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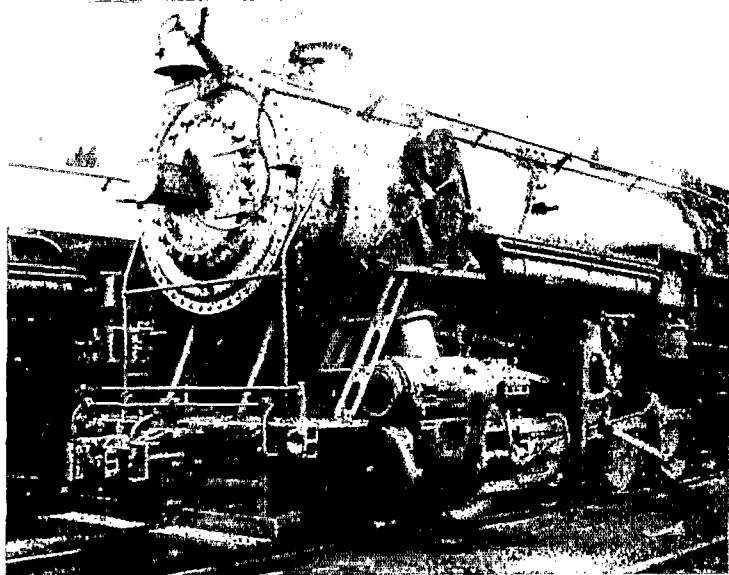
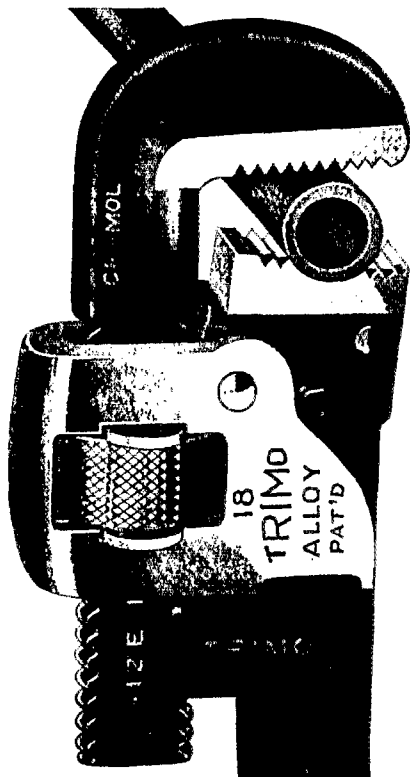
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SEPTEMBER, 1935

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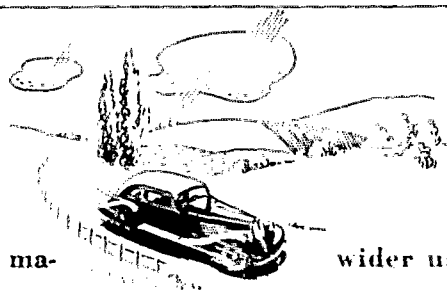
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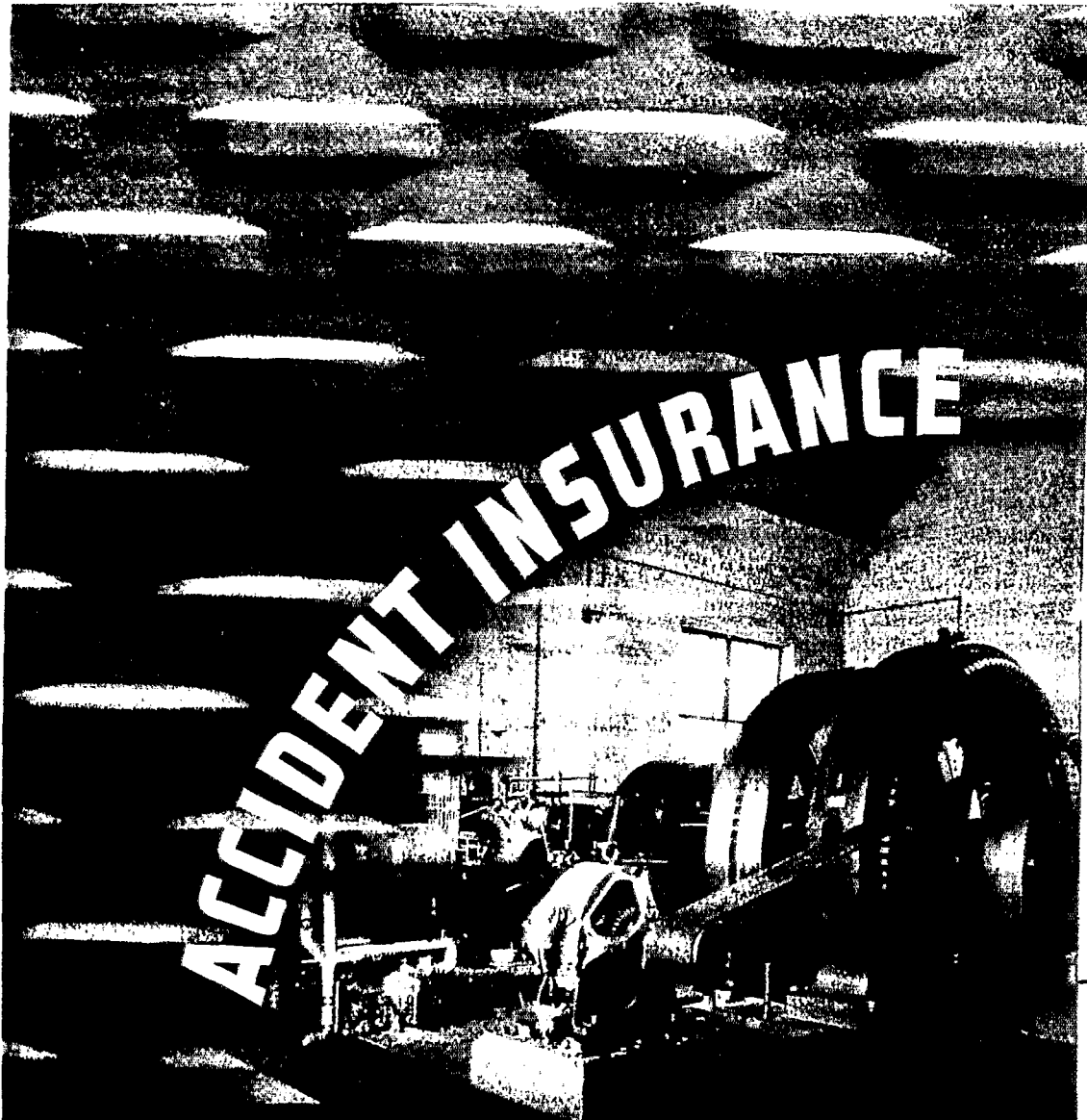
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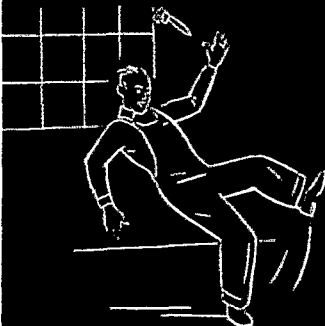
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NATIONAL SAFETY NEWS



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National Safety News

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

VOL. 32, No. 3



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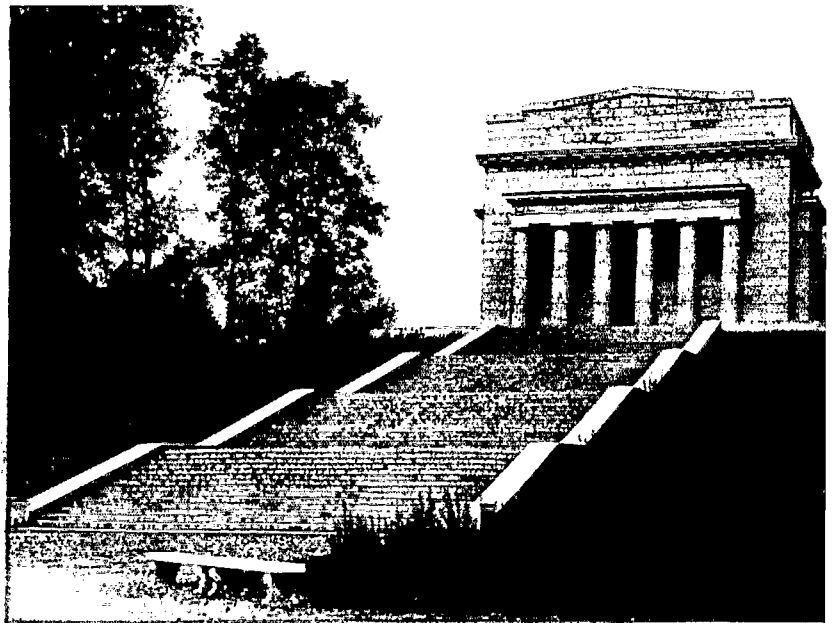
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NATIONAL SAFETY NEWS

LINCOLN SHRINE



In the field of higher education is the University of Louisville, with departments of medicine, dentistry, science, engineering, law and college of liberal arts with an enrollment in all departments of approximately 2,500.

Louisville's hotels uphold the hospitable traditions of Old Kentucky, combined with the modern luxuries which discriminating guests appreciate. The hotels provide 3,500 rooms, and when additional space is needed for a large convention, the facilities of a number of modern apartment hotels can be utilized. Louisville has been host to many large gatherings in recent years.

Louisville's industries have always been well represented in the membership of the National Safety Council. For the past fourteen years the city has had an active community safety council which has received its financial support



ZACHARY TAYLOR MONUMENT

SEPTEMBER, 1935

NATIONAL SAFETY NEWS

Published by National Safety Council, Inc.

More Worker Delegates

EVER since the beginning of the safety movement we have heard that "safety must start at the top." Executive participation is indispensable, not only for the prestige it gives to accident prevention work in the plant and on a national scale but also for the leadership that the executive minds can give.

The attendance of industrial leaders has always been welcomed at the Congress, and it has contributed much to the success of these annual meetings.

Too often the Annual Safety Congress is regarded as a meeting for a specialized group—the safety men. But industry is beginning to realize more and more that safety is something which involves the whole organization.

Wherever a good record has been made, safety started at the top but it didn't stop there. Supervisors and workers have played an important part in the results.

For many years a few members of the Council have been sending one, two or even a small group of workers, in addition to safety engineers and executives, as delegates to the Congress.

Why have they done so?

Because through these rank and file delegates the workers of industry get the "feel" of the safety movement. The delegates return to their jobs real missionaries of safety. It is a signal honor to be sent, and one to be striven for. Accomplishment in the field of accident prevention becomes a coveted prize and safety gains ground.

Because the companies which have used the Congress in this way vouch for its value, the Council is this year recommending the plan to other members. If enough worker delegates attend, a special function will be held for them.

The Congress is held for the benefit of members. Here is a way to secure even greater benefits from it.

Have You Read Them?

THREE articles which have appeared in national magazines during the past month are of special interest to all who are associated with safety work. In the August number of the *American Magazine*, Governor Harold G. Hoffman of New Jersey, who is chairman of the Street and Highway Traffic Section of the Council, presents a searching analysis of the public safety problem. In the September *Ladies' Home Journal*, Paul De Kruif tells how Milwaukee made a remarkably low traffic fatality rate. Other magazines are also finding safety an absorbing theme.

An article of a different type appeared in the August *Readers' Digest*. It presents the gruesome details of highway accidents with a sickening realism. This article is reprinted on page 66 of this issue through permission of *The Readers' Digest*. It is not pleasant reading and we feel that safety education should not contain too much literature of this nature, but we do wish the picture it presents could be flashed before every motorist who is tempted to drive too fast for his reflexes or pass another car on a curve.

SEPTEMBER, 1935

Militant Motorists

HALF a century ago Carrie Nation set out with her hatchet to vanquish the Demon Rum. A few weeks ago her modern prototype, Mrs. Carrie Newton, of Colorado Springs, started a crusade against parking restrictions with her car as a weapon.

"I'm sick and tired of driving around looking for parking space and the bus outfits making a depot of downtown streets and saying I can't park there. I'll show them," she declared.

After carrying an arm load of signs to the dump, Mrs. Newton was fined \$25. Then she began knocking over signs with her car. The campaign ended in a padded cell after its leader had broken all the windows in the women's ward.

This would seem to be an extreme example of the rugged individualism that sometimes develops with ownership of a car. More familiar symptoms are occupying the center of the road, driving through red lights and demanding the right of way.

Motorists who chafe at parking restrictions and regard the buses as juggernauts hogging the streets do not realize that the great majority of people depend on the common carriers for transportation. The transportation companies pay all taxes that are imposed on motorists and a few special ones. They are trying to provide safe service in streets infested with incompetent and inconsiderate motorists.

Anyway, unrestricted parking would probably prove disappointing. Nine times out of ten, some other motorist would be there first.

In This Issue

ELEVEN years ago the National Safety Council held an Annual Congress in Louisville. Those who attended have not forgotten. It was a Congress marked by serious attention to business at the sessions and a gracious hospitality which made the leisure hours of the week delightful. (Page 11).

Putting in a few fans and ducts is not dust-control. The problem is a highly complicated one, involving engineering, medical and legal skill. (Page 17).

What does a commercial driver think about safety? One of them tells us. Pleasing the company, the customers and the public at large is his job, and he needs all the help he can get from the management. (Page 19).

Safety work on the construction of the Colorado River Aqueduct by the Metropolitan Water District of Southern California is being conducted with careful attention to all important details. The hazards are serious but they are being offset with modern equipment and training. (Page 20).

Every safety man would like to discover some method whereby the safety savings could be reflected more clearly in the company's accounting system. An accountant who is familiar with the value of safety work discusses the problem. (Page 23).

The Managing Director's Page

Most People Die in Bed

MARK TWAIN said, "Beds are the most dangerous places in the world. Isn't it true that most people die there?"

That statement is perfectly true as far as it goes, but it needs some additional explaining. Most people do die in bed, but usually from causes which occurred elsewhere. For the present, we shall confine our discussion to one cause of premature death and disability—home accidents.

We know how home accidents can be prevented. The problem is to convince housekeepers that accidents need not happen. As usual, this will require a combination of persuasion and discipline. Perhaps some day government inspectors will have authority to inspect homes for accident hazards, and the day will surely come when no industry will be permitted to operate under flagrantly unsafe conditions.

If the laws of the land can compel public school education, vaccination and other measures for public welfare, can it not also insist on protected homes? And just as soon as industry realizes that thousands of its trained workers are lost every year through home accidents will they not extend their safety programs?

A recent study of 500 harrowing home accident cases, treated in a single hospital, makes it clear that home folks seldom realize the accident possibilities in their own homes. Accidents do not prevent themselves, although luck does seem to step in and protect the victims at times. Mother and the girls must learn to keep house and guard against slippery floors, dangerous washing machines, dark places and frayed electrical cords.

The machine age is in the home as well as in the factory but the homekeepers do not seem to realize it. They are not trained in the uses of machines. If the floor lamp looks ornamental and fits into the decorative scheme, little thought is given to the reliability of the electric cord. Not one bathtub in a thousand has a rubber mat and proper handholds.

INTERESTING ITEMS

The National Red Cross will distribute 10,000 copies of the National Safety Council's statistical pamphlet "Accident Facts—1935 Edition" to its many Chapters and cooperators.

There are now 775 cities and 35 states enrolled in the National Traffic Safety Contest.

The Council's membership is increasing with the improvement in business. In one day recently eight new memberships were added to the thousands of members valiantly cooperating in the National Safety movement.

There never was a time when the newspaper and magazine press was giving more attention to records of accidents, special articles, cartoons and other forms of publicity, particularly on automobile accidents. Popular magazines like the *American*, the *Ladies' Home Journal*, *Reader's Digest*, and others are recognizing the appalling number of deaths due to street and highway accidents, and the "average man" is being appealed to in a constructive way.

Remember—"This Year It's Louisville."

The problem always is. How can we tell the family about these things? How can we encourage regular inspections at home? How can we make otherwise intelligent people aware of these dangers?

To combat this ignorance and lack of thought for protection there has been the teaching of safety in the schools, and, of course, the women's clubs, parent teacher associations, insurance companies, the Boy Scouts, and many other agencies have made safety an incident of their influence.

But it is the employer who can exert the greatest influence over the family. If he genuinely interests himself in the welfare of the worker, and makes it clear that no working condition will be permitted to kill or maim the employees, then industry can say to the worker, "You know how we have studied the causes of accidents in our jobs. You know that we do not tolerate unsafe working conditions. You know that the wife and children are just as liable to be injured by machines used in the home."

And through his committees, bulletin boards, payroll enclosures, safety calendars and other influences he points out that "he doesn't want to lose his old time friend and worker and he doesn't want this friend of his to lose his wife or sit up nights with a seriously injured child." I almost hesitate to point out so obvious an influence within the grasp of the employer.

One of our large corporation members has seen this invaluable opportunity and recommended miniature safety organizations in the home. There are many variations to the plan but it is based on the familiar contest idea now being used so successfully in thousands of industries. There should be a bulletin board in the hall, the kitchen, or some other conspicuous place to focus information about home accidents and how to prevent them. A "no-accident month" campaign is a part of the plan; a score is established for merits and demerits—for good or bad safety conduct, as well as for systematic inspections.

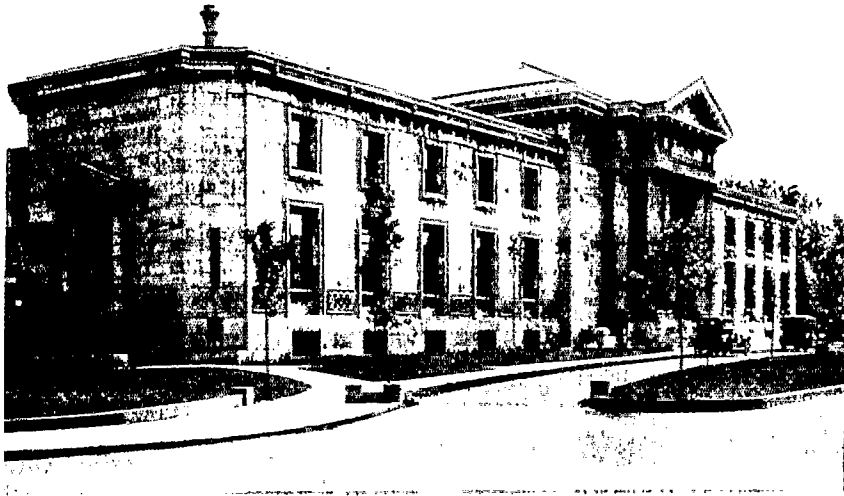
Then there is a list of instructions on the bulletin board—how to prevent falls, burns and scalds, treatment of cuts and scratches, the careful use of equipment, the storage of hazardous supplies, and the many other interesting methods known to industry.

Under the auspices of the National Safety Council more than a dozen industries were persuaded to try this home safety influence. The sample campaign lasted six months and was called "After the Whistle Blows." Literature was supplied and reports of all accidents in the homes during the period were required.

In a sense the safety movement is a new experience in human history. Safety must become a primary part of the education of every child born into this world, but we must also persuade the adults that they should have—and must have—a larger share and influence in the safety movement if we are to solve the accident problems.

M. J. Amers

NATIONAL SAFETY NEWS



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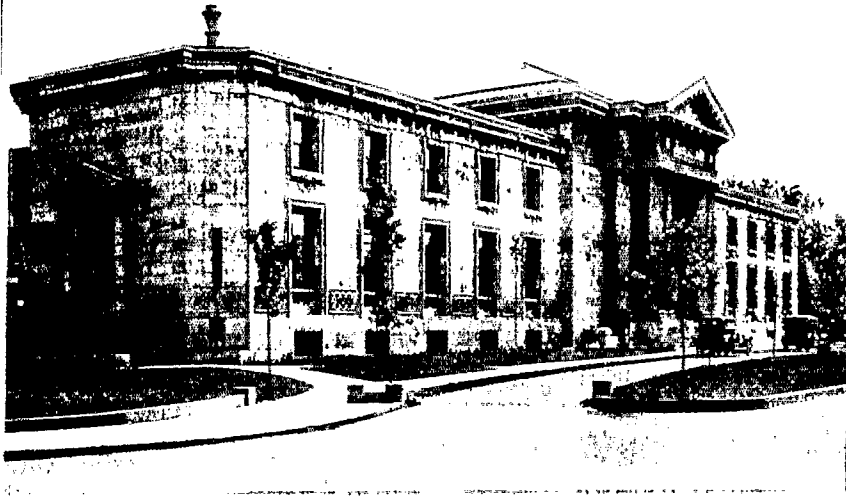
to the northern border of the United States than it is to the Gulf Coast. Louisville is nearer to Windsor, Canada, than to Memphis, Tennessee, and nearer to New York than New Orleans. Furthermore, the city is almost an equal distance from the Rocky Mountains and the Atlantic Seaboard.

Eight trunk line railroads, the Mississippi Valley waterway system, an airway system and scores of bus and truck lines serve Louisville north, south, east and west. A terminal railway belt line serves the industries of the city. Louisville's municipal airport has a rating among the best in the country.

Among the educational facilities of the city are 77 grade schools, eight junior high schools, and six senior high schools, with a total enrollment of 47,065 pupils.

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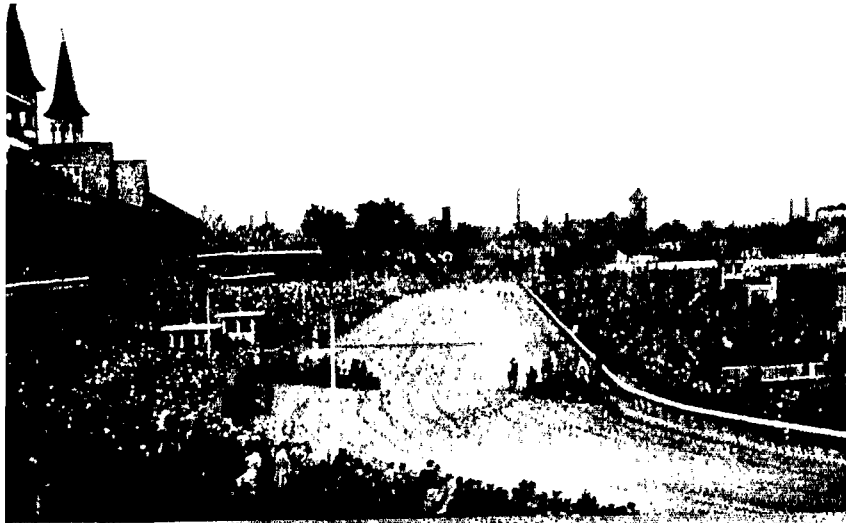
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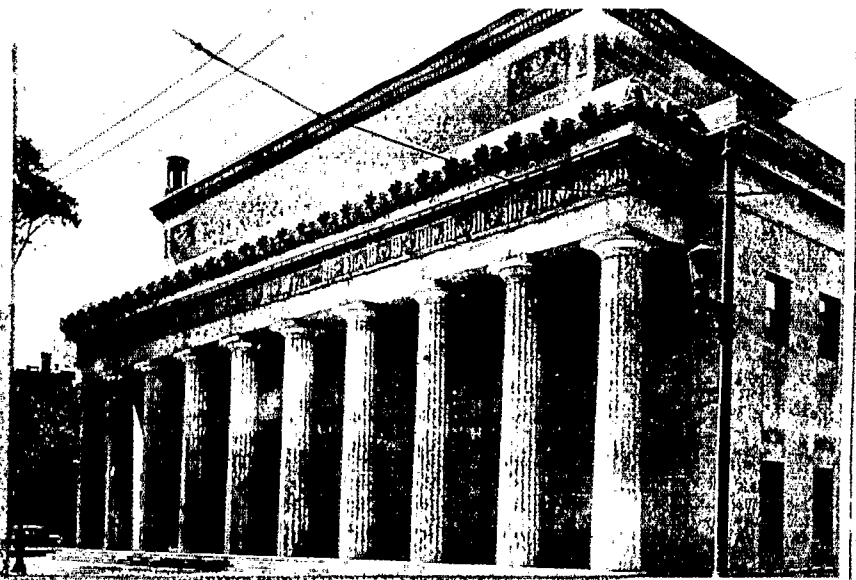


CHURCHILL DOWNS

partly from the Community Chest for its public safety work and the other half from membership, mostly industrial. Since its organization in July, 1921, many of Louisville's industrial leaders have served as officers. The present officers are: President, E. J. O'Brien, Jr., E. J. O'Brien Company; Vice-Presidents — Howard W. Stoddhille, *Courier Journal and Louisville Times*; H. M. Reed, Standard Sanitary Manufacturing Company; J. H. Stewart, Dry Goods; J. H. Sawyer, J. H. Sawyer & Son, Inc.; Frank W. Smith, Smith & Smith, Inc. of the Central Trade Union. Recently, Louisville passed a new traffic ordinance which will result in the removal of many cars from the city streets.



