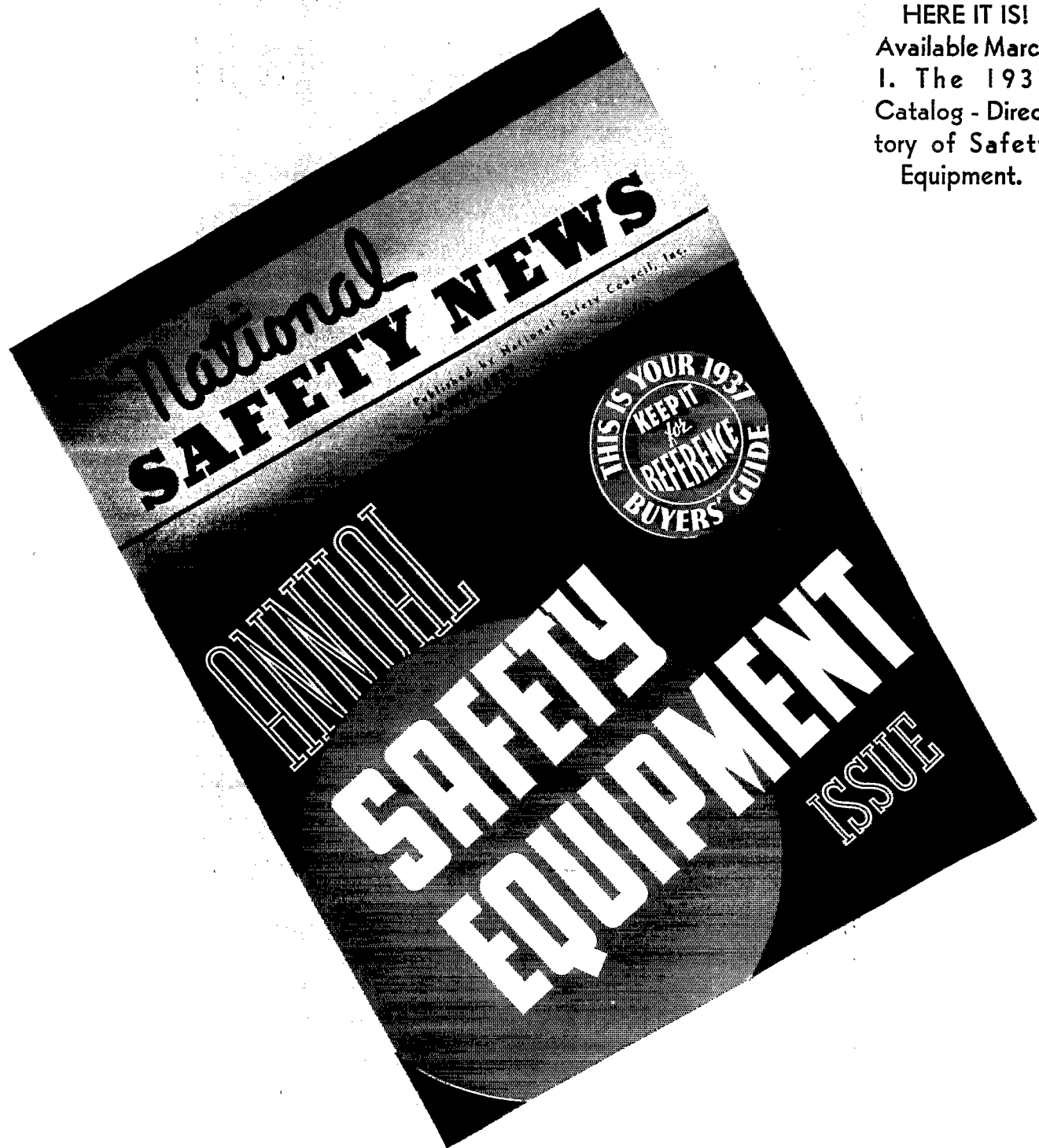
Men complaining of headaches or inflamed eyes should be sent in for consultation and examination.

Where high power pneumatic chisels are used in cutting off rivet heads, the wire mesh face mask or helmet affords the best protection. In the presence of steam or vapor, the wire mesh goggles furnishes excellent protection.

It is needless to warn electricians of the dangers associated with high voltage, but it may be well to state that the passage of strong currents of electricity through the body may and often does cause cataract development, as well as burns.

(Please turn to page 75)

HERE IT IS!
Available March
1. The 1937
Catalog - Direc-
tory of Safety
Equipment.



IN one unit, the NATIONAL SAFETY NEWS is bringing you detailed information on all types of equipment and service to help you reinforce the mechanical side of your safety program.

LET'S make March the Annual Safety Equipment Month—the time to make a new check-up on equipment. The Guide will give you suggestions. Selection of reliable products will be greatly simplified if you will keep this authoritative Reference Guide always at hand. Every man responsible for Safety should have a copy. Watch for it March 1. Extra copies should be ordered in advance.

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

Antimony and Its Compounds

Industrial Data Sheet D-Chem. 22

A. Problem

1. What are the hazards of antimony and its compounds and what precautions are necessary in their use?

B. Hazards

2. The principal hazard is that of poisoning by absorption through the alimentary system, the respiratory system, or the skin.

C. Discussion

3. Antimony is a silver white metal of crystalline structure, very brittle, easily broken and a poor conductor of electricity. It burns with a blue flame, giving off dense white fumes which have an odor resembling garlic. At ordinary temperatures it is not affected by air. Chemically it is closely related to arsenic and forms the same type of compounds. It dissolves in boiling hydrochloric acid and liberates hydrogen. It readily forms alloys with a smic, lead, tin, copper, zinc, iron and bismuth.

4. Antimony and its compounds are used in the dyeing, printing, electroplating, storage battery and rubber industries; in the manufacture of various pewters, anti-friction metals, non-rusting nails, fireworks, matches, enamels, glazes, and medicines; and in the arts for plating and painting.

Symptoms of Poisoning

5. The respiratory system is the chief avenue of entrance of antimony and its compounds into the body because these substances are often in powder form or become finely pulverized in use. The intake through the alimentary system is by swallowing dust while at work, by contamination of food, tobacco and water. Absorption through the skin is not marked except by those using alloys or accelerators, or working with pew-

ter, or using an oil or greasy substance in conjunction with these operations.

6. There are two types of poisoning, acute and chronic. The symptoms of acute poisoning are violent irritation of the mouth, nose, stomach and intestines; vomiting, purging with bloody stools; slow pulse and low blood pressure; slow, shallow breathing; coma and convulsions sometimes followed by death from cardiac and respiratory exhaustion. The symptoms of chronic poisoning are: dryness of throat; pain on swallowing; occasional vomiting and persistent nausea; susceptibility to fainting; diarrhea, loss of appetite and weight; giddiness; dermatitis, either pustular or ulcerative; anemia. Such cases as those last mentioned may become acute and death may result because of exhaustion.

7. The symptoms of poisoning by antimony and its compounds are often mistaken for those of lead or arsenic poisoning. In such cases a careful analysis of the symptoms, the urine, stools, blood serum and salivary secretions should be made by a physician who is thoroughly familiar with the true symptoms of antimony, arsenic and lead poisoning.

Treatment

8. In case any of the symptoms of poisoning, even slight, are noticed, the affected individual should be removed from contact with the chemical and placed under the care of a physician who is versed in the treatment necessary.

Precautions

9. All antimony and its compounds, if used in powder form, should be handled carefully to avoid the raising of a dust.

10. The hands and arms of the worker should be protected and if exposure is severe or long continued the worker should wear a respirator. (See Note W.)

11. If soluble compounds are used, the exposed surfaces of the body should be protected by rubber gloves, waterproof clothing, or by the use of a protective ointment that can be applied before going to work and washed off at the end of the day. (See Note X.)

12. Where such compounds as the oxides and sulphides are used in quantities, the individual should work only two or three days a week on the job and then be relieved. This is to prevent accumulation of poisoning in the body and to help the body eliminate such poisons.

13. No food should be kept or eaten in the work room.

14. No individual should partake of food or drink until after he has thoroughly washed his hands and face. Suitable washing facilities should be provided for this purpose. (See Note Y.)

15. Overall's or some other form of suitable protection should be furnished and laundered often.

16. All workers using antimony or any of its compounds should be physically examined at regular intervals. (See Note Z.)

NOTE W. Detailed information on suitable respirators will be found in Safe Practices Pamphlet No. 64 "Respirators, Gas Masks, Hose Masks and Breathing Apparatus."

NOTE X. Detailed information on rubber gloves and other protective clothing will be found in Safe Practices Pamphlet No. 16 "Protective Clothing."

NOTE Y. Detailed information on suitable washing facilities will be found in Safe Practices Pamphlet No. 27 "Industrial Sanitation."

NOTE Z. Detailed information on physical examinations will be found in Health Practices Pamphlet No. 2, "Physical Examinations."

National Safety Council, Inc.

20 No. Wacker Drive
Chicago, Illinois

POSTERS

Make your poster selections from this page as well as from those following



6037 9x12 inches 1 unit



6015 9x12 inches 1 unit



6030 9x12 inches 1 unit



6019 9x12 inches 1 unit



THE BULLETIN BOARD

A page for those who maintain the
Show Windows of Safety.

Conducted by STAN KERSHAW

The New Poster Pages

DO YOU like this new poster section? Is it an improvement?

We ask these questions because we are striving to present the miniature reproductions of posters in the most useful and attractive manner.

To those of us who have been engaged in the preparation of these pages, the crowding that was made necessary by the inclusion of nine posters on a page and the solid red background became very tiresome and monotonous; it must have had a similar effect upon others. This is the principal reason for opening up the pages by using only six poster miniatures to the page and breaking up the monotony of the background with a change of design.

You must have noticed, too, that this new section includes full color reproductions of four of the general posters. By preparing the drawings for these posters for reproduction in the three process colors—red, yellow and blue—we have been able to work out a plan whereby they can be reproduced in full color miniatures at the minimum of expense.

This, by the way, is the first time in the history of the Council that posters have been reproduced in miniature in the NATIONAL SAFETY NEWS in the colors that are used in the full size posters, a departure which, it is hoped, may be expanded some day to include all of the posters.

When selecting your posters for the month, be sure to include a sufficient supply of the new three color ones to give them a fair trial on your bulletin boards.

Be Thrifty With Your Time

BECAUSE safety is such a big subject with so many ramifications, it is not unusual for an industrial safety man to feel conscious of the weight of his problems. By no means the smallest of these is how to find the time to cover all the territory and do all the things the job requires.

It has been well said that when a man builds up his own personal efficiency to a maximum point, the only way he can increase his capacity for work is to get assistance, but few men ever reach the maximum in personal efficiency.

Those who accomplish most are the planners and diplomats. The things they have to do with their own hands are accomplished with the least effort and with the minimum waste of time, and they use diplomacy to get others to do things for them.

Because of the diversity of his work, a safety man must be even more of a planner than one engaged in routine work. If he is wise, he will not only get others to lend a hand by using diplomacy and persuasion but he will also be constantly on the lookout for services and products that will work for him.

Among the available services are the National Safety Council's posters

—silent but persuasive workers for safety. A well organized program of poster displays on attractive and strategically located bulletin boards will do more effective safety educational work and reach more people per unit of time spent than could ever be accomplished in a like amount of time by personal contact work.

Be thrifty with your time by making good use of this and other services. They will enable you to do more in these busy days.

A Safety Man's Poster Philosophy

I'LL put the bulletin boards where everyone can see them without having to walk out of his way.

I'll make each display so good looking and interesting that no one will go by without stopping to take a look.

I'll set an example for my people by keeping both the bulletin boards and displays spic and span.

I'll change the displays often so they will not become stale.

I'll not prepare my poster displays so they will only preach safety. I'll make them newsworthy. I'll use them to broadcast local happenings.

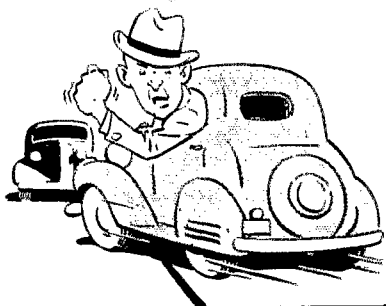
I'll capitalize on every important accident and near-accident by preparing special displays about them.

If any of my displays fail to do what I want them to do, I'll find out why.

- - - And I'll bet my safety bulletin boards will be the talk of the town.

Electrotypes of miniature cartoons appearing on the following pages may be purchased from National Safety Council for \$2 each. Miniatures of three-color posters are not available.

ANOTHER HIGHWAY ENEMY

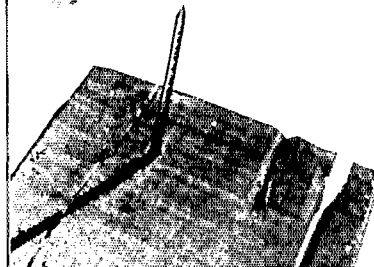


The "HOT HEAD"

NATIONAL SAFETY COUNCIL

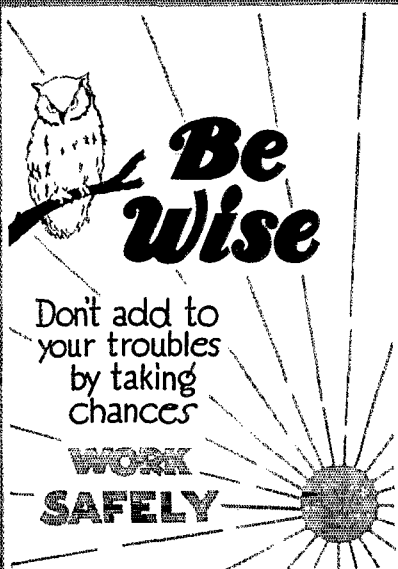
6039-C 25x38 inches 8 units

It does not
have to be rusty
to cause



NATIONAL SAFETY COUNCIL

6021-B 17x23 inches 4 units

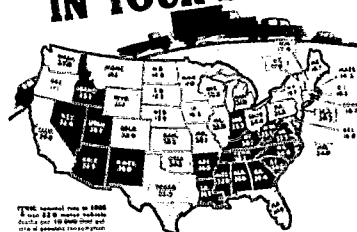


WORK
SAFELY

NATIONAL SAFETY COUNCIL

6018-B 17x23 inches 4 units

HOW SAFE ARE THE HIGHWAYS IN YOUR STATE



WILL YOU HELP MAKE
THEM *Safer?*

NATIONAL SAFETY COUNCIL

6036-B 17x23 inches 4 units



NATIONAL SAFETY COUNCIL

5658-B 17x23 inches 4 units

The best
SINGLE
THING
you can do
to prevent
accidents

COME UP TO
EVERY
INTERSECTION
READY FOR A
CAR TO POP OUT
OF A SIDE STREET

NATIONAL SAFETY COUNCIL

6034-B 17x23 inches 4 units

BARGAIN
Today ONLY

SALE

A MINUTE SAVED
at the Price of
An ACCIDENT
is
NO BARGAIN

FOR SALE CHEAP
TODAY'S Special \$34.75

1/2 Price

NATIONAL SAFETY COUNCIL

6031-B 17x23 inches 4 units

A LINEMAN TAKES NO CHANCES WITH ELECTRIC WIRES. SONNY

FLY KITES OPEN SPACES
Use no wire, glass or other metal for kite or string

NATIONAL SAFETY COUNCIL

6023 9x12 inches 1 unit
6024-D 12x16 inches 2 units

Haven't your memory simple means you haven't trained your self to remember

you Can remember to work Safely

NATIONAL SAFETY COUNCIL

6035-B 17x23 inches 4 units

The Pity of it

NATIONAL SAFETY COUNCIL

5440-B 17x23 inches 4 units

NEVER HAD AN ACCIDENT

?

DON'T TAKE CHANCES NOW

NATIONAL SAFETY COUNCIL

5445-B 17x23 inches 4 units

The LINE in the Center is your LIFE LINE

Stay Alive by KEEPING ON YOUR OWN SIDE

NATIONAL SAFETY COUNCIL

5620-B 17x23 inches 4 units



4776-B 17x23 inches 4 units

AN **OIL SPILL** IS
DANGEROUS



5558 9x12 inches 1 unit

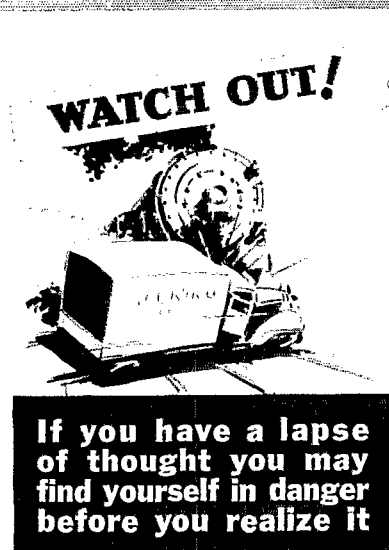
**One
Accident
May be
One
Too many**
*It might be
your last*

NATIONAL SAFETY COUNCIL

4880-B 17x23 inches 4 units

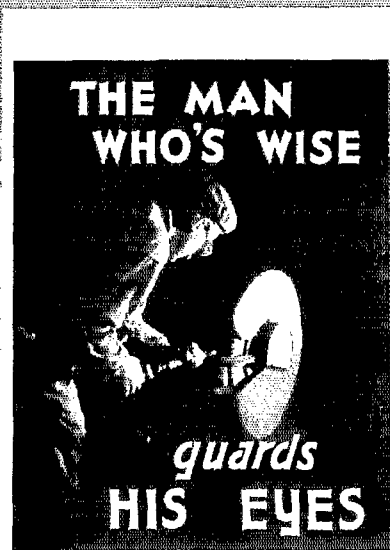
BEWARE of using specific job posters on bulletin boards that are intended for general consumption. If the posters actually concern only a few people in a large group, the rest of them will lose interest in the bulletin board.