MEMORIAL AUDITORIUM



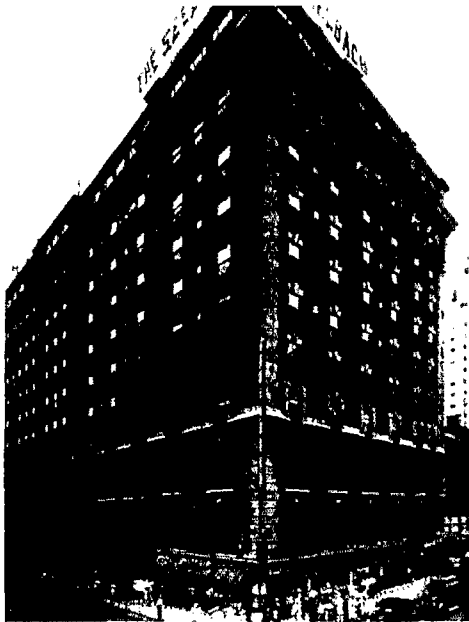
public. Another recent advance along public safety lines is the establishment of an Accident Prevention Bureau in the Police Department.

For many years Louisville has been one of the leaders in safety work in the public schools. All of the public schools and two-thirds of the parochial schools are reported as carrying on regular safety work, and many of these also have patrols. Two local school safety publications are issued monthly. Louisville is one of the few cities having a child safety program for high school safety work. The school work is also extended to the playgrounds in the summer. Frederick Archer, superintendent of schools for Louisville, is chairman of the Child Education Section of the National Education Association.

The Louisville Commission on Safety is composed of representatives of the city and county governments, the police and fire departments, and the school system.



NEW POST OFFICE



SEELBACH
HOTEL



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maintains 200 street bulletin boards carrying public safety posters. The Council furnishes a large number of speakers for various meetings and has been conducting a continuous radio program. An active Home Safety Committee works with the Parent-Teacher Associations and other interested organizations. The Police Department provides two officers full time to work in the schools under the direction of the Safety Council.

On the industrial side the Louisville Safety Council has for many years conducted an active program. One of its outstanding activities is an interplant contest among its plants. During 1934 a total of 45 industrial safety meetings were held.



KENTUCKY
HOTEL

HENRY
WATKERSON
HOTEL



No Half Way Measures in Dust Control

By ARTHUR S. JOHNSON

*Assistant to the Manager, Engineering Department,
American Mutual Liability Insurance Company*

TO CONTROL its dust hazard to the extent of making the occurrence of pneumoconiosis improbable, industry must do much more than buy mechanical dust removal equipment and set it going. With it there must be set up a routine of check and double check, perhaps whole new operating practices and a sharp definition of responsibilities. This all boils down to day-to-day attention to a program designed upon a long range health conservation policy. Half-way measures unrelated to each other won't work. Nor is this a "done once, done forever" affair. Dust control is not an event, it is a program that never finishes.

Experts seem to be in rather general agreement about four grades of pneumoconiosis hazard. First, quartz causing real silicosis, a serious solidification of the mass of the lungs by fibrosis or growth of scar tissue. It takes years to get started, but once started is progressive, a condition which will not stop and cannot be cured. After exposure of 15, 20 or 25 years, men in certain trades accumulate this fibrosis of the lungs which lessens their capacity for physical labor. It makes them short of breath and causes certain well-defined clinical symptoms. X-rays of their chests show characteristic shadows. A few of these men die as a direct result of this condition.

Although few of them have their physical capacity to work lessened even in 15 or 20 years, there may be actual lung impairment which predisposes them to tuberculosis. The cause of this silicosis is silica, as free quartz, not combined with other elements in the form of silicates, but the quartz as found free in granite, and in its purest natural form as flint and ganister. The studies made of many cases of silicosis and the exposures which caused them in the rock industries, sand grinding industries, firebrick making, etc., have shown that the hazard is silica and that it is proportion-

Dust control is not an event; it is a program that requires concentrated day-to-day attention

al to the amount of silica in the air breathed. A new ray of hope lies in some fairly good evidence that there may be mixed dusts in which such dust as limestone, gypsum, coal, hematite, clay or cement dilute the silica hazard and produce less physiological reaction than the silica content operating as pure quartz alone.

A second group of dusts produces somewhat the same clinical picture as silicosis in its early stages, yet the x-ray of the chest shows the shadows pretty much confined to the lymph ducts. The damage appears not to be so serious as silicosis in many ways, particularly in that it is not progressive nor does it predispose to tuberculosis. The dusts producing it certainly should be classified as absorptive and therefore harmful although not in the same category as quartz. There is no question but that lessened lung capacity results from them after long enough exposure but it certainly takes more dust and more time to lower capacity for work. Asbestosis falls in this group and apparently similar conditions develop from exposure to excesses of many mineral dusts relatively low in free silica content.

Inert Dusts

A third group of mineral dusts may be harmless in reasonable quantities. The result of work by some investigators which has been published recently indicate clay, talc, emery and carborundum dusts to be inert. In some animal experimentation these dusts did not produce fibrosis. Contrarily, there have been claims for disability from workers who alleged that the exposure to these same dusts caused their ailments. Experts state that these dusts generally do

not produce disabling lung pathology, yet we are faced with the facts of claims prosecuted successfully. Quantity of dust, rather than quality, was doubtless responsible for any ill health. Some state regulations require dust exhaust machinery on some operations. We must, therefore, include for control some dusts which by nature may not be harmful.

Our fourth grade of hazard is tuberculosis. Tuberculosis is a disease caused by a germ, and probably more useful work has been done to control this disease than almost any other. From time immemorial the dusty trades which we now speak of as having a silicosis hazard were always among the danger spots for tuberculosis. What we now know is this: that silicosis makes a first class place for tuberculosis to thrive in and kill the patient off much earlier than would silicosis alone. Opinion seems to be that perhaps simple silicosis uncomplicated by tuberculosis may seldom be fatal, but shortens the working life of the victim just as angina, arterio sclerosis, and such degenerative diseases do.

On the other hand, we may expect from tuberculosis one of two things: first, a man brings tuberculosis, no matter how dormant it may be, into a dusty trade, he may reactivate the tuberculosis and have his case diagnosed as "aggravated by" the dust; or second, by getting simple silicosis or perhaps other pneumoconiosis, and then contracting tuberculosis from tubercular associates either at work or elsewhere, die of tuberculosis superimposed on silicosis. Tuberculosis associated with silicosis does not respond well to treatment. Regardless of the fact that tuberculosis is an infective disease not necessarily occupation-

al, we must face this fact, that tuberculosis is so often the disabling result of dust exposure, that dust control must include tuberculosis control at the same time.

Measuring the Hazard

Summarizing, we have three dust hazards; (1) quartz, which produces true silicosis — a progressive, lung-disabling disease; (2) some dusts which produce a pathology which usually is not serious and is not progressive after exposure stops, yet a pneumoconiosis none the less, and (3) some dusts which paradoxically are probably relatively harmless, yet have been the claimed basis for tuberculosis and other disabilities. In the absence of adequate diagnoses, occupational histories and a more satisfactory method of adjudicating claims than prosecution at common law, we must conclude that it is necessary to find a practical method for controlling all mineral dusts. Let us now see whether it is necessary to give them all the same degree of control.

We have learned that the silicosis hazard is measured by the amount of silica in the air breathed. This means that with but few exceptions it is directly proportional to the amount of dust in the air and the percentage of silica that is in the dust. The studies which have established the safe limit, or tolerance, or threshold limit for continuous exposure without deleterious effect, have arrived at 5 million particles of quartz dust per cubic foot of air, none of which dust is larger than 10 micra in size. I think we need to digress for a moment to visualize what is meant by 5 million particles of dust of such tiny size. We know it is invisible to the naked eye because it takes 15 to 20 times that much to produce a haze, and even that isn't visible as particles of materials. The particles, therefore, are so small as to thwart imagination.

As one looks across a dusty room and sees great gobs of dirt floating in the air, settling out rather rapidly, or being blown around by draft currents, he is told that that is not the dust we are talking about. The danger lies in such tiny particles that they could be run between the bearing and the shaft of a very fine machine and not touch, for a micron is roughly .00004 of an inch. Five particles of sand, each piece so small as to be only .02 of an inch in diameter, pulverized down to 5 micra, makes just that 5 million particles for

loading a cubic foot. This means that if it is found necessary to exhaust the dust at its point of origin so that that which gets into the breathing zone of the workers will be 5 or fewer million invisible motes in each foot of space, we haven't begun when we get out only the visible dirt. We are confronted with the astounding fact that the health hazard has not been touched, even though an exhaust is 98 per cent efficient in terms of the weight of dust. If we cannot visualize such an invisible hazard, it at least warns us not to throw together some tin ducts, motors and fans, and call it dust control.

Returning to our main theme, let me repeat 5 million particles per cubic foot as the bench mark for quartz dust. Since the hazard is in proportion to quartz, the less quartz the less danger, or conversely, the less quartz the more dust may be permitted. Now, is there a top limit of dustiness which, regardless of quartz content, might be considered a maximum above which nothing would be safe, and up to which only the inert or so-called "safe" dust might go? It seems to be pretty well agreed among the investigators that there is a top limit and this figure, or second threshold limit, is 100 million particles. In other words, no matter what the dust is, it's dangerous if the concentration is greater than 100 million particles per cubic foot. In between these limits must lie the points of safety which take the proportion of silica into account.

Standards for Dust Tolerance

What is the practical answer? A table of dust tolerances such as is contained in some state regulations does well enough, and in them we find a general agreement but with some variation. In principle most such tables show 5 to 20 million particles as the limits where the quartz content of the dust runs from 100 per cent down to 30 or 35 per cent respectively. To use these tolerances which are based upon percentages of silica, both chemical and petrographic analyses of the dust must be made to get reasonable estimates of the silica. The sampling and analyses are both very difficult and expensive. It is doubtful if the settled dust represents the hazard, and the raw material certainly does not. Also much evidence indicates that petrographic analyses of the smaller sizes is impossible. It seems to me that, without being contradictory either in attitude or results, we can simplify

things by arbitrary standards.

1. Dusts which are known to be largely quartz, 50 to 100 per cent, which represents the sands, and sand stones which are used in molding operations, sand blasting operations, abrasive pulverizing, ganister brick mixing and other such operations, can well be grouped for a limit of 5 million particles.

2. Dusts which come from the hard rocks used in the building and monumental trades which run 50 to 50 per cent quartz and the mixed foundry dusts, which started with 80 to 90 per cent quartz in the sand but have been diluted by tremendous quantities of smoke and lime or phosphate parting so that the dust breathed is often less than 50 per cent quartz, a practical safe limit for them appears to be 10 million particles.

3. For the whole great range of dusts such as talc or clay or emery, which contain either no quartz or only a 5 or 8 per cent impurity, for which 100 million particles is a never-to-be-exceeded dead line, I doubt that we can afford to take chances and be satisfied with control which brings these dusts down only to 100 million particles. I have often suggested 15 million but have been accused of being ridiculous because that figure is certainly not in arithmetical proportion to the silica content. Yet, we are faced with this dilemma—suppose we pick 50 or 60 million particles, install a dust control procedure and find in the course of a number of years' operation that we still get disabling results. No dust control that I know of has actually demonstrated that 15, or 50 or 100 million residue is satisfactory. It may be necessary, therefore, to skip a tolerance for that type of dust except to say that when it is over 100 million it must be reduced. However, get the dust down as low as is reasonably practicable, and 15 million still looks reasonable to me.

We now understand in general terms what dusts, how much, and of what sizes constitute health hazards. You have a plant in which you suspect a hazard. Let us examine what can be done about it to evaluate your particular conditions. Dust control is so expensive you should not guess at the hazard. If your dust has a lot of quartz in it, such as foundry molding sand, ganister, aggregate for fire brick, granite, sand stone for tool grinding, etc., there is a health hazard. If you can see the dust, you know it to be a terrific hazard. If there is settlement on ledges there is a hazard. You can save yourself the bother of finding out the exact quality of toxicity, and proceed at once to put the dust under control. Your problem lies in the 5 or 10 million limit group.

If, on the other hand, you have some mixed dusts of low silica content or doubtful hazard, before buying dust control machinery you want to find out what the hazard is and how much. The first thought would be to take dust

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NATIONAL SAFETY NEWS

The Driver Has His Troubles

By HENRY J. DROGAS

Chauffeur, Wieboldt Stores, Inc.



Reasonable schedules and reliable equipment help the driver to serve the public safely and uphold the company's reputation

WOULD like to present a few of the problems that a driver is confronted with in regard to safety. I point out some of the difficulties which often cause drivers to have accidents. These difficulties are not known to anyone except the man actually running the truck, so in behalf of drivers, may I make known to the other side of the story. I made it my business to contact some of other concerns to get their views on the subject. They were willing to help me, providing I would not give their names or the names of the firms they were working for. Prior to the depression and the NRA, a commercial driver didn't have such a hard job. Most of them didn't work more than 40 hours. They worked by the day

or week. The concerns didn't care very much if it took the man 6 hours or 10 hours to do his work, because they were all making a fairly good profit and didn't have to pay these men overtime because there were no set hours for the week. In those days when a driver came to work and didn't feel quite well or had some worries on his mind, he went about his work a little slower than usual. He didn't have to worry about getting bawled out when he came in for putting in an extra half hour or so.

But today it is an entirely different thing. When the depression set in, everyone started to cut down expenses. I believe the firms found that their delivery departments were one of their items of greatest expense. As trucks were taken off, more and more work was being added onto the men. And equipment began to be neglected too, the firms forgetting that their delivery men and equipment are their best and cheapest advertising, as well as their actual binding salesmen.

Soon each driver had so much territory that, in order to cover his ground, deliver his load, satisfy his customers, and come in on time, it meant he would

have to increase his speed a good deal. In other words, he didn't have time to satisfy his customers and the public, and also he had to become a speed demon as well and take a chance here and there. Because the trucks carry the name of the company, this is not very good advertising. Then when one of the drivers has an accident, he's called in and told he must be more careful and avoid accidents. For a few days after that he drives around more carefully, spends a little more time with his customers so that they're satisfied, and the next thing he knows he's called on the carpet for too much time.

Now that man is driven to occasional accidents through no fault of his own. He must get in on time, or he'll be out looking for another job. You all know that jobs today are very scarce.

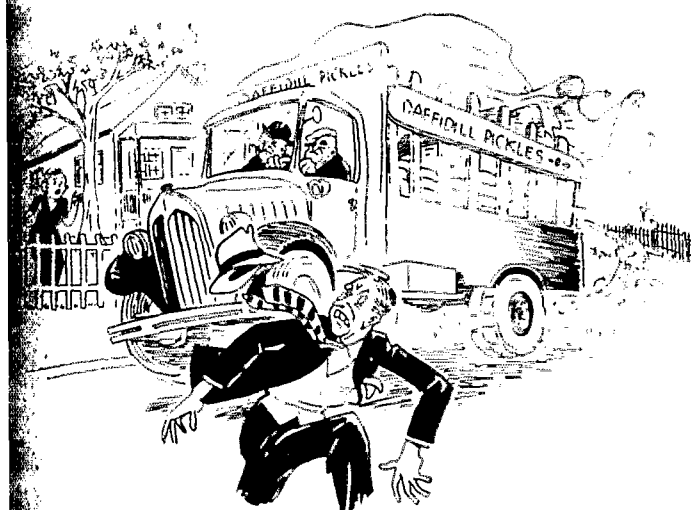
A man might come down to work not feeling quite well, or with some personal worry on his mind. He can't very well afford to stay home. In some cases he calls his barn boss, and tells him he'd like to be off that day, but the boss can't very well spare him, and he is told to come to work. After he gets down to work, he finds he has an exceptionally heavy load and the weather good. In peak seasons some concerns ask the driver to use old trucks that are not dependable but expect a lot of work from them. Give a driver a good truck and he will do a good day's work.

I'll try to point out to you a condition that is not uncommon. Take two men, for example. One is considered an exceptionally good delivery man because he gets in in plenty of time practically every day; the other man comes in about a half hour later each day, so that at the end of the week he has accumulated about three hours overtime.

Both men have practically the same territory, and do the same work. The first man is always in a hurry, never gives his customers a decent answer because he feels rushed, zooms in and out of traffic, and has a few accidents each year. But the accidents are overlooked by the concern. The barn boss or

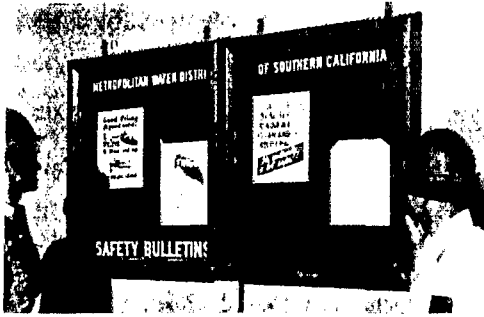
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paper read at the Thirteenth Annual Safety Conference, Chicago



A recklessly driven truck is a poor advertisement for any company.

EMBER, 1935



"Every Possible Safety Measure"

By T. W. OSGOOD

*Associate Member, American Society of Civil Engineers;
Safety Engineer, the Metropolitan Water District of Southern Calif.*

A DESCRIPTION of the measures taken to safeguard workmen engaged in building the Colorado River aqueduct will be better understood if the reader has some idea of the extent of the project.

Before the actual work of the aqueduct was started, it was necessary to construct and place in operation 150 miles of surfaced highway; 428 miles of high voltage electric transmission lines; 180 miles of five-, six- and eight-inch water supply mains; and 285 miles of telephone lines.

The aqueduct itself from the Colorado River to the terminal reservoir will be 242 miles long. It will be made up of 66 miles of canals, 56 miles of conduits, 28 miles of pressure pipe lines, and 92 miles of 16-foot tunnels. The capacity of the aqueduct, incidentally, will be approximately one billion gallons per day.

The system being constructed for the distribution of the water after it has left the aqueduct also can be described only in big figures. In this system there will be 11 miles of tunnels, seven miles

of conduits, and 126 miles of pipe line. The aqueduct and distribution system is being financed by \$220,000,000 bond issue. Twenty contractors are carrying on the work in the tunnels and on the surface.

Now, carrying on a project of this magnitude safely necessarily involves a great deal of special attention to safety. For the benefit of safety men generally and for construction men in particular I shall list and discuss briefly the safety

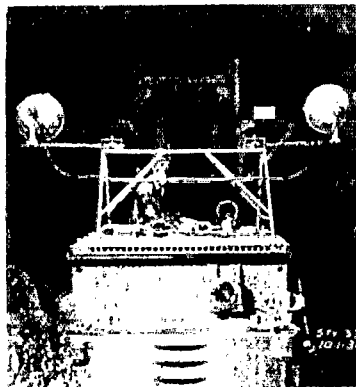
measures we have found valuable. I might say that the Metropolitan Water District has only one policy regarding safety. It might be expressed as follows: "Every possible safety measure shall be applied."

Safety committees on the project, which are representative of engineers, employers and employees, hold an average of thirty meetings each month. Ways and means for realizing safe physical conditions and safe practices are discussed and made operative.

Safety literature published by the U. S. Bureau of Mines, the National Safety Council, and other recognized authorities, is made available to the construction forces.

First aid training courses have been conducted annually in the aqueduct camps by the U. S. Bureau of Mines, and additional training has been carried on by the safety division of the Metropolitan Water District and the insurance companies. Voluntary attendance at these classes has been gratifying; in a number of camps 100 per cent of the personnel has taken this training. Inter-

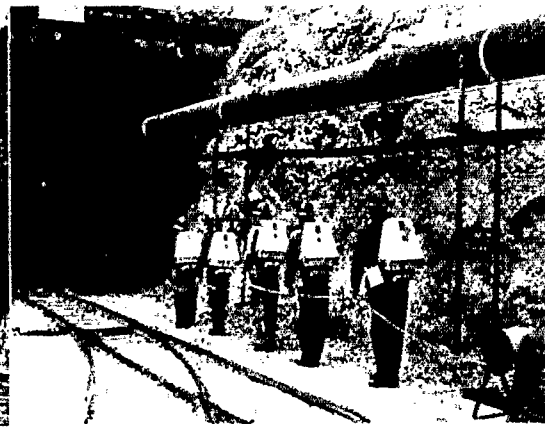
Heading floodlights equipped with 300 watt lamps.



One of the rescue squads at a tunnel portal.

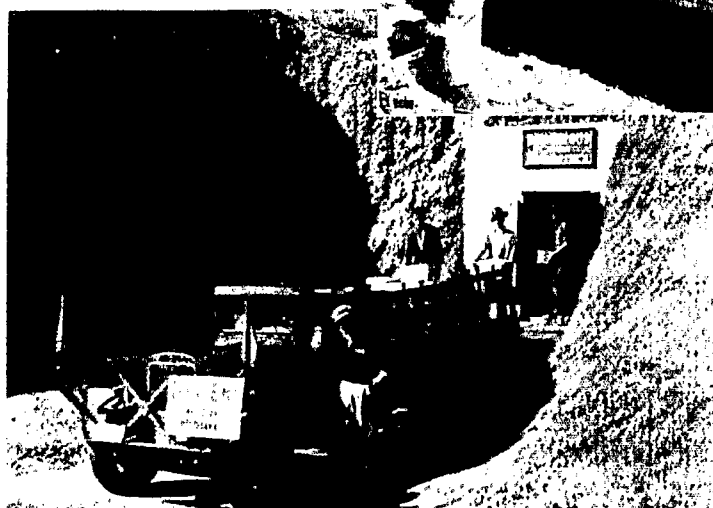


Rescue squad entering a tunnel during practice maneuvers.



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. . . That is the aim of the Metropolitan Water District of Southern California in the construction of the Colorado River Aqueduct



Man cars provide safe and comfortable transportation for tunnel workers.

Left: Truck for transporting explosives. Note sign and red flags which are displayed at both ends of the truck. In the background is a main tunnel magazine.

camp first-aid contests are held and prizes are awarded to the winners.

The knowledge acquired through first-aid training has been put to good purpose in cases of emergency, but it is believed that the greatest benefits lie in the understanding which the men get of the consequences of injuries, and this has made them more safety minded, and more diligent in protecting themselves and their co-workers from injury.

Inter-camp safety contests are a continuous feature of the safety work. Monthly and annual awards are made on the basis of the lowest lost-time accident frequencies.

Accident statistics, which include causes, frequency, severity and costs are compiled, and these data have served as a valuable guide and stimulus to accident prevention.

A mine rescue station is maintained under the direct supervision of the safety division of the District. It consists of an enclosed truck, ten sets of McCaa oxygen breathing apparatus and other mine rescue equipment. Six five-man rescue squads, trained by the Bureau of Mines, are kept ready for action. This rescue unit is available at any time in

case of a tunnel fire or other major emergency.

Approximately 18 million pounds of explosives will be consumed in blasting the 91 miles of tunnels through the mountains, and additional quantities will be used in connection with the construction of canals, pipe lines and other surface units.

Blasting Practices

Every possible safeguard is thrown around the storage, transportation and use of explosives.

Fire-proof, bullet-proof, and well ventilated magazines are provided for the separate storage of dynamite and blasting caps, and for operations incident to making primers and slitting dynamite cartridges. These magazines are located at least 100 feet apart and at safe distances from construction operations, buildings, highways and railroads.

Safety primers are used exclusively in blastings at tunnel headings on District work, and to a considerable extent on contract work. Between June 1, 1934, and March 1, 1935, more than half a million of these primers were fired safely and efficiently.

Dynamite and primers, well boxed, are transported from magazines to tunnel headings in separate powder cars, or in a two-compartment powder and primer car. Electric battery or trolley locomotives are used exclusively in tunnel haulage.

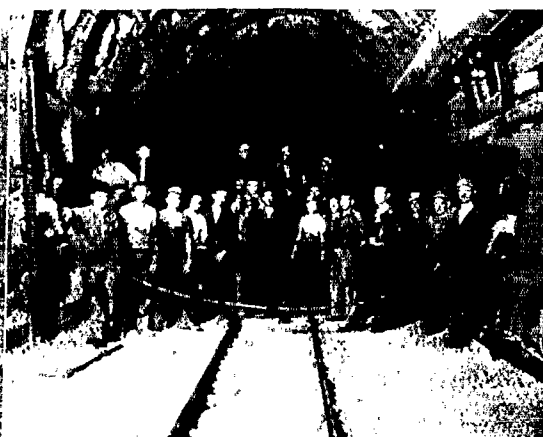
Electric blasting is used exclusively at tunnel headings. The standard blasting equipment (alternating current) embraces the following features:

a. *Permanent blasting lines:* Wiring shall not be smaller than No. 8 AWG rubber covered or weatherproof wire, installed on glass insulators or large porcelain knobs on side of tunnel opposite all other electric circuits and pipe lines. Wires shall be kept at least five inches apart and not less than eight feet above the tunnel floor, and shall be kept clear of any contacts except at points of suspension. Splices shall be staggered, soldered, and covered with rubber tape, varnished cambric and at least four layers of friction tape, or otherwise to provide insulation equal to that of the wire.

b. *Transformer and switch at source of blasting current:* A separate 2,300-400 volt, 5 kw minimum capacity transformer shall be provided exclusively for blasting. The voltage on the blasting circuit shall not exceed 440 volts. An externally operable fused switch shall be installed to protect the blasting circuit. This switch shall not be less than 60 ampere capacity and shall be fused



Two-compartment cars keep explosives and primers separate.



All men remain back of the rope during blasting. Transformer and switch are at the right; blasting switch is at the left; connecting cord in position for blasting.

at not less than 35 amperes. Both the transformer and switch shall be located opposite the blasting switch on the other side of the tunnel and not less than 1,500 feet or more than 3,000 feet from the face.

c. *Blasting switch:* The blasting switch shall be externally operable, double-pole, double-throw type of not less than 60 ampere capacity, and shall normally be held in the "off" position by means of a suitable spring attached to the handle outside of the switch box. In the "off" position the two wires of the circuit shall be short-circuited, but not grounded. This switch shall be so arranged that it cannot remain in the "blasting" position when the handle is released, and the "line" clips shall be provided with arc-quenchers. This switch shall be of such construction that the cover cannot be removed when the operating handle is locked in the "off" position and shall be equipped to lock in the "off" position only. This switch shall be located not less than 1,500 feet and not more than 3,000 feet from the face.

d. *Portable connecting cord:* A two-conductor portable cord, type "S", not smaller than No. 8 AWG and not less than 20 feet long, shall be provided for making the connection between the blasting switch and the source of electric energy on opposite side of tunnel. The cord shall be connected to power and blasting circuits by means of plugs and receptacles of not less than 60 ampere capacity. These plugs and receptacles shall be of a type which has provision for preventing the plugs from being accidentally pulled out of the receptacles,

and shall not be interchangeable with any other plugs and receptacles at any one camp.

e. *Safety switch:* The safety switch shall be of the same type and rating as the blasting switch but shall not be equipped with spring. In the "off" position, the lines from the face of the tunnel shall be disconnected from the source of electrical energy feeding in from the blasting switch. In the "off" position, the two wires of the circuit shall be short-circuited but not grounded. The safety switch shall be not less than 500 feet back from the face.

f. *Lead wires:* These shall be not smaller than No. 16 AWG single conductor rubber-covered copper wire.

g. *Bus wires:* These shall be not smaller than No. 16 gauge AWG bare copper wire.

The track and all compressed air, ventilating, and water pipes, and other similar electric conductors shall be bonded at intervals of not more than 1,000 feet and shall be effectively grounded. Steps shall be taken to insure that the bond and ground connections are maintained.

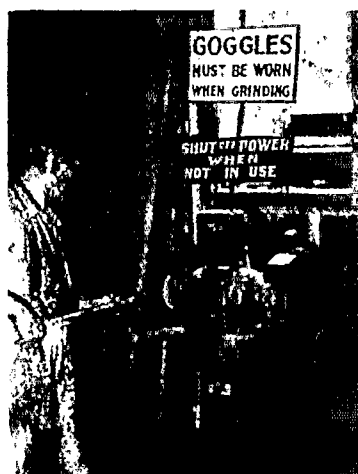
Tunnel illumination is normally provided by electric circuits. During loading and connecting-up a round, electric circuits are removed from the heading and all electric energy is cut off at a distance of not less than 500 feet from the face. During this period illumination in the heading is provided by floodlights plugged into an electric battery locomotive spotted approximately 100 feet from the face.

Workers in tunnels wear protective hats; our man cars are safe and comfortable; our switch frogs and guard rails are blocked to prevent workers from getting their feet caught in them. We use automatic car couplers. Moving parts on machines, such as compressors, and switch panels are guarded; grinding wheels are guarded and workers must wear goggles—to mention only a few of our safety methods.

First-aid supplies and stretchers are kept in suitable cabinets near the headings and at other points in the tunnels. On each shift there are two or more men who have received U. S. Bureau of Mines first-aid training. First-aid stations in charge of trained nurses, are just the horrible raw material of the

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Grinding wheel equipped with tool rests, guards, and push-button control. And goggles for the operator, of course.

An Accountant Analyzes Safety Savings

By STANLEY PEMBRIDGE

C. P. A. Manager with Price, Waterhouse & Co., New York City

AS AN introduction to this discussion of accident costs and safety savings, it may be well to comment on the public accountant's position. A large portion of his work consists of financial examinations and investigations for special purposes. In such work he would not ordinarily be concerned in finding out the total accident cost any more than he would be concerned with the number of fatalities or injuries occurring during the period, except for special reasons.

In carrying out his work, the accountant would examine generally the items in overhead wherein accident costs, for the most part, are included. Bearing this accounting procedure in mind, it will be understood why the public accountant has not been required to establish an accident cost figure.

In Safe Practices Pamphlet No. 21, issued by the National Safety Council, I observed some specimen annual accident reports submitted by the respective safety departments of two companies. (Figures 7 and 8). In Figure 7 reference to the accident costs of the year is made thus:

"Compensation, medical, hospital and incidental expenses connected with treating our injured cost us \$15,000 in 1932 but only \$8,500 during 1933. The saving has more than paid for the operation of the safety department without making any reductions in our activities."

Figure 8 presents in tabulated form the accident data of the year in comparison with the average experience of the preceding five years. Accident costs are shown in three items, consisting of (1) Compensation payments, (2) Medical and hospital costs, and (3) Fixed compensation awards.

In each report statistics are furnished comparatively relating to the accident experience of the year.

I have referred to these two specimen reports because the factors entering into accident experience and costs as usually shown appear substantially to be given in them. The safety engineer desires to

know whether additional information could not be given in such periodical reports which would more clearly reflect the efforts of an efficient safety department. Before considering this question, the detail of accident costs should be discussed.

In a casualty record covering a specific period of time we would expect to find certain direct or recurring expense items entering into accident costs. These may be tentatively indicated as follows:

1. Casualty expenditures consisting of:
 - Personal injury settlement on account of employees
 - Transportation and funeral expenses
 - Artificial appliances for injured

HOW can safety men present the benefits of effective safety work in terms that can readily be interpreted by financial and operating executives? Accident frequency and severity rates are tools of the trade; they often fail to impress the layman. Nor do accident costs per dollar of payroll, total compensation paid, and similar items tell the whole story. At the Sixth Annual Greater New York Safety Congress, the subject was discussed by Thomas A. Walsh, safety engineer, American Optical Company, and by Mr. Pembbridge, Mr. Walsh asking the following questions:

Isn't there a place on the periodical report submitted by executives to the board of directors in which the results of the safety program can be reflected financially as well as statistically?

In developing such accident cost figures is it not possible to give consideration to them in a budget in a way similar to that used to reflect the efficiency of any other department of the company?

Can the accountant suggest what might be done to interpret more forcibly the need of safety?

The accountant's views on the problem are presented in the accompanying article.

- Occupational diseases
- Judgments paid on suits brought
- Company hospitals and emergency rooms
- Public hospitals and fees of surgeons
- Payments to injured other than employees
- Casualty department expenses including therein such items as salaries, office expenses, traveling, accident and other work, etc.
- Legal expenses
- Payments to States as required by compensation laws
- Boiler insurance premium covering personal injury
- Safety department expenses including therein all salaries, special bonuses for reduction or prevention of accidents, safety publicity matter, etc.

2. Safety expenditures consisting of:

- Cost of new or improved protective features where none has previously existed
- Cost of protective facilities in connection with new construction or rebuilding of plant units, etc.
- Renewals and replacements
- All other expenses

The accounting treatment to be given expenditures on hospital construction, safety equipment, etc., should receive special attention. These are in the nature of capital expenditures and are therefore chargeable in most cases over a longer period than one year.

I am informed that the tentative list of expense items would be divisible into (1) The accident dollar, representing compensation paid, and medical and hospital expense, and (2) The accident prevention dollar, representing all expenses to mitigate accidents.

Referring back to the reports of the two safety departments given in Safe Practices Pamphlet No. 21, it may be noted that had details been given of incidental expenses in the first mentioned report it would have been more explanatory to executives of the company. The other report does not even refer to incidental expenses.

In addition to direct costs there is a much larger figure to be considered. These items, which may be described as hidden or indirect costs, are harder to

trace but they are ever present. They include such items as:

1. Cost of lost time of injured employee and lost time of other employees through giving assistance to the injured or for other reasons.
2. Cost of idle equipment.
3. Cost of repairs to damaged equipment.
4. Cost of spoilage of material.

To this list might be added numerous other indirect costs. Special studies have shown that the hidden accident cost is approximately four times as great as the compensation and medical payments combined. According to the Associated General Contractors the proportion of indirect costs is even higher in construction work.

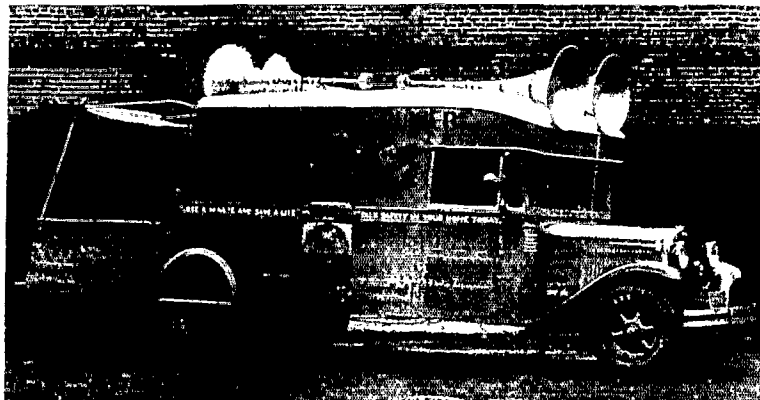
To give a simple illustration of hidden accident cost, it happened that on a building erection job the compensation and medical cost aggregated \$225. Against this the computed indirect cost amounted to \$950. This indirect cost was made up of (1) Time lost by injured employee; (2) Time lost by other employees; (3) Time lost by foreman and superintendent; (4) Property damage; (5) Payment of forfeits for failure to complete the job on time.

Burdensome Clerical Work

The hidden accident cost I have described seems to open a wide door to expenditure which is properly traceable to an accident but which has received very little attention in determining total accident cost. It would be wholly impracticable for a cost department to segregate all items making up this expenditure to an accident costs account. It must be remembered that the detailed clerical work required of most cost departments is always burdensome, and to keep track of such hidden costs would develop a situation whereby the business would be run to keep books instead of the books to record the operations of the business.

In connection with the distribution of accident costs, it was suggested by a safety engineer that they be charged direct to the job on which the injured was working, or to the department with which he was connected, in the same way that spoiled work is charged. Thus the interest of management in the control of such losses could be aroused. In some accounting systems this procedure would also be impracticable. Accident costs, however they may be classified, are only a small portion of the many items entering into overhead which is distributed by apportionment over departments or to jobs or contracts.

For Sales and Safety



BOTH safety and the company's product are advertised by the "Safety Cruiser" which is now on the road for the Phillips Petroleum Company.

The bus, as shown in the above illustration, is equipped with a sound amplifier and an apparatus for displaying sound motion pictures. When nearing the station of one of the company's agents or dealers, the agent's name is called from the amplifier and he is asked to step out in front and greet the "Safety Cruiser" as it approaches. This performance soon attracts a crowd.

In the daytime and frequently at night the cruiser is at the disposal of the mayor, city police or county authorities for putting on traffic schools and safety lectures throughout the territory in which it happens to be operating. Local authorities have willingly cooperated in the safety program. Many complimentary letters have been received by the company throughout the territory in which the cruiser has operated.

Both advertising and safety literature are distributed throughout the crowd during the program.

I now come to the question, "Can the accountant suggest what might be done in the safety department's report to emphasize the need of accident prevention?"

A report of this nature must refer statistically to the accident experience of the year compared with that of the preceding year, or to the averages of perhaps five years. The results are generally expressed in frequency and severity rates, accident costs per dollar of payroll, and so on. (Parenthetically it may be asked if accident costs per dollar of payroll is a correct term if it excludes certain expense items incidental to accidents.) I have already referred to the factors entering into direct accident costs, and these should also be reported in summary form comparatively with those of the corresponding preceding period.

Whether hidden costs can be reported is a problem which, I believe, has not yet been worked out by safety engineers. One solution would be for the safety engineer to follow up the so-called

hidden costs by compiling data which could be obtained from the cost department or from other sources. At the close of the fiscal period the total of these hidden costs could be combined and reported by him. The time may come when a cost department can be geared to build up this figure in a special memorandum account. More study, however, will have to be given to the subject before effective action can be taken.

It is my understanding that safety engineers feel that they do not obtain credit for savings effected through their efforts. By savings is meant reduction of cost for one period compared with a corresponding preceding period. That the factor of savings is recognized is apparent from reports of cash savings to employers resulting from improved accident experience, which reports were obtained by the National Safety Council during July, 1933, from a selected list of members. A perusal of these reports indicates very clearly that the replies

(Please turn to page 70)

NATIONAL SAFETY NEWS

Grand Rapids is Safety Conscious

By CURTIS BILLINGS

IF YOU were seeking an American community in which the spirit of safety has permeated through a very large part of the population and you wanted to observe the results, you could travel much farther than the city of Grand Rapids, Michigan—and find much less to report.

For in this furniture center the laborers, the skilled workers, the business leaders, the city officials, the children and their teachers and mothers—all are represented in the local safety council which for thirteen years has performed an educational function so thorough and effective that it is the envy of cities the country over.

While a close study of the methods used will reveal no startlingly original innovations (indeed, from the point of view of the traffic engineer and enforcement specialist Grand Rapids leaves something to be desired), the same study will show that the simple, understandable, incessant program conducted is reaching almost everybody in a very effective way. To use a trite, but rather accurate phrase, Grand Rapids is safety-conscious. The people there regard an accident as the result of ignorance, which usually it is; and they are determined to wipe out a type of ignorance which can result in terrible suffering.

Before presenting the facts which serve as a measure of the success of the

By a simple, understandable, incessant safety program, this furniture center is reaping rich dividends each year—dividends that can be measured in dollars and cents

program, it might be well to describe briefly the program itself. First let us observe the program for public safety.

Because of its many unusual characteristics, mention might well be made at the outset of the council's Special Traffic Squad. This squad which meets on each Tuesday for lunch is not only an integral cog in the safety machine of the city, but is, beyond question, the most exclusive luncheon club in town! At first glance this fact may seem irrelevant, but when one recalls that the child's game of "Follow the Leader" is a game which adults play as well, one realizes the importance of having civic, social and business leaders serving actively in an organization for safety. They set the style, if you please, and others follow.

It is an exclusive organization—only thirty-one men hold the coveted memberships. They are all police constables for traffic within the city limits and deputy sheriffs in Kent county. The captain is H. Fred Oltman, vigorous vice-president of the Peoples National bank, and under him are five lieutenants. All members of the squad may make arrests, but, since their function is mainly educational, they exercise this power infrequently. They do something which is even more valuable. They stop from 1,500 to 1,800 cars each year and talk personally to the drivers about the malpractice which they have just been observed to commit. During a year they may give only 75 or so of these violators arrest tickets because usually this is not necessary. Cooperation to observe the law is usually good naturedly promised after the talk.

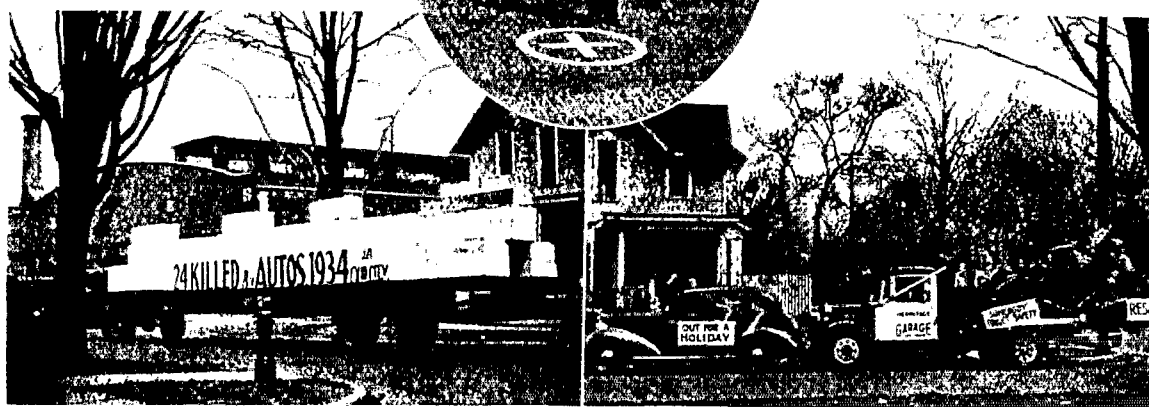
The squad conducts drives seven or eight times annually. A member in his own car and with a uniformed policeman beside him cruises an assigned district during specified hours and watches for such dangerous practices as have been observed there, such as driving without lights, speeding and running signs and signals. The squad member and policeman may caution as many as 300 law violators during the cruise.

On the squad is the president of a coal company, a newspaper editor, the

The work of reminding the public of the need for safety never ceases in Grand Rapids. Here a police officer is shown painting a cross on the



pavement where a fatality occurred. The other pictures show two floats in a recent parade which made grimly graphic the toll of auto accidents.



SEPTEMBER, 1935

president of a manufacturing company, a leading lawyer, the vice-president of an ice company, an assistant superintendent of schools, the superintendent of an express company, the president of a paint manufacturing company, the secretary of a motor club, the president of a publishing house, a furniture designer, the president of a trucking company, a past mayor, the general manager of one furniture plant and the president of another, the superintendent of a trolley company, several insurance men and a city commissioner. Such men can obviously set the tone of the whole city in regard to traffic safety.

Each year the Grand Rapids Council carries on some outstanding activity calculated to reach and influence a large number of people. This year in May it was a safety week. Each day during the week had its special activity. Monday started off with a dinner of representatives of interested organizations. The late Dr. Maurice R. Keyworth, State Superintendent of Public Instruction, was the principal speaker. Incidentally he made a very significant statement at the dinner. He said that it was his considered opinion that it is more important for people to learn how to drive automobiles properly than to learn how to write their own names!

On Tuesday the Industrial Division of the Council had a meeting which had as its sole purpose enlisting the active interest and support of every industrial executive in the city. While the old story of the cost of accidents in the plant received its due attention, a main point in the discussions was the tremendous loss to industry of accidents occurring outside the plant on the streets, in other public places, and at home.

Wednesday was Child Safety Day in all the schools of Kent county, with appropriate programs. Mention will be made later of the work going on in the schools of the city. Thursday was Home Safety day and Police Department day. No warnings were issued to motorists on Thursday; every violator who was caught was given a ticket. Friday was devoted to the development of membership in the Safety Council. Saturday the pedestrian had his day. A hundred and fifty junior safety squad members aided the downtown police in stopping jaywalking. A parade was conducted on Saturday afternoon with more than 150 decorated vehicles and floats and hundreds of persons participating.

The Highway Division of the Council makes a monthly inspection of grade crossings in the city and county. This division is interested in securing proper signals for the crossings, the removal of barriers to view, and the laying of permanent pavement so that the crossings will not be rough and bumpy. It is composed of city, county and railway engineers.

While the police of Grand Rapids are conservative in the adoption of new methods of traffic control, they have investigating squads equipped with



Here are the men who lead the fight on accidents: young, personable James K. Miller, president of the Grand Rapids Safety Council, and E. Ross Farra, manager.

cameras and measuring tapes on the streets whose function it is to determine the cause of accidents. The regular work of law enforcement is of a comparatively high standard. Traffic engineering is in the hands of the City Traffic commission which is composed of four citizens, the chief of police, a member of the city commission and the city manager, with the city engineer as advisor.

All of the large commercial vehicle fleets in the city, except one or two, participate in the Inter-Fleet Safety Contest conducted by the Council. More than 900 units are included and monthly meetings are held for the purpose of maintaining interest and stimulating competition.

Every spring an equipment inspection is made in which 90 per cent of the cars in the city are tested.

The school program in Grand Rapids is one of the most complete in the country. Under the direction of the Safety Council the Kiwanis Club is the official sponsor of the Junior Safety Squad. There is one in every school,

public, parochial and private, the total being 69, with 38,000 children receiving this protection. More than 750 children serve on the squads.

In most cities these squads are stationed at intersections near the schools to hold the children back until a safe interval in traffic occurs. A study of child accidents in Grand Rapids revealed that most of them occurred not near the school, but from four to six blocks from the school. Consequently, the squad members escort the children past all of the dangerous street intersections which they come to and in many cases take the younger children to their doors. The whole city of Grand Rapids is proud that in 1933 no child of school age was killed on the streets. The record in 1934 was not so good. Four youngsters lost their lives, but not one while he was going to or from school. The Police Department has detailed a full-time traffic officer to the safety council and he organizes the squads, talks to the students, encourages them, trains them. In the choice of this man the city was lucky, for Officer Elmer Brackett is a past school teacher, a genial chap who is well liked by all the children.

Every school receives a subscription to "Safety Education" magazine and every school room receives a monthly safety poster and a lesson outline for the teacher to use (by order of the superintendent) for a fifteen-minute safety lesson.

Home safety is taught in the domestic science classes and in June the manager of the Safety Council went to all junior and senior high schools and, in auditorium speeches, asked for the cooperation of the pupils to stop accidents this summer. His specific requests were that they obey the traffic laws themselves, that they think through their own driving and walking habits and correct them, that they tell their parents of the mistakes they make, and that they use their influence everywhere for safety.

The home safety program in Grand Rapids is also one of the most complete to be found. The Woman's Home division of the Council conducts monthly meetings. The division is made up of representatives of the Parent-Teacher associations, the woman's clubs, the literary clubs and the church groups. There are 117 such cooperative organizations in the city and each one devotes regular time to safety. A monthly bulletin (Please turn to page 69)

NATIONAL SAFETY NEWS

Kansas Health Authorities Fight Accidents

By EARLE G. BROWN, M.D.
Secretary, Kansas State Board of Health



IT IS the function of a State Board of Health to promote the physical well-being of the citizenry. I have always taken the position that disability and death from accidents are just as serious as disability and death from diseases and that accident prevention is just as important in the health department's program as the dissemination of knowledge and serums in the fight against diphtheria or typhoid fever. I believe that most state departments now take that point of view.

Diphtheria caused 38 deaths in Kansas during 1934, typhoid fever 26 deaths, both all-time lows for the state. During the same 12 months accidental deaths numbered 1,755, which was the largest number ever recorded for any year. There has been a steady increase in accidental deaths from 1914, when the total was only 965. During the ten-year period, 1925-1934, our records show 194,383 deaths from all causes. Of this total, 14,445, or 7.4 per cent were due to accidents.

For several years accidents have ranked fifth as a cause of death, but in 1934 they moved up to fourth place,

exceeded only by deaths from chronic heart disease, cancer and apoplexy.

About five years ago we became convinced that the only solution to the problem of rapidly mounting deaths from accidents was to familiarize every person in the state with accident causes and with the places, times, and circumstances of greatest danger. In order to do this we adopted a program of obtaining and analyzing in much greater detail every death from accident that occurred in the state. In 1931 we adopted special report blanks designed to provide information supplementary to that given on the regular death certificate. As a result of their use we are now able to tell the public not only how many accidental deaths there are but also where the accidents occur, what the person was doing at the time of the injury, what unsafe practice was responsible, and other details which bring the accident problem "down to earth."

In making our analyses we have used the four main groups of accidents recommended by the National Safety Council as suitable classifications. The total of accidental deaths in Kansas for the five

years, 1930-34, is 7,831, classified as follows:

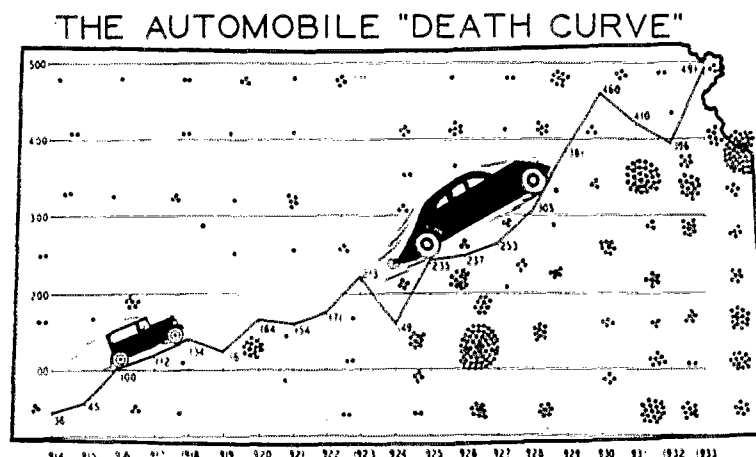
	Number	Per Cent of Total
Home	2,841	36
Motor Vehicle	2,496	32
Public (not motor vehicle)	1,394	18
Industrial	1,100	14

Although this is not meant to be a statistical report, a few main facts about each of these types of accidents may be of interest. The group of home fatalities the best known proved to be the most dangerous room in the house. Approximately twice as many persons die from accidental falls which occur in the bedroom as in the next most dangerous place in the home, the living room. The next largest group of fatalities occurs on stairs and steps; then comes the kitchen. Approximately 50 per cent of all deaths from burns occur in the kitchen and are the result of making fires with kerosene or gasoline.