6026 9x12 inches 1 unit



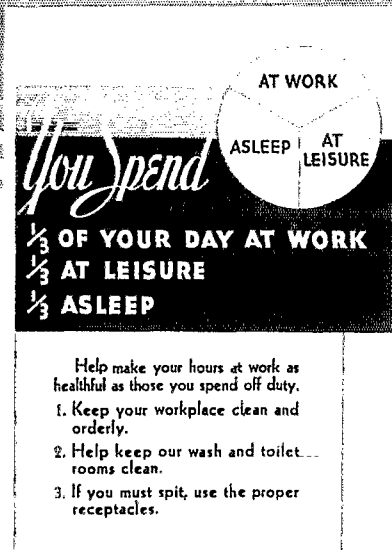
NATIONAL SAFETY COUNCIL

5650 9x12 inches 1 unit



NATIONAL SAFETY COUNCIL

6016 9x12 inches 1 unit



NATIONAL SAFETY COUNCIL



5027 9x12 inches 1 unit



4871 9x12 inches 1 unit



5442 9x12 inches 1 unit



5290 9x12 inches 1 unit

ONE bulletin board well located, well kept, and upon which the displays are changed every day or two will do more good than a dozen boards placed promiscuously and allowed to grow stale.



5015 9x12 inches 1 unit



5292 9x12 inches 1 unit



**WHATEVER YOU LIFT
GET A
FIRM HOLD**



**A DROPPED LOAD MAY
BE A KNOCK-OUT DROP
FOR YOU**

NATIONAL SAFETY COUNCIL

5846 9x12 inches 1 unit

**Never
depend
on the other
fellow —**

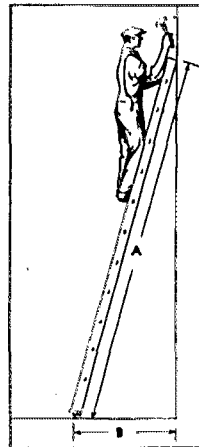


**DRIVE
SAFELY
YOURSELF**

NATIONAL SAFETY COUNCIL

5819 9x12 inches 1 unit

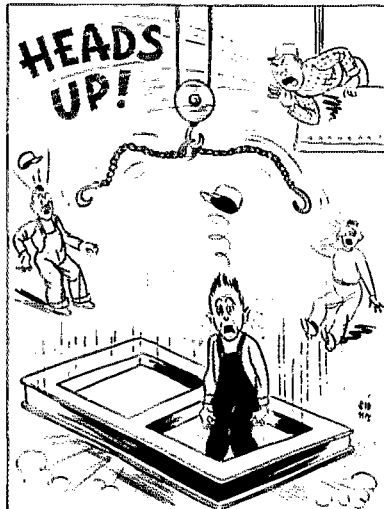
SAFE ANGLE FOR LADDER



THE best angle at which to place a ladder is that in which the distance B is approximately $\frac{1}{4}$ of A. In other words, a 12 foot ladder should be placed so that the bottom of it is 3 feet away from the wall or object it is leaning against.

NATIONAL SAFETY COUNCIL

5284 9x12 inches 1 unit



KEEP OUT FROM UNDER LOADS

NATIONAL SAFETY COUNCIL

6033 9x12 inches 1 unit

**make every
CONSTRUCTION JOB
SAFE**



The few minutes used to put up a guard rail may save a life

NATIONAL SAFETY COUNCIL

5648 9x12 inches 1 unit



An easy way to lose a finger hand or arm - or maybe your life, is to reach into moving machinery to clean oil or adjust it.

ALWAYS STOP THE MACHINERY FIRST

NATIONAL SAFETY COUNCIL

4862 9x12 inches 1 unit



TRY THE BRAKES WHEN YOUR VEHICLE IS FULLY LOADED

*Brakes which
stop a vehicle
effectively
when it is emp-
ty may not con-
trol it when
fully loaded*

NATIONAL SAFETY COUNCIL

3171 9x12 inches 1 unit

A Thought for Today

**• It's Better
and Easier to
Work Safely
than to
Explain an
Accident**

NATIONAL SAFETY COUNCIL

4984 9x12 inches 1 unit

WHAT YOU SHOULD KNOW ABOUT GAS WELDING CYLINDERS

1. Never use acetylene at a pressure in excess of 15 lbs. per square inch gauge pressure.
2. Never allow oxygen to come in contact with oil or grease.
3. Always refer to gases by their proper names. Do not refer to oxygen as "o" or acetylene as "gas."
4. Never use oxygen as a substitute for compressed air for pneumatic tools or similar devices.
5. Never use pressure from an oxygen supply for clearing clogged oil lines.
6. Never use cylinders as rollers or to support work.
7. Do not tamper with safety devices on cylinders or cylinder valves.
8. Do not hang blowpipes from the regulators attached to cylinders.
9. Never attempt to transfer gas from one cylinder to another.
10. Never attempt to mix two gases in one cylinder.
11. Do not let hot slag fall on combustible materials or on the cylinders.

NATIONAL SAFETY COUNCIL

5018 9x12 inches 1 unit

4029 9x12 inches 1 unit



NATIONAL SAFETY COUNCIL

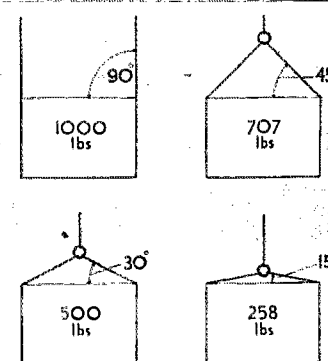
5293 9x12 inches 1 unit



NATIONAL SAFETY COUNCIL

5192 9x12 inches 1 unit

HERE'S HOW THE ANGLE OF A SLING ALTERS IT'S SAFE CARRYING CAPACITY



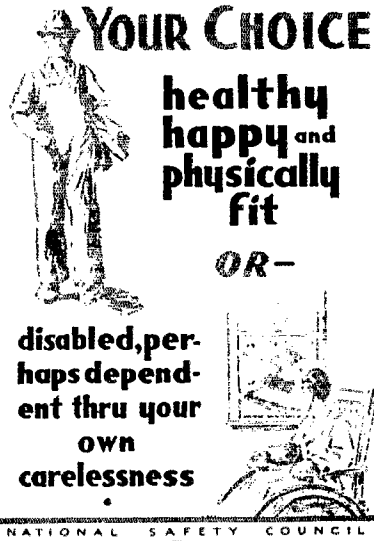
NATIONAL SAFETY COUNCIL

YOUR CHOICE

**healthy
happy and
physically
fit**

OR—

**disabled, per-
haps depend-
ent thru your
own
carelessness**



NATIONAL SAFETY COUNCIL

5660 9x12 inches 1 unit

To the
**NEW
EMPLOYEE**

- We don't want anyone injured while working here.
- If you don't know the safe way to do a job assigned to you, ask your foreman.



NATIONAL SAFETY COUNCIL

6020 9x12 inches 1 unit



**LEAVE NON-STOP
FLIGHTS TO AVIATORS**

WALK DOWN STAIRS

NATIONAL SAFETY COUNCIL

6022 9x12 inches 1 unit

KEEP a supply of posters on file and classified by accident causes. You'll find them mighty handy when you want to put on special campaigns on these causes or if you want to drive home the lesson of an accident or near-accident.

5639 9x12 inches 1 unit



**SOME LIVE TO
ENJOY OLD AGE**

while others

**THINK A SMALL CUT
OR SCRATCH WON'T
AMOUNT to ANYTHING**

NATIONAL SAFETY COUNCIL

6014 9x12 inches 1 unit

USE MANWAY



NATIONAL SAFETY COUNCIL

5258 9x12 inches 1 unit

NEVER "BRAKE"
a MACHINE with
YOUR HAND



**YOU KNOW
WHY**

NATIONAL SAFETY COUNCIL

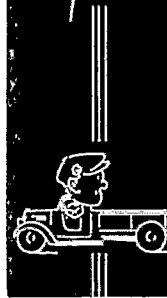
**YOUR LIFE
AND
YOUR JOB
ARE AT STAKE
WHEN
YOU VIOLATE
THE
SAFETY
RULES**



NATIONAL SAFETY COUNCIL

4473 9x12 inches 1 unit

**IT'S EASY TO
BACK INTO**
trouble



**LOOK
back-then
BACK**

NATIONAL SAFETY COUNCIL

6031 9x12 inches 1 unit

Safety Hat



*Scores
Again*

..... A chain hoist weighing 71 lbs. fell a distance of 25 feet and struck the wearer of this hat. He was knocked down and stunned, but regained consciousness quickly. An x-ray showed no serious injury. He was able to return to work the next day.

NATIONAL SAFETY COUNCIL

6017 9x12 inches 1 unit



**MATERIALS PILED
CARELESSLY ARE
NOT SAFE!**

NATIONAL SAFETY COUNCIL

6017 9x12 inches 1 unit

**HEADS WIN
IN PREVENTING
ACCIDENTS**

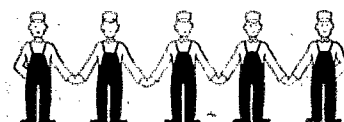


NATIONAL SAFETY COUNCIL

5649 9x12 inches 1 unit

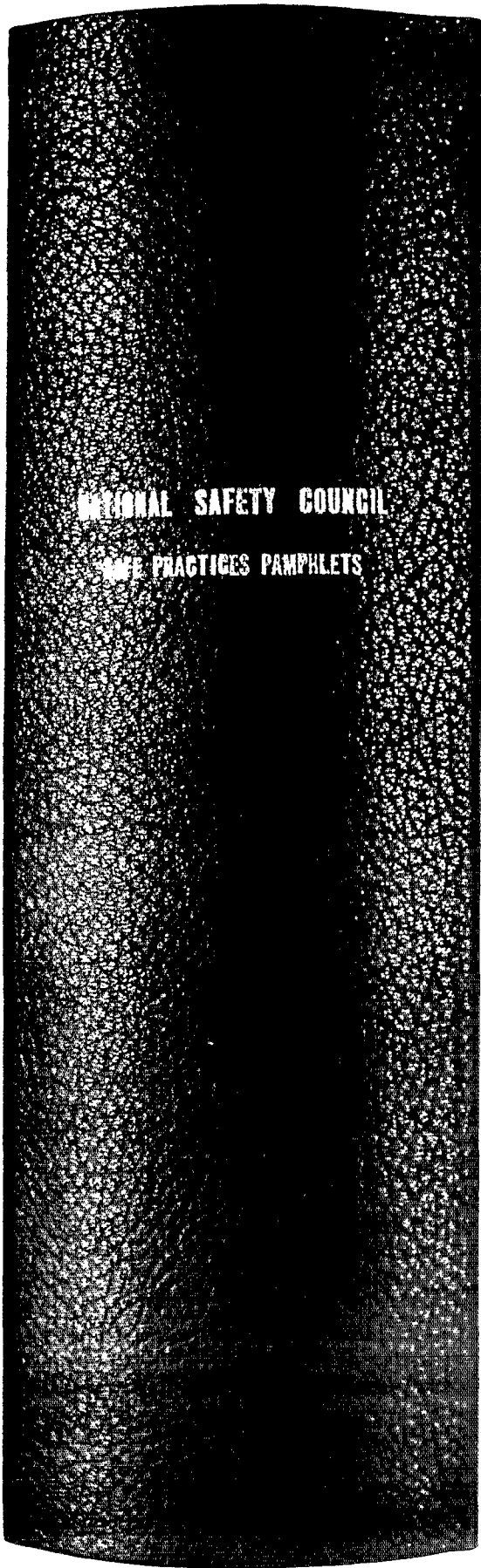


One man can't do it



but **ALL OF US
working together can
STOP ACCIDENTS**

2488 9x12 inches 1 unit



NATIONAL SAFETY COUNCIL
SAFE PRACTICES PAMPHLETS

A Compilation of information that will save you time and money

MEMBERS who have not yet familiarized themselves with the Safe Practices Pamphlets offered by the Council will be interested in the following member's comment:

"I have not realized until this morning the wealth of practical, constructive material contained in the 'Safe Practices Pamphlets.' I have just spent a couple of hours looking through my recently acquired volume and I am mentally kicking myself for not having utilized more of these pamphlets as educational material for our key men."

Each pamphlet is a treatise on some important phase of industrial safety and contains just the kind of reference data you need to find the answer to many of the perplexing accident problems with which you are confronted in your safety work! A complete list of over 150 pamphlets issued to date will be sent upon request. The complete set of General Safe Practices Pamphlets is obtainable at \$12.00 f.o.b. Chicago and includes new and revised pamphlets as issued.

Available only to members.

NATIONAL SAFETY COUNCIL
20 N. Wacker Drive
CHICAGO, ILL.

More Cleveland Plants in 1936 Safety Campaign

WITH 1,448 firms participating, the Sixth Annual Greater Cleveland Industrial Safety Campaign set a new record in number of companies enrolled, number of employees participating, and man-hours of exposure. The first of these campaigns, which was held in 1931, had an enrollment of 370 companies.

The six campaigns have been sponsored by the Division of Safety and Hygiene of the Industrial Commission of Ohio and the Cleveland Safety Council in cooperation with *The Cleveland News*. *The Cleveland News* awards annually a beautiful cast bronze plaque as a grand prize award to the company going through the entire campaign with the best record among all firms participating. The trophy remains the permanent possession of the company. This year, as an innovation, all participating firms were divided into the following groups of employment: 1 to 50; 50 to 200; 200 to 500; 500 to 1,500; over 1,500. The company having the best record in each of the five classifications will receive a secondary grand prize award.

The *News* grand prize award for 1936 goes to the National Carbon Company, Inc. (Edgewater Division), which went through the entire campaign without a single disabling injury while working a total of 1,664,748 man-hours with an average monthly employment of 1,647 workers. This same division of the National Carbon Company also won the *News* award in 1935 with a record of

1,307,535 hours without accidents. This plant has now won first place in four of the six annual six-month safety campaigns.

The following concerns, each of which had a monthly employment of more than 200 during the campaign, finished behind the grand prize winner in the following order:

2. General Electric Co., Euclid Lamp Works.
3. Friedman Blau Farber Co.
4. Central National Bank of Cleveland.
5. General Electric Co., Cleveland Equipment Works.
6. Stone Knitting Mills Co.
7. General Electric Co., Cleveland Lamp Works.
8. The National City Bank of Cleveland.
9. Interstate Motor Freight System.
10. The Chandler and Rudd Co.
11. General Electric Co., Cleveland Welds Works.
12. General Electric Co., Lamp Development Laboratory and Nela Lamp Works.
13. National Carbon Co., Inc., Brush and Printing Division.
14. M. and N. Cigar Manufacturing Co.
15. The Forrest Garment Company.
16. American Telephone and Telegraph Co.
17. Cleveland Shopping News Co.

Table 1 gives a comparative statistical analysis of the six campaigns. It will be noted that there was a marked increase in severity in 1936, the rate exceeding only that of 1931. This was due largely to the fact that this year, for the first time, all broken bone cases were charged at the rate of four points per accident, even though there may have been no actual loss of time. In all previous campaigns one or two points were charged for a broken bone where it involved

lost time. The records show a total of 304 fractures. The inclusion of these cases also caused a noticeable increase in the frequency, although the rate of 14.03 is still better than that for the years 1931 and 1934.

In rating the contestants, the following points were charged for injuries: from one to seven days lost time, 1; over seven days lost time, 2; broken bones, 4; loss of member or permanent impairment, 6; death or permanent total disability, 10. The rating for each company was the number of points charged multiplied by 100 and divided by the number of man-hours worked. The severity rating for each group was also determined in this manner. While this does not give a true severity, due to the inability to obtain the actual number of days lost per accident, it was considered an equitable plan of rating.

During the campaign there were 2,727 accidents reported, with 1,308 causing loss of time from one to seven days; 1,110 causing loss of time of more than seven days; 304 causing broken bones; 90 causing amputation or permanent dismemberment; and 15 resulting in death or permanent total disability.

A large number of safety surveys were made by engineers furnished by the Division of Safety and Hygiene, who in visiting these plants not only pointed out the necessity for guarding machinery and equipment and the correction of hazards, but also in many instances inaugurated shop safety programs and attended many of the safety meetings. In addition to this the campaign sponsors furnished more than 30,000 posters for display on bulletin boards and 75,000 safety pamphlets for individual distribution to supervisors, foremen, key men, superintendents and executives. As a special feature a general shop safety rule book was printed and distributed among all participating companies.

Thomas P. Kearns, Superintendent of the Division of Safety and Hygiene, served as campaign chairman, with H. M. Schnerer, of the Division's staff, as campaign field secretary, and Carl L. Smith, Managing Director of the Cleveland Safety Council, as campaign secretary. The support of the various group chairmen was generously given, and splendid cooperation was received from the employers who participated.

TABLE NO. 1

	1931	1932	1933*	1934	1935	1936
Total Number Firms Enrolled	370	582	630	713	1,117	1,448
Ave. Monthly Employment	81,706	85,912	107,601	127,530	148,136	179,560
Total Man-Hour Exposure	91,086,816	90,911,217	71,905,035	132,572,508	153,296,681	191,379,580
% Firms Without Accidents	11.32%	58.59%	59.81%	50.9%	60.19%	58.02%
Man-hour Exposure Per Accident	55,037	77,265	73,000	68,800	81,050	71,350
Total Number of Accidents	1,655	1,177	985	1,921	1,821	2,727
Accident Frequency per Million Hours	18.09	12.93	13.69	14.45	11.89	14.03
Total Points Charged for Accidents	2,697	1,953	1,671	3,187	2,992	5,231
Severity	.02965	.02151	.02331	.02106	.01947	.02689

* Four-month campaign—all others were 6 months duration.