The most important facts developed in our study of motor vehicle fatalities parallel those which are available in motor vehicle department reports from other states. Fatalities are more numerous in the three summer months than in any other quarter of the year, July being the highest single month. Friday, Saturday and Sunday are the high days of the week for motor vehicle accidents, with Sunday accidents being most numerous. The peak period for fatal motor vehicle accidents is the late afternoon and early evening hours. In 1934, however, there was a noticeable increase in fatal accidents occurring between midnight and six in the morning. Kansas is essentially a rural state, of course, and we find that a predominant number of our motor vehicle deaths occur in rural districts rather than in cities.

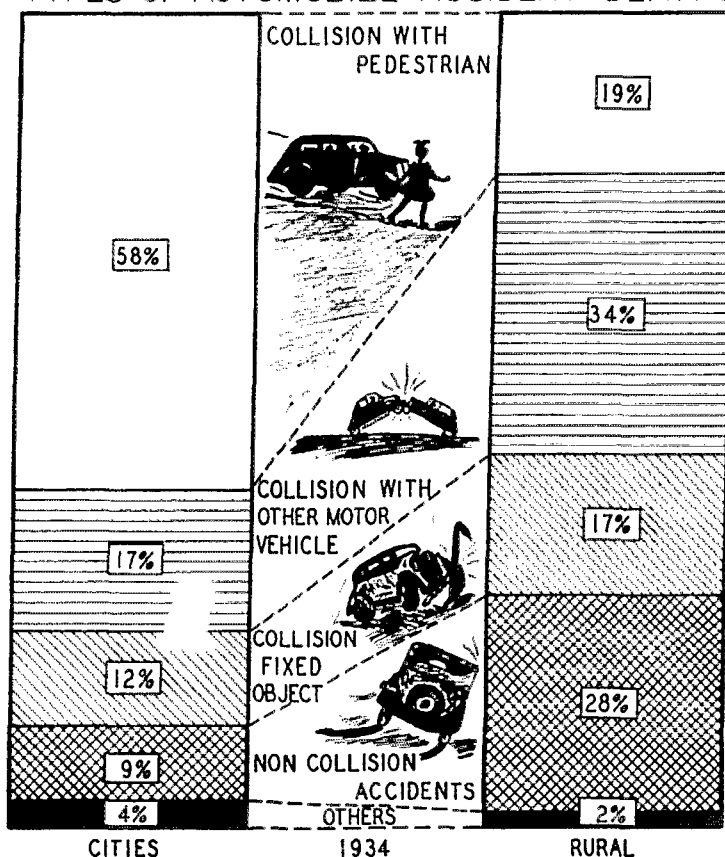
In the group of public accidents not involving a motor vehicle, drownings constitute 23 per cent, railroad deaths 19 per cent and falls 13 per cent. Both drownings and railroad accidents have shown substantial decreases in recent years.

During 1930-1934, 1,100 industrial



One of the charts made available to newspapers by the Kansas Board of Health as part of a program of public education.

TYPES OF AUTOMOBILE ACCIDENT DEATHS



Charts like this one show Kansas citizens the nature of the state's motor vehicle accident problem.

accidents resulted in death. These fall into three principal divisions: Agricultural activities resulted in 503 fatalities, or 46 per cent of the entire number; transportation and public utilities claimed a death toll of 147 persons, or 13 per cent; and 7 per cent were caused by accidents in construction work.

A survey of agricultural deaths shows that more than 50 per cent are caused by farm machinery and farm animals. Fatalities from machinery, which show a ghastly increase, were mostly caused by tractors, of which there has been a growing number in use. Agricultural deaths are confined almost entirely to males, with fatalities in a majority between the ages of fifty and eighty.

These few facts are only suggestive of the thorough analysis of accidental deaths which has been carried on in our vital statistics division. This analysis has meant additional work for us, but work which we are convinced has been tremendously worth while. It is worth

while because the information has not been packed away in small-type tables to be glanced at occasionally by research students, but has been sent out daily, weekly, and monthly to the people of the state through every educational channel.

The Kansas press is very co-operative. This is not entirely altruistic, as the story of human deaths (how many, where, when, how and why) is packed with human interest. Many newspapers are glad to write their own special articles from the tabulated reports we submit to them. The Associated Press Bureau in Topeka sends stories of the aforementioned type all over the state.

Radio Station KFBI at Abilene, Kansas, has broadcast twice-a-week bulletins from the State Board of Health for more than three years. Many of these have dealt with accidents and their prevention. The time is donated by the broadcasting station and through this medium much valuable information and many

important warnings are given our people. Radio Station WIBW in Topeka, intersperses its programs with brief safety warnings and slogans.

During the past year an important forward step has been taken to coordinate all of the safety education activities of the state into a Kansas Safety Council. Beginning in February, 1934, certain officers of the State Government, whose departments have to do with accidents and their prevention, began to hold weekly meetings. Governor Alf M. Landon gave official recognition to the campaign by giving an effective radio talk on safety last May. Semi-weekly talks have followed, under the sponsorship of the Kansas Safety Council, up to the present time.

October, 1934, was declared a "Safety Month" for Kansas by a proclamation of the Governor. Meetings were held for the reorganization of the Kansas Safety Council and the enlistment of support of all persons interested.

Two things have developed from the meetings of the State Safety Council. First, the organization of county and city units, composed of interested persons. These groups will make a study of their own problems and construct a program. Second, a movement for the prevention of school accidents. Schools are divided into groups, according to population, and 47 school systems are reporting accidents to their school children. These reports are made to and tabulated by the State Board of Health. Prizes were offered for the school in each group making the best record (that is, having the least accidents and time lost) for the year 1934-35.

One of the effective safety measures introduced last fall was the use of the loud speaker system at football games and other large athletic events, giving a short warning—a talk in the interests of safety, in which this slogan was repeatedly stressed: "Add five minutes to your driving time and arrive home safely."

Recently, a new daily syndicated feature was started by the Kansas Safety Council. This feature, "It Happens Every Day," is a brief description of actual fatal accidents, although fictitious names are used. The information is furnished by the State Board of Health, and 17 dailies are using the feature.

As a result of information furnished by the State Board of Health to the State Board of Agriculture, to officials of the Kansas State College and to farm

(Please turn to page 63)

NATIONAL SAFETY NEWS

Steps to Safety

By ROY R. RANDALL

Sutton Company, Worcester, Mass.

More attention to the floors and stairways means
a safer footing for employees and customers

MORE people die or are injured each year by falls on floors or stairs than in any of the catastrophes so blatantly described in newspaper headlines. Much of this is all so needless because so many of these falls are directly traceable to negligence in providing safe walking or stairway surfaces.

A very large proportion of the falls that occur on floors are caused by their being badly worn, thus offering a tripping hazard with a consequent fall, or by the floor having a smooth, slippery surface. If a floor is worn, an entirely new surface can be laid, or the surface may be repaired if a new floor is not warranted. In either instance any cause of tripping should be eliminated.

A further safety precaution, especially in dairies, kitchens and similar places where liquids, oils or fats may be spilled,

is the use of a flooring material that is "non-slip" under any conditions, whether dry, wet or oily.

Many flooring materials on the market offer a level walking surface, and there are some which claim a "non-slip" feature which is especially true when the floor surface is dry. To properly achieve a suitable "non-slip" surface under all conditions we believe an abrasive surface is necessary.

Ordinary abrasive grains may be spread into the top surface of a floor and accomplish the desired result to a certain extent. An abrasive grain, however, presents a hard smooth exterior which does not readily or firmly bond itself to its surrounding materials. It is for this reason that aggregates are especially manufactured and prepared to create a grain of aggregate irregular in shape, and open in its structure, to give a rough, easy-to-grip, surface. Once imbedded in a cement or other bonding material it is firmly and permanently



Since propaganda for safer footwear seems to be so much wasted effort, the management can only provide safe floors and stairways and hope for the best.

held in place, yet still offers the required resistance to wear and slipping.

Ramps such as are found at the entrances to stores or vestibules of buildings should also be made adequately non-slip; for it is here, with a sloping surface to start with, that a great number of slipping accidents are likely to occur. The floors of ramps these days are usually laid in terrazzo or in tile. If it is to be of terrazzo, an abrasive aggregate should unquestionably be used, for a terrazzo floor in itself can be quite slippery, especially if wet. If the ramp is to be tiled, non-slip abrasive tiles are available and can be used with a definite assurance that they will remain non-slip for years to come, provided they contain a sufficient amount of abrasive. (Thirty-five per cent is recommended as a minimum.)

Falls on stairs are usually more serious than those occurring on floors and such falls are most frequently occasioned by a slippery condition at the nosing of the tread. Worn treads themselves may also cause tripping and consequent falling accidents. The question naturally arises as to what can be done about slippery and worn treads to overcome these hazardous conditions.

It is not always real economy to choose stair coverings that seem to be cheap in their first cost, because oftentimes these stair coverings will prove very costly in the long run due to necessity of frequent replacements and because they do not offer adequate protection against slipping and tripping accidents.

(Please turn to page 54)

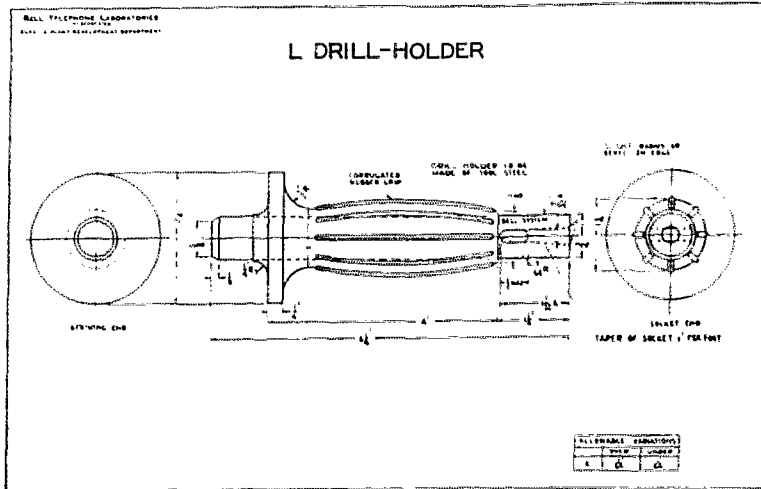
Excerpt of a paper read at the Fourteenth Annual Massachusetts Safety Conference, Boston, Mass.



Ceramic mosaic tile with a satisfactory anti-slip surface is widely used where safety must be combined with attractive appearance.

THE SAFETY EXCHANGE

"A ROUND TABLE IN PRINT"



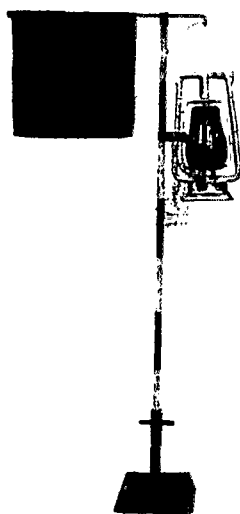
Rubber Grip and Flange for Drill Holder

This tool-steel drill holder has a corrugated rubber grip, a tapered socket,

and a half-inch flange below the striking end. The grip enables the workman to maintain a better hold on the drill, and the flange protects his hands from being struck while the drill is in use.

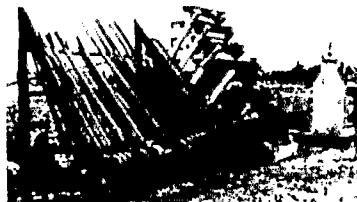
Combination Danger Signal Is Easily Constructed

The Equitable Gas Company of Pittsburgh, Pa., sends us this photograph of a combination flag and lantern



danger signal. The base is made of an old gate box cover, the upright of iron pipe, and the cross arm which supports the red warning flag and lantern, of a lighter material. A U-shaped bracket holds the lantern in place, thus preventing it from being blown into the standard or from swinging. This signal is simply constructed, and can easily be dismantled for transportation.

Salvaged Material Makes Pipe Tong Rack



This rack for pipe tongs is made of short lengths of discarded pipe welded together. It keeps the wrenches off the ground, adding to their life; it eliminates the hazard of stumbling over

The ideas presented here have proved helpful. If you have developed some useful device or method send in a description, with illustration, if possible. These devices are home-made and are not available commercially

them; and it makes them more available for use. The rack is used by the Lon Star Gas Company, Dallas, Texas. A photostat of the device may be had from the National Safety Council library.

Safety Switch Prevents Bruises and Strains

To prevent mashed hands and strained backs occurring to the men who load and unload ice through the side door

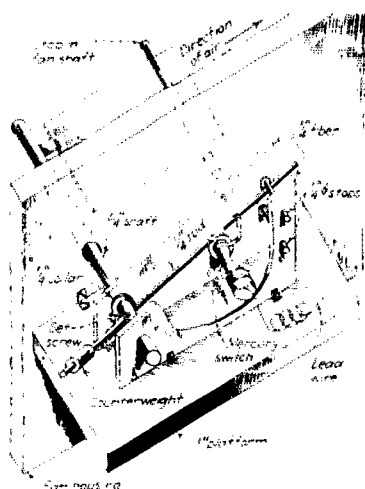


of their elevators, Hage's Ltd., Ice Cream and Dairy Products, San Diego, has developed a safety switch. When the side door of the elevator is opened, the switch is automatically thrown and the elevator cannot be moved until the door is closed.

NATIONAL SAFETY NEWS

Automatic Signal Warns When Fan Stops

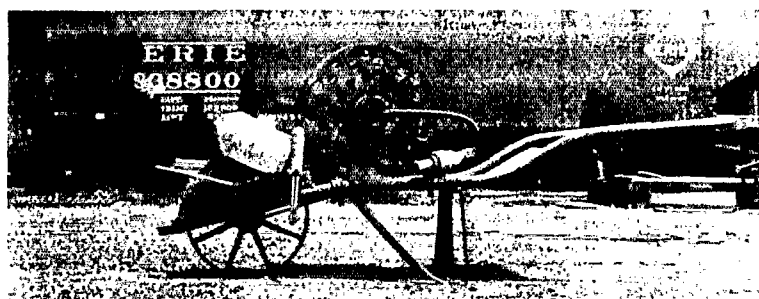
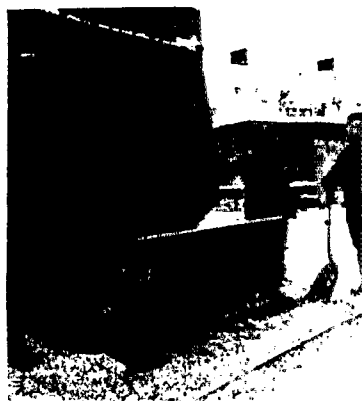
The revised code of standards of the Union Pacific Coal Company, Rock Springs, Wyo., provides that each fan shall be equipped with an automatic signaling device similar to that shown in the accompanying illustration. This equipment is so constructed that when the air current is interrupted, the vane in the fan shaft drops, whereupon, through the system of shafts and levers, the mercury switch is rotated sufficiently to either make or break the circuit to bell or light. The latter is installed at any convenient point designated by the



mine superintendent to warn those responsible for fan operation in case of a shutdown.—*Coal Age*.

Hinged Grate Guards Chute

The visible feeding opening shown in the accompanying illustration is covered with a permanent grating with the grates far enough apart to permit the



Welding Equipment Is Handled Conveniently

To avoid excessive handling of equipment during welding, a truck was devised by Michael Gacek, electric welder at the Buffalo roundhouse of the Erie Railroad, incorporating ideas for saving time and energy.

The truck body is the frame work of an old iron wheelbarrow, and attached to it a cylindrical drum, made from scrap sheet iron, for winding the electric cable. A guard was placed over the

wheel in the form of a tray, giving the welder a convenient place for carrying his helmet and welding wire. To facilitate welding on a locomotive, a place is provided on the back of the truck for carrying a ground wire. The truck permits quick transfer of equipment and saves the cable from unnecessary wear and tear.

The truck has two safety features. Men will not trip over the cable in transit, and the flexible ground cable eliminates the use of a firehook to get a ground, a hazardous method.

material to go through. Over the opening is a movable hinged grate which is lifted when the car is to be unloaded. This arrangement is in use at G. A. Serlachius, A. B., Mantta, Finland.

Hook Turns Flywheel Off Dead Center

This safety hook was devised by the National Works of the American Sheet



and Tin Plate Company, Monessen, Pa. It is used to turn the large flywheel off dead center. The lever bar, which closes the mouth of the hook after the engine

starts, makes it impossible for the hook to catch in a spoke. If this should happen, the hook or the chain from which it is suspended would probably snap. The bar is therefore a real protection to men working near the flywheel.

Hand is Guarded With Sharpening Stone

This sharpening stone has a hilt guard so that the operator's hands will not come in contact with the edge that is being sharpened. The device is in use at the Corduroy Rubber Company, Grand Rapids, Mich.



Cleaning Exterior Walls of Buildings by Sandblasting or Steamblasting

Industrial Data Sheet D-Gen. 12

A. Problem

1. What are the hazards of cleaning the exterior walls of buildings by sandblasting or steamblasting, and what precautions are necessary?

B. Hazards

2. The hazards are:

- Unguarded machinery.
- Explosions.
- Falls.
- Burns.
- Sand and dust.

C. Discussion

3. Sandblast equipment for cleaning building exteriors consists generally of a gasoline engine driven air compressor with air receiver, control and safety valves, pipes and gages; a sand mixing chamber; a suitable high pressure hose and nozzle; a swing scaffold with the necessary hooks, irons, pulley blocks and rope; and canvas tarpaulins or curtains. In steamblasting, the equipment is about the same, except that there is no sand mixing chamber and a stationary or portable high pressure steam boiler is used instead of the air compressor unit.

Machinery

4. All moving parts of the gasoline engine such as shafting, fly wheels, belt, cranks, couplings, gears, sprocket wheels and chains, should be so enclosed as to prevent accidental contact with them. (See Note V.) Accidents due to hand cranking of air compressor engine can be avoided by the use of a self-starting device.

Explosions

5. The possibility of explosion in an air compressor engine, receiver, and pipes requires that special attention be given to compressor lubrication, cleanliness of air at intake, air cylinder temperature, and cooling the air between stages and after compression. The air receiver should be designed in accordance with the specifications of the A.S.M.E. Boiler Code. Make-shifts such as old hot water tanks should not be used. Air pressure gages should be checked and calibrated at frequent regular intervals. Safety valves should be tested daily and, if necessary, adjusted to prevent sticking. They should be set preferably at five pounds over the working pressure. The air receiver should be drained daily. (See Note W.)

6. Boilers used in steamblasting should be designed, constructed and equipped in accordance with the requirements of the A.S.M.E. Power Boiler Code, unless local or state laws contain more stringent requirements, in which case those requirements should be followed. Boiler gages should be checked and calibrated every six months. Boiler safety valves should be set to blow off at not more than ten pounds above working pressure and should be tested daily to make sure they are not sticking. All steam boilers and their accessories should be

inspected at frequent regular intervals by qualified men. Certificates of such tests should be conspicuously posted at the place where the boiler is being operated. (See Note X.)

Falls

7. Failure of the scaffold or its supports is the cause of most falls in these operations. In addition to good scaffold material and construction, safe hoisting ropes and blocks, hooks, irons, hand rails and toe boards should be used. The requirements of a recognized scaffold code, such as that of New York, Pennsylvania, Ohio or Wisconsin, should be followed. (See Note Y.) Frequent and regular inspections should be made of all parts of the scaffold and its accessories to make sure they are safe. Care should be taken to keep supporting ropes away from acid and caustics. Scaffolds should be firmly tied to the building to prevent swaying. Special care should be taken to avoid dropping the scaffold while it is being raised or lowered.

8. Passersby sometimes trip over such equipment as barrels, ropes, hose lines, and tools. Hose lines crossing the sidewalk or other pedestrian passageways, should be elevated on overhead supports not less than seven feet high. Rope fall lines should be placed in barrels or other receptacles. Tools not in actual use should be kept in boxes so located that they will not create a stumbling hazard. When sidewalk obstructions are unavoidable, the sidewalk should be barricaded against passage. At night adequate illumination or red warning lights should be provided.

Burns

9. Equipping the nozzle end of the steam hose with a positive grip handle will prevent the nozzle from slipping from the hand of the operator. Frequently workmen are burned by the escaping steam. Steamblasting operators should wear wool lined asbestos gloves. Burns of the wrists may be prevented by asbestos wristlets, and of the legs by asbestos leggings. Proper eye and head protection is necessary. In most cases, a heavy canvas or asbestos hood covering the head, neck and shoulders and equipped with clear glass lenses or windows, is suitable. (See Note Z.)

10. The blow-off pipe from the boiler should be so located that the discharging of steam will not be a hazard to employees or to the public. If the boiler is located where the public may come in contact with it or with burning fuel or hot ashes, the boiler should be enclosed and signs posted prohibiting entry of unauthorized persons within the enclosures. Covering the steam pipe line from the boiler to the hose with asbestos or other suitable insulation, will prevent many burns to employees and passersby.

Sand and Dust

11. Appropriate respiratory protection and wearing apparel should be provided for the sandblast operator. Make-shift canvas hoods

should not be used, as they do not afford the necessary protection against the inhalation of dust created by the abrasive. The protection should consist of a positive air-pressure helmet or hood with wide angle, clear vision lenses. This helmet or hood should fit completely over the head and neck to the shoulders and be furnished with a constant supply of clean dust-free air at a pressure of not more than five pounds where it enters the helmet. The volume of air supply to the helmet should be not less than three nor more than four and one-half cubic feet per minute. If the air is supplied from the high pressure air receiver used for sandblasting, a pressure regulating valve should be provided in the line, preferably near the air tank. An adequate air filtering device should also be provided in the line to the helmet or hood to remove oil and other extraneous or dangerous fumes and substances. Protective helmets or hoods used in this work should comply with the requirements of the Schedule on Respiratory Protection¹ by the United States Bureau of Mines. (See Note Z.)

12. Tarpaulins and canvas curtains should be maintained in a serviceable condition to arrest sand, dust and other flying particles which may strike passersby. These should be attached securely to the top rail or, and should extend along the side of and under the scaffold, close to the building. A canvas duct should be provided for returning sand from the scaffold to the container below. Where possible, a vacuum dust and dirt recovery system should be used to separate the sand and extraneous material and thus avoid such contamination of the air as would be detrimental to the public.

Miscellaneous

13. Safety couplings should be used at all joints of hose under air or steam pressure or provision should be made to hold ends together in case joints become detached.

14. Dermatitis may result from the irritating effects of chemicals sometimes used as cleaning agents in steamblasting. When chemicals are used the steam blaster should wash freely with soap and water immediately before lunch and at the end of the day's work. If the chemicals are flammable, the equipment should be grounded to prevent accumulations of static electricity.

15. At the end of each day's work, all equipment should be removed from walkways. When this is not practicable, suitable warning lights should be conspicuously placed. Warning signs to the public should be placed on trucks, scaffolds and other equipment.

(Please turn to page 62)

¹Formulated in cooperation with Metropolitan Chapter, American Society of Safety Engineers—Engineering Section, National Safety Council.

National Safety Council, Inc.

20 North Wacker Drive
Chicago, Illinois

NATIONAL SAFETY NEWS

Mercurochrome in Industry



IN INDUSTRY

little things count. Slight mistakes may mean serious loss. So with industrial injuries a little scratch if ignored may become a serious infection. ¶The first defense against infection is thorough cleansing and the application of an effective antiseptic. All wounds, however small, should receive treatment promptly. Be prepared with Mercurochrome for the first aid care of all minor injuries. In more serious cases call a physician.



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HYNSON, WESTCOTT & DUNNING, Inc., Baltimore, Maryland

SEPTEMBER, 1935

INDUSTRIAL HEALTH

A Non-Technical Symposium for Physicians and Laymen

Raising the Standards of Industrial Medicine

By M. N. NEWQUIST, M.D.

*Department of Industrial Medicine and Traumatic Surgery,
American College of Surgeons*

UNTIL recently the medical profession has not effected special organizations to deal aggressively and continuously with medical problems in industry which would be comparable to the work of the National and Local Safety Council. To facilitate the dissemination and practical application of knowledge requires a national organization.

The American College of Surgeons, an organization of some 12,000 qualified surgeons, has for over twenty years established standards for surgeons and hospitals in this country to provide better surgical and hospital care for the public. As a result of this beneficial work, the College was requested by representatives of industrial organizations, labor and insurance carriers to aid in the improvement of medical service in industry.

Preliminary investigation in this field made by the College in 1926 revealed that many of the larger industrial organizations had provided excellent medical service for employees, but that much could still be done to improve the service, particularly among the smaller establishments. Our surveys also revealed that compliance with compensation laws does not in itself signify efficient medical service, and that compensation awards cannot correct a disability chargeable to inefficient medical service. The College therefore formulated a Minimum Standard for Medical Service in Industry and is now engaged in a campaign to elevate the standards of such service.

Personal surveys have been made of

the medical services in some 1,300 industrial establishments and they are rated according to their compliance with this minimum standard.

The question is often asked, "What role does medical service play in the reduction possible in injury rates?" Investigation by individuals and organizations has shown that an efficient medical service can be responsible for at least one-third of the reduction in injury rates, while the safety service can be responsible most of the remaining two-thirds.

The accepted basic objectives of industrial medicine are:

1. To ascertain by examination the physical and mental fitness of employees for work.
2. To maintain and improve the health and efficiency of those already employed.
3. To cooperate in educating the worker in accident prevention and personal hygiene.
4. To reduce lost time from illness and injury.