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The G-E Light Meter can be an important tool in reducing accidents in your plant. For example, in machine tool plants like this employees can work more safely and do better, more efficient work under the 25 footcandles of light provided than under the 5 or 10 so commonly used.

THERE are many ways in which correct "measured lighting" can benefit your factory. Outstanding is the fact that better lighting—based on the Science of Seeing—can reduce the number of accidents because it enables employees to see faster, more accurately, and more easily. It not only saves eyes and reduces fatigue but also makes for greater efficiency, fewer errors, and less spoilage.

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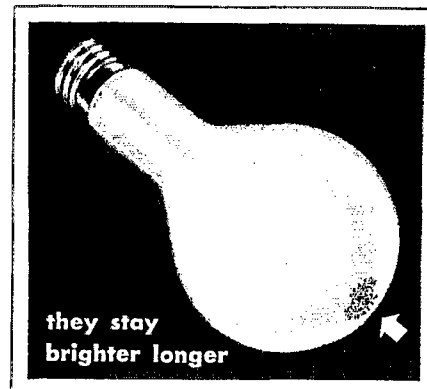
Write to General Electric Company, Dept. 166, Nela Park, Cleveland, Ohio for a free copy of the illustrated booklet, "Special Lighting Applications for Industrial Processes."

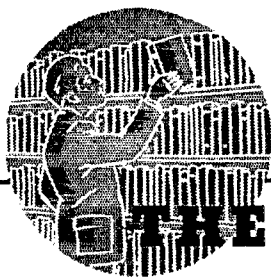
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THE SAFETY LIBRARY

By MARY M. WELLS, Librarian, N. S. C.

BOOKS AND PAMPHLETS

Athletics

SAFETY IN ATHLETICS. The Prevention and Treatment of Athletic Injuries. By Frank S. Lloyd, George G. Deaver and Floyd R. Eastwood. Published by W. B. Saunders Co., Philadelphia, Pa., 1936. Price \$3.25. (Book.)

This book is based upon a nationwide survey of school and college athletic injuries. The authors first provide a background of important information regarding the relative hazards of various sports, those injuries common to each one, and their causes. Then they follow with recommendations for instituting safety controls that will eliminate a large percent of all athletic injuries. The final division of the book is devoted to the treatment of athletic injuries.

Child Safety

SAFETY IN PUPIL TRANSPORTATION. Published by the Research Division of the National Education Association, 1201 Sixteenth St., N.W., Washington, D. C., 1936. (Research Bulletin, Vol. XIV, No. 5, November, 1936. (Pamphlet.)

This publication directs attention to some of the possible causes of pupil injury associated with school bus operation. It suggests numerous safeguards and safety precautions which have proved effective in eliminating school bus accidents and indicates some of the common qualities which characterize safe drivers. It also calls attention to safe operation practices and to a number of administrative procedures having vital safety implications.

Child Education

SAFETY THROUGH THE YEAR. By Florence Nelson and H. Louise Cottrell. Published by the McGraw-Hill Book Co., 330 W. 42nd St., New York City. Price 52c.

This is an entirely new type of book that provides a complete one year course in safety education for the intermediate grades. Designed for

use by the pupil, it also furnishes safety information for the teacher and provides activities carefully planned to develop safety consciousness and proper attitudes. Most of these activities have been selected from projects that have actually been put into practice in the class room.

An exceptionally valuable feature of this book is that methods are incorporated to assist the teacher in determining the safety habits and attitudes of each pupil and to observe the benefit that each child is receiving as the course progresses.

The book is composed of ten units covering all phases of safety which are of concern to school children. These are planned for flexibility so that they can be presented independently in adaptation to local needs. Each unit may be used for regular safety education periods or correlated with various subjects of the curriculum.

Illustrations supplement the text with valuable information, and simple questionnaires and charts help the pupil to grasp the personal significance of the need for safety.

RAYMOND G. ROSS

Industrial Relations

WHAT EMPLOYERS ARE DOING FOR EMPLOYEES. A survey of voluntary activities for improvement of working conditions in American business concerns. Published by the National Industrial Conference Board, Inc., 247 Park Ave., New York City. Price \$2.

Lack of public understanding and appreciation of the accomplishment of industrial management in increasing economic prosperity and improving the living and working conditions of the American people is given as the reason for preparing this brochure.

The booklet indicates that the entire history of industrial relations in this country shows a steadily increasing consideration of the worker. In the beginning a few companies found various ways to make working condi-

tions better, and gradually the idea spread to its present day extent. To quote the authors, "Humanitarian motives played their part in the growth of these personnel activities."

The National Industrial Conference Board has undertaken to determine what personnel activities are being carried on by American industrialists. Information was solicited from concerns in all fields of activity. Replies were received from 2,452 establishments employing 4,502,608 persons.

The well-being of employees depends on both wages received and satisfactory working conditions. Wages are not included in this study. Personnel activities undertaken by employees are grouped under various heads, including collective bargaining, economic security, financial incentives, thrift and investment, training and education, medical work, safety and plant conveniences, rest periods and recreation, and systematic evaluation of employees' work. The booklet contains a large number of charts in which these activities are fairly well subdivided and classified according to industries.

There are 70 pages of material, paper bound. The data will appeal to those particularly interested in employer-employee relations.

EDWARD R. GRANNISS

Public Safety

THE DRIVER. Published by the American Automobile Association, Washington, D.C., 1936, pamphlet.

This pamphlet represents the first of a series of six text-books on traffic, safety and driving. Released as the "Sportsmanlike Driving Series," they are designed to instruct drivers in the more skillful and safe operation of the motor vehicle.

The following subjects are to be covered: (1) The Driver; (2) Driver and Pedestrian Responsibilities; (3) The Automobile and how to Drive It;

Stonehouse FOLD-AWAY Tripod and Signs

This Stonehouse unit is simple in construction, easily operated, readily portable and can be depended upon to provide the clear forceful warning needed to guide traffic and to prevent costly accidents. Each tripod is equipped with 2 red flags. The signs are of 26 gauge steel with baked flexible enamel finish. Many different wordings carried in stock.

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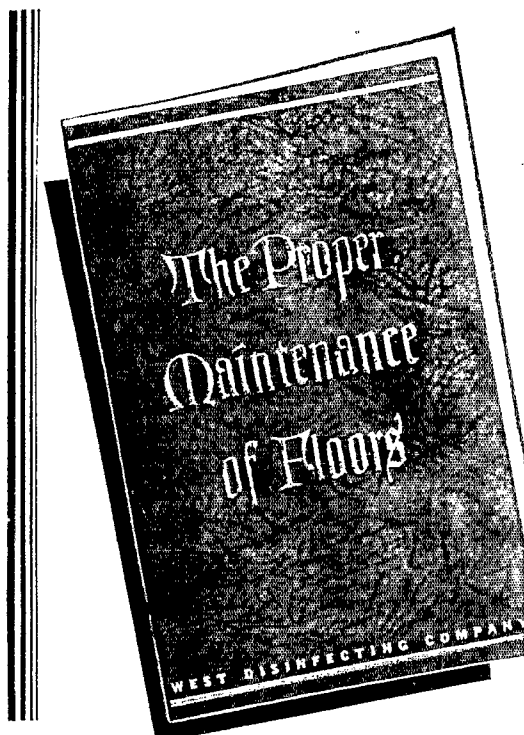
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PAINTED WOOD	SOFT ASPHALT	SLATE OR QUARRY
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● On line construction—in the hands of electricians—where danger is an accepted part of the day's work—Public Utilities everywhere safeguard their men with the best in equipment. Pliers—Climbers—Safety Straps and Belts—Grips—all carry the Klein trademark.

"Since 1857" the name Klein on linemen's equipment has stood for the finest in quality. When life's at stake there can be no compromise with safety. That's why, invariably, the safety engineer demands Kleins.

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Safety for the Pole Climber.
Specifications on Linemen's Belts and Safety Straps.
The Safety Factor on Linemen's Leather Goods.
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(4) How Accidents are Caused. The Highway; (5) Rules of the Road, Tests and Examinations; (6) Highway Traffic—Its Development and Problems.

The material in "The Driver" has been presented in seven chapters and represents the composite effort and counsel of a number of qualified specialists. In answering questions such as "How shall we prepare for skillful driving?" and "What do we need to know as a basis for driving well?" the authors have attempted to provide the reader with a better understanding of the problem. An abundance of illustrative material has been included to hold the interest of the reader. The rather technical topics have generally been handled in a highly popularized and understandable manner.

JAMES G. HAYDEN

Health Hazards

SUMMARY OF STATE REPORTS OF OCCUPATIONAL DISEASES, with a Survey of Preventive Legislation, 1932 to 1934. By M. T. Mettert. Published by the U. S. Women's Bureau, 1936. For sale by the Superintendent of Documents, Washington, D. C. Price 10c. (Bulletin No. 147.) (Pamphlet.)

Machine Shops

MACHINE SHOPS. Revised. Published by the National Safety Council, Inc., 20 N. Wacker Drive, Chicago, Ill., 1936. Price 25c. (Safe Practice No. 39.) (Pamphlet.)

Traffic

MOTOR VEHICLE SPEEDS ON CONNECTICUT HIGHWAYS. By C. J. Tilden. Assisted by D. L. Morris, T. M. C. Martin and E. W. Russell. Published by The Committee on Transportation, Yale University, 1936. (Pamphlet.)

"This study, made jointly by the committee on Transportation of Yale University, The Connecticut State Highway Department and the U. S. Bureau of Public Roads, is believed to be the first large scale accurate study of speeds at which motor vehicles move under a variety of conditions on typical highways. Many of the stations at which the studies were made were located very close to cities."

PERIODICALS

Commercial Vehicles

Ten Hints on Educating Your Drivers. By H. J. Mineur. In *Safety*, December, 1936, p. 68, 71.

Health Hazards

Carbon Monoxide Poison in the Hat Industry. By M. R. Meyers. In New York Department of Labor, Industrial Bulletin, December, 1936, p. 413-414.

Carbon Tetrachloride Poisoning. Outline of a Successful Treatment. By Dr. G. G. Davis. In *Industrial Medicine*, January, 1937, p. 24-29.

Occupational Disease Legislation in the United States, 1936. In U. S. Bureau of Labor Statistics, Monthly Labor Review, November, 1936, p. 1096-1101.

Pathology of the Pneumoconiosis. Silicosis; Silicosis and Tuberculosis; Asbestosis; Siderosis; Anthracosis. By Dr. O. Auerbach. In *Industrial Medicine*, January, 1937, p. 38-48.

The Physiological Response of Peritoneal Tissue to Certain Industrial and Pure Mineral Dusts. By John W. Miller and R. R. Savers. In U. S. Public Health Service, Public Health Reports, December 4, 1936, p. 1677-1689.

Iron and Steel Industry

Injury Experience in the Iron and Steel Industry, 1934 and 1935. In U. S. Bureau of Labor Statistics Monthly Labor Review, December, 1936, p. 1370-1384.

The frequency and severity rates of injuries in the iron and steel industry decreased in 1935 from the 1934 levels in a period during which total man-hours worked increased, according to reports received by the Bureau of Labor Statistics from 1,926 departments of identical firms. The frequency rate declined from 19.42 to 17.14, and the severity rate from 2.42 to 2.11, although the total man-hours worked increased by 17 per cent.

Physical Examinations

Pre-Employment Examinations. A Digest of the First Thousand of a Series. By Dr. M. H. Barsky and Dr. J. Woolff. In *Industrial Medicine*, January, 1937, p. 19-23.

Psychology

The Neglect of the Human Factor in the Prevention of Industrial Accidents. By Dr. H. M. Vernon. In International Labour Office, *International Labour Review*, December, 1936, p. 772-781.

Dr. Vernon shows that workers who are particularly liable to incur accidents in some specific occupation could usefully be transferred to another in which there is less scope for their unfortunate proclivity. He also stresses the value of safety organizations; he expresses the opinion, which he supports by data, that systematic and well-applied safety instructions can achieve useful results by training the workers in methods of accident prevention and by promoting the development of semi-automatic habits adapted to that end as well as of conscious efforts.

Asked and Answered

STEEL TAPE LINES

QUESTION: Is the use of steel tape lines by line crews permissible? If so, under what circumstances? Are construction crews permitted to use steel tapes in plants or outdoor substations where any part or all of the adjacent equipment is energized? If so, what regulations govern such use? What are the objections regarding the accuracy of measurements with approved linen tape lines? When linen tapes are used, should they be tested for conductivity and stamped "Approved" before being issued to line or other crews engaged in electrical work?

ANSWER: It is general practice among utility companies to forbid the use of steel tape lines or metallic woven tapes by overhead line crews. An exception is made in the case of tower erection, when steel tapes are used for setting templates or for other exact measurements, and surveyors' chains are used in setting towers. At this time, however, there are no live circuits on these towers.

Because of the greater resistance to wear, steel tape or metal woven tape lines are generally used for ground work, such as staking, pole setting, and lining up machinery and equipment.

When absolutely accurate measurements are required near energized equipment, the power is shut off, or, if this cannot be done, the work is done by foremen or specially designated employees who fully realize the existing hazard.

The preponderance of opinion is that approved linen tape lines are very accurate and can be used for most types of work. Although some companies feel that the accuracy of linen tape varies according to humidity and temperature, others report that both types have been used in wet snow over a period of time and that at the end of the period the linen tape was found to be just as accurate as the metallic.

There is also a difference of opinion regarding the value of the test for conductivity on linen tapes and on stamping the tapes "Approved" before issuing them to crews. Some members approve of the tests; others purchase tapes according to definite requirements from selected manufacturers and feel that tests are not necessary. One member feels that the tests might be dangerous, because they provide an opportunity for the tape to become damp and thus act as a live conductor.

CHLOROPICRIN

QUESTION: What should be done in case a cylinder of chloropicrin should burst and spray on the skin?

ANSWER: Because chloropicrin will blister and burn the skin, the material should be removed as rapidly as possible. Since chloropicrin is very hard to dissolve in water and cannot be decomposed by

water, dilute alkalis or acids, it should be washed off the skin with large quantities of organic solvents, such as alcohol or ether. After the chloropicrin has been thoroughly removed in this way, bland ointments and oil dressing should be applied to the skin.

However, in an accident of this nature, far greater danger would result from injury to the lungs, caused by inhalation of the vapors. These are similar in nature to the vapors produced by phosgene and the oxides of nitrogen vapors. The proper treatment is to remove the patient immediately to fresh air, remove all garments which may be contaminated with the poison, and give the patient absolute rest.

The pain in the respiratory tract may be alleviated by the inhalation of a fine mist

prepared from a 3 per cent solution of sodium bicarbonate; in addition barbiturates may be given to alleviate the pain.

Neither morphine nor atropine should be given.

If respiration becomes weak, oxygen should be given. As soon as the first signs of pulmonary edema develop, blood should be let from the vein up to 500 or 1,000 cubic centimeters. This may be followed by intravenous injection of 10 c.c. of a 20 per cent sterile solution of dextrose.

Even if the patient should feel no discomfort immediately after the accident, it is vital that he have absolute rest for at least 48 hours. This means that he should not be allowed to move about, nor even to undress himself.



Safe and Easily Cleaned

• Nonskid surface in all four directions means extra safety where Inland 4-Way Floor Plate is used. Also it's easily kept clean. It can be swept and it drains equally well in all four directions. 4-Way Floor Plate should be installed wherever there is need for safety and long wear—around machines, on walkways, steps, loading platforms or aisles where traffic is heavy. Write for our new 16-page catalog illustrating applications.

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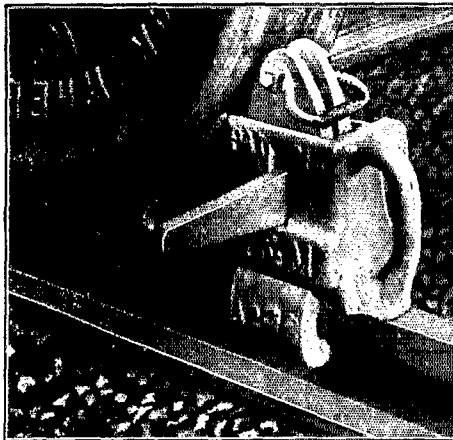
Eliminates the dangerous practice of placing blocks of wood under the car wheel for bracing.

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 A—\$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.
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What's in a Name? This Contest Showed Them

*What's in a name? That which we
call a rose
By any other name would smell as
sweet.*

At least, that's what Shakespeare thought.

However, Mrs. Elizabeth Frances Townsend, 2927- 24th Ave, Moline, Ill., found that a name might contain plenty of things that a christening clergyman never dreamed of. By rearranging the letters in her name to form the sentence, "Be sincere and honest," Mrs. Townsend won the first prize of \$20 in the December, 1936, Safety Calendar Contest of the National Safety Council. Mrs. Townsend received a calendar from the John Deere Plow Works, Moline.

Charles Howard Melville, 206 Laurel Ave., Bellevue, Pa., who won the second prize of \$10, found his name in complete accord with the sentiments of General Sherman, who contended that "War is hell." Mr. Melville received a calendar from the Pittsburgh Railways Company.

Miss Elizabeth Ann Moyer, 269 New York Ave., Oshkosh, Wis., found in her name the sentiment, "I hate lazy men." For this sentence she received the third prize of \$5. Miss Moyer obtained a safety calendar from the Deltax Rug Co., Oshkosh.

The requirements of the contest, the only one of the year which was not hinged on a safety theme, were simply that contestants rearrange the letters of their names to form a sentence. Awards were made purely on the basis of the ingenuity shown by the contestants in transforming the letters to form a coherent thought.

Winners of the fifteen one dollar prizes were:

George Edward Finif, 214 Staumi Ave., Pittsburgh, Pa. Calendar from the Jones and Laughlin Steel Corp. Winning sentence, "A fried egg for Edwin."

Calvin Nicholas Marshall, 1201 N. 19th Street, Richmond, Va. Calendar from the du Pont Rayon Co. "Call no man a liar."

Robert William Barclay, 3114 Bancroft St., San Diego, Calif. Calendar from the San Diego Consolidated Gas and Electric Co. "I am it! Clara Bow Bell."

Miss Alice Eleanor Hollenbach, Saegersville, Pa. Calendar from the Lehigh Portland Cement Co., Allentown. "Hello! A nice, lean bachelor."

Miss Ruth Marie Entorf, 309 Orchard St., Pittsburgh, Pa. Calendar from the Jones and Laughlin Steel Corp. "I am the terror." Alfred Ernest Rainer, 36 "A" Street, Niagara Falls, N. Y. Calendar from the Hooker Electrochemical Co. "I need a real rest."

George Washington Docterman, Box 1094, Ziegler, Ill. Calendar from the Bell & Zoller Coal and Mining Corp. "He can send it to me now."

Charles Edward Earhart, 3323 Procter St., Port Arthur, Texas. Calendar from the Texas Co. "Hard hearts declare war."

Miss Edith Howard Boyden, 200 Blue Hills Parkway, Milton, Mass. Calendar from the Boston Elevated Railway. "Did the boy drown?"

Miss Theresa Louisa Kridle, 2121½ Jennings Ave., Scottsdale, Pa. Calendar from the Warrick Coal Co. "Sue killed a rat."

Miss Della Elaine Muir, 711 West Main St., Lead, S. D. Calendar from the Homestake Mining Co. "I'm a liar."

Miss Annie Gladys Pickett, 3821 Clark Ave., Fort Worth, Texas. Calendar from the Texas Electric Service. "I play deck tennis."

Alonzo Weinstein Davis, Forest, Va. Calendar from the Appalachian Electric Power Co. "I'd love to win."

Miss Christina Marie Dragone, 1024 Alhambra Ave., Martinez, Calif. Calendar from the Hercules Powder Co., Inc. "I adore Christ in a manger."

Mrs. Caroline Rees Smith, Shoemakersville, Pa. Calendar from the Pennsylvania Manufacturers Association Casualty Insurance Co. "Christ is near me."

The interest shown in this contest stamped it as one of the most successful of the entire year. Many unusual entries were received, among them one in which a contestant whose name contained 18 letters constructed 535 sentences.

The contest judges included Dr. C. H. Watson, President, National Safety Council; Harry Guilbert, Director, Bureau of Safety and Compensation, The Pullman Co.; and Glenn F. Griffin, Director, Bureau of Information, National Safety Council.

The new contest series, based on the 1937 Safety Calendar and offering a larger award as first prize, is now in full swing. The February contest is a safety slogan competition. The most important requirement is that the slogans submitted by contestants be original. Plagiarism will cause entries to be ruled out immediately. A statement of 25 words or less must be written by the contestant, telling why he selected the slogan submitted.

There is no limit to the number of slogans that may be entered, but a statement of this type should be sent with each.

Contestants are reminded that entries received before the first day of the contest month or after midnight of the last day of the contest month will not be considered.

Slogans must contain not more than 12 words. All entries will become the property of the National Safety Council. None will be returned. Prize winners will be notified of their awards by mail, and their names will be published in the NATIONAL SAFETY NEWS.

Elaborate entries will be given no more consideration than any others. The contestant must mention the name of the firm from which he received his Safety Calendar.

The first prize in each contest will be \$50 in cash, second prize will be \$10, and third, \$5. In addition 15 cash prizes of \$1 each will be awarded every month.

New Sound Picture Carries Driving Lesson

AS a means of promoting safer driving among the drivers of their assureds, Bruce Dodson and Company, Kansas City, Mo., have developed a sound motion picture entitled "Hell Wouldn't Have Him."

The plot carries Jake Thornton through a truck accident in which he is killed. Upon being hailed before the court of "Judge" Devil, all his careless acts on the highway are brought before him. He is informed that his brother "Buddy" is to be the next victim. Jake breaks away from the lower regions for the purpose of warning Buddy to cease his careless habits.

The story then takes up the education of Buddy along safety lines. Jake constantly at his side. After Buddy's conversion, Jake returns, only to be ejected by the devil for spoiling his business through teaching the value of carefulness.

A happy ending brings about the realization that it was all a dream, but it makes Jake a real driver. This picture has been endorsed by many safety experts and has been shown before a number of meetings. Whenever possible to do so, Bruce Dodson and Company will be glad to show it without charge.

Five Points

WE never set much stock in New Year's resolutions, but a list of five ways that everyone of us can fall in line during the 1937 campaign for a better safety record attracted our attention recently. Call them resolutions if you will—clip out these five rules for a happy new year:

1. Set a safe example for others to follow.
2. Don't let unsafe conditions and injuries go unreported.
3. Help to maintain order and cleanliness.
4. Wear clothing that is safe for the job.
5. Consider the safety of others—especially new employees.

—Delco Doings

If a two-wheeled vehicle is a bicycle, and a three wheeler is a tri-cycle, a one wheeler ought to be an icicle. But it isn't—it's a wheel-bar-row.

"THERE'S NO EASIER WAY"

"Why make a big job of doing floors?" you may hear some say. "A little soap and water . . . or a little wax . . . a mop or a brush . . . that's all it takes."

There is no greater fallacy in business than that. The result of hand mopping or polishing is an optical illusion. What seems to be a short cut turns out to be a detour.

What is true of housekeeping in the home is equally true of housekeeping in business. Electricity is the "easiest way." In the long run it is also the cheapest way, as well as the speediest and best.

You don't have to wait until you have a Finnell machine to prove the foregoing statement to your satisfaction. We will gladly and without charge or obligation make a survey

of the floors in your building. By it, we can tell what you can save and how much better results you can get with a Finnell System.

JUST SAY WHEN! Take the easiest way to let us know when our representative may call. Write, wire or phone. Let him inspect your floors and analyze your present methods. His report will tell you in easy-to-understand figures just what you can expect—and the figures may surprise you. Address FINNELL SYSTEM, INC., 2202 East Street, Elkhart, Ind.

FINNELL SYSTEM

OF
FLOOR
MAINTENANCE

Polishing
Waxing
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Machines

Floor
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Materials



Flaws in Metal

(Continued from page 13)

threads, scratches and rough surfaces, are all stress raisers and may reduce the safe working load from two to ten times and even more, depending on circumstances. These are external stress raisers, but the high power microscope shows that there are also internal stress raisers which influence the trend and propagation of a fatigue crack.

In connection with this matter of stress raisers I have mentioned sharp

cornered keyways in shafts as stress raisers of major importance. This condition is found frequently in machine design. It is questionable design to key one part to another as, for example, an elevator drum to its shaft. Certainly it would be wiser and safer whenever possible to find some other method of attachment, such as a forced fit.

Under no circumstances should keyways have sharp corners. I have examined elevator machinery which through such faulty design has resulted in loss of life and property. I

have also examined the huge driving shafts of ocean steamships which have similarly failed and by so doing have occasioned their owners, crews and passengers some distressing moments.

The term endurance limit appears in connection with discussions of fatigue phenomena. The endurance limit of a metal and the safety factors to be applied under conditions encountered in practice are of importance to engineers and designers of heavily loaded and fast moving machine equipment.

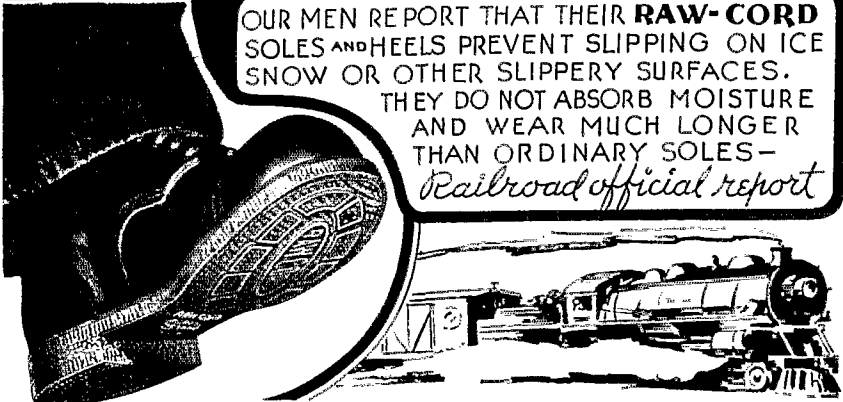
To determine the endurance limit of a given metal, suitable specimens are subjected to reversed cycles of stress. This may be by clamping one end of a specimen securely and pushing the free end first in one direction and then in the other. For carrying out the test a very high stress may be applied to the first specimen which in all probability will soon develop a crack and fail at a relatively low number of operations. The stress and the number of reversals to failure are recorded. There are modifications of the method and there are fatigue testing machines which are automatic and do the job for us.

Each specimen of a group is tested in turn with a diminishing increment of load. As a result a specimen will be encountered which will withstand a given load indefinitely. This particular load is called the endurance limit. Many tests are run on the basis of 10,000,000 reversed cycles of stress without failure. Usually it is assumed that if a specimen will withstand this number of reversed cycles of stress it will run indefinitely.

The test data secured from a series of specimens enable one to plot a graph with unit stress as ordinates and millions of reversals as abscissae. This graph is called the S-N curve of the metal, and it discloses the endurance limit and shows what may be expected from the metal under different intensities of stress.

It has been found in practice that if the safe stress in a given part is raised suddenly to or above the endurance limit for a short time, a crack may develop. Following this, if a much lower value of loading is employed, experience teaches that the crack most likely will continue to develop and the piece will finally rupture. This is believed to be due to the fact that the end of the crack is

RAILROAD MEN ENDORSE RAW-CORD Soles and Heels



OUR MEN REPORT THAT THEIR **RAW-CORD** SOLES AND HEELS PREVENT SLIPPING ON ICE SNOW OR OTHER SLIPPERY SURFACES. THEY DO NOT ABSORB MOISTURE AND WEAR MUCH LONGER THAN ORDINARY SOLES—
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GRO-CORD

NON-SLIP SOLES AND HEELS

rounded and is subject to high local concentration of stress.

Fatigue cracks seem to be the result of progressive action. The action is entirely local. Apparently the grains are not deformed, and the metal along the crack appears to be identical with that far removed.

COMING EVENTS

Of Interest to Safety Men

March 3-4, Newark, N. J.

Eastern Executives Safety Conference. (Essex House). Fred M. Rosseland, Secretary-Manager, Newark Safety Council, 24 Branford Place, Newark, N. J.

April 13-15, New York City

Eighth Annual Convention, Greater New York Safety Council. (Hotel Astor.) Julien H. Harvey, executive vice-president, Greater New York Safety Council, 60 East 42nd Street, New York City.

April 19-20, Toronto, Ont.

Industrial Accident Prevention Associations. Annual Convention. R. B. Morley, general manager, 600 Bay Street, Toronto 2, Canada.

April 20-22, Columbus, O.

All-Ohio Safety Congress. (Neil House.) Thomas P. Kearns, Superintendent, Division of Safety and Hygiene, Industrial Commission of Ohio, Columbus, Ohio.

May 11-12, Roanoke, Va.

Third Annual Virginia State-wide Safety Conference. (Hotel Roanoke.) Secretary, William M. Myers, managing director, Richmond Safety Council, 50 Allison Bldg., Richmond, Va.

May 20, Erie, Pa.

Northwestern Pennsylvania Safety Conference. W. E. Dean, Secretary, Erie Safety Council, 404 Ariel Bldg., Erie, Pa.

June 3, La Crosse, Wis.

Second Annual Upper Mississippi Valley Safety Conference. Secretary, W. F. Oppermann, c/o La Crosse Vocational Schools, La Crosse, Wis.

Sept. 15-16, Portland, Me.

State Safety Conference. (Eastland Hotel). Walter J. Brennan, Safety Engineering Division, Department of Labor and Industry, Augusta, Me.

October 11-15, Kansas City, Mo.

National Safety Council. Twenty-sixth National Safety Congress. W. H. Cameron, managing director, 50 North Wacker Drive, Chicago.



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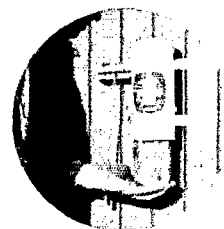
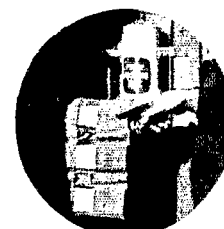
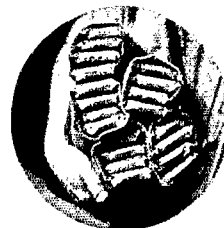
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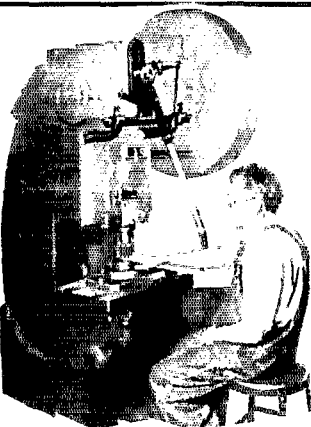
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sweeps the operator's hand away if it is in
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PERSONALS

CLARK D. BRIDGES, who has been connected with safety work and occupational disease control for more than 12 years, has been named director of the Workmen's Compensation Health and Safety Bureau of the Illinois Manufacturers Association. Mr. Bridges was engaged in general safety work with the General Accident Assurance Corporation for 10 years. During the latter part of this period his work also was concerned with occupational disease.

Becoming associated with the Hartford Accident and Indemnity Insurance Company, Mr. Bridges was engaged in occupational disease control work and special risk work for that company for 2½ years.

Known as one of the best informed men in the Middle West on occupational diseases, Mr. Bridges will serve the Illinois Manufacturers Association in an advisory capacity in relation to the new occupational disease act now effective in the state of Illinois. His work will include study of methods of control of occupational diseases from the engineering and medical standpoints.

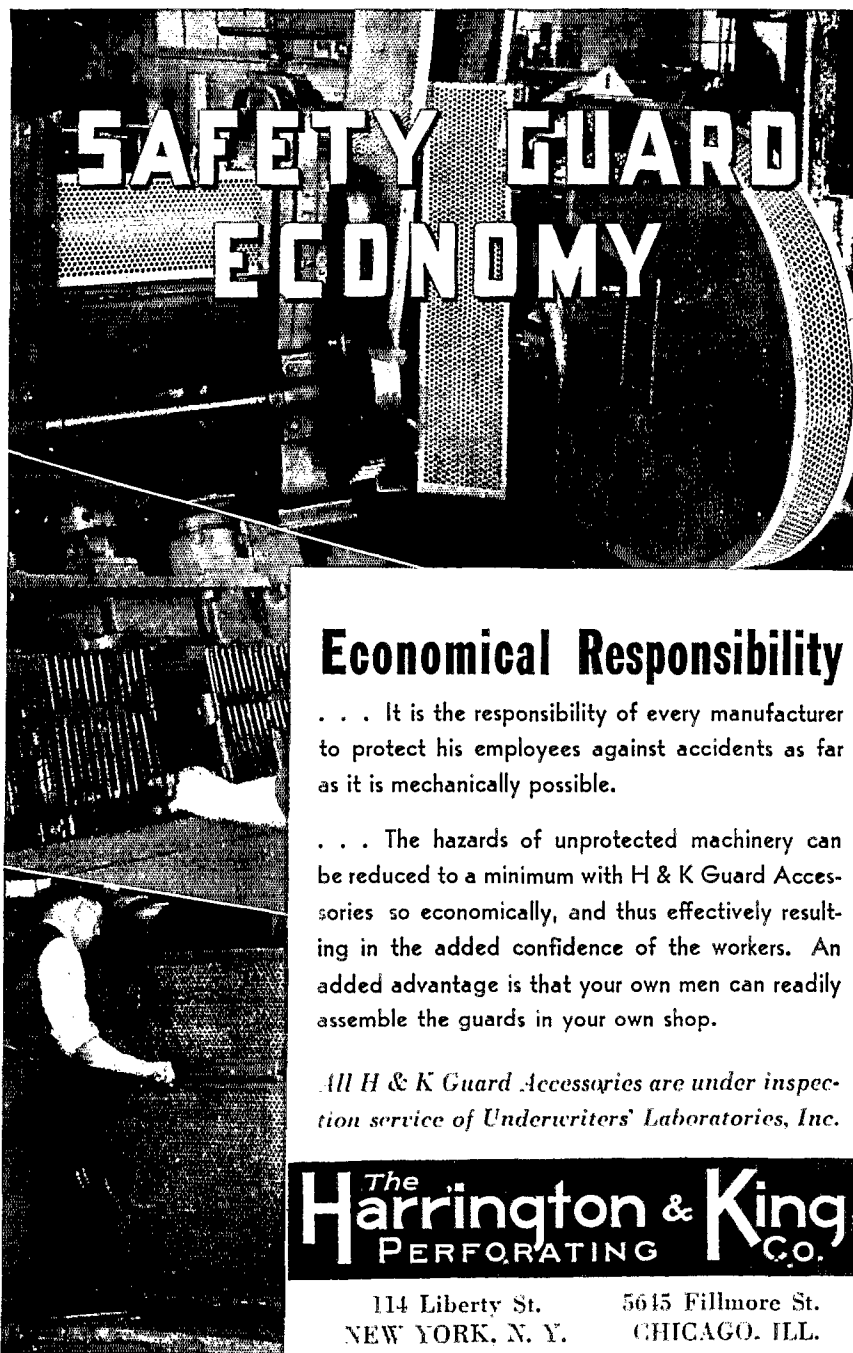
As the first step in a program to broaden the activities of the American Foundrymen's Association, the Executive Committee of the Board of Directors on December 4 elected C. E. HOYT, for the past 18 years executive secretary-treasurer of the Association, to the position of executive vice-president, a newly created office.