The above objectives do not mean that industry should provide medical care for non-industrial disabilities. It is not the original purpose of industry to practice medicine. Sound business and humanitarian principles, however, plus the responsibility imposed by compensation laws, should call for the following scope of medical service:

1. Pre-employment and the indicated periodic physical examinations of employees.
2. The complete care of all industrial injuries and occupational diseases.
3. First aid for non-industrial injuries and disabilities of employees only while on duty.
4. The elimination of all preventable health hazards.
5. The integration of the industrial medical service with that rendered by the private practitioners.

How can industry accomplish the

above objectives economically and efficiently? By putting medical matters into competent medical hands, and delegating therewith appropriate responsibility and authority. This brings us to the qualifications and duties of an industrial physician, remembering that his personality, integrity and ability form the most important element in the medical service.

1. *The physician should be a graduate of an accredited medical school and licensed to practice in the state or province.*

Since every industrial injury is a potential medico-legal case, it is important that these cases requiring medical attention be treated by a surgeon who is licensed to practice.

Surveys have revealed that in some industrial establishments nurses and first aid men attempt such surgical procedures as the suturing of wounds and the incision of boils. This practice is not only unsafe for the employee; it is illegal as well. The state requirement for a license to practice surgery should automatically prohibit such practices by laymen. The entire first aid service should be under the supervision of the plant physician.

2. *He should have at least one year's internship in an accredited hospital and some experience in general practice.*

The policy of employing a full-time physician is justifiable if the administrative and professional requirements are of such a nature and volume as to warrant it. It is the consensus, however, that the rest of the medical personnel should have experience in private practice. It will broaden their social, industrial and professional viewpoints, and it will add to their knowledge and ability.

3. *He should be qualified to determine by examination of employees their physical and mental fitness for work.*

No physician should consider himself qualified to make physical examinations with recommendations for placement until he has a knowledge of the job

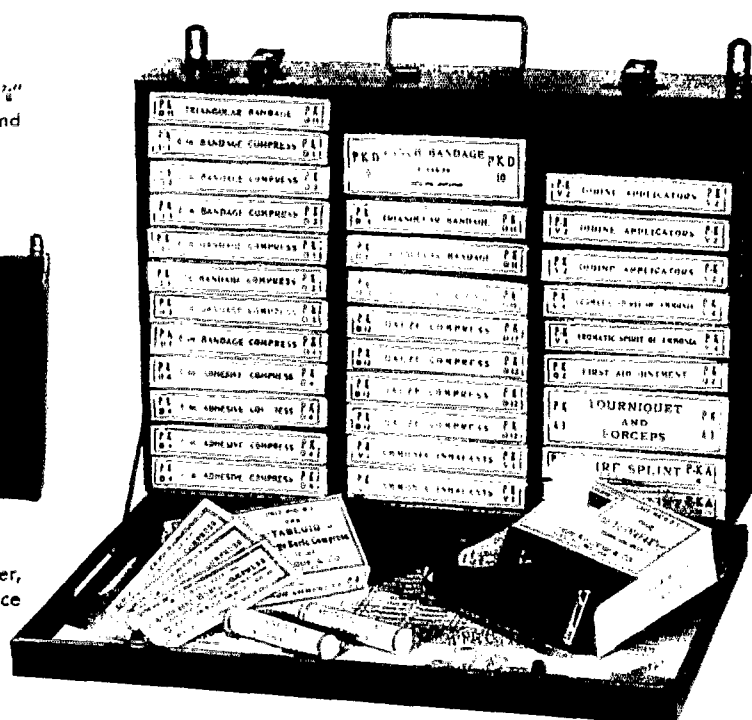
Abstract of a paper read before the Thirtieth Annual Midwest Safety Conference, Chicago.

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36 Unit Illustrated
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24-unit cases



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which when open is held in place
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SEPTEMBER, 1935

requirements and health hazards involved. This will require inspection trips through the plant and a close working relationship with the employment officer.

In industry, opportunity is presented whereby many of those afflicted with physical defects may be safely allocated to jobs. Notwithstanding the importance of this situation, during the past year we found in one industrial community alone over 100,000 employees who had been given their so-called pre-employment physical examinations by employment officers or first aid men. Such a procedure may be regarded by some as only a culling process, for the findings will be of little or no future value to either the employer or employee. In giving physical examinations, a trained medical examiner is the only one who is qualified to determine physical fitness for work.

Causes for rejection

Similarly, the causes for rejection must be determined by the examining physician. The hazardous nature of one industry may be a cause for rejection, whereas the rejected person may be safely employed in another. The percentages of rejection among applicants for employment in industry range from less than 1 per cent to 40 per cent.

The thoroughness of the examination should be based upon the requirements and hazards of the particular industrial plant. Unfortunately, in about one-third of the industrial establishments surveyed by us, the examining physicians had failed to make adequate or any records at all of the physical findings. If the examinations are worth making, a record thereof should be made.

The examination of the eyes of employees should be made by the examining physician at the time of employment, using the Snellen charts, recording the findings, and instituting corrective measures for those having defective vision. Since anywhere from 25 to 75 per cent of all applicants for employment have defective vision, such a procedure would be productive of a greater working efficiency among the employees and would tend to reduce the number of accidents. This examination, however, has often been overlooked by the examining physician. As a result, some well meaning managements have permitted individuals or commercial organizations to enter their plants and make free examinations of the eyes of their employees for the opportunity of selling the glasses.

The principle involved is commendable, but the logic of the procedure is rather misplaced. I am sure that it would not be good business to have expensive machinery overhauled on the same basis—"Labor free, you pay for the parts."

With the introduction of seniority rights into the labor situation and the more rigid application of the workmen's compensation laws, it has been noted that the preemployment physical examinations have gradually become more thorough and more practicable. Particularly enough, the employee benefits most thereby because the employer cannot expect to reap any material benefit until he has first benefited the employee.

On account of the present occupational disease situation, many industrial establishments having such hazards have recently made special effort to obtain, first, a more complete history of previous occupations for all applicants for employment, and second, a thorough physical examination, including X-ray examinations of the chest and other indicated laboratory tests.

To maintain the health and efficiency of those already employed, we find periodic health examinations for all employees in some plants, while others examine only those who are exposed to occupational disease hazards. The frequency of these examinations, unless specified by law, must be determined by the plant physician. We have observed dye workers being examined weekly, lead workers examined every 30 days, and those exposed to silica dust X-rayed once a year.

4. *He should have a general knowledge of industrial relations and employment methods.*

5. *He should have a knowledge of the materials used in plant processes and of preventive medicine in general.*

McCord has listed more than 500 agents used in manufacturing processes that are toxic or are so closely related chemically to known toxic agents that toxicity may be expected. No list should be considered complete on account of the increasing complexity of manufacturing processes. It may be of interest to enumerate the 27 occupational diseases recognized to date by the compensation law of New York:

Compensable Diseases

1. Anthrax.
2. Lead poisoning or its sequelae.
3. Zinc poisoning or its sequelae.
4. Mercury poisoning or its sequelae.
5. Phosphorus poisoning or its sequelae.

6. Arsenic poisoning or its sequelae.

7. Poisoning by benzol or nitro-, hydro-, and other amino-derivatives of benzol (nitro-benzol, anilin, and others) or its sequelae.

8. Poisoning by carbon bisulphide or its sequelae, or any sulphide.

9. Poisoning by nitrous fumes or its sequelae.

10. Poisoning by nickel carbonyl or its sequelae.

11. Dope poisoning (poisoning by tetrahydro-methane or any substance used as or in conjunction with a solvent for acetate of cellulose or nitro cellulose, or its sequelae).

12. Poisoning by formaldehyde and its preparations.

13. Chrome ulceration or its sequelae or bromine poisoning.

14. Epitheliomatous cancer or ulceration of the skin or of the corneal surface of the eye, due to tar, pitch, bitumen, mineral oil, or paraffin, or any compound, product or residue of any of these substances.

15. Glanders.

16. Compressed air illness or its sequelae.

17. Miners' diseases including only cellulitis, bursitis, ankylostomiasis, tenosynovitis and myasthenia.

18. Cataract in glassworkers.

19. Radium poisoning or disability due to radioactive properties of substances or to Roentgen rays (X-rays).

20. Methyl chloride poisoning.

21. Carbon monoxide poisoning.

22. Poisoning by sulphuric, hydrochloric or hydrofluoric acid.

23. Respiratory, gastro-intestinal or physio-logical nerve and eye disorders due to contact with petroleum products and their fumes.

24. Disability arising from blisters and abrasions.

25. Disability arising from bursitis or synovitis.

26. Dermatitis (venenata).

6. *He should have a knowledge of the diagnosis and treatment of occupational diseases.*

7. *He should have a knowledge of sanitation, working conditions and accident prevention methods.*

Unfortunately many physicians in industry think that plant sanitation consists only of inspection of toilet facilities. They have overlooked the important points of illumination, ventilation, garbage and sewage disposal, the safeguarding of food and water supplies, occupational disease hazards, and other diseases that threaten or may be present, such as malaria, typhoid, hookworm, amoebic dysentery, etc. Every company operating a canteen should make sure that all food handlers receive the indicated medical examinations.

It has been conservatively estimated that there are over 500,000 workers in

(Please turn to page 71)



LOOKING TOWARD the CONGRESS



FOR the first time the Council is urging all members to send one or more worker-delegates to the Annual Safety Congress. Recently a letter signed by W. H. Cameron was sent to more than a thousand members recommending that they select from the ranks of their employees some worker who would suitably represent all the employees at the great safety gathering.

The following suggestions were sent with the letter:

1. Use your plant bulletin board to publicize your decision to send one or more delegates "from the ranks" to the Congress. Do not, however, name the delegates at first.

2. Select your delegates carefully. Perhaps there is one man (other than an official) who has made some outstanding contribution during the past year to your safety program; perhaps one of your workers has performed some notable feat in life-saving; perhaps one has been responsible for some new method of safeguarding which has prevented accidents; perhaps one man has religiously attended every safety meeting or rally since you started your safety program. If such men are available, make the trip to Louisville their reward for such meritorious service. If not, perhaps you will want to send those who have been longest in your employ or those who have the longest no-accident records.

Perhaps you will want to allow the employees to select their own representative by popular vote. Or you may want to have a contest of some sort to decide on the winners. Your safety director or your personnel director can easily plan a contest which will get everyone thinking and talking about safety.

3. Once the delegates are selected, have a

talk with them yourself. Tell them now, important it is that every man in the plant keep interested in safety all the time. Point out to them that their trip to Louisville is made possible because the company wants them to get first-hand information so that they can carry a message of safety back to their fellow workers on their return.

4. Following the Congress, have the delegates address a safety rally which all the workers should attend. This can be held during a noon hour. The delegates should also make a full report on their trip to you.

5. The success of this plan rests, to a large extent, on choosing the proper delegates. The longer their station (providing they are interested) the better the results should be.

If enough members respond to this suggestion, a special function will be arranged for their worker-delegates.

* * *

THE PRELIMINARY edition of the program of the Twenty-fourth Safety Congress which is part of this issue of the NEWS is one of the most complete ever issued by the Council. Of 393 scheduled participants, 359 speakers and meeting chairmen have accepted invitations to take part. There are, thus, only 34 vacancies.

* * *

ONE OF THE greatest novelties ever presented at the Congress will be a feature of the sessions of the Street and Highway Traffic Session. To demonstrate the effect of alcohol on the automobile driver four subjects will "sub-

mit" to stated doses and then to various tests. Also the efficacy of scientific tests of drunkenness in traffic cases will be demonstrated by a mock trial. The latter will be held at the Friday morning session.

* * *

G. W. HUEY, manager of the Conventions and Publicity League, Louisville, is in charge of the hotel reservations bureau for Congress delegates.

Since hotel room reservations are pouring in now, it is recommended that members state their needs to Mr. Huey at once.

* * *

The session for State and Federal officials which was tentatively planned has been canceled because the officials thought that they would profit better by attending the regular sessions of the various sections. Next year a series of meetings will be conducted for the officials.

Reduced Fares to the Congress

Prospective delegates to the 24th Annual Safety Congress should write to Council headquarters for reduced railroad fare certificates. The certificate enables one to buy a round trip ticket for one and a third the one-way fare. Tickets from California and other distant points may be purchased a day or two in advance.

Tickets may be arranged for going and coming on the same or different routes with stop-over privileges in most cases. Those living on roads in the Southeastern Passenger Association have a choice between the fare-and-a-third rate and the special round trip fares of 2 cents a mile in each direction with a 15-day limit.

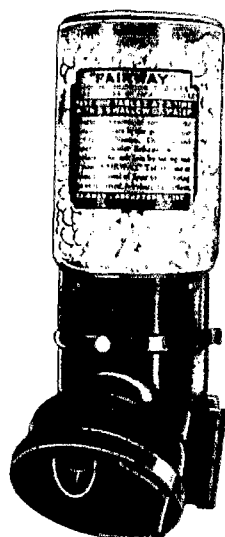
One certificate enables a delegate to buy reduced fare tickets for members of his family.

HOTEL RATES IN LOUISVILLE

	SINGLE		DOUBLE	
	With Bath	Without Bath	With Bath	Without Bath
Brown, 4th & Broadway	\$3.00-\$5.00		\$5.00 up	
Kentucky, 4th & Walnut	2.50 up		3.00 up	
Seelbach, 4th & Walnut	2.25-3.00	2.00-2.50	3.00-7.00	3.50-4.00
Tyler, 3rd & Jefferson	2.00-3.00		3.00-4.00	
Henry Watterson, 415 W. Walnut	2.00-2.50	1.50	4.00-6.00	3.00
Henry Clay, 3rd & Chestnut	2.00	1.50	3.50-4.00	2.50
Argonne, 1st & Chestnut	1.50	1.25	2.50	
Cortlandt, 942 S. 4th	2.00 up	1.50	3.00 up	2.00
Plaza, 409 S. 5th	1.50-2.50	1.00-1.50	2.50-3.00	1.50-2.00
Chesterfield, 429 W. Broadway	1.50-2.00	1.25-1.50	2.50-3.00	2.00-3.00
Kenton, 108 W. Walnut	1.75 up	1.25 up	2.50 up	2.00 up
Victoria, 10th & Broadway	2.00-2.50	1.50	3.00	2.50
Berkeley, 664 S. 4th	2.00-2.50	1.50	3.00-3.50	2.50
Hermitage, 345 S. 5th	1.50 up	1.00	2.50 up	2.00

HEAT SICKNESS

—is no longer a menace



"FAIRWAY JUNIOR" UNIT
70A HOPPER-1500 TABLETS

1935 has marked this familiar enemy of production as being finally overcome.

Thousands of plants are now using "Fairway" Sodium Chloride Tablets and Dispensers with universal success.

Heat sickness is ended wherever plant physicians and safety directors are familiar with this successful preventive.

If you have not had a copy write for "Prevention of Heat Sickness"—it tells the whole story.

*Tablets now available in pocket packages and individual refills.
We will send the booklet on request without charge.*

FAIRWAY LABORATORIES, Inc.
2628 West Main Street
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Better Safer...

RESPIRATORS

with the Original

DOUBLE FILTER CHAMBER

DUPOR

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BULB VALVE TYPE NO. 4

This DUPOR respirator has a clear entrance filter aperture of 7½ sq. in. It uses special felt filter pads 5/16" thick. Extra pads 4c each. The exhalation valve takes care of moisture and enables easier breathing. Made in soft, high grade rubber with face cloth. Foldable and reversible.

Price \$18.00 per doz.

Sample postpaid \$1.50

CHIPPEWA-A

DUPOR is really two ordinary respirators in one because of its double filter arrangement. It provides greater filter area thus enabling slower passage of air through the filter pads. This not only enables easier breathing but provides better filtering because more dust and spray is caught. Order your DUPOR today. Once you try it you will never be satisfied with any other.

THOUSANDS OF DUPOR RESPIRATORS NOW IN USE

Used for all kinds of dusts, smoke, light fumes, vapors and paint spray that is free from harmful gases.

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DETAIL PATENTS PENDING AND ALLOWED

MANUFACTURED ONLY BY
H.S. COVER

BULB VALVE TYPE NO. 5

This DUPOR has enlarged adjustable filter chambers of screw cap type and the very large aperture of 11½ sq. in. Extra 1/8" thick pads 3c each. The exhalation valve takes care of moisture and enables easier breathing. Made of soft, high grade rubber with face cloth. Foldable and reversible.

Price \$24.00 per doz.

Sample postpaid \$2.00

SOUTH BEND, IND., U.S.A.

THE BULLETIN BOARD

A page for those who maintain the Show Windows of Safety

Conducted by STAN KERSHAW

Accident Facts Exert a Powerful Influence

IN THE average family group of 20 persons, one will be injured or killed in a motor vehicle accident within the next five years—a startling and thought provoking statement, yet it is only one of the many cold, hard facts which have been brought to light by the statisticians who have been studying the accident experience of the nation.

It is a human trait to think of accidents as happening to the other fellow. To break down this false sense of security is one of the biggest problems facing the safety men of the country.

Perhaps the most powerful influence that can be exerted is the appeal to the sense of fear of injury to oneself or to those who are near and dear. Not until accidental injury or death stalks ones home does a person fully realize the meaning of all he has read and heard about safety. It is then that the light of understanding enters with the force of a hammer blow.

If more people knew more about the hardships and deprivations that result from accidental injuries and death, there would be fewer accidents.

Posters are a great aid in imparting this knowledge. While gruesome and factual posters cannot be expected to produce one one-hundredth part of the shock experienced by a person who sees for himself the actual results of a serious accident, they do make lasting impressions that tend to produce the desired reactions.

The Council has issued many such posters and a number of them are available. Some of the outstanding ones appearing in previous issues are here listed for your convenience.

No. 5552-B—17x23 inches—4 units.

In the average family group of 20 persons, one will be injured or killed in a motor vehicle accident within the next five years—but —YOU, through your influence and example can make your group safer than the average, and thus avoid this threatened tragedy.

No. 5542—9x12 inches—1 unit.

PUBLIC ENEMY NO. 2—Accidents kill more men and boys than any other cause except heart disease.

The poster shows graphically the relative importance of the causes of death.

No. 5503-B—17x23 inches—4 units.

Last year there were 16,000 fatal occupational accidents, 36,000 fatal motor vehicle accidents, 51,500 fatal home accidents and 17,500 fatal public accidents (not motor vehicles).

No. 5502-B—17x23 inches—4 units.

Will your brakes commit manslaughter?

This poster, which shows a boy who has just been struck by an automobile, includes a complete chart of proper stopping distances.

No. 5488—9x12 inches—1 unit.

This arm became infected through a small crack in the end of one finger—death resulted after seven weeks of suffering.

There are two photographs of the horribly infected arm.

No. 5099—9x12 inches—1 unit.

It's nice the victim thought to have a pal so kind. But in taking off the bandage he found he had gone stone blind.

The poster shows a worker removing a particle from a fellow worker's eye and a close-up of the resulting infection.

No. 5361—9x12 inches—1 unit.

If all the accident victims could be moved out of hospitals and into shop windows, there wouldn't be so many accidents.

Locating Bulletin Boards by Test

BULLETIN boards can be made so attractive that they will cause people to stop and absorb every message posted upon them. It is not possible, however, to rub a bulletin board with some sort of magic lode stone and convert it into a magnet that will draw people from the far corners of a plant to within reading distance.

No, to be effective a bulletin board must be where the people are, and what is more, it must catch the eye and compel attention.

Unfortunately, people don't ordinarily walk with their eyes searching the landscape. They do generally watch where they are going and anything within that range of vision is likely to be seen.

Place a sign or poster to one side of a walk and paralleling it and many of those who pass will never know it's there. Place the same sign at right angles to the walk and facing against the direc-

tion of travel and more people will see it.

To carry the matter still further, place it facing against the direction of travel but at a turn in the walk and in a position which would place it in the center of the walk if it continued straight and most everybody walking in that direction will see it.

Now, seeing a sign or poster is one thing; stopping to read it is another. However, making it difficult to overlook is the first important step in locating a display.

On the other hand, suppose the display does appear at such a point that it cannot very well be missed, how much good will it do if the people you want to reach cannot spare the time to stop and read?

It certainly takes more than a casual observation to determine the best location. It is necessary to consider ease of observance and time for observance as of equal importance.

Size is another factor. If the board is to be used to display small, wordy posters, it must be placed where people can get close to it. If it is to be used for large posters with but brief wording, it may be moved back from the path of travel somewhat but even so, ease of observance as well as time for observance must be considered.

One good way of determining the best location suggests itself. Why not construct a temporary board of the desired shape and size, mount it on a portable support and try it out in different locations and in different positions with respect to the paths of travel? Observe carefully what occurs each time you shift it from one location or position to another. Make actual counts of the people who stop to read the messages early in the morning, at noon, and in the evening. Don't be satisfied with a one-day survey in each location. Wait until the novelty wears off.

When you have in this way discovered the locations where the displays will reach the most people, proceed with the erection of the permanent bulletin boards and concentrate on the job of keeping them alive with interesting posters and news items.

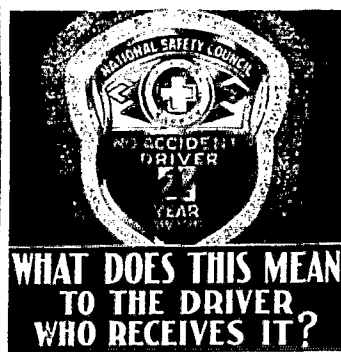
NATIONAL SAFETY NEWS

It was Just a
LITTLE SCRATCH



**LOOK
WHAT
NEGLECT
DID!**

NATIONAL SAFETY COUNCIL



**WHAT DOES THIS MEAN
TO THE DRIVER
WHO RECEIVES IT?**

- No. 1. A MARK OF SKILL, ALERTNESS,
AND GOOD JUDGMENT.
No. 2. ONE OF THE BEST RECOM-
MENDATIONS TO ANY EMPLOYER. No. 3. A MARK OF THE COUR-
TEOUS AND RELIABLE DRIVER.
No. 4. AN INDICATION OF THE EFFORT TO
GUARD AGAINST THE RECKLESSNESS AND
CARELESSNESS OF THE OTHER FELLOW.
No. 5. PERHAPS A LIFE SAVED, MAYBE HIS OWN.

NATIONAL SAFETY COUNCIL



The chance-taker

NATIONAL SAFETY COUNCIL

WORTH SEEING, WORTH READING

**CURRENT
SAFETY
NEWS**

THIS YEAR IT'S LOUISVILLE

The biggest and most disastrous accident in the history of the National Safety Council occurred in Louisville, Ky., on May 1, 1935. A passenger car, carrying 15 people, was struck by a truck, resulting in the death of 14 people and the injury of 1. The accident was caused by the driver of the truck, who was speeding and failed to stop in time.

INDUSTRIAL DEATHS

In the first 10 months of 1935, 1,100 industrial deaths were reported in the United States. This is a record for any one year. The deaths were caused by a variety of factors, including machinery accidents, falls, and fires.

ONE DAY'S TRAFFIC TOLL

In the first 24 hours of 1935, 1,100 people were killed in traffic accidents in the United States. This is a record for any one day. The deaths were caused by a variety of factors, including speeding, recklessness, and carelessness.

NATIONAL SAFETY COUNCIL

**MORE
JUDGMENT
FEWER
ACCIDENTS**

NATIONAL SAFETY COUNCIL

**THEIR
SAFETY
IS
UP TO YOU**

NATIONAL SAFETY COUNCIL

**Learn the
DANGEROUS
PLACES
where you
DRIVE
and
WATCH OUT**

NATIONAL SAFETY COUNCIL



Your
**FOREMAN
wants to help
you prevent
ACCIDENTS**

NATIONAL SAFETY COUNCIL



**BEING CAREFUL
IS PART OF
YOUR JOB**

NATIONAL SAFETY COUNCIL



"Where's my daddy"?

NATIONAL SAFETY COUNCIL

**YOU
CAN'T
AFFORD
to be
INJURED**

NATIONAL SAFETY COUNCIL



**KEEP
SAFE
FROM
FIRE**

NATIONAL SAFETY COUNCIL



When the alarm clock rings in the morning, it arouses the millions of people who are gainfully employed in the United States. More than 26,000 will meet with accidents during the day and 260 will never hear the alarm again.

NATIONAL SAFETY COUNCIL



**GRUESOME
LINES**

*from an actual letter
received by the
NATIONAL SAFETY COUNCIL*

"I look like a demon.
"I create excitement wherever I go.
"My hands are only stubs.
"I lost my wife in the fire.
"After thirty months I am well enough to leave the hospital.
"I want to try to prevent others from having their loved ones cremated alive like mine were."

NATIONAL SAFETY COUNCIL

**AN OIL SPILL IS
DANGEROUS**



**A TUB
AND
SAND
MAKE IT
SAFE**

NATIONAL SAFETY COUNCIL



**SAFETY SHOES
are
TOE SAVERS**

NATIONAL SAFETY COUNCIL

**POSITION *is*
EVERYTHING**



Keep back away from the flame and drop the lighted match into furnace.

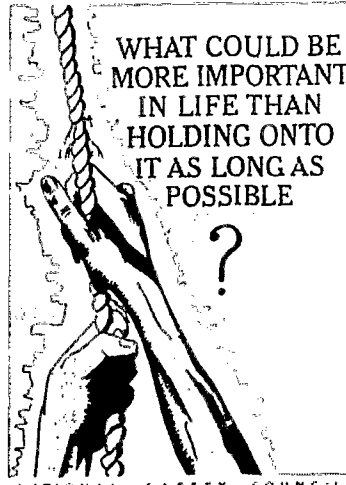
NATIONAL SAFETY COUNCIL

MUSHROOMED HEAD



TROUBLE AHEAD

NATIONAL SAFETY COUNCIL



WHAT COULD BE
MORE IMPORTANT
IN LIFE THAN
HOLDING ONTO
IT AS LONG AS
POSSIBLE

NATIONAL SAFETY COUNCIL

"FIRST THINGS" FOR MOTORMEN



TEST HANDBRAKE
AND BE READY FOR AN
EMERGENCY



NEVER
HANDLE MORE THAN
YOU CAN HANDLE SAFELY

NATIONAL SAFETY COUNCIL

LOOK
LOOK LOOK
THEIR GOGGLES
WERE BUSTED—
BUT
THE MEN STILL
LOOK
WELL

NATIONAL SAFETY COUNCIL

IT TAKES YEARS
TO BECOME A
SKILLED WORKMAN.
BUT ONE CARELESS
MOMENT CAN
MAKE YOU A
HELPLESS CRIPPLE



NATIONAL SAFETY COUNCIL

A Thought for Today

WATCH
WHAT YOU
DO
WHEN YOU
DO IT

NATIONAL SAFETY COUNCIL

FROM
THE CRADLE
TO
THE GRAVE
ACCIDENTS
THREATEN US



FROM 1 to 14
Accidents
more than
any other age

FROM 15 to 40
Accidents
fewer than
any other age

ALL AGES AND
BOTH SEXES —
Only 3 & 4 years
can make more than
one death

NATIONAL SAFETY COUNCIL

UP TO THE
FIRST OF
THIS MONTH
WE HAD
GONE

days
WITHOUT A LOST-
TIME ACCIDENT
HOW MANY
MORE DAYS?
CAN WE GO?

NATIONAL SAFETY COUNCIL



A NAIL WOUND IS PAINFUL AND DANGEROUS

NAIL SAFETY

NATIONAL SAFETY COUNCIL

JAWS that KNOW NO MERCY

KEEP ALL GUARDS IN PLACE



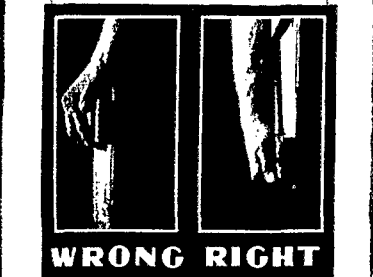
NATIONAL SAFETY COUNCIL

WHAT'S TO BE DONE WITH THE MAN WHO CONTINUES TO TAKE OLD TIME CHANCES



NATIONAL SAFETY COUNCIL

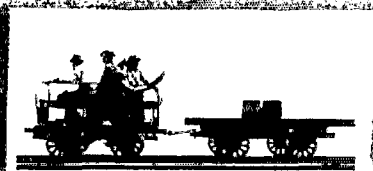
WHATEVER YOU LET GET SAFE HOLD



WRONG RIGHT

SAVE YOUR TOES

NATIONAL SAFETY COUNCIL



There's NO EXCUSE for failure to operate motor cars SAFELY!

- 1. Inspect the motor car before starting out
- 2. Get proper line-up from train dispatcher
- 3. Load tools and material properly
- 4. Make proper coupling to trailer
- 5. Test brake
- 6. Keep constant lookout in both directions
- 7. Approach all highway crossings prepared to stop

STUDY THE RULES

NATIONAL SAFETY COUNCIL

THE KIND OF A WORKER WE HAVE NO USE FOR!



NATIONAL SAFETY COUNCIL



USE your HEAD

You CAN AVOID ACCIDENTS

NATIONAL SAFETY COUNCIL

ALL FOR SAFETY FOR ALL



NATIONAL SAFETY COUNCIL

WEAR GLOVES

To protect your hands while handling hazardous materials and chemicals

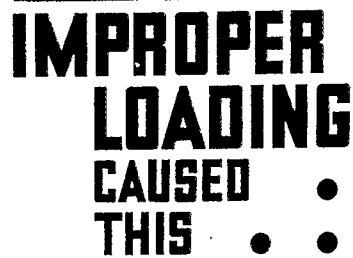


NEVER WEAR GLOVES

When working around moving machinery



NATIONAL SAFETY COUNCIL



**IF YOU
DRIVE
OR WALK
WORK OR
PLAY
PRACTICE
SAFETY
EVERY DAY**

**THE BEST THING A
BALLPLAYER DOES IS
TO GET HOME SAFE
YOU TOO**

EASE OVER TO CENTER OF ROAD

[illegible]

ONE ACCIDENT-
can UPSET your
WHOLE WORLD!



NATIONAL SAFETY COUNCIL

PULL DOWN or BLAST DOWN
all "DRUMMY" ROOFS



Neglect on the part of a miner to BLAST DOWN a bad piece of roof after having made two unsuccessful attempts to bar it down, resulted in his laborer being seriously injured.

NATIONAL SAFETY COUNCIL

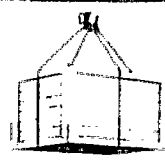
DOUBLE PARKING
is DANGEROUS
IT BLOCKS TRAFFIC
IT OBSTRUCTS the VIEW
IT IRRITATES DRIVERS
IT FORCES OTHER CARS INTO THE LEFT SIDE OF THE STREET
and it
is HOGGING the ROAD



NATIONAL SAFETY COUNCIL



NATIONAL SAFETY COUNCIL



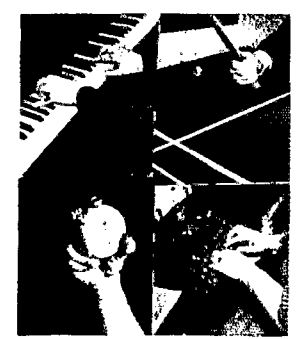
No man's land



KEEP AWAY

NATIONAL SAFETY COUNCIL

PRACTICE makes PERFECT!



SO PRACTICE SAFETY

NATIONAL SAFETY COUNCIL

Do you know that you and the company pay for all accidents and that a no-accident record helps the company to keep you employed

NATIONAL SAFETY COUNCIL

THERE IS NO QUITTING TIME FOR
Safety



Your chances of being injured by accident are at least twice as great away from work as they are on the job.

We don't want to lose your services because of an accident and you can't afford to lose your pay.

If you have to cross railroad tracks always use both ways before crossing. If you don't have to cross them, don't use them as a short cut for the "to a job" trail.

If you ride a bicycle always carry a light after dark and remember it is not easy for an automobile driver to see you at dusk or in the dark.

If you have to work along a highway always walk on the left side facing the oncoming traffic, and at dusk or after dark carry a light or wear something white so you can be seen easily.

NATIONAL SAFETY COUNCIL

KEEP the GUARDS
BETWEEN YOU AND DANGER



NATIONAL SAFETY COUNCIL



YES SON—YOU WATCH THE BUS DRIVERS AND WHEN YOU COME TO DRIVE YOU'LL KNOW HOW TO DO IT SAFELY

NATIONAL SAFETY COUNCIL

MACHINES DON'T CAUSE ACCIDENTS
It's the Operators who use them



NATIONAL SAFETY COUNCIL

LIGHTING A CIGARETTE IS DANGEROUS IN DANGEROUS PLACES



IT CAUSES MANY FIRES & EXPLOSIONS

NATIONAL SAFETY COUNCIL

THE SAFE WORKER'S DICTIONARY



PRACTICAL JOKER—
A prankish nitwit; a pest; accident-causer; one who would jerk a chair out from under his own grandmother to get a laugh. Should be told to STOP or GO!

NATIONAL SAFETY COUNCIL



You have been employed to do specific kinds of work. If you have ambition to get ahead by learning other jobs talk it over with your immediate superior. Never operate machinery or equipment without authority to do so!

NATIONAL SAFETY COUNCIL



DON'T KID ABOUT SAFETY!
■ YOU MAY BE THE GOAT! ■

NATIONAL SAFETY COUNCIL

KEEP CUTTING EDGES SHARP



SKINNED KNUCKLES-STRAINED MUSCLES-BRUISED ARMS-BATTERED LEGS AND A HOST OF OTHER INJURIES COME FROM TRYING TO USE DULL TOOLS

NATIONAL SAFETY COUNCIL



WIDE IT UP BEFORE IT THROWS YOU DOWN

NATIONAL SAFETY COUNCIL



A BABY WAS BORN

YES, a baby was born in America—over 14 millions last year. Born in hope and pain. Born to infinite possibilities. Another miracle on earth. Perhaps a merchant prince... perhaps an industrial giant... perhaps a scientist... doctor... PRESIDENT. Hopes, ambitions, prayers go with him.

All this will come to naught unless and thousands of babies born last year. They will be killed by careless accidents before their 5th birthday. Only the 5th. This is but part of the tragic toll of accidents in the United States.

NATIONAL SAFETY COUNCIL

Dust Control

(Continued from page 45)

counts, make analyses and rely upon those findings. I have said that I doubt the value of analyses. They may prove to be the only practical methods, but they certainly are not as good criteria as to know whether the dust is harmful, and some moderate quantities under suspicion may be safe. We are, therefore, very anxious from a practical standpoint to determine whether our dust is really dangerous or not. This seems to me to be a tremendously important point, for if certain dusts are not dangerous, the atmospheres containing them should not require such clean sweeping as though the quartz content were there alone.

Our present knowledge of pneumoconiosis is so limited, and especially our knowledge of these minor dusts, that we do not know definitely which are bad and which are not. Good medical records of old employees, which records would show the incidence of pneumonia, tuberculosis, etc., would be helpful. X-ray of employees with 20 years or more exposure would be most useful, but the danger from inexpert diagnosis on the one hand, and misuse of the information on the other, makes examination of employees for this purpose something to be avoided. I urge that more satisfactory yardsticks for evaluating this hazard be found, and the recent and current toxicity studies hold some hope for an answer.

In the meantime, it is necessary to assume that all mineral dusts contain some health hazard and put them all under control, and rely upon the low quartz content of the material producing the dust to locate it in the third or least harmful bracket.

It may be well to consider medical examinations as a dust control measure. It is recommended that new employees for dusty places be found physically fit in order to avoid introducing men whose condition makes them liable to an early break down on account of defects or diseases already present, or who may infect others by spreading disease.

Proper diagnosis of such physical conditions can only be accomplished by having a medical examination with x-rays of the chest, including as complete a medical and employment history of the applicant as can be obtained. It is recommended that x-ray interpretations

be made only by physicians who are qualified to interpret x-rays and who have training and wide experience in the diagnosis of respiratory ailments.

The periodic examination is an indispensable preventive measure which enables the physician to detect diseases of the lungs in their early stages and at a time when removal of the worker from the dust offers hope of recovery or improvement. In addition, the repeated routine medical examinations furnish a valuable means of determining the effectiveness of dust control measures.

While it would seem desirable to examine *present* employees to discover cases with active tuberculosis, in order to assure proper treatment and prevent their spreading infection, this procedure is likely to stir up claims or misunderstandings on the part of the workmen. Such examinations, if made, should be used only for rehabilitation purposes.

Equipment for Dust Counts

Our problem now is to suppress the dust to a safe limit. That implies its removal at the source by mechanical exhaust. That implies counting the dust to begin with in order to have some basis for designing the equipment, and re-counting to know that the equipment is working satisfactorily. The impinger or standard method is complicated, slow, expensive and poor for routine checking although it must be used as a standard for calibration. We, therefore, want a simple method, one that somebody not an industrial health expert can use satisfactorily. Zeiss Konimeter is a satisfactory instrument in the hands of the man who has had some training. The instrument is imported, is rather difficult to obtain, and not too expensive, under \$200, I believe.

Another instrument is the Owens Jet which has been modified by Mr. Hatch of Harvard and Mr. Thompson associated with me in the American Mutual to make its operation simpler and more satisfactory. This apparatus was built specifically for use in checking the dust control apparatus in a large granite shed, and is entirely satisfactory. Up to the present time I do not know that any instrument maker has undertaken to manufacture it, but certainly a demand would create interest to produce them at

a reasonable price. There is also a very ingenious continuous dust sampling and counting apparatus for keeping a continuous count of the dust in a room under exhaust and it can be so arranged as to control the ventilating exhaust mechanism, turn on more as needed and turn it off when the satisfactory conditions have been reached. This has been designed and built by Mr. Hazard and Mr. Philip Drinker of Harvard and as far as I know, is still a laboratory piece. I see nothing impracticable about it, however, and for a large dust control installation I would expect it to be as useful as the automatic carbon monoxide detector and control mechanism in the Holland tunnel.

There are practical dust suppression mechanisms for sand blasting, tumbling, grinding, mixing, bagging, drilling, abrasive grinding, dry pan mixing and almost every type of localized operations generating dusts. They are expensive unless well-designed. They are too often ineffective because, as I said before, they don't begin to touch the health hazard until they have got rid of most of the dust, which is the best they can do. They wear out due to the abrasive action of the dust. They cost a lot of money, and the cost usually cannot be justified on the grounds of improved work efficiency or quality of product. Occasional installations will be self-supporting. The Kelly trap on rock drilling has been demonstrated to increase the cost per foot drilled but has increased the drilling rate sufficiently to offset the cost. Also in the case of air-conditioned rooms in which porcelain enamel is sprayed, the expensive air conditioning system can be made to control the dust and at the same time be made economically sound by reason of an improved quality of enameled surface. No doubt there are many installations which have already demonstrated economy from other considerations than improvement to health. The point I wish to make is that the improvement to health is too important to waste time trying to justify dust exhaust equipment upon economic considerations. Where operations are spread out over a great area, as in the case of foundries, it is difficult to avoid raising dust in the shakeout operation, except by expensive mechanical installations. Most of those which have come to my attention have been installed for the economic purpose of sand handling and in most such cases were far from satisfactory from a dust control standpoint. They

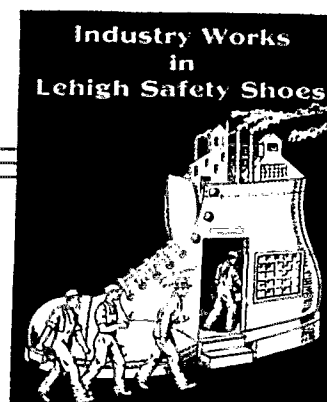
handle the sand tonnage all right but they do not touch the micrograms.

Let us now look further to see whether some other remedies will be satisfactory. Suppose we leave the hazard alone and put respirators on the men. It won't work, except for very short periods or for emergency work, such as cleaning out dust arresters or loading tumbling barrels. There should be no question about efficient respirators because the United States Bureau of Mines is now prepared to make tests and an employer can justifiably limit his purchase to respirators which meet these tests. Even though respirators may be efficient, they are uncomfortable, and while it is not a hardship for a man to wear a respirator temporarily, or even for a week perhaps during a period of breakdown in the dust exhaust system, I cannot conceive of workmen remaining contented if they have to wear respirators continuously for a long period. If they need to wear them and don't wear them properly they might just as well not have them on at all.

In operations which can be confined to a limited space, such as sand blasting and perhaps shaking out some types of castings, the workers can be encased in helmets provided with an adequate supply of clean air. The air-line helmet is practical for continuous use, while a filter respirator is practical for only limited periods. If the dust is extremely heavy, say 300 million particles of quartz, and a respirator is 98 per cent efficient, the worker is still breathing six million particles, which is too much. Think of respirators preferably to supplement exhaust systems.

What else can we do to get rid of the dust hazard? The first to suggest itself is to get rid of the silica content in the dust. I know of one group of foundries which is conducting extensive research involving the use of molding sands that are free of quartz. That may prove to be thoroughly practical and is a step in the right direction. Any plant can study its operations to see whether the quartz material that is being used can be eliminated. Castings in some cases can be cleaned with water. Blasting can be done frequently with steel grit instead of sand. Certainly foundries can use silica-free parting compound that is just as good as quartz dust. Silica packing should be replaced in annealing operations. Pulverized quartz is not needed as an abrasive. This is one avenue of control which should have thorough study in each individual case.

Even though you get rid of quartz



Copyrighted 1935 by Lehigh Safety Shoe Co.

Happy Feet

It has often been said that a man is no better than his feet. Mangled, bruised, broken or smashed toes and feet not only take a man off the job, but cost real money in compensation, medical and other direct and indirect costs. In addition such injuries reduce the morale of fellow workmen and slow down production.

You can protect your workers' feet by insisting they wear Lehigh Safety Shoes with the improved steel box safety toe. Their feet will be happy feet, protected against injury and further—Lehigh Shoes are built for comfort, durability and appearance.



EVERY-DAY WORK SHOES

No. 839 — Black Elk Blucher, Leather Sole and Rubber Heel.

No. 838 — As Above, Except Chrome Leather Middle Sole, Army Grid Rubber Sole and Rubber Heel.

Sizes 5-12 EE

LEHIGH SAFETY SHOE CO.
31 S. SEVENTH ST. ALLENTOWN, PA.

FERALUN Anti-Slip Treads

Also Bronzalun,
Alumalun and Nicalun

PREVENT ACCIDENTS ON STAIRS and FLOORS

A hard metal matrix into which is cast an abrasive next in hardness to the diamond assures durability and anti-slip efficiency.

ALL ARE FIREPROOF

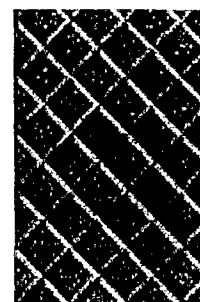
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SAFE WALKWAYS

Specify Feralun and Be Sure

AMERICAN ABRASIVE METALS CO.

Irvington, New Jersey



10 Reasons why GRO-CORDS are SAFE



GRO-CORD and RAW-CORD soles and heels are used in dairies, iron and steel foundries, railroad shops, auto factories, gas and electric plants, ice and fuel stations, stone quarries, mines, general warehouses — where Safety is an important factor.

1. Gro-Cord and Raw-Cord Soles and Heels contains approximately 70% native cotton.
2. The Cotton is twisted into tough cords to increase wear.
3. Cords are placed in the sole ON-END to prevent slipping.
4. Non-Slip features relieve leg strain.
5. The high percentage of cotton resists heat and cold.
6. CORD-ON-END gives cushion COMFORT to the feet.
7. Flexibility and ease in walking.
8. NON-SLIP adds confidence and efficiency to the wearer.
9. GRO-CORDS and RAW-CORDS guard against lost time accidents from slipping.
10. Safe workers are efficient workers and are in demand.

Now—before you have an accident is the time to purchase shoes that have GRO-CORD or RAW-CORD soles and heels on them. Your work will be more pleasant because of this added safety.

★ See our exhibit at 24th Annual Safety Congress and Exposition
BOOTH NO. 16, Brown Hotel, Louisville, Ky., October 14-18, 1935.

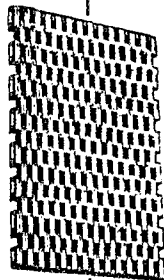
The Lima Cord Sole & Heel Co., Dept. 7-F, Lima, O.

Fully Protected by Patents—Any Infringement Will Be Prosecuted



NON-SLIP SOLES AND HEELS

Rubberized Fabric Link Mat



This Non-slip Safety Mat is especially designed for industrial use where there is a slip hazard. In addition, they increase the workers' efficiency as they reduce fatigue brought on by standing on concrete, brick, tile or hard flooring. Ideal for placing in front of machines and where wet conditions exist.

Heavy galvanized wire with cadmium plated clips and plates are used to prevent rust. Furnished in sizes to meet your requirements. Low in cost and long wearing.

Write today for prices and complete information.

THE BUXBAUM COMPANY
Akron, Ohio

but cannot get rid of all dust, see what you can do about getting rid of excesses of it by conducting operations in such a manner as to minimize the raising of dust. Explore your process, for instance, and see how much residual dust lies on the horizontal beams, ledges, etc. In some plants that have not been cleaned for a long time this dust has been found to lie at the angle of repose and the vibration of a passing truck would liberate enough dust in the air to be of itself a serious hazard. This can be got rid of by a thoroughly practical means, such as vacuum cleaning or blowing down with a jet of wet air or steam. Respirators are satisfactory for the protection of men doing the cleaning.

There is an economic value in this item. It has been reported by some plants which have improved their housekeeping by this method and have gone a step farther and brightened up their factory rooms with paint and adequate lighting that other accidents have been reduced and work efficiently increased. Certainly an extremely dusty place indicates sloppy housekeeping. Housecleaning must be put on a periodic routine.

Dry processes will sometimes admit of being changed to wet processes, or damp processes. While dampness will not lay dust, moisture in the process will prevent the generation of dust in many cases. Care must be exercised in interpreting this suggestion because water on a high speed grinding wheel does not prevent the dust. One of the most serious silica health hazards is wet grinding on natural sand stone wheels. The incidence of tuberculosis is high. Water on artificial emery and carborundum wheels may or may not be beneficial. It is permitted in lieu of dust exhaust in at least one state, but we are faced with the opinion that these dusts are harmless anyway, unless the volume is high. Its worth depends upon getting the dust well below 100 million particles.

Having done all the housekeeping and process improvement that can be devised in lieu of exhaust, we are confronted with the question of whether there still remains dust in sufficient quantity from some processes to make it necessary to remove it by mechanical exhaust. Dust counts will tell the answer. Hand operations, such as molding, can be done without raising much dust. Most mechanical operations which use or generate dust must be exhausted. It seems inevitable that exhaust be used on sand slingers, rock crushers, dry pans, etc.

Assuming that we have put in an ex-

NATIONAL SAFETY NEWS

haust system that is well designed, what must be done to make it work? I have said that they wear out. You must put dust counts on a routine basis as a check of the efficiency of the system. Whether you use the Zeiss or the Owens' or the impinger doesn't matter. The system must be explored constantly for leaks, the dust traps must be cleaned regularly, and the dust disposed of so that it won't blow back into the building. If the design contemplates returning the cleaned air to the building, extremely careful checking of it must be done in order that the hazard may not be compounded. It is poor practice to return the air to the building because operation is so often badly maintained.

Who is responsible for a dust control program? The owners, through the management, are responsible for the provision of the equipment and the proper engineering to produce it. They have to spend the money and it is management's responsibility to see that it is spent properly. The initiative and the engineering necessary to control the dust rest entirely with the management. It is not a hazard which can be controlled by efficient supervision and safe practices alone.

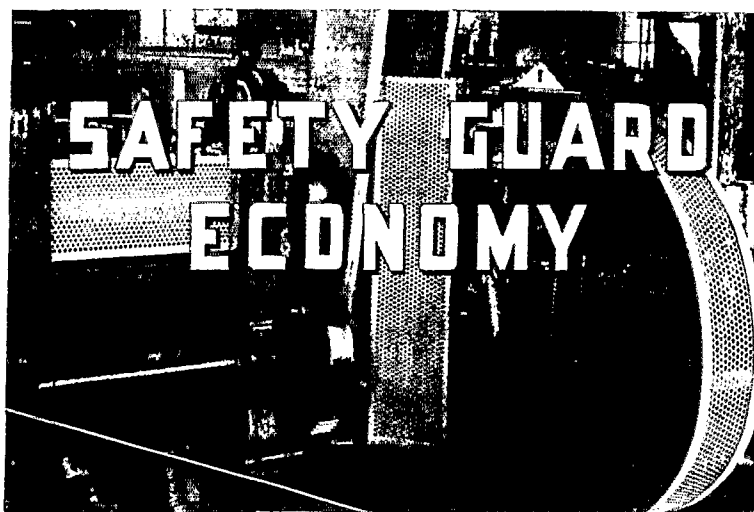
The supervisory department is responsible for the housekeeping, safe practices and shop methods. Some assigned members of the supervisory department are responsible for the maintenance and operation of the dust removal equipment and for the dust counts used as a check on the system. If there ever was a nice machine requiring constant tuning, it is a dust removal system. It won't work without this attention.

The workers carry a responsibility too. They must use the safeguards provided, whether they be respirators or portable hoods to place behind hand tools. They must not stuff bags into ducts to stop drafts. Dust control is a cooperative thing—each division carrying its share of responsibility. Nobody can avoid his responsibility and make the thing work.

A Correction

Through an error in the caption accompanying the illustration on page 11 of the August NATIONAL SAFETY NEWS, Alfred P. Sloan, Jr., president of General Motors Corporation, was referred to as vice-president of the corporation.

SEPTEMBER, 1935



Out of the Way Places

When you make your next plant inspection, be sure to notice the more or less out-of-the-way drive belts, motors, shafting or other equipment that should be guarded, but that have been neglected due to their location. It is a good policy to protect every hazard even though the chance of accident is seemingly small.

It is real economy to protect your workers from possible injury and it is Safety Guard Economy when you do so with H & K Guard Accessories. They are furnished ready for easy and quick assembly by your handy man in his spare time.