At the same time DAN M. AVEY, formerly vice-president and director of the Penton Publishing Company, Cleveland, and Editor of *The Foundry*, was elected secretary-treasurer.

Mr. Hoyt has long been active in the work of the Association, first as a member of the Western Foundry-

WANTED

An experienced safety engineer trained in all phases of steel plant accident prevention. Mechanical engineer preferred. Give full details of personal qualifications and experience. State salary expected. Address BOX 303, NATIONAL SAFETY NEWS.



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... It is the responsibility of every manufacturer to protect his employees against accidents as far as it is mechanically possible.

... The hazards of unprotected machinery can be reduced to a minimum with H & K Guard Accessories so economically, and thus effectively resulting in the added confidence of the workers. An added advantage is that your own men can readily assemble the guards in your own shop.

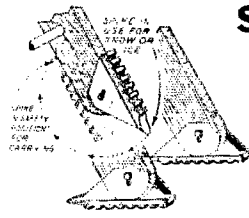
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*A self-sharpening spike eliminates cost and hazard of depending on inspection and sharpening.

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men's Association, then as secretary-treasurer of the Chicago Foundry Foremen's Association. Later he was elected secretary-treasurer of the Associated Foundry Foremen of America and subsequently secretary and manager of exhibits for the Foundry Supply Association and its successor, the Foundry and Machine Exhibition Company.

Mr. Avey has long been identified with the work of the A. F. A. He has served as a chairman, member or representative on many important committees, and has held office as director in 1931 and 1932, vice-president in 1933, and served two terms as president in 1934 and 1935. He has also been secretary of the Foundry Equipment Manufacturers Association.

JACK DEMPSTER, editor of the News-Letter of the Cement Section, has been transferred from Plant No. 8 of the Canada Cement Company at Port Colborne, Ontario, to the safety department at company headquarters in Montreal.

A. E. PARKER, chairman of the Transit Section, National Safety Council, and chairman of the Committee on Publicity and Merchandising of the Canadian Transit Association, has been elected for a third term chairman of the Advisory Traffic Commission of the City of Winnipeg. Mr. Parker is in charge of accident prevention work for the Winnipeg Electric Company.

OBITUARY

W. P. CONN

WHITMAN P. CONN, long active in the accident prevention field and in the work of the Construction Section of the National Safety Council, died on Sunday, January 3. He was editor of *The Constructor*, official publication of the Associated General Contractors of America. He was also Chairman of the Publicity Committee of the Construction Section, N.S.C.

A strong and enthusiastic advocate of accident prevention, he devoted his editorial columns frequently to the advancement of this work.

National Safety News, February, 1937

ARMORED

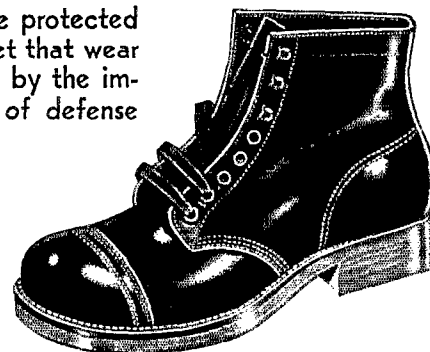


STEEL for PROTECTION

THE dreadnaughts of the Navy are protected by 16 inches of *steel plate*—the feet that wear Lehigh Safety Shoes are protected by the improved *steel box toe*, a first line of defense against foot injury.

COMFORTABLE, attractive in appearance and long wearing qualities, combine to induce workers to appreciate their value.

THERE is a pattern available from stock to meet practically every industrial need. Please write for complete information.



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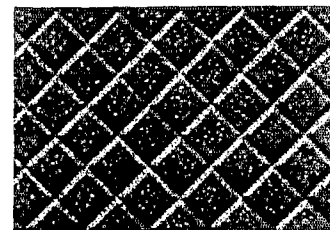
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● For more than 25 years, the manufacturers of Old Hickory STEEL-GRIP Gloves and Safety Clothing have worked hand in hand with Safety Engineers and Purchasing Agents in devising the correct type of safety equipment for protecting the life and the limb of employees.

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"Just Another Year?"

(Continued from page 18)

traffic safety speeches on a national net-work program. Continued co-operation was given to the National Conference on Street and Highway Safety. A second study was made on fatigue due to driving commercial trucks excessively long hours, published with the title "How Long on the Highway." Tens of thousands of copies of this new study have been distributed. Two other pamphlets distributed were: "The New War on Accidents" and "State and Community Organization for Safety," to be followed by additional ones covering the public safety problem comprehensively. Other engineering studies, as well as street and highway traffic surveys, have continued, and representatives of the Council have attended dozens of meetings held by public officials and others on cooperative programs.

6. The school safety program of the Council, still financed by the National Bureau of Casualty and Surety Underwriters, never made more progress than in 1936. One of the extended developments was in the field of training high school drivers. The monthly magazine, SAFETY EDUCATION, with associated safety lesson outlines, achieved its largest monthly distribution. Contacts were maintained with the National Congress of Parents and Teachers and other cooperative institutions.

7. The Community Safety Councils benefited by the recovery in business during 1936, and your national organization continued its services to these state and local councils by correspondence, conferences, consolidated reports, and personal visits and contacts. The annual conference of managers, a mid-summer conference, the monthly news-letter, the consolidated report of activities, and similar services were maintained.

8. Our Eastern Office, located in New York, was converted into the Greater New York Safety Council March 1, thus consummating a long planned and desired development.

9. The Annual Congress at Atlantic City, in which the State of New Jersey assumed the leadership in a very significant manner, brought out an

attendance that was the largest in the history of the safety movement. Eighteen Regional Safety Conferences were consummated between the Louisville and Atlantic City Congresses. Services were rendered to our Pacific Coast members through attendance at the Annual Safety Convention of the State of California in May, and at other meetings. In addition to these meetings, hundreds of speeches were made by voluntary committeemen and members and by the staff during the year.

10. The income of the Council for 1936 increased about 15 per cent over 1935, and thus permitted a considerable increase in definite activities. Every call for service was met promptly; every request for cooperation was complied with. Requests for sample publications from many parts of the world were opportunities for service which the Council welcomed. The two volumes of printed Transactions of the New Jersey Congress were edited, printed and mailed a month earlier than usual.

11. There are just three outstanding factors in the success of a national movement like that undertaken by the National Safety Council. The first is the lay-leadership; the second is a reasonable amount of money to pay expenses; and the third is efficient and aggressive management. While the Council is dedicated to the highest ideals of public service, it also has all of the problems of a complicated business. Enough is now known about the problem of safety to enable your Council to answer almost any important prevention problem, but many lives could be saved if money were available to multiply the services that must be rendered to cut down the number of accidents. Our major committees know how difficult it is to spend our comparatively small income for the best interests of members and still stretch a helping hand to many others unwilling or unable to pay their share of the expenses. In addition to the payment of dues by our industrial members, many have contributed small amounts during the year for our home and protection fund. This money will be spent di-

rectly for this purpose and not for overhead.

12. Death took its toll of safety leaders during 1936; men whose passing will leave places difficult to fill in the front-line of accident prevention. Though the list is too long to give in full, these may be mentioned: Past-president Arthur T. Morey, P.W.A. Fitzsimmons, Albert C. Gibson, Charles E. Babcock, Ethelbert Stewart, Charles M. Anderson, Arthur Bergquist, and Elmer J. Smith.

Members of the Council know that much more could be accomplished in safety if the Council had more adequate financial support. At the same time we must always realize that the priceless resources of the organization are the good will, the services, the enterprise and the capacity of its members and cooperators. Accidents are unnecessary, their cost is beyond computation, but they can be stopped when employers, employees and the public make up their minds to do the necessary things—to apply the pattern of prevention so laboriously developed over these twenty-four years.

Safe Drivers Show Good Judgment

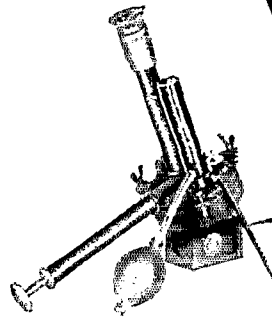
ACCIDENT-FREE drivers have good records because they use good judgment. Here are the experiences of two men who have good safety records.

The motorman of a street car slowed down as he approached a line of parked machines. Suddenly one of them pulled out directly in front of him. He was able to stop in time to avoid a collision. When asked why he slowed down he replied, "I saw white smoke coming out of the exhaust of that automobile. That told me the driver had his foot on the gas and might do the wrong thing so I was prepared for it."

A driver approaching a cross street slowed down for no apparent cause. As he reached the corner, a large truck pulled out of the street at high speed directly in front of him. When asked why he slowed down, he said, "Didn't you see that pedestrian on the crosswalk jump ahead to reach the curb? I did. That told me there must be a vehicle approaching."

That's good judgment.

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Safeguard your company from the dangers of unknown dust conditions in your plant by making an accurate study of the problem.

The B & L Dust Counter not only provides you with an easy, accurate, and dependable means for measuring the dust concentration in your plant but it furnishes you with a permanent record for future reference.

Designed in collaboration with and at the request of one of the leading insurance companies, this instrument is a combined air sampler, and dust particle counting and measuring microscope. With it you can take twelve samples of air on one slide which can be examined immediately "on location" or later in privacy.

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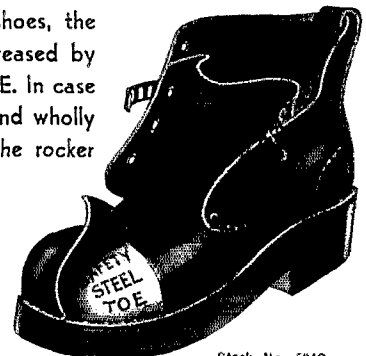
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Different from other types of safety shoes, the strength of the STEEL TOE is greatly increased by the "PERFECT ROCKER" WOODEN SOLE. In case of severe shock, the wearer need not depend wholly on the Steel Toe to protect the toes. The rocker action of this sole will force the foot from underneath the fallen object.

Write for sample of this Safety Shoe that provides both sole and toe protection.

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Refund of money paid will be made on written disapproval of any state or insurance inspector.

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**IN SAFETY THE BEST
IS NONE TOO GOOD**

The Value of a Safety Council

By JOHN J. TOOHEY, JR.

Commissioner of Labor, State of New Jersey

COMMUNITY safety councils are important adjuncts to the organized safety work authorized by the state legislature when it created a department of labor. In view of modern processing conditions, high speed machinery, and subtle and dangerous trade substances that may cause ill health, it is important that workmen be given intensive training that will make them realize the hazards to be avoided in their daily tasks.

While the State of New Jersey Department of Labor has cooperated to the fullest extent with the American Standards Association in the development of mechanical devices for the protection of workers, it is, of course, impossible for any state department to organize state-wide educational safety campaigns that will reach management, supervisors and men. The work of promoting safety education is one that should be assumed by employers in each local area. It is not too much to ask them to support a safety council morally and financially.

If employers are not willing to do their part in educating those employed or those who may potentially be employed by them, they are not doing their full duty towards themselves and society. The day has long passed when any employer can justify his own conscience in case of accident by declaring he has done all that the state law required him to do in maintaining plant safety conditions.

We know that the large percentage of all accidents results from carelessness, thoughtlessness or negligence on the part of the working group. Such causes cannot be overcome by legislative enactments, nor can they be prevented by factory inspection alone. They can be prevented only by employers who cooperate with local safety councils, insisting that the supervisors and foremen attend safety lectures and then try to instill in the entire organization a spirit of caution.

The state will do its part through the department of labor in safeguarding equipment and structures, but the safety educational program is one that must be promoted by industry itself.

During the ten-year period of 1926 to 1935 there were 2,623 fatal accidents in the New Jersey industries. There were also 214,694 non-fatal compensable injuries with a total compensation cost of \$63,425,209. If we were to multiply the total monetary cost four times, the sum then reached would probably not approximate the total cost of these accidents.

I am not going to say a word about the suffering these accidents cause the injured men and their families. You may let your own imagination work on this, but just keep in mind that even though we do compensate a man for a maiming injury, or a family for the loss of a bread-winner, the amount received is small indeed in comparison with the loss.

Statistics present many dark tragedies that could have been prevented by a more intense interest in the work of safety councils and safety education in general on the part of the employing group.

Embossing Press

(Continued from page 27)

point, it immediately reverses itself and starts to rise at the same speed as the platen. When the platen reaches the top of its stroke, the gate continues to rise for about an inch and remains stationary until the platen opens for removal and replacement of material. Thereupon the gate again closes for the next cycle of operation.

Protection is afforded both at the front and rear of the machine. Full protection is given when changing plates, even if the operator should fail to stop the motor, though this practice is not recommended.

When the gates are raised high enough to permit changing the plates, they remain raised and must be brought back to operating position before the machine can be started again.

After the safety device has been tripped, it must be reset before the operator can start the machine.

It is believed that the guard demonstrates a sound basic principle which it will be possible to apply to many machines similar in operation.

The guard was developed through the joint cooperation of the Steinhart Leather Company, the Travelers Insurance Company, and Fiest and Fiest, insurance brokers, Newark, N. J. The need of such a guard was brought to attention by the New Jersey State Department of Labor.

Although the first installation represents an expenditure of several thousand dollars, because of the research work done and the cost of constructing working models, it is reported that the device can be duplicated on other machines at a low cost.

Weak Spots

(Continued from page 20)

Many managers and foremen have overlooked a real opportunity to do effective work in this field. Correction and instruction of journeymen will not only increase production and decrease accidents but it will also have a salutary effect on the thinking and actions of other workers.

Instruction is equally applicable to specialists or machine tool operators, particularly when they first enter employment, or whenever a process is changed or a different device introduced. The specialist may have operated a similar machine, but invariably concealment of facts during the employment process misleads the foreman into overestimating the man's ability. The very limited training and experience of some of these specialists sometimes stunts their comprehension of the enormous power or fast motion of mechanisms and the damage which may result from negligence or lack of skill.

The training of apprentices can do much to prevent accidents among the future personnel of the production departments. The apprentice groups of today are the journeymen of tomorrow. Industry must develop these or accept lower standards of performance in the future.

1936 FIGURES ARE IN

**MORE NEW USERS
THAN ANY PREVIOUS
YEAR EXCEPT 1929**



**GROUP WASHING
★ SAVES SPACE,
TIME, WATER
—MORE SANITARY**

Bradley three- or five-stall Showers (all in one complete unit) like Bradley Washfountains, save space, water, installation cost and upkeep.



● In the 20 years since Bradley Washfountains were first developed—1936 led all but 1929 in the total number of new users of these modern, sanitary wash fixtures.

Yet the thousands of Bradleys in long usage have proved so satisfactory that 55% of total 1936 Washfountain production went to users who were extending their Bradley facilities—getting more because they liked them.

Easy to Install—Fewer Plumbing Connections

Bradley Washfountains to serve 10 at one time require one-tenth the plumbing connections that individual wash basins do. They are easy to install in present or new buildings—good reason for you to modernize all your washrooms—and save at the same time. Write for Catalog No. 435, today. BRADLEY WASHFOUNTAIN COMPANY, 2237 W. Michigan St., Milwaukee, Wis.

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...GIVES GREATER STRENGTH,
ECONOMY, AND SAFETY

Rivetless face-piece, formed from seamless heavy-gauge fibre sheet, eliminates all possibility of electric shock through the shield—permits easy, complete sterilization—and insures exceptionally long life with maximum economy.



UNIQUE LENS HOLDER PROVIDES ECONOMY
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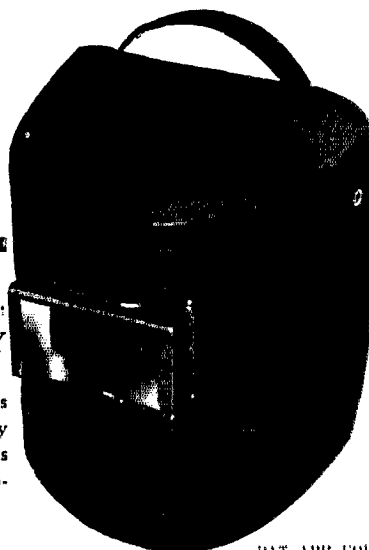
Made from special oil and heat resisting compound—reduces breakage and allows for instant changing of cover glass without removing colored glass.

NEW HEADGEAR GIVES EXTRA COMFORT

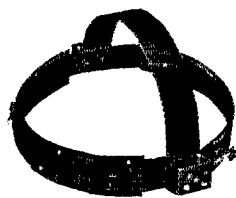
Instantly adjustable, really fits all heads—with new detachable headpad that affords maximum comfort.

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PAT. APP. FOR



THE HONOR ROLL

Details of no-accident records in excess of 400,000 man-hours or 300 working days, are invited for this department

Kansas Gas and Electric Co.

The entire Independence district of the Kansas Gas and Electric Company has won a place in the safety honor roll. The record, as of December 15, 1936, is as follows:

The 58 men of the Independence Division have gone five years and seven months without a lost time accident; the Cherryvale Division of seven men has gone five years and eleven months without a disabling injury; and the Elk River Division of 10 men has completed a five-year period without an accident of any kind. This makes a total of 75 employees in the Independence district who have worked 780,000 safe man-hours during the past five years.

The Neosho plant of the company near Parsons, Kansas, has completed a record of two years without a disabling injury. The 87 men employed in the plant have worked a total of 561,920 safe man-hours.

Lehigh Portland Cement Co.

The extended no-accident record begun by employees of the Topeka, Kansas, plant of the Lehigh Portland Cement Company on September 9, 1926, has remained intact through another year and is now nearing the three-million man-hour mark. On December 31, 1936, the number of man-hours without a disabling injury totalled 2,994,977. The average working force is about 135 employees.

Lever Brothers Co.

A record of more than one million man-hours without a disabling injury has been made by the 1,858 employees of the Cambridge, Mass., plant of the Lever Brothers Company, manufacturers of soap and glycerine.

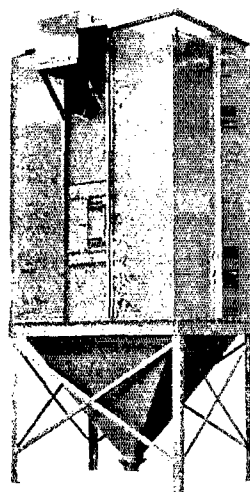
The record, which began August 1, 1936, reached a total of 1,269,909 safe man-hours on December 5, 1936, and was still unbroken at that date.

Perfect Circle Co.

An intensive safety campaign, started a year ago, is given credit for the best safety record established at the Hagerstown, Ind., plant of the Perfect Circle Company. The record, which began June 15, 1936, reached a total of 579,978 man-hours on December 1. It was still unbroken on December 15, the date of reporting.

The Perfect Circle Company, classified in the light machines division, manufactures piston rings and piston expanders. An average force of 650 workers is employed.

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DUST causes a loss each year that runs into hundreds of millions of dollars. Any plant that has Dust pays a toll, equal to cash, and therefore contributes in a definite way to this huge yearly loss. Healthy workers are happy workers and will increase efficiency of plant. An efficient plant has a decided advantage in face of severe competition. No matter how large or small your Dust problem appears it should be properly taken care of. Even one machine can create enough Dust to reduce efficiency of entire plant. For individual machines we supply DRACCO Unit Filters (write for literature). If you require complete protection write for Bulletin No. 301. A very important feature is that all repairs are made on the CLEAN AIR SIDE of Filters. DRACCO Engineers are particularly well qualified to advise you no matter what your Dust problem may be.

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Texas Corrugated Box Co.

Between December 8, 1933, and December 31, 1936, the Texas Corrugated Box Company, Inc., at Dallas operated 920 days (421,494 man-hours) without a disabling injury. The average number of employees was 70. At the beginning of the present year the record was still intact. Since December 6, 1930, the plant has had only one disabling injury, which involved 15 lost days, in a total exposure of 885,617 man-hours.

Fire Losses Cut 54.9% In Nine Years

FIRE losses on the American railroads last year amounted to \$3,273,927, a decrease of 54.9 per cent as compared with the \$7,268,434 fire losses sustained in 1926. It is shown by a report of the Committee on Statistics presented at the recent annual meeting of the Railway Fire Protection Association held in Chicago.

Of the 1935 total, the loss to merchandise in transit amounted to only \$352,495, or slightly more than 10 per cent.

In 1935, wrecks were responsible for greater fire losses than those attributed to any other single cause. The total 1935 loss so assigned was \$490,297. Fires traced to trespassers, resulting in losses of \$385,319 in 1935, was second on the year's list of causes. Fire damage due to unknown causes was reported for 1935 at \$423,065, while miscellaneous losses not separately classified totaled \$41,930.

Other major causes, together with respective 1935 fire losses, were as follows: exposure, \$307,039; incendiary, \$269,872; spontaneous ignition, \$262,606; electric power and motors, \$164,966; smoking and matches, \$119,233.

Elizabeth Safety Council To Hold Lecture Course

AN enrollment of about 400 persons is expected in the Elizabeth, N. J., Safety Council's Third Annual Industrial Safety Lecture Course for executives, foremen, supervisors, and safety engineers, which will open March 15. Arrangements are being made by the Industrial Safety Committee of the Council.

Sessions will be held once a week over a period of five weeks and will be conducted in the Hotel Winfield Scott.

The lecture course has been very successful during the past two years, drawing representative delegates from the industrial area in which Elizabeth is situated.

Keep the Packing Room Safe and Clean WITH VACUUM

Vacuum cleaning in the packing or shipping room has three distinct advantages: It protects the employees; it keeps dust away from the finished goods and containers, and it does the ordinary floor cleaning quicker, better and at less cost than any other method.

Spencer Vacuum Cleaning Systems, designed in many types and sizes, will clean any kind of floor, wall or ceiling surface; remove bulky materials such as sand or coal dust, and extremely light materials such as lint or powdered dust.

Spencer Systems are used to clean machinery, to clean products before painting or finishing; to remove stencils, and to pick up or hold materials during the manufacturing process.

These systems are built especially for long-life service under the most severe industrial conditions. May we send you the bulletin?

A single unit is readily piped to all floors of any building, and light-weight vacuum hose, connected to special Spencer Vacuum Tools, provides a universal one-man cleaning system.

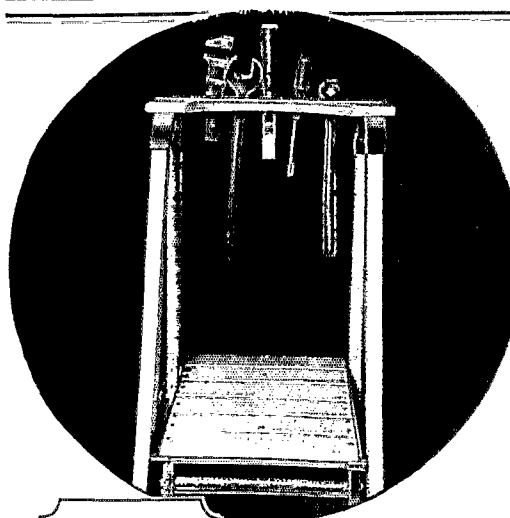


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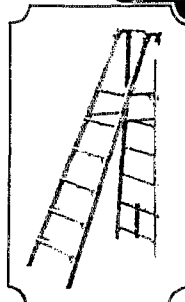
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THIS enclosed platform and handy tool rack are giving industry two invaluable services — (1) Better, faster work at levels from 3 to 18 feet in the air — (2) Safety from dropping tools and all common ladder hazards.



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Safety Platform Ladder

Specify it by name—Known everywhere as part of the Complete Gold Medal Line

The PATENT SCAFFOLDING CO., Inc.

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ATLANTA BOSTON LOS ANGELES PHILADELPHIA PITTSBURGH ST. LOUIS SAN FRANCISCO

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B-K VALVES incorporate ease of operation, positive action and fine materials and workmanship. There are B-K VALVES available for all types of Inhalators and Oxygen Breathing Apparatus used by Steel Mills, Oil Companies, Chemical Works, Public Utilities, Fire Departments and Rescue Squads, regardless of make. Write for Details and Prices. Be sure to state make and type of your equipment.

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OXYGEN EQUIPMENT PRODUCTS



THE VALUE of your business is protected, in proportion to the insurance you carry. It reimburses you for direct loss. It cannot repay loss of time, orders, sales and records that a serious fire brings. Crime shows no sign of decrease.

THE ELEMENT of detection that stops the occurrence of these losses is needed in every business. The simplest, most efficient way of supplying it is by watchmen, properly checked by a supervisory system.

THE SIMPLEST, most efficient way of supervising the watchmen is a Detex Watchclock System.

ASK DETEX for information on a system that will fit both your present and future needs.

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Safer Blasting Practices

(Continued from page 22)

As experience with the Bureau of Mines type lean-cement-mortar magazine near Bruceton, Pa., had shown that it was relatively cool in summer, one was constructed at one of the collieries of the Philadelphia and Reading Coal and Iron Company. It is of 25,000 pounds capacity, and has been in service three years.

The maximum temperature recorded in this magazine during the hot summer of 1936 was 85° F., while outside temperatures in the sun exceeded 112° F., (the magazine is not shaded); the minimum during the severe winter of 1935-36, with an outside temperature of -24° F., was actually 18° F.

The salient feature of this magazine is the use of cement-mortar in walls, sliding door, and roof. The cement-mortar is six inches thick in all walls and three inches thick in roof and door. The cement-mortar is composed of 1 part cement to 6 parts of coarse sand, permitting it to disintegrate to sand in the remote event of an explosion within it. It is bullet and fire-resistant, securely locks against unlawful entry, well ventilated, and cool in summer. The metal covering is grounded and thus at least partly protected against lightning. The No. 26-gage galvanized flat iron used on the exterior walls, roof, and door is covered with aluminum bronze paint, designed to assist in keeping the temperature low during the hot months.

As most permissible explosives and many of the dynamites contain ammonium nitrate, they are adversely affected by repeated alternations of high and low temperatures. The temperatures in this magazine were well within the transition temperatures for ammonium nitrate. Two similar magazines are being erected by the company.

Proper underground storage is equally as important as surface storage if explosives in good condition are always to be available. Miners buy explosives by the 25-pound case and commonly store them in case in headings, with the electric blasting caps nearby, and not infrequently against or in the cases of explosives.

Occasionally headings were too

short to permit the storage of both explosives and electric blasting caps therein and still maintain a proper distance between them. Tests were made to determine the minimum thickness of oak which would prevent a group of 25 blasting caps, effectively arranged, from exploding a sensitive dynamite.

Repeated trials were made, and it was definitely determined that three one-inch oak boards would always prevent the explosion of the dynamite placed directly against the other side of the barricade. This partition was incorporated in the design of a box for underground storage with separate compartments for explosives and electric detonators. This type of box has been adopted generally by the company.

Electric Blasting

Electric blasting had been introduced so recently that there was need for a study of the methods in use and for a general standardization of the methods to prevent accidents due to the faulty application of a new method. Electric blasting, especially the blasting in series of multiple shots, presented a special problem. A study of the firing-in-series characteristics of commercial electric blasting caps led to some interesting results.

Tests were made of 10 types of electric blasting caps of four manufacturers; two were of the match-head type, the others of the bridge-wire type; five had copper legs and five iron; minimum firing currents were determined by three trials, firing 10 electric blasting caps in series; the source of current was dry cells in series supplying 23.0 volts.

Minimum firing currents varied from 1.35 amperes to 0.48 ampere for the different manufacturers. Manufacturers recommend that the minimum firing current for series firing be not less than 1.5 amperes. However, it was demonstrated the factor of safety against misfires is substantially greater with some type of electric blasting caps than with others.

With this information available, the authors were able to fire 35 electric blasting caps of one type having

iron legs (0.48 ampere minimum firing current), but only 25 electric blasting caps of another type having copper legs (1.35 amperes minimum firing current), using a powerful Schaffler BDK type of multiple-shot blasting machine.

This procedure permitted the selection of those types of electric blasting caps most certain of detonation in series firing, but it was desired to determine the current-time firing characteristics by tests of individual caps, in the expectation that it might be possible to limit the time of application of the firing current at its source and still deliver adequate energy to the bridge of each cap to fire it with certainty. A timing switch arrangement, consisting of an inclined plane having two side rods as runners for a large ball bearing was used for this purpose, the current flowed during the interval that the ball bearing passed over the bare portion of the two runners, and the time was changed for the various tests by changing the rods, which were arranged with different lengths of bared portions. Current from dry cells and various resistances in the firing circuit were used.

Four codes of different manufacturers tested would fire with an application of current for 0.0025 second, but requiring 2.22 to 5.62 amperes. For 0.005 second the required amperage varied from 1.25 to 2.24, each established by five trials. Results, however, were erratic, especially at these very short time intervals, and suspicion was cast on the adequacy of the inclined-plane type of timing device to give a continuous current; this undependability was demonstrated to be a fact by oscillograph tests of this device by the Electrical Section of the Bureau of Mines and, as a result, this section undertook the testing of different codes of electric blasting caps, and published the results.

The significant result of these tests was the definite discovery that one type of electric blasting cap always had a lag of 0.006 second or more, although the firing current was 4.25 amperes. At lower firing currents the lag was 0.010 or more second. This substantial lag—time between the application of the firing current and the explosion of the caps—seemed to be the first step in the solution of a very important safety problem, that is, the question of a gas ignition at the face

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Wherever there is possibility of encountering harmful gases in emergency or ordinary service work, there is need of the protection afforded by this light, comfortable, easy-to-carry outfit. Standard kit includes cartridges for fumes most generally encountered in industry. Write for literature.

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"WORKER'S FALLS ARE A GREATER MENACE

... than all the Machinery, Elevators, Hoists or Conveyors in all the industrial establishments," quotes a well known authority on accident prevention.

Overcome this menace in your plant before some one of your employees pays with life or limb for a dangerous floor condition that could so easily and economically be corrected with a Lincoln Twin-Disc Machine.

Not only will this machine be an important factor in accident prevention by keeping your floors in a clean sanitary condition, but will actually Save you MONEY in Labor, Time and floor cleaning materials. In addition the Savings accomplished by preventing accidents is incalculable.

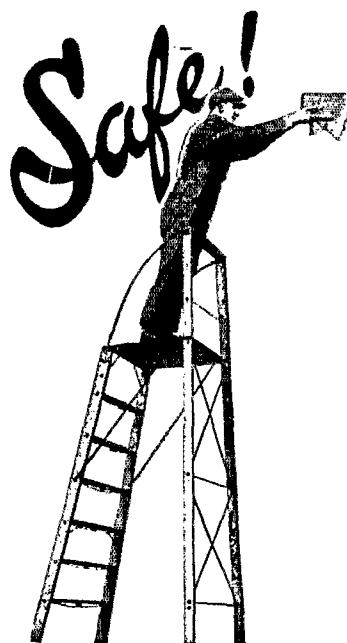
Floor accidents are an every-day occurrence. At this minute some one of your employees may be paying the sacrifice of life or limb through hazardous floor conditions. Eradicate this menace, the easy economical way by writing today, stating the types of flooring in your plant and the floor problems you encounter and we'll gladly arrange a FREE demonstration of one of our industrial machines at your convenience.

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The LINCOLN Twin Disc
SCRUBS - WAXES - POLISHES

For Economy For Safety!



Every Dayton Safety Ladder in your plant serves a double purpose. Saves workman's time, saves accidents. No wobbling, no tipping, both hands free for fast work. Made of durable airplane spruce, strongly braced. Sizes 3 to 16 feet. Gives you quality at a moderate price.

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DAYTON Safety Ladder

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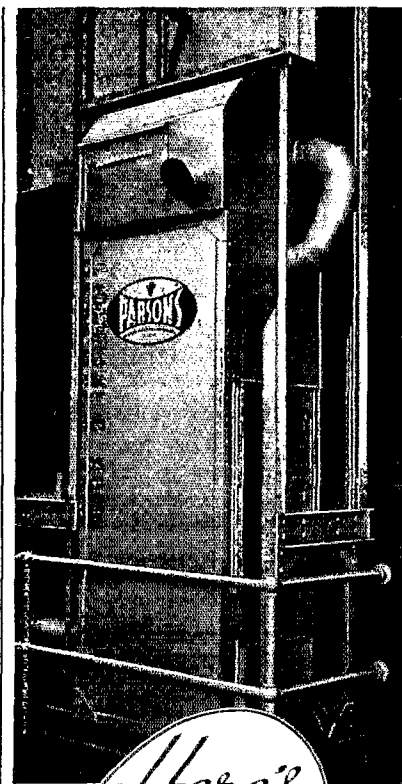
Send for our new Catalog No. 3 showing a complete line of accident prevention equipment.

caused by firing currents strong enough to give off arcs that will ignite gas, as a current from a 10-shot blasting machine.

Since there is no general agreement in evaluating this hazard, it is explained in detail: In the bituminous coal mines it has been recognized that a hazard exists when using mine power wires or any blasting machine with enough current to ignite gas as a result of a make-and-break contact of tangled electric wires such as usually occurs at faces at and immediately after blasting; an explosive mixture of firedamp and air, possibly amplified by dust, is likely to be found in some coal mines immediately upon blasting, thus bringing about the very dangerous combination of an explosive atmospheric mixture and a spark or arc to ignite the mixture.

This was so well recognized that the permissible single-shot blasting unit was designed, tested, and approved by the United States Bureau of Mines, and is commonly used for firing single shots. The sequence of this ignition is complicated, and the hazard may seem remote; the current from the normal blasting machine of the 5- or 10-shot non-permissible type will flow for approximately 0.3 of a second. If during that time the blast at the face creates sufficient disturbance to cause the lead wires or any two uninsulated portions of wire to come into momentary contact, the current from the blasting machine will cause a spark or arc at that point of sufficient intensity to ignite any explosive mixture present. The interval between the application of the current and the blast is usually of the order of 0.001 to 0.003 of a second, so that the time interval during which such an ignition can occur is an appreciable one.

This has been recognized in the bituminous field, where a single-shot machine is more or less standard, but in the anthracite region, where the 10-shot machine is used, no consideration has been given to this rather important matter until recently, and the hazard is still considered somewhat remote. However, since it is not possible to differentiate between the two major causes of gas ignitions by blasting—the explosive and the igniting ability of the current used for firing—the matter was considered important enough to justify elimination of the hazard from the current if possible.



*Here's
the
Answer!*

ARE you saying, "But ours is a small application"? Here's the answer—the Parsons Unit Type Arrestor. It insures you the exclusive features of Parsons design and construction, especially the advantages of the Oval Bag principle. In addition, you get compactness and portability. Note how the fan and drive are mounted on top. You can transport the Parsons Unit Type Arrestor on a truck and erect it right beside the equipment to be ventilated.