All H&K Guard Accessories are under inspection service of Underwriters' Laboratories, Inc.

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BULLARD
in Safety

BULLARD

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This protection is secured by rubbing Bullard Protective Cream into the exposed skin before exposure. It forms an invisible glove . . . dry and non-sticky. When it's time to clean up, just wash with ordinary soap and water. No cleansers are needed. The cream is water soluble.

Won't you try Bullard Protective Cream? Let us know how your workmen are exposed. We will send you data on how Bullard Cream has protected workmen under similar conditions.

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By return mail you will receive the data on Bullard Protective Cream. No obligation, of course.

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DULUTH W. F. & R. S. Mars Company, 324 W. Michigan Street
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SAN FRANCISCO E. D. Bullard Company, 275 Eighth Street
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Comfortable to wear, as they rest lightly on the worker's foot and the floor or ground takes the force of the impact in case of falling objects.

Write for your sample.

Ellwood Safety Appliance Company

Ellwood City, Pennsylvania

The Holger Nielson Method of Resuscitation

TAKING ONE. The Holger Nielson method of resuscitation, which was described on page 34 of the August NATIONAL SAFETY NEWS, was ballyhooed through the Canadian press in June of this year. When it was received by the Toronto papers, it was brought to the attention of the chief coroner with a request for his opinion. With others, I was requested by the coroner, Dr. Crawford, to test the method. It was done in the following manner:

1. Under the supervision of some of the coroners, the medical health officer, the life saving squad, and others interested in life saving, I tested the Danish method and also Schafer's prone pressure method on five subjects. Two of them were life savers, one the doctor attached to the life saving squad, one the secretary of the swimming association, and the fifth the superintendent of life saving in Toronto harbor. All of these men have had long practical experience in artificial respiration. None of them felt that the Danish method was as effective as the Schafer method.

2. To make doubly certain of the correctness of these conclusions, I carried out the Danish method of artificial respiration on a patient in the Toronto General Hospital under the supervision of a number of doctors. Arrangements had been made to measure tidal air by a spirometer and I also carried out the Schafer method in a similar manner. In both of these instances the artificial respiration was carried out for five minutes and a record taken by a moving pen. The Schafer method gave 60.5 per cent more tidal air than did the Danish method.

With the results of these tests before us, the Toronto papers have refrained from giving publicity to the Danish method, or recommending it in preference to the prone pressure method.

I do not think that the National Safety Council realizes its responsibility in giving publicity to methods that have not yet been thoroughly tested. Having for some years had some responsibility in connection with training in artificial respiration among public utility employees in the United States and Canada, and knowing that thousands of men are thoroughly trained in the Schafer method, is it too much to ask that the Council should thoroughly test any method before giving it publicity and unsettling the minds of your readers?

WILLIS MACLACHLAN,

Electrical Engineer

NATIONAL SAFETY NEWS

PERSONALS

EDWARD P. DUFFEE, for many years educational director of Hamlin & Company, is now associated directly with the Consolidated Gas Company of New York as assistant manager of the Insurance Department. S. Engel, formerly vice-president of Hamlin & Company, is manager of the department. The company's insurance department will render the same service as was rendered by Hamlin & Company, covering engineering and educational work in connection with accident prevention for the entire system. Mr. Duffee is news-letter editor for the Public Utilities Section of the National Safety Council.

Full time safety inspectors have been appointed in the three principal plants of the Paint Division of the Pittsburgh Plate Glass Company. PETER ZIMMER has been appointed to the Milwaukee plant; K. R. BURNS to the Newark plant, and D. C. CARRUTHERS to the Ditzler color plant.

CHARLES J. KOLB has resigned as manager of industrial relations for the Pierce-Arrow Motor Corporation to take up similar duties with the Colonial Radio Corporation, Buffalo, N. Y.

OBITUARY

HERBERT D. BANTA, personnel manager for the Hoberg Paper and Fiber Company at Green Bay, Wis., and general chairman of the Paper and Pulp Section of the National Safety Council, died suddenly on August 9. He was 36 years old. Surviving are the widow, four sons, three sisters and three brothers.

Mr. Banta was one of the outstanding members of the Paper and Pulp Section and had held several offices in the section prior to his election as general chairman at the Cleveland Congress last year. He was also president of the Brown Country Traffic Safety Council.

A. E. DAVINSON, formerly president of the Chesebrough-Whitman Company, and one of the founders of the Patent Scaffolding Company, New York City, died July 11. He was 75 years old, and had not been in good health for more than a year although death came suddenly. He is survived by his widow, three sons—F. A., A. E., Jr., and Harry—and two daughters.

In the early days following the organization of the National Safety Council

SEPTEMBER, 1935

Announcing a New Respirator THE DIAMOND FILTO-RING RESPIRATOR TYPE 60 WITH FILTRATION DISC

What is new? The Filtration Disc and the Filtration Ring.

What is a Filtration Disc? It is a foramenous metal disc containing a filter pad with an air tight edge formation.

What is a Filtration Ring? It is a rubber ring which fits into the face piece of the respirator. It provides front and rear grooves for holding the Filtration Disc. It also provides front and rear flanges for fitting the front guard filter pad. Notice! The Filtration Disc is held by the front and rear grooves and the front guard filter pads are held by the flanges.

The front guard filter pad may be replaced frequently. It is easily pulled out with the fingers and readily replaced by tucking a new one under the rubber flange.

This respirator is light, comfortable and efficient. Provides a maximum of filtration area for a minimum of air space. Easiest on the market for replacing filter pads. Equipped with exhaust valve.

Price, \$24.00 per dozen . . . Filter pads 5 cents each.

We shall be pleased to have you try one on approval at the dozen quantity price.



Patent Pending

Also New

THE DIAMOND DISC RESPIRATOR WITH FLUTTER VALVE

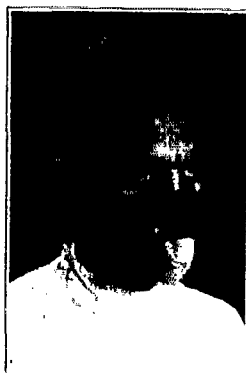
What advantages does the flutter valve provide? Exhalation is made easier, therefore, respirator is cooler. Also a large sponge is provided increasing the efficiency of the air filtration.

This is the lightest respirator on the market for the amount of efficiency.

	Prices	
	Each	Doz.
Diamond Disc Respirator with valve	\$1.50	\$15.00
Diamond Disc Respirator without valve	1.25	12.00
Diamond Disc Respirator without valve and without sponge (has gauze filtering)	1.00	9.00

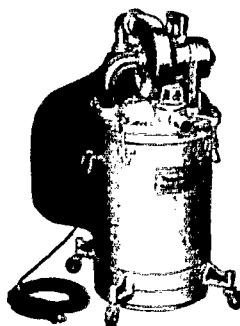
We shall be pleased to send samples on approval at the dozen quantity price.

HYGEIA RESPIRATOR CO.
129 East 85th Street New York City



Patented Feb. 6, 1934
and Patents Pending

For the First Time Vacuum Cleaning Made Applicable to All Plant Cleaning Requirements at Low Cost with BREUER'S BALL BEARING TORNADO PORTABLE INDUSTRIAL VACUUM CLEANER



Solves all cleaning problems without expense of installing a stationary plant or using semi-portable cleaners which are too heavy and expensive for average plant applications.

Combines light weight (only 40 pounds) with tremendous cleaning power (1 HP G.E. ball bearing motor—40% waterlift).

Removes dust, dirt, metal filings, etc. Special attachments for cleaning boiler tubes, ovens, machinery, walls, floors, etc. Sprays paint and insecticides.

Reduce the dust hazard which so vitally affects the safety and health of your employees by using this new machine.

Write for details and further information.

BREUER ELECTRIC MFG. CO.
858 Blackhawk Street Chicago, Ill.

THERE ARE NO HALF-WAY MEASURES IN DUST CONTROL

IF YOU SPECIFY

• PANGBORN •

ALL METAL CLOTH SCREEN

DUST COLLECTORS

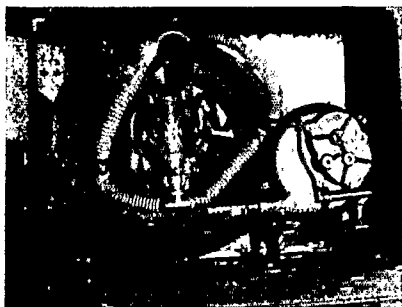
Efficient Dust Control means practical, **DEPENDABLE DUST CONTROL**. Halfway measures are not only inefficient—they are both costly and dangerous.

A Pangborn Dust Control System, as designed by Pangborn Engineers, will trap dangerous dust at its source . . . and collect it for salvage or disposal . . . safely, and at low cost! Write today for Dust Control literature.

PANGBORN CORPORATION

The World's Largest Manufacturer of Blast Cleaning and Dust Collecting Equipment

HAGERSTOWN • • • • MARYLAND



You will appreciate the greater value of this new and more practical **DAVIS AIR LINE OUTFIT** which may be had at no extra cost.



Write for details to

DAVIS EQUIPMENT CO., INC.
Chicago, Ill. • New York City • Houston, Tex.

Mr. Davidson gave the movement his whole-hearted support, contributing much to the development of safety on a national scale as well to the development of safer equipment and safer practices in the construction industry.

WALTER E. DORN, safety director for the Grasselli Chemical Company, Cleveland, died July 30. He had been with the company fifteen years, succeeding E. C. Rogers as safety director three years ago.

Steps to Safety

(Continued from page 29)

dents. In other words, when you buy a stair covering, regardless of whether it is for use in a new or an old building, you should make certain that the tread you buy not only is going to wear a long time but also is going to stay non-slip for years to come. Some materials are well adapted for stair treads and can be used with a definite certainty of permanent non-slip protection. Other materials used on stairways have not given the service anticipated. When new they are rough and seem to be non-slip, but after they have been subjected to heavy traffic they lose their rough surface and become slippery. The net result is that the public does not get the protection that was originally intended.

If you do not know what material you should use on the treads of a stair in a new building or what you should use for covering worn and slippery treads in your present building, ask your liability insurance company. They should be willing to give you the benefit of their experience. After all is said and done, the number of accidents and the number of claims the insurance company has to pay is reflected in the premium charged.



NATIONAL SAFETY NEWS

Minute Lessons in Watchman Service

WHEN a watchman must look for a scrap of paper to make a report, a hazard may go unreported. Some of the larger concerns have report forms and instruct their watchmen in safety and fire prevention but such training is by no means universal. With the needs of smaller companies in mind, Roy M. Warberg, of Chicago, has designed a set of "Minute Lessons in Good Watchman Service."

These lessons are in 12 books of 26 pages each. Each page is detachable and perforated for filing in a post binder. In addition to a check list, each page contains a brief, readable talk on some phase of safety, fire prevention or other subjects coming within the watchman's duties. There is also space for additional comment on conditions observed.

This service is published by Minute Lessons Publishers, 6354 Evans Ave., Chicago.

FROM THE PRESS

THE SCARLET LETTER

(Peoria Transcript)

OUR Puritan ancestors sometimes seem cruel and heinous to us. Offenders against social and moral codes were stripped of all dignity and branded so that they had to walk with heads bowed in shame the rest of their lives. Yet their methods had the virtue of being effective.

Today we are too inclined to be lenient and make excuses for offenders, even when their violations of various codes actually endanger the community. We evidently do not believe strongly enough in our own laws and codes to enforce them.

Perhaps in certain respects it would be a good thing to go back to the old days and brand those who flout law and custom, so that they would be shamed and others would be warned to beware of making the same mistake.

This revival of the "scarlet" letter and the branding iron might be tried tentatively on the motorists. Our legislators have refused to pass licensing laws and other traffic controls, so we must do something to turn public opinion toward this greatest of all modern crimes.

Instead of fining offending motorists or warning them in police court it might be well to establish a system of windshield "brands." These could read: "I am a speeder," "I am a reckless driver," "I drive without lights," "I drive while drunk," "I drive through stop lights," or "I killed a child."

For minor offenses these stickers might be left on 30 days under a penalty of a \$10 fine. For major offenses they could be affixed from six months to a year, with heavy penalties for removal.

If traffic law violators were branded with these "scarlet letters" they might learn caution and obedience under the derision and shame of their acquaintances.

SEPTEMBER, 1935

Brought new Safety TO FUMIGATION

Industry, in self-defense, must kill billions of insects, eggs and larvae every year. Proxate, developed in the research laboratories of The Liquid Carbonic Corporation, is a gas which does this killing job with utmost safety to human life and property.

Unlike the chemical agents generally used, it is non-poisonous to humans. Almost equally important, there is no fire hazard—in fact, a sufficient concentration of Proxate will put fires out.

Yet, this safety does not mean that the gas is slow or ineffective in its action. Proxate quickly kills living insects or larvae, and penetrates their eggs to prevent hatching.

Proxate has proved itself in a variety of applications, from crops fumigated in bulk storage bins to packaged food products.

Liquid's experienced fumigation engineers are available for consultation on new applications as well as standard uses. Their objective is to lower both infestation losses and fumigation costs and increase the safety factor far above present levels. Write for Proxate Fumigation Handbook, giving many further interesting facts about Proxate.



PROXATE

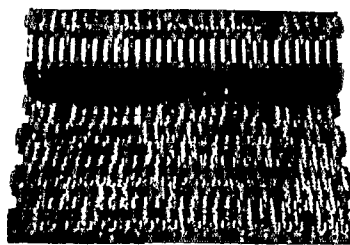
The Safe Fumigant

THE *Liquid* CARBONIC CORPORATION
3100 S. Kedzie Ave., Chicago, Ill.

Branches in 37 Principal Cities of the United States and Canada
London, England Havana, Cuba

★ DURABLE SAFETY MATS ★

You know how new workers tire quickly from standing. While it is true they become more or less accustomed to being on their feet, there remains a strain which naturally results in slowing down both physically and mentally. You can help your workers and yourself by supplying Durable Safety Mats. They are soft, resilient, slip-proof and will do much to reduce fatigue, prevent accidents and increase production.



**DURABLE
MAT
COMPANY**
764 Miami Street
Akron, Ohio
Toronto, Canada
Seattle, Wash.



WHEN INDUSTRY RALLIES at the Twenty-fourth Annual Safety Congress

... the roster will read like "Who's Who" among users of

STONEHOUSE SIGNS for Accident Prevention

As usual, we will be an exhibitor, with all the newest Accident Prevention Sign ideas. For Stonehouse is the foremost authority in this field.

The new Stonehouse Catalog No. 4 will be off the press for the Congress. Watch for it.

We'll see you
at the "Safety
Herby"
Booth No. 4
Oct. 13-18!

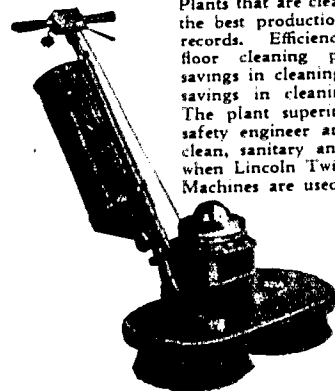


Stonehouse
SIGNS, INC.
9th at LARIMER "Since 1863" DENVER, COLO.

ACCIDENT PREVENTION STEEL SIGNS ♦ FOR ALL INDUSTRIES

Lincoln Twin Disc Floor Machines

Keep Your Floors Clean



Plants that are clean usually set the best production and safety records. Efficiency in plant floor cleaning produces a savings in cleaning time and a savings in cleaning materials. The plant superintendent and safety engineer are assured of clean, sanitary and safe floors when Lincoln Twin Disc Floor Machines are used.



The Lincoln Industrial Special is used by many of the country's largest industrial plants to remove the imbedded grease, dirt, steel chips, and shavings from factory floors. Twenty times faster and more efficient than hand work. Ideal for cleaning wood-block floors.

Two of our twelve models are illustrated. These machines have proven their worth by continuous service in many large plants. A trial on your own floors under your own supervision, can be arranged without any obligation. Write for complete details.

LINCOLN-SCHLUETER
FLOOR-MACHINERY CO., INC.
237 W. Grand Ave., Chicago, Ill.

The Lincoln Type No. 20 is a compact combination scrubbing, cleaning and polishing machine—recommended for use in average congested areas. Has a capacity of from 2500 to 3000 sq. ft. per hr. Brushes revolve in opposite directions eliminating "whirl" or side pull.

The LINCOLN Twin Disc
SCRUBS - WAXES - POLISHES

The Driver Has His Troubles

(Continued from page 19)

Shipping clerk helps cover them up because the driver always makes such good time. Now the second man gives his customers a decent answer, drives more carefully and manages to keep away from accidents, but he is constantly being picked on, and told to wake up. He finally gets disgusted and says to himself that if that's what they want he'll give it to them. He no longer takes up time with his customers and starts driving around the same as the other fellow. In time he will not only lose customers because he doesn't take time to give them a civil answer, but the people will even try to keep him out of the neighborhood by making sure they deal with some other concern that has men that drive sensibly, because they are not only afraid to let their children out, but they're afraid to cross the streets themselves.

Where you had one reckless driver, you now have two. That's one of the reasons for your frequent accidents.

Another reason is this: You are very careful that your salespeople are thoroughly experienced in their line of work, get the proper training, and are given a chance to rest up when they are not quite so rushed. But you seem to forget that your drivers need that just as much as clerks do, if not more. They need the same consideration because they do heavy work; they put up with all kinds of traffic in all different kinds of weather; they often have to drive bad trucks; and, last of all, they are the store's representative making the last contact with the customer.

With all this against them they have to figure out a way of their own to make your sales stick. Soon as loads are a trifle light they are told to stay home, and lose a day's pay. Or else they are doubled up to make sure that they earn their day's pay, rather than be allowed to take it easier for a day or two.

How can you expect these men to keep alert, to keep their faith in your business, as well as to be in a mood to drive safely?

A driver delivering merchandise to the consumer must be a good chauffeur; he must be honest, alert and neat; and he must be a diplomat and a cashier. He must be fearless, and know the store system of deferred payment plans, store policy, etc., and he must know his city.

I am not basing these remarks on personal experience alone. Our company

NATIONAL SAFETY NEWS

is not guilty of some of the criticisms I have made. I have formed my opinion from information I have collected from drivers for department stores, milk companies, laundries, and many other concerns all of which deliver their goods to the consumer.

More Companies Join Million Hour Club

AMONG all companies reporting 1934 industrial injury records to the National Safety Council there were ten which worked more than 1,000,000 man-hours during the year without a single disabling injury. Here are the members, therefore, of the "No-Accident Million Hour Club" for 1934:

United Shoe Machinery Corp., Beverly, Mass.

Western Clock Company, LaSalle, Ill.

Raytheon Production Company, Newton, Mass.

Owens-Illinois Glass Company, Gas City, Ind.

American Tobacco Company, Richmond, Va.

General Cigar Company, Perth Amboy, N. J.

Brown Shoe Company, Union City, Tenn.

Brown Shoe Company, Brookfield, Mo.

Lycorning Manufacturing Company, Williamsport, Pa.

H. D. Lee Mercantile Company, Kansas City, Mo.

Some of these companies operated well over a million perfect hours last year; some are still continuing without a single injury. Three of these perfect record plants also were members of the Million Hour Club for 1933: The Brookfield Plant of the Brown Shoe Company; The Raytheon Production Company; Western Clock Company.

A million man-hours is a long time to go without a disabling injury. It means a year's perfect record for a plant with a payroll of approximately 400 employees. It is equivalent to one man working without an accident for 400 years.

Flannigan met with an accident, but the next day he managed to crawl to work.

"Hy didn't ye stay home for a week or two?" asked Finnigan. "Weren't ye carryin' an accident policy?"

"No," said Flannigan. "I was careless enough to leave it at home in the dresser drawer."

SEPTEMBER, 1935

NOW READY

New Cesco Catalog



**SEND FOR
YOUR FREE
COPY**

It's a real hand-book of valuable information on head, eye and lung protective equipment.

MAIL THIS COUPON

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Chicago, Ill.

Gentlemen:

Without cost or obligation send me a copy of your new catalog.

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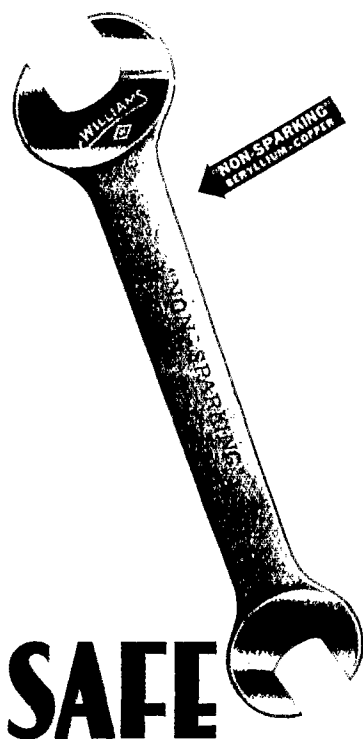


PRESCOTT SAFETY TOOL

*A special tool that will close
hopper-bottom car doors with
EASE and SAFETY*

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

Write for prices and details
The Trumbull Mfg. Co.
Warren, Ohio



IN THE PRESENCE OF INFLAMMABLE GASES

Williams' "NON-SPARKING" Safety Wrenches are the safest and strongest known for use wherever a spark may produce disastrous results. Drop-forged from beryllium-copper and accurately heat treated, these Safety Wrenches are unequaled in strength, toughness and hardness. Non-rusting. Non-corroding. Practically as strong as steel wrenches of similar size and design. A wide range of sizes in single and double head patterns.

Williams' "NON-SPARKING" Safety Wrenches are finished in "Safety Green" enamel with heads polished bright. They are easily identified and are backed by more than 50 years of wrench making experience. Guaranteed by the manufacturers of the most complete line of drop-forged wrenches in the U.S.A.

Buy from your mill or safety supply house. Ask for literature.

J. H. WILLIAMS & CO.

"The Drop-Forging People"
75 Spring St. New York
Western Warehouse and Sales Office, Chicago
Works, Buffalo, N. Y.

WILLIAMS
SUPERIOR DROP-FORGED TOOLS
DROP-FORGED
WRENCHES

Elementary Safeguarding Is Still Important

Accident reports show that lack of simple safeguards remains high among the causes of injuries

WHEN industry first became impressed with the idea that accidents really could be prevented, attention was turned to safeguarding. If every moving part could be covered accidents would promptly disappear, men thought. When the reduction in accidents proved disappointing, they turned to safety education as the sure cure. Then engineering revision, a little understood term, caught their fancy. Safety men are continually discovering new angles of approach to the accident problem, and getting increasingly gratifying results with each discovery. But no single remedy has proved effective.

Guards no longer hold the center of the safety stage. Many people are inclined to think that contraptions of expanded metal, perforated metal and sheet metal are obsolete; that modern machines of streamline design with all moving parts enclosed have solved the guarding problem.

Such machines, however, are not yet universal. And there is a vast amount of obsolete machinery in American factories which will be operating for many years to come before excessive maintenance costs and the demand for increased production send them to the scrap heap. If you think the hazard of inadequately guarded machines is a thing of the past, ask any insurance or state inspector.

Hundreds of photographs have been rejected for the NATIONAL SAFETY NEWS because of some uncorrected mechanical hazard. Many of them have been from companies which have high standards of mechanical protection and exceptional safety records. Occasionally some defect gets into print and the Council hears from members about it. Often a hazard in a picture is called to the safety man's attention by the men in the shop and relayed to the editor. In many cases the hazard is not serious but members feel that the Council's publications should bend over backward in showing anything less than perfection.

Any survey of accidents covering al-

most any industry would seem to offer ample evidence that education alone is not a cheap substitute for safeguarding. Medical service, job training, psychological studies of the accident prone and other elements of progressive accident prevention work cannot compensate for the lack of sound elementary safety practice.

The following examples, taken from the News-Letter of the Chemical Section, are illustrative of the types of accidents that still occur, although their causes were known twenty-five years ago.

1. A man working on a machine driven with an unguarded belt had occasion to move material located close to it. He was wearing a loose ragged sweater, the arm of which came in contact with the belt. He was thrown over the shaft and killed. Unsafe clothing and unguarded transmission equipment again proved to be a deadly combination.

2. A man was working on a clay-mixing machine (pug mill type). An overhead belt jumped off its pulley and was caught in the revolving blades of the pug mill. The belt wrapped itself around the man's legs and he was thrown into the mill and crushed to death. Good practice in safeguarding power transmission equipment calls for a guide to prevent the belt from running off the pulley where there is no bearing between the pulley and the outer end of the shaft.

Supervision Was Lax

3. Here is a case in which guards were provided but training and supervision were ineffective. A workman removed a guard and leaned over a shaft to oil a bearing. His clothing caught and his arm was torn from the socket. An investigation showed that this practice had been common in the plant. While in this case the shaft had been guarded the value of the guarding was purely nominal in view of the fact that the workman thought it perfectly proper to remove the guard and oil the shaft while it was unguarded. Just another example

NATIONAL SAFETY NEWS

of the close tie-up between education and safeguarding.

4. A workman was emptying a can of material into a mixer. A horizontal shaft was located on the top of the mixer. The shaft had never been guarded. The man's frayed coat caught on the shaft and another arm was torn from its socket. Management's neglect both in guarding and supervision was all too evident in this case.