Write for our NEW Bulletin
No. DA-6



PARSONS ENGINEERING
CORPORATION

6511 Cedar Ave., Cleveland, Ohio

Two approaches to this problem were possible, one through the development of a suitable dry-cell blasting unit, in which the current would not cause a spark of sufficient intensity to ignite the gas, and the other through the use of the same 10-shot blasting machines in which the circuit from the blasting machine would be disconnected by a timing switch in the machine in a time period long enough to insure the complete detonation of all the series, but not long enough to furnish current after the first detonator had exploded.

Five Burgess No. 533 batteries of 3 cells each, or batteries of equivalent capacity and voltage, will fire 6 electric blasting caps through a total resistance up to 20 ohms. This battery will also fire more than 6 electric blasting caps, provided the total resistance is not excessive. Probably 10 is a reasonable limit to place on the number of electric blasting caps in series with a total resistance in the firing circuit of not to exceed 15 ohms. The current from this battery is not strong enough to cause arcing or sparking which will ignite gas. Its reliability, month by month (in some places week by week) depends upon frequent tests of its capacity in order that it may not deteriorate unduly and cause misfires through improper storage or use.

The authors know of no place where these batteries are used underground, but emphasize the use of special 10-shot blasting machines with special internal timing switches.

It was considered desirable to study the firing characteristics of the various manufacturers' products in connection with one of these machines, which was made by the Schaffler Blasting Machine Company, timed originally to 0.010 second and later corrected by the Bureau of Mines to 0.005 second. These tests required more accuracy than that afforded by the equipment in the field, and the problem was taken under consideration by the Electrical Section of the Bureau of Mines.

Summary

Following is a summary of the information obtained:

1. With one type of detonator now being manufactured, a timing of 0.005 second on the blasting machine will assure that all the detonators in series will fire and that no one of the detonators will fire before the timing switch has opened the circuit.

2. With other types of detonators the entire series will fire, but one or more may fire 0.001 or 0.005 of a second before the circuit is disconnected by the timing switch.

3. The first combination eliminates the hazard, whereas in the other types the hazard is reduced in the proportion of time available for the necessary sequence of conditions from approximately 0.297 second without the timing switch to a matter of 0.001 to 0.005 of a second with the timing switch.

4. Twelve of these machines with the 0.005-second timing switch are now in use underground for a long-period service test. No misfires have been reported during their use. Six have been retested, and no significant change in the timing has occurred.

It is important to know that every type of explosives accident experienced by the company during the past five years could accurately be classed as a remote, nonrecurring type. If the company had assumed the attitude that remote problems need not be attacked, the same accident rate would obtain year after year. Remoteness is difficult to define, since approximately 4,000,000 shots per year are fired in the collieries of this company. An accident of this type occurring once every two years, or every 8,000,000 shots, might properly be classed as remote; although few typical accidents occur with greater frequency, 4 to 12 accidents occur each year from blasting.

The Philadelphia and Reading Coal and Iron Company was firing all shots electrically when this investigation was started, therefore considerable study was made of this method of firing shots, and a set of standards for firing lines and safety breaks was drawn up. Unlike the usual bituminous reeled cable, the general system of firing lines consists of a permanent line in each working place, which is strung along the manway or rib on wooden cleats, using two separate lines separated by at least four inches.

A safety break is placed in the line, which remains open until the last man out of the working place connects it; this break is intended to prevent a common type of accident in which one man, preceding his "buddy" to the firing station, fires prematurely while his "buddy" is walking back from the face. The safety break is placed far enough from the face so that should the shot be fired immediately after the last man connects the break, he will be far enough away from the shot to escape injury. The important matter is, of course, adequate supervision to insure that this break is always open, except directly before the blast.

SAFETY FIRST NEWS FLASH

FEBRUARY



ABRAHAM LINCOLN said: "It is the duty of every man to protect himself and those associated with him from accidents which may result in injury or death." Safety First Shoes fulfill this need.



No. 3731. "Double Duty" for winter wear. Water - resisting throughout, plus steel box-toe protection. Also available in 8" and 16" Hi-cuts.

Special for this month. "The CAP-IT-ALL plan for promoting safety through 100% coverage with Safety First Shoes.



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Gentlemen: Please send details of the "CAP-IT-ALL" plan and latest catalog.

Name.....

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**A Slip
A Fall
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No
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**Insure
Safety
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*Car Runner's
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and is opened before anyone returns to the working face.

This paper describes methods of eliminating certain blasting hazards in anthracite mines which may also be helpful in other branches of mining. These are:

1. The halved cartridge test with crimped ends facing gave helpful data on preventing the serious hazard of burning of explosives due to insensitiveness.
2. The superiority of the cement mortar type of magazine for keeping stored explosives within reasonable limits of temperature variation was demonstrated.
3. A combination explosive-detonator underground storage box was developed.
4. The use of a firing current of short duration (0.005 second) for the firing of multiple shots, connected in series, together with the use of an electric blasting cap of relatively substantial lag (0.006 second) or more was found to practically eliminate the possibility of the ignition of fire damp and air, by a break spark anywhere between the shot-firing unit and the bore holes. This result was obtained without promoting misfires.
5. Standards for firing lines and safety breaks were adopted.
6. The use of straight nitroglycerin dynamites was displaced by the ammonia gelatin dynamites for chute blasting, and the search for still safer explosives was inaugurated.

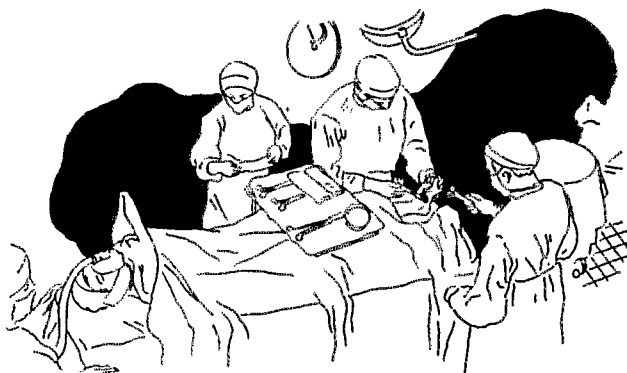
They Are Alive Today!

WE have heard much complimentary comment when the subject of safety belts for seamen has been brought up for discussion. The consensus of the opposition seems to be that a "he-man" sailor would be demeaning himself by wearing one. However, we know of many instances in which the wearing of a safety belt contributed directly to saving the life of the wearer.

As far as we know, safety nets never were used in bridge construction until California Industrial Accident Commission ordered one used in conjunction with the building of the Golden Gate bridge. This net, composed of sections which were pushed out ahead of construction as the steel erection progressed, totals 120 feet in width with a completed length of over 6,400 feet.

To date ten men, engaged in steel erection, painting, etc., are alive. Without the net, each would have made the headlines via the morgue! It's a 200 foot drop from the floor of the bridge to the turbulent tides of the Golden Gate and each of those men started on that drop but landed in the net.

—Marine Section News-Letter.



21% OF ALL ACCIDENTS ARE TO FEET AND TOES

FEW stop to realize the importance of preventing accidents until after a major occurrence. The expense resulting from one foot accident, including doctor, hospital, compensation and lost time, in a majority of cases is sufficient to purchase fifty pairs of Sankey Foot Guards. The very fact that Sankey's afford maximum protection for so little cost is reason enough for their justification where foot hazards exist. Do not hesitate to take advantage of our 30-day trial offer. Write for descriptive literature and prices.

There's Safety in Sankey's

ELLWOOD SAFETY APPLIANCE CO.

211 Fountain Avenue

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Establish Foundation for Arc Welding Research

DEDICATED to encouragement of study and research for benefit of the arc welding industry, a new Foundation has been established by vote of the directors of The Lincoln Electric Company, Cleveland, Ohio. This new fund has been named "The James F. Lincoln Arc Welding Foundation", in honor of the pioneer work of the company's president in promoting arc welding and in developing arc welding equipment and electrodes. One of its primary functions will be the stimulation of original design in order that arc welding processes may be more widely utilized in modern-day fabrication.

Principal direction of the Foundation's work will be given by Dr. E. E. Dreese, head of the Department of Electrical Engineering at The Ohio State University. Other trustees who will serve with Dr. Dreese on the Foundation are W. B. Stewart, distinguished member of the Cleveland Bar, and H. R. Harris, Vice President of the Central National Bank of Cleveland.

Conserving Eyesight

(Continued from page 38)

Perhaps the most severe burns of the eye occur to men handling acids and lime as well as molten metal or electric flashes. Battery men and lime workers would prevent many serious injuries to the eye if they wore goggles. Caustic soda, if splashed in an eye, calls for immediate attention. Remember in an emergency that commercial acetic acid diluted one quart to four quarts of water (2 per cent solution) is valuable if used early to counteract the burn of caustic soda. Saturated soda bicarbonate solution can be used as an emergency eye wash when acid burns occur. In actual burns, instill a drop of sweet oil in the burned eye as first aid.

Nystagmus is an involuntary rapid oscillation of the eyes. This sometimes occurs in miners, chauffeurs, type setters, paper hangers, painters and occasionally in draftsmen and textile workers. It is brought on by faulty visual fixation and poor illumination. It occurs in cases of carbon monoxide poisoning. Preventive measures consist in correction of errors of refrac-

tion, proper illumination and proper number of recreational hours.

Venereal infection should bar a man from the shops. Contamination of towels and drinking cups, etc. may be the cause of gonorrheal ophthalmia.

Trachoma, a disease of the eye lids, is contagious and a person suffering from this is a source of danger to his fellow workmen. It resembles what is commonly called granulated eye lids. It is transmitted by towels, wash basin or direct contact. When untreated, it often causes ulcers of the cornea which vitally affect vision.

Issue Warning on Blasting Cap Menace

AS a warning to school officials, pupils and parents, the Industrial Commissioner, Elmer F. Andrews of New York State, has made public the findings of an investigation made by the Department of Labor in the injuries suffered by three school boys playing with blasting caps in Pleasantville, Westchester County, early in December, 1936.

According to the report, one boy said that he had taken the caps, not knowing what they were, out of the room occupied as an office by a contractor living in the same building. The contractor claimed that he had no knowledge of the caps being in his office; that he had never purchased any of that type of cap and that since he discovered their presence he had removed them to a magazine. Five hundred of the blasting caps were confiscated by the Labor Department from the contractor, and 70 more recovered from school children. Examination of the caps recovered from the children showed that several had been tampered with and the investigators reported it "miraculous" that more children had not been injured. This was explained by the possibility that the caps had been on the shelf a long time and had absorbed moisture, making them less sensitive.

Commissioner Andrews has warned contractors and others using blasting caps to be most cautious in safeguarding them, as not infrequently reports come to the Labor Department of such caps getting into the hands of children. School authorities and parents have been urged to warn children against playing with any objects with which they are unfamiliar.

Everything for Safety from an Asbestos Suit to a Pair of Goggles



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HAND AND ARM
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The Patented ARMSTRONG Drivelock Feature locks socket to driver, locks driver to ratchet and extension to extension. Makes of every assembly a safe, rigid tool that will not fall, pry or knock apart. Sockets and sets of all sizes and types. Write for Catalog V-35.



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"The Tool Holder People"
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National Safety News, February, 1937



Complete Unit Type First Aid Service for all plants, public utilities, contractors, etc. Refills according to individual specifications — 20 gauge steel container — convenient, economical units for individual use, insuring sterilization — note open kit for contents.

A handy nurse on the job always!



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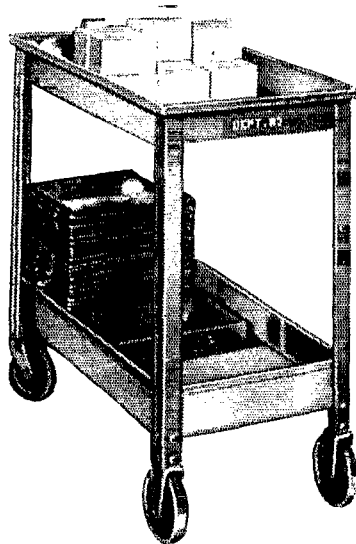
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267 ATLANTIC AVE. BOSTON, MASS.

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

Stock Handling Carts

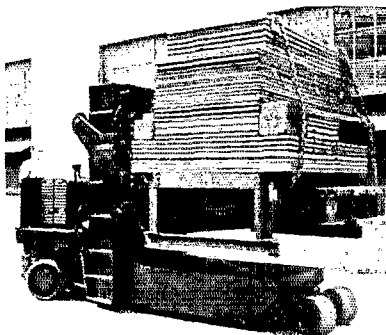
The Lyon Metal Products, Inc. of Aurora, Illinois has designed a new stock cart of handy size to permit use in aisles between storage bins and to provide a fast and convenient means of moving stock from one location to another.



The cart is 32 inches high, 30 inches long and 16 inches wide; equipped with four large rubber-tired casters. The front casters are swivel and the rear casters stationary. The two shelves are 3" deep—allowing space so that another shelf may be added. It is finished in green enamel.

New Capacity Tying Platform Truck

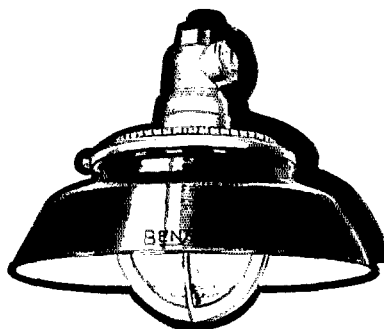
A new industrial truck has been engineered and designed by the Automatic Transportation Company, 101 West 87th St. Chicago, Illinois, for handling, at various heights, of 30 ton dies to and from the presses and storage.



Some of the features perfected and claimed by the manufacturer are Powerful Dual Platform Lift Units synchronized for equalized lifting of enormous loads on platform by means of four two part massive roller chains. A powerful dual drum die handling unit directly mounted on platform which is capable of drawing and placing 30 ton dies to and from presses and storage. A drive unit designed to give efficient service with newest Automatic design "V" joint universal for driving wheel connections. An eight wheel trailing axle fully equalized and compensating controlled by power steer which permits easy steering with practically finger tip control. The manufacturer further states that no side sway of platform or pinching of tires is experienced when operating around corners or over uneven surfaces.

Explosion Proof Fixture

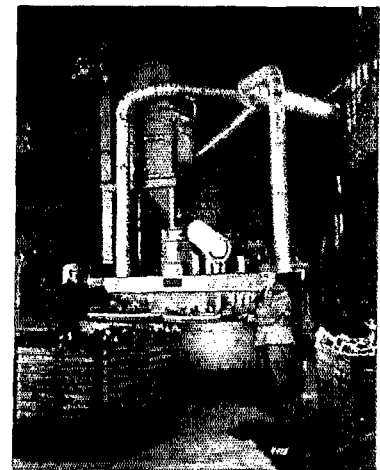
The Benjamin Electric Mfg. Company of Des Plaines, Illinois announce a new explosion proof lighting fixture for locations in which flammable volatile liquids, highly flammable gases, mixtures or substances are manufactured, handled or stored. It is the contention of the manufacturer that they have ample strength in every part to withstand the tremendous pressures of possible internal explosions, caused by sparks or breaking lamps, without breaking down or permitting flame, hot gases or sparks to escape and ignite the surrounding atmosphere.



These lamps are characterized by a separate hood design which provides a barrier between the socket terminal space and the lamp chamber so that explosions originating in either space cannot be transferred to the other. The manufacturer further states that they are designed for general overhead lighting installations and where the spacing distance between units does not exceed one and one half times the mounting height and requiring 200 watt lighting intensity.

New Blasting Cleaning Unit

Of interest to foundries, metal cleaning shops, etc., is the recently announced Type "LG" Airless ROTO-BLAST Cleaning Table with eight individual smaller tables which, as they approach the blasting zone, automatically start to revolve, thus presenting every exposed surface of the work placed upon them to the action of the blast.



The Pangborn Corporation of Hagerstown, Maryland, manufacturers of the ROTO-BLAST line of Airless Cleaning equipment claim that this Table is unsurpassed for blast cleaning comparatively frail work, particularly of a flat character. Stove parts, shovels, tools, etc., are cleansed by this equipment.

As in all ROTO-BLAST machines the centrifugal force of a motor driven wheel is used to replace compressed air for throwing abrasive against the work to be cleaned. The ROTO-BLAST principle also eliminates pressure tanks, hose, nozzles, valves, air chambers, etc., and uses only 15 B.H.P.

With the "LG" Blast Table the ROTO-BLAST is mounted above the rear enclosed portion of the large table in such a position that its blast stream completely covers all parts of the revolving smaller tables as they pass through its field. The spent abrasive, refuse and heavy dust drop into a pan below the table top and are conveyed into the boot of an elevator as they start back again to the separator for cleaning, then to the hopper for storage until they are again gravity fed into the ROTO-BLAST for reuse.

The large table, as well as the smaller ones, are ball-bearing mounted, and all moving parts are effectively sealed against abrasive and dust. The machine is free from complicated moving parts such as gears, cams, eccentrics, etc.

All Weather Eye Glass Cleaner

A new ingredient known as "Stay-Clear" is being produced and marketed



by the Johnson Products Co., 1702 North La Salle Street, Chicago, who claims that it prevents steaming of goggles and eye-glasses, giving the lens a silken glossy finish.

The product is put up in a handy "lip-stick" size container, sufficient for several months. It is the contention of the manufacturer that if applied to both sides of the lens and then polished with a clean cloth the effects last for twenty-four hours.

NEWS-ITEM

The American Chain Company, Inc. has changed its corporate name to American Chain and Cable Company, Inc. The general executive offices will remain at Bridgeport, Connecticut and 230 Park Avenue, New York City. Manufacturing plants are located at Bridgeport and Hartford, Conn., York, Reading, Monessen, Braddock, and Wilkes-Barre, Pa.; Adrian, Michigan and Terre Haute, Ind.

American Chain's familiar trade mark "ACCO Giant" will be retained.