5. A man went up a ladder to paint overhead pipes that were located close to an unguarded shaft. While he was doing the work, a rung of the ladder gave way and he was thrown onto the unguarded shaft. It may be argued that the ladder was directly responsible for the accident. Probably it was, but, on the other hand, if the shaft had been guarded the man would not have been killed. Like most accidents, this had more than one contributing cause.

One of those places where "nobody ever goes" was involved in this case.

6. In the course of altering a building, a workman was let down through a hatchway into an unused room of the building. A horizontal shaft, hip high, located near the side of the room, was in motion. The foreman of the job was lowering timbers to the man down below when the man's jacket was caught on the shaft and he was killed. The alibi was that the shaft was turning in a room where no one was ever expected to go. Fifty cents worth of lumber and thirty minutes of a mechanic's time would have prevented this tragedy.

7. Other sources of frequent trouble are the temporary installations and the equipment for emergency use. Guarding is seldom up to standard and maintenance is too often neglected. One such example is that of a circular saw in a chemical plant which was used for emergency repair work. The saw was not used much and this was given as the excuse for not maintaining it properly. However, a workman did find it necessary to use the saw which was wobbly on the mandrel. A kickback occurred and a piece of timber killed the emergency operator.

Similar cases might be drawn from any industry and carried to monotonous lengths. These, however, will suffice for illustration. The saddest part of the whole story is that they occurred from causes that are so easily preventable.

While we are awaiting the installation of fool-proof equipment (which may be several years in the future) a little attention to the commonplace hazards will prevent many of these needless tragedies.

SEPTEMBER, 1935

**REDUCED
RESPIRATORY
DISEASE**

**PAID FOR THEMSELVES
IN REDUCED CLEANING
COSTS IN 90 DAYS**

**PREVENTED DUST
EXPLOSIONS**

**MADE PLANT
ORDERLINESS
AUTOMATIC**

**REDUCED
INSURANCE RATES**



**5 actual results proven by manufacturers
now using INVINCIBLE INDUSTRIAL VACUUM CLEANERS**

May we tell you more?

INVINCIBLE VACUUM CLEANER MFG. CO.
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INVINCIBLE—CLEANED PLANTS ARE ALWAYS SAFE

PRESENTING New Justrite Safety Cans!



Waste Can!

JUSTRITE'S Automatic Safety Waste Cans give you safety, economy, efficiency. Opens with foot, closes automatically. Leaves both hands free. A great feature. Reduces insurance rate. Capacity 2, 3, 5, 11 gallons.

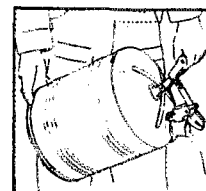
Opens with Foot
Closes automatically

JUSTRITE presents a New improvement in the 2, 3 and 5 gallon Safety Cans. The carrying handle has been redesigned. This permits "Easier Carrying" and "More Accurate Pouring." Large spout easily filled direct from filling station hose—no funnels required.

See how easy it pours—the most efficient can for the workman. Automatic spring controlled spout cap. Natural Hand Grip—opens in one operation—closes automatically. A safe container for carrying explosive and volatile liquids, no leakage or evaporation. Labeled by the Underwriters Laboratories, Inc., and Approved by the Associated Factories Mutual Fire Insurance Companies.

LESSENS INSURANCE RATES

Protect your plant—your employees—your insurance rate premiums—by installing the latest improved and approved JUSTRITE Safety Devices. 10-15-34. See your dealer or write us for operating prices and literature.



Justrite
TRADE MARK

Justrite Mfg. Co. 2087 Southport Avenue
CHICAGO, ILLINOIS

NEW FRIENDS

for

THE INDUSTRIAL SUPERVISOR

"It is very well edited and should go a long way in reaching the key-men of industry."

C. J. Long
United Traction Company

"Your new publication is going to fill a long-felt need for some kind of medium to disseminate safety information to Foremen."

Ernest Agustus
The Mead Corporation

"This magazine should have a very definite bearing on the furtherance of the accident prevention movement in the direction in which the operating executive will be made to appreciate its value in relation to good management."

T. A. Walch
American Optical Co.

"It is a splendid magazine and should be a part of every safety man's library."

Joe H. Ayres
The American Rolling Mill Co.

"I shall be glad if you will register this department for 30 copies monthly of the new magazine entitled 'The Industrial Supervisor.'"

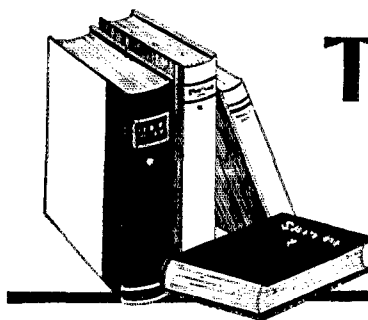
Victorian Railways
Melbourne, Australia

Monthly Circulation Now 5,000

Published by

NATIONAL SAFETY COUNCIL
CHICAGO, ILLINOIS

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The Safety Library

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

Further information regarding publications listed here can be obtained from the National Safety Council Library

BLINDNESS AND THE BLIND IN THE UNITED STATES

Best, Harry: **BLINDNESS AND THE BLIND IN THE UNITED STATES.** Published by The Macmillan Company, 60 Fifth Avenue, New York City, 1934. Price \$0.50. (Book)

This work is a revision and expansion of "The Blind. Their condition and the work being done for them in the United States." It covers the various problems that are raised by the presence of the group of persons known as the blind and the several measures that have been put forth to deal with the problems thus brought to view.

OTHER BOOKS AND PAMPHLETS

Respiratory Protection:

List of devices for respiratory protection approved by the U. S. Bureau of Mines. Published by the U. S. Bureau of Mines, Washington, D. C., 1935. Free. (I.C. 0815)

Tin Can Industry:

Tin can manufacture. Published by the Retail Credit Co., Atlanta, Ga., 1935. Pamphlet. (Industry Report)

PERIODICAL ARTICLES

Carbon Monoxide:

Cooper, G. F., Methylene blue and other agents as antidotes in hydrocyanic acid and carbon monoxide poisoning. In U. S. Nat'l Medical Bulletin, July, 1935, p. 364.

Fires:

The 1934 fire loss. In *National Fire Protection Quarterly*, July, 1935, p. 19.

Housekeeping:

Andrews, J. F., Laid out like a city. Numbered streets and lettered avenues speed selection of parts for assembly, replacement for branches or customers. In *Factory Management and Maintenance*, August, 1935, p. 337.

Labor Costs:

The doctor and the cost of hiring. In *Industrial Medicine*, July, 1935, p. 351.

Resuscitation:

Pye, H. Walter, Resuscitation by Holger Nielson method. In *Coal Age*, August, 1935, p. 340-341.

Silicosis:

Pierson, Dr. P. H., Silicosis—its medical, industrial and legal aspects. In *California Safety News*, June, 1935, p. 6.

Solvents:

Smyth, H. F., Volatile solvent hazards and how they may be minimized. In *Industrial Medicine*, July, 1935, p. 354.

Static Electricity:

Davies, W., To prevent belt static. Always unnoying, often dangerous, static charges can be prevented by proper drive design and keeping belts soft and pliable. In *Factory Management and Maintenance*, August, 1935, p. 355.

HONOR ROLL

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

Citizens Power & Light Co.

Five years without a disabling injury was completed on July 30 by the Citizens Power & Light Company, Council Bluffs, Iowa. The average number of employees for the period has been between 55 and 60.

General Cable Corp.

The Perth Amboy, N. J., plant of General Cable Corporation has operated since December 12, 1934, without a disabling injury. The exposure on July 12 totaled 525,632 man-hours.

Morton Salt Co.

From September 30, 1932, to June 17, 1935, the Newark, Calif., plant of the Morton Salt Company operated without a disabling injury. The record terminated on the latter date when an employee dropped a chain on his foot. The 42 employees worked 422,775 man-hours during this period.

Panhandle Refining Co.

The Kings Mill refinery of the Panhandle Refining Company has not had a disabling injury to any employee since it was placed in operation on March 1, 1933. The working force is 100 per cent first aid trained through the courses sponsored by the Bureau of Mines and the American Petroleum Institute. "When a department is first-aid trained," says R. E. St. Clair, safety director, "it has a tendency to keep down accidents."

NATIONAL SAFETY NEWS

Sections Appoint Nominating Committees

THE personnel of the nominating committees of 20 sections of the National Safety Council have been announced and are printed below. The members of these committees will welcome suggestions for candidates for the offices of their respective sections for the year 1935-36.

ASSE-ENGINEERING

S. E. Whiting (Chairman), Liberty Mutual Insurance Co., Boston.
J. I. Banash, Consulting Engineer, Chicago.
R. F. Thalner, Buick Motor Co., Flint, Mich.
C. B. Auel, Westinghouse Electric and Manufacturing Co., East Pittsburgh, Pa.
Dr. M. G. Lloyd, National Bureau of Standards, Washington, D. C.

AUTOMOTIVE AND MACHINE SHOP

M. J. McCarthy (Chairman), Fisher Body Detroit Div., General Motors Corp., Detroit.
H. L. Fracher, Detroit Steel Products, Detroit.
L. E. Averill, C. H. Dockson Co., Detroit.
R. A. Shaw, The Murray Corporation of America, Detroit.

CEMENT

Lt. Col. Henry A. Keninger (Chairman), Lehigh Portland Cement Co., Allentown, Pa.
H. Vanderwerp, Medusa Portland Cement Co., Cleveland, O.
E. Posselt, International Cement Corp., New York City.

CHEMICAL

John Roach (Chairman), Deputy Commissioner of Labor, Trenton, N. J.
Plummer Wheeler, American Cyanamid Co., Linden, N. J.
S. E. Whiting, Liberty Mutual Insurance Co., Boston.

CONSTRUCTION

John Russell, Jr. (Chairman), Underground and Transmission Construction Dept., Public Service Corp., Newark, N. J.
Fred L. Rowe, W. L. Johnston Construction Co., Hicksville, O.
Robert McKinley, General Accident Fire & Life Assurance Corp., Detroit.

FOOD

Henry J. Mineur (Chairman), Borden's, New York City.
Frank A. Haase, Corn Products Refining Co., Chicago.
William A. Sullivan, Loose-Wiles Biscuit Co., Kansas City, Mo.

MARINE

Frank H. Cogan (Chairman), The Delaware and Western Railroad Co., New York City.
John S. Hunter, The Atlantic Refining Co., Philadelphia, Pa.
Arthur M. Tode, Consulting Marine Engineer, New York City.

MEAT PACKING, TANNING AND LEATHER INDUSTRIES

N. L. Brainard (Chairman), Swift & Company, Union Stock Yards, Ill.
W. F. McClellan, Armour and Company, Chicago. (Continued on next page)

NEW TYPE SLINGS

LESS THAN 2" THICK

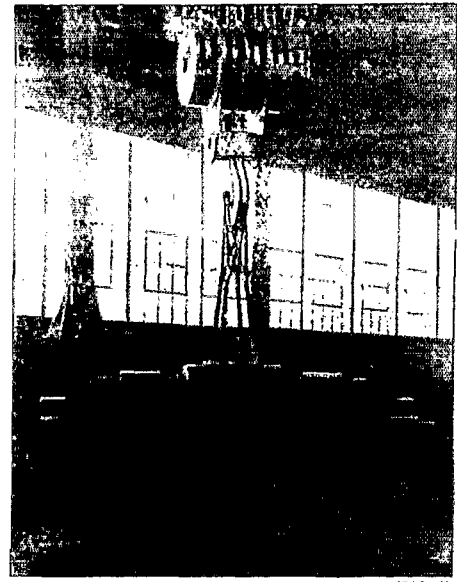
They had to be flat—to meet a clearance of only $\frac{3}{4}$ inches.

They had to be flexible, easy to handle—yet capable of lifting 50-ton loads!

To meet these rigid specifications, Macwhyte designed and built these 6-part DREW Slings of Monarch Whyte Strand Wire Rope—made endless and then braided flat to give a flexible non-kinking, non-spinning body. This patented construction speeds up loading and gives an unusually high safety factor.

Drew Slings are custom-built for all kinds of lifting jobs, especially for those having small clearance requirements. Write for catalog.

At the 24th Annual Safety Congress, Louisville, visit Booth 35 and see the Macwhyte Sling Exhibit.



MACWHYTE
WIRE ROPE Slings

ATLAS • DREW • MONARCH

MACWHYTE COMPANY, Kenosha, Wisconsin

WHAT'S NEW In Louisville?

That's the question which hundreds of safety-minded executives will be asking as they start their annual trek to the National Safety Congress and Exposition the week of October 14th.

B-K Laboratories have been busy the past few months on some new oxygen equipment developments. Be sure to see them!

Visit
Booth No. 38



Section of B-K Inhalator Department

B-K PRODUCTS Include

- ♦ Oxygen Breathing Apparatus
- ♦ Oxygen Helmets
- ♦ Inhalators
- ♦ Tents
- ♦ Pumps
- ♦ Hose Masks
- ♦ Valves

BISHINGER-KOEHLER

MANUFACTURING CO., INC.

7838-42 Kelly Street Pittsburgh, Pa.

Manufacturers
OXYGEN EQUIPMENT PRODUCTS



A TRIBUTE to INDUSTRIAL SAFETY



♦ Twenty-five or more years ago, when the industrial safety movement was organizing, scarcely a day passed in many a large steel mill without the loss of life or serious injury.

♦ At first—management thought and said that accidental death and injuries could not be eliminated. But thanks to the organized safety movement, with its efficient safety personnel and protective equipment, industrial injuries continue to decline . . . and today, many of these same mills will work an entire month without a loss-time accident.

We are happy in the realization that STEEL-GRIP gloves and safety clothing have played a prominent part in the reduction of fatalities and injuries in many of these mills.



INDUSTRIAL GLOVES CORPORATION

725 GARFIELD BLVD.

DANVILLE, ILL.

Chicago

Philadelphia

Detroit

H. D. Tefft, Institute of American Meat Packers, Chicago, Ill.

METALS

E. F. Blank (Chairman), Jones & Laughlin Steel Corp., Pittsburgh, Pa.

F. G. Bennett, The Buckeye Steel Castings Co., Columbus, O.

A. Berquist, The Youngstown Sheet and Tube Co., East Chicago, Ind.

MINING

J. T. Ryan (Chairman), Mine Safety Appliances Co., Pittsburgh, Pa.

Thomas E. Lightfoot, Koppers Coal Co., Pittsburgh, Pa.

P. M. Arthur, American Zinc Co. of Tennessee, Mascot, Tenn.

PAPER AND PULP

A. Scott Dowd (Chairman), The Paper Industry, Chicago.

J. J. Plzak, Consolidated Water Power and Paper Co., Wisconsin Rapids, Wis.

Samuel Pruyn, Finch-Pruyn and Co., Inc., Glens Falls, N. Y.

PETROLEUM

R. W. Black (Chairman), Standard Oil Co., Elizabeth, N. J.

C. J. Hightower, United Gas Co., Houston, Tex.

R. E. Donovan, Standard Oil Co. of Calif., San Francisco, Calif.

POWER PRESS

E. J. Smith (Chairman), Western Electric Co., Hawthorne Station, Chicago, Ill.

S. H. Slaymaker, Fairbanks, Morse & Co., Beloit, Wis.

G. A. Kuechenmeister, Dominion Forge and Stamping Co., Walkerville, Ont., Canada.

PUBLIC UTILITIES

F. M. Pepper (Chairman), Illinois Bell Telephone Co., Chicago.

C. B. Boulet, Wisconsin Public Service Corp., Milwaukee, Wis.

E. S. Beaumont, The Peoples Gas Light & Coke Co., Chicago.

QUARRY

Otho M. Graves (Chairman), The General Crushed Stone Co., Easton, Pa.

A. L. Worthen, The Connecticut Quarries Co., Inc., New Haven, Conn.

Nathan C. Rockwood, Rock Products, Chicago.

REFRIGERATION

L. W. Dawley (Chairman), Southern United Ice Co., Jackson, Miss.

J. F. Nickerson, American Institute of Refrigeration, Chicago.

A. J. Authenrieth, Chicago.

RUBBER

H. W. Low (Chairman), Miller Rubber Products Co., Inc., Akron, O.

E. W. Beck, United States Rubber Products, Inc., New York City.

R. W. Morse, The Firestone Tire and Rubber Co., Akron, O.

TEXTILE

E. E. Place, American Mutual Liability Insurance Co., Boston.

M. W. Heiss, Proximity Manufacturing Co., Greensboro, N. C.

J. T. Trolinger, American Bemberg Corp., Elizabethton, Tenn.

TRANSIT

M. W. Bridges (Chairman), Chicago Rapid Transit Co., Chicago.

R. A. Finch, Tennessee Valley Authority, Joe Wheeler Dam, Ala.

Ralph C. Bush, Transit Mutual Insurance Co., Boston, Mass.

WOOD PRODUCTS

Louis W. Kerberg (Chairman), Mengel Body Co., Louisville, Ky.

E. G. Padgett, North Carolina Industrial Commission, Winston-Salem, N. C.

J. A. Purdy, Michigan Mutual Liability Co., Detroit.

Data Sheet

(Continued from page 32)

16. It is recommended when practicable to arrange the cleaning job, that the work can be done at night beginning after the close of the regular business day and ceasing in the morning in time to clean up and remove all obstructions from the street and sidewalks. When the work is performed at night, provision must be made for adequate illumination both of the scaffold and that portion of the thoroughfare to which the work is confined.

Note V: Valuable information on the guarding of gasoline engines will be found in National Safety Council Safe Practices Pamphlets No. 9, "Engine Guarding and Engine Stops," and No. 58, "Construction of Machinery Guards."

Note W: Complete information on the construction and use of compressors and air receivers will be found in National Safety Council Safe Practices Pamphlet No. 47, "Compressed Air Machinery and Equipment."

Note X: Detailed information on power boilers and their equipment will be found in National Safety Council Safe Practices Pamphlets No. 3, "The Safe Operation of Steam Boilers," and No. 49, "Construction and Equipment of Steam Boilers."

Note Y: Additional information on the construction, maintenance and use of scaffolds will be found in National Safety Council Safe Practices Pamphlet No. 12, "Scaffolds." National Safety Council Safe Practices Pamphlet No. 6, "Fibre Rope," contains excellent information on the use and care of such equipment as scaffold rope, blocks and tails.

Note Z: Detailed information on head protection and protective clothing will be found in National Safety Council Safe Practices Pamphlets No. 16, "Protective Clothing," and No. 64, "Respirators, Gas Masks, Hose Masks and Breathing Apparatus."

A Candidate for the Dumb Stunt Prize

The man who sat on a limb and sawed it off between himself and the tree had nothing on a Colorado quarryman in displaying real ivory. This chap got a twelve-foot drill stuck. He fastened a pick head over the drill, put a long board under the pick to get leverage, and backed out on the board over a 49-foot quarry pit. The board slipped and he fell to the bottom. He may recover but it is certain he will not use his right arm and leg and become a total permanent disability case.—*The Ohio Monitor*.

NATIONAL SAFETY NEWS

Kansas Health Authorities Fight Accidents

(Continued from page 28)

organizations, a program for the prevention of farm accidents has been developed which is being carried on by the Grange, the Farmers Union, extension department at the State College, the Four-H Clubs, and other interested organizations.

Last summer the State Board of Agriculture prepared a four-page bulletin on the prevention of farm accidents. This bulletin was distributed by the Board and by farm groups. This year, due to the interest of J. C. Mohler, secretary of the State Board of Agriculture, data are being secured by assessors concerning non-fatal farm accidents which occurred in 1934.

The American Legion has also played an important part in this move for safety, largely through the efforts of M. R. McLean, Adjutant-General of the State of Kansas, and state chairman of the American Legion Safety Committee. General McLean has been responsible for organizing the Kansas Legion members in the safety project. A safety director is appointed in each of the eight districts; each post commander automatically becomes a member of the Kansas Safety Council, and approximately 300 of the 360 posts have safety officers. The Legion assisted greatly in the passage of state legislation regarding motor vehicles and laws pertaining to traffic safety and drivers' licenses. General McLean is bringing a powerful force to support the safety movement, and the work of the Legion members is both effective and enthusiastic.

Increasing numbers of persons interested in safety are associating themselves in the work of the Kansas Safety Council. The primary purpose of the Council is to develop a program of education which will have a potent and far-reaching effect in the saving of human lives.

Although Kansas recorded a new high for accidental deaths in 1934, it is only fair to say that excessive heat fatalities contributed materially to the advance. I believe that we have laid the groundwork for a real attack on our normal accident problem in the state. After five years of effort, the Kansas Health Department would no more think of discontinuing its special analyses of accident causes and its general accident prevention activities than it would of giving up its fight against disease.

SEPTEMBER, 1935

\$210,000,000 will be LOST



through FIRE in the next 6 months

... That's a conservative estimate of the toll which American industry will pay to fire. A large proportion of this loss will be caused by *not* having an extinguisher in the right place... or by having the *wrong* extinguisher in the right place.

Remember that the heaviest contributors will be *oil* and *electrical* fires. And remember, too, that

LUX gas, the fastest known extinguishing agent, snuffs out these dangerous fires instantly, penetratingly! This harmless gas leaves no mess, is good until used.

Fire does not always destroy the *other fellow's* plant. If it strikes *yours*, fight it with the same equipment that great refineries, power plants depend on... LUX Extinguishers... Prices start at \$14. Write today for new bulletin.



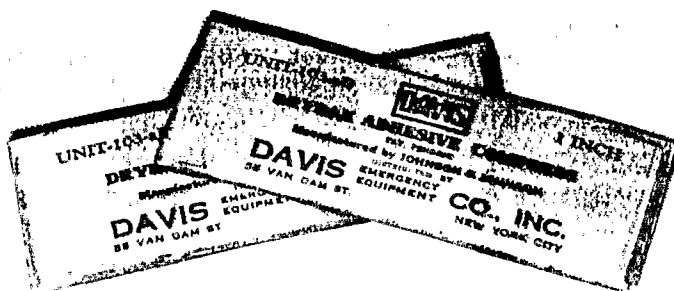
Walter Kidde & Company

91 West Street

Bloomfield, N. J.

FOR ALL ELECTRICAL AND FLAMMABLE LIQUID FIRES

GIVE YOUR MEN A BETTER PROTECTION



Use Drybak Adhesive Compresses on all cuts and wounds. And be assured of the protection of your men. Minimize your compensation.

1. Waterproof—Drybak adhesive sheds water and oil.
2. Economical—Dirt may be easily washed from the surface of Drybak adhesives. Its useful life is thus prolonged many times.
3. Strong adhesive qualities—Drybak ad-

hesive does not roll or tear at edges.

4. Clean, trim appearance—no residue when removed.

Send for your copy of Bulletin on First Aid. No obligation. Just use coupon below.

Davis Emergency Equipment Co., Inc.
55 Van Dam Street, New York City
Please send my copy of your Bulletin on First Aid to

Name _____
Address _____
City _____ N.Y.

DAVIS EMERGENCY EQUIPMENT CO., INC.
Chicago, Ill. • New York City • Houston, Tex.
San Francisco and Los Angeles, Cal.

Certain Safety

with

M & M RAIL CLAMPS

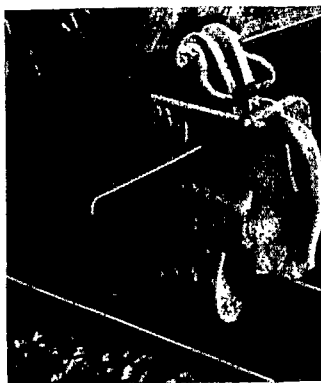
*Easily and Quickly Removed
Guaranteed Against Breakage*

M & M Rail Clamps are recommended as the surest and safest possible stop for use on runways, in repairing cranes, on loading platforms, temporary sidings, air ferries, under tipples, car stops and cars on grades.

M & M Rail Clamps eliminate the dangerous practice of placing wooden blocks under the car wheels for bracing.

M & M Rail Clamps are rigidly constructed of open hearth annealed cast steel, with tool steel key. Will fit any rail from 40 to 110 lbs.

M & M Rail Clamps are used and recommended by Manufacturing Plants, Cement Plants, Grain Elevators, Mines and Quarries.



Style A \$15.00 each

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

INDUSTRIAL PRODUCTS COMPANY

Accident Prevention Equipment
800 W. Somerset St.
PHILADELPHIA, PENNA.

High Speed Movie Shows Sprinklers at Work



Copyright 1935—Rockwood Sprinkler Co.

1. Solder beginning to melt because of fire conditions.
2. Strut collapsing, allowing water to start.
3. One piece of strut shown just as released.
4. The "flat" shown in above illustration dropped about $\frac{1}{8}$ inch.
5. Water beginning to come in greater volume.

6. "Flat" turning but no lower than in previous picture.
7. Heavier top or "flat" caused this piece to turn further.
8. One other of the four pieces of the strut can be seen at the left of the frame.
9. Water increasing in volume.
10. Full discharge of water but in time it has taken the "flat" piece to drop about $\frac{1}{2}$ inch.

ONE-TENTH of a second after the heat struck the solder, water deluged the fire in sufficient quantities to extinguish