Formation of an Industrial and Transportation Color Service has just been announced by the Sherwin-Williams Company. It is under the direction of R. H. Hookway, Sherwin-Williams Colorist. This new department combines its efforts with those of the S-W Paint Engineering Service to offer designers, manufacturers and industrial consultants assistance not only in developing desired colors and combinations for "dressing up" new or old products, but also information on types of finishes and their suitability for specific application requirements.

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.

If a literal interpretation of the Golden Rule seems a bit altruistic for the average employer, let him try this one: Before trying to get the most out of an employee, first try to develop the best in him.

Trade Publications

for your

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A Service For Our Readers

Now is the time to devote more study to all types of equipment and products which can lower production costs through factors of safety. Find out now what the market offers. The publications listed below will be sent free and without obligation to readers of National Safety News. Indicate on coupon the publication you desire.

1. Watchman's Clock Systems:

A sixteen-page booklet covering a complete line of apparatus for supervising watchmen. Explains the principle of operation, diagrams and specifications of systems for all types of industrial plants. Detex Watchclock Corporation.

2. Safety with Wire Ropes:

A short discussion of "Tru-lay" wire ropes presents their safety factors under normal conditions. Sixteen pages of facts, figures and illustrations. American Cable Company, Inc.

3. The Proper Maintenance of Floors:

A booklet of twenty pages devoted to the cleaning and maintenance of all types and kinds of flooring. West Disinfecting Company

4. Dockson Protective Equipment:

Form 636B is a twelve-page catalogue type booklet giving specifications and construction details of goggles, lens, hand shields and welding helmets. C. H. Dockson Company.

5. Safe as the Floor:

Bulletin 112 presents specifications and illustrates industrial uses for the Gold Medal Safety Platform Ladder. Patent Scaffolding Company.

6. Boots:

A brochure setting forth the boots and important features found in wooden sole shoes. Reece Wooden Sole Shoe Company, Inc.

7. Wilson Screwless Shock Proof

Portable Lamp Guards: An illustrated insert giving the advantages and uses and construction diagram of a flexible fibre guard for portable extension electric lamps. Safe Guard Electric Company.

8. Practical Housekeeping for In-

dustry: Bulletin No. S-33-B covers several types of portable vacuum cleaners for industrial use. The Spencer Turbine Company.

9. Smothering Fire in Power Plants:

A twelve-page booklet No. AD411A-5-35 giving a detailed discussion photographically illustrated of automatic fire protective installations for power plants. Walter Kidde & Company, Inc.

10. Metal Flex Soles and Heels:

An insert dealing with a corded material that will flex for soling of heavy duty industrial shoes. The S. and K. Rubber Co.

11. Germa-medica:

A brochure dealing with a surgical soap for general use. Dispensing systems and chemical contents data. Huntington Laboratories.

12. Martindale Maintenance

Equipment: A 40-page illustrated catalogue giving complete information on electrical and mechanical maintenance equipment. Catalogue No. 20. The Martindale Electric Company.

NATIONAL SAFETY NEWS

20 North Wacker Drive
Chicago, Ill.

February, 1937

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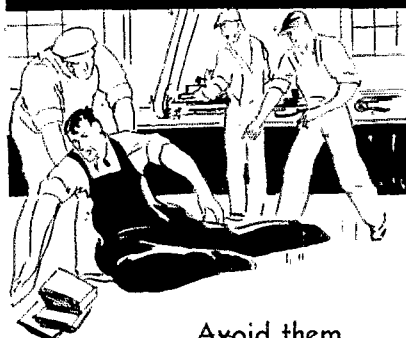
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Safe Driver Awards

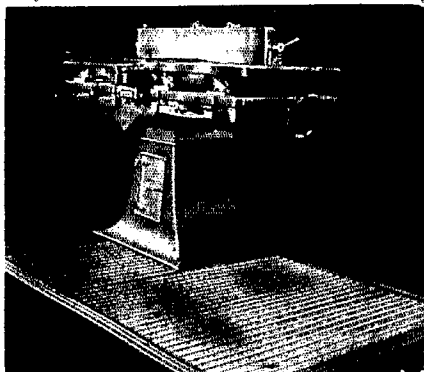
AWARDS for safe driving, made by members of the National Safety Council to their drivers, totaled 816 during the period between December 6 and January 6. Of this number 675 were one-year awards; 92 two-year; 36 three-year; 3 four-year; 8 five-year; and 2 six-year.

Companies whose drivers received awards were as follows:

Aero Mayflower Transit Co., Indianapolis, Ind. One-year—1; two-year—1.
Alamito Dairy, Omaha, Neb. One-year—1.
W. R. Arthur and Co., Inc., Janesville, Wis. One-year—2; two-year—2.
Automobile Shippers, Inc., Detroit, Mich. One-year—1.
Baltimore Transfer Co., Baltimore, Md. One-year—5; two-year—4; three-year—1.
The Bayer Milk Co., New Britain, Conn. One-year—4.
A. G. Boone Co., Columbia, S. C. One-year—1.
Boston Store, Chicago. Two-year—1.
Joe Brown and Sons, Grand Rapids, Mich. One-year—6; two-year—1.
Carr's Transport, Owen Sound, Ont. One-year—1.
Channel Pie Shop, Sacramento, Calif. One-year—5.
Chicago and Suburban Refuse Disposal Co., Chicago. Five-year—1.
Commander-Larrabee Milling Co., Minneapolis, Minn. Three-year—1.
Consolidated Freight Lines, Inc., Portland, Ore. One-year—263.
Crown Coach Co., Joplin, Mo. One-year—1.
Daily Mirror, New York City. Two-year—1.
Davidson Baking Co., Portland, Ore. One-year—2.
Dealers Transport Co., Kansas City, Mo. One-year—5.
Decatur Cartage Co., Decatur, Ill. One-year—5; three-year—1.
Deluxe Cab Co., Toronto, Ont. One-year—3.
Dennis Taxi, Guelph, Ont. Three-year—1.
Derby Oil Co., Wichita, Kansas. One-year—20; two-year—5; three-year—20.
Dominion Cab Service, Windsor, Ont. One-year—1.
Donne's Auto Service, Torrington, Conn. One-year—3.
Federal Land Bank of St. Paul, St. Paul, Minn. One-year—28; two-year—50.
Fisher and Zettel, Kitchener, Ont. One-year—3; two-year—1.
Florida Motor Lines, Jacksonville, Fla. One-year—3.
Hamilton Milk and Cream Co., Inc., Ridgewood, N. Y. One-year—1.
Hinchliff Motor Service, Chicago. One-year—2; two-year—2.
Holland Farms, Inc., Brooklyn, N. Y. One-year—12.

Interboro Mutual Indemnity Insurance Co., New York City. One-year—6.
Jersey Creamery Co., Detroit, Mich. One-year—5; three-year—2.
Norman Kelly, Baysville, Ont. Three-year—1.
Kerrville Bus Co., Austin, Texas. One-year—2; two-year—2.
Kimble Glass Co., Vineland, N. Y. One-year—1; two-year—5.
Latimer Laundry Co., Inc., New Britain, Conn. One-year—5.
C. Lewis Lavine, Inc., Trenton, N. J. Five-year—1.
Adam Limonovics, Golden City, Ont. One-year—1.
McFees Livery, Sarnia, Ont. One-year—2.
Midwest Transit Lines, Inc., Benton Harbor, Mich. One-year—2.
B. Michaels, New York City. Four-year—1.
Mohrk Delivery Co., Saginaw, Mich. One-year—2.
National Cab, Ltd., London, Ont. One-year—1.
National City Bus Lines, Inc., Long Island City, N. Y. One-year—2; two-year—1.
Nickels Bakery, Inc., Martins Ferry, Ohio. One-year—1.
Northwest Casualty Co. (awards to school bus drivers). Three-year—1; four-year—1; five-year—3.
Oklahoma City Mill and Elevator Co., Oklahoma City, Okla. One-year—3.
Oklahoma Transportation Co., Oklahoma City, Okla. One-year—34; three-year—2; five-year—2.
Omar Bakery Co., Omaha, Neb. One-year—57.
Overland Transportation Corp., Detroit, Mich. One-year—4; two-year—3.
Peoples Gas Company, Glassboro, N. J. Three-year—1.
M. H. Renken Dairy Co., Brooklyn, N. Y. One-year—114.
R. J. Reynolds Tobacco Co., Winston-Salem, N. C. One-year—23.
Sarnia-Petrolia Bus Line, Petrolia, Ont. One-year—4.
Schuylkill Transportation Co., Mahanoy City, Pa. Five-year—1; six-year—2.
Snyder's Dray and Transfer, Bismarck, N. D. One-year—2; three-year—4.
Sperry Flour Co., San Francisco, Calif. One-year—11; two-year—2.
Standard Taxi, Hamilton, Ont. One-year—2.
Storm King Stage Corp., Highland Falls, N. Y. Four-year—1.
Taylor Produce Co., Kalamazoo, Mich. Three-year—1.
United Motor Coach Co., DesPlaines, Ill. One-year—3; two-year—2; three-year—1.
United Taxi, Kitchener, Ont. One-year—2.
Edward Van Cleef, Driver for William Langmaid. Three-year—1.
Hugh Van Koughnet, Collingwood, Ont. One-year—1.
The Visking Corp., Chicago. One-year—1; two-year—8.
William Wrigley, Jr., Co., Chicago. Two-year—1.

Put Mason Protection Around Machinery

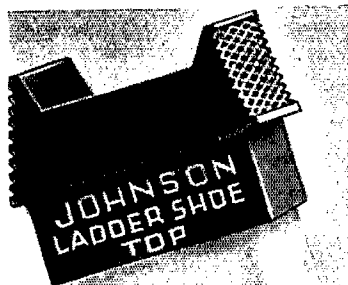


The abrasive filled steel base is supplied in standard widths, lengths as required, usually 6 inches, and may be easily installed around any machinery where slipping hazards are present. May be anchored to any type flooring, and provide safe protection against slipping. Treads available to fit any sized space.

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WE have found after a long and careful survey of ladder safety the importance of a shoe at the top as well as at the bottom of the ladder.

We are happy to announce our new ladder top shoe which will be known as the Johnson Ladder Top. They are simple in construction and marvelous in performance. They will not mar walls and are conformable to any surface, rough or smooth. They will reduce the side slipping of the ladder.

Order from your dealer or direct.

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He was a good-natured Irishman, and was one of a number of men employed in erecting a new building. The owner of the building said to him one day:

"Pat, didn't you tell me that a brother of yours is a lawyer?"

"Yes, sor," replied Pat.

"And you a hod carrier! The good things of life are not equally divided, are they?"

"No, sor," said Pat. "Poor fellow—my brother couldn't do this to save his loife."

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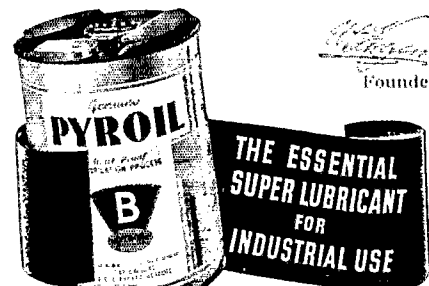
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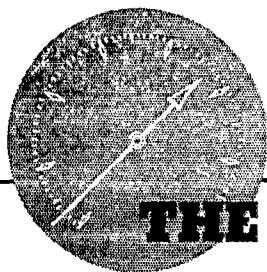
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THE ACCIDENT BAROMETER

Prepared by the Statistical Bureau,
National Safety Council

ACCIDENTAL DEATHS OF ALL TYPES occurring in November totalled approximately 9,610. This is an increase of 9 per cent over the total of 8,820 for November, 1935. Advances were recorded in each of the four principal classes of accidents. Occupational deaths rose 13 per cent, motor vehicle deaths 10 per cent, other public deaths 8 per cent, and home deaths 4 per cent. The November increase brings the eleven months' cumulated total up to 101,570, compared with the 1935 eleven months' total of 90,900—an increase of nearly 12 per cent.

OCCUPATIONAL DEATHS in November numbered about 1,700, or 200 more than occurred in November, 1935. The January-November total is estimated to be 16,300, compared with 15,300 for the same months of 1935—an increase of nearly 8 per cent. The inter-plant contest of community safety councils continued to show a slight improvement in accident experience over last year. The November frequency rate per million man-hours was 12.21, or 7 per cent less than the 1935 comparable rate. The severity rate per thousand man-hours was 0.81, or 37 per cent under 1935. During the eleven months from January to November frequency averaged 12.30 and severity 0.82—reductions of 11 and 5 per cent respectively. On the other hand, three sectional contests conducted by the National Safety Council showed an 11 per cent increase in frequency for

November, and a 13 per cent increase for the first eleven months of the year. Deaths reported during December to Industrial Commissions in 19 states totalled 676 or 23 per cent more than in December, 1935.

STEAM RAILROAD ACCIDENT DEATHS occurring in September numbered 453, or 8 per cent less than in September, 1935. Injuries, however, went up 25 per cent. The record for the first nine months of the year may be summarized as follows: Deaths, up 2 per cent to 3,882. Injuries, up 24 per cent to 25,306. Deaths and injuries of trespassers appreciably lower than in 1935. Deaths of passengers down from 15 to 12, but injuries up from 1,426 to 1,846. Deaths and injuries in highway grade crossing accidents up only a little. Deaths and injuries of employees up 19 and 35 per cent respectively.

MOTOR VEHICLE DEATHS rose sharply in November, reaching a total of 4,020, according to reports from 35 states with a population of more than 93,000,000. The death total is 10 per cent above November, 1935, and is the largest increase that occurred this year. The November total is also the largest number of motor vehicle deaths that has ever been recorded in a month. The eleven months' total for 1936 is now estimated to be 34,080, or 2 per cent more than the comparable figure for 1935. Gasoline consumption figures are available for only 10 months, but during that period consumption averaged 10 per cent above 1935. On the basis of traffic volume, therefore, 1936 still has a better record than 1935.

COMMERCIAL VEHICLE ACCIDENTS averaged 2.06 per 100,000 vehicle miles in November, or 10 per cent more than in November, 1935, among fleets entered in the National Fleet Safety Contest. Increases by type of vehicle were: Trucks 3 per cent, passenger cars 14 per cent, and buses 23

per cent. For the first five months of the present Contest (July to November) the average rate for all fleets was 1.81 or 2 per cent over the same months of 1935. The truck rate decreased 2 per cent to 2.58, but the passenger car and bus rates rose 3 per cent and 8 per cent respectively.

PUBLIC (NOT MOTOR VEHICLE) DEATHS totalled about 1,300 in November, or 100 more than occurred in November, 1935. The eleven months' cumulative total is estimated to be 17,200, compared with 15,900 for the same period of 1935. The increase amounts to 8 per cent.

HOME ACCIDENTAL DEATHS occurring in November numbered approximately 2,900. In November, 1935, there were 2,800 fatalities from accidents of this kind. In only three other months of 1936—May, September and October—has the increase been as small as this. During the first eleven months of the year there were 36,900 home deaths, or 7,900 more than in the same months of 1935. Probably as many as 4,000 of these were due to excessive heat.

Looking Ahead . . .

The February total of accidental deaths will probably be the smallest of the year—due primarily to its being the shortest month. However, there may be more deaths *per day* than in March or April. According to records of past years fatal burns, asphyxiations, and falls will be as numerous as in any other month, and motor vehicle deaths will drop only slightly in daily total.

These items summarize briefly the monthly reports collected by the National Safety Council to show current accident trends. Certain reports are analyzed more fully in other publications of the Council. In addition, the annual statistical report "Accident Facts," contains detailed information on all types of accidents.

All Accidental Deaths

January-November

1936	101,570
1935	90,900
1934	92,228

U. S. Census Bureau total for 1934;
National Safety Council estimates
for 1935 and 1936.

Announcing.....

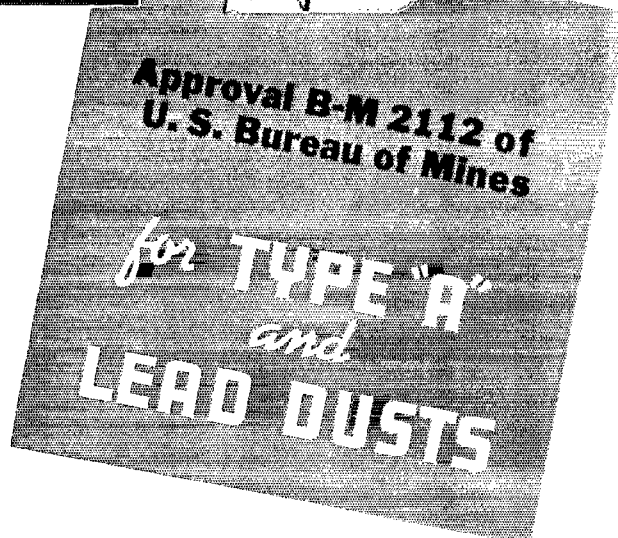
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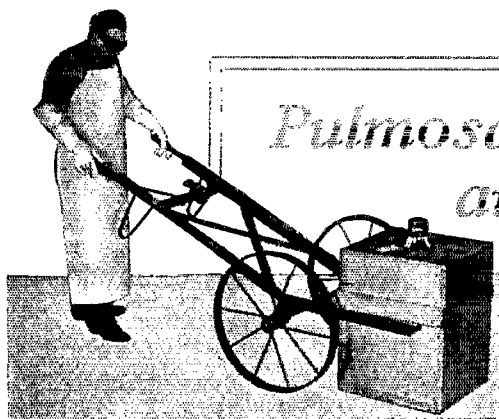
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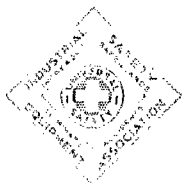
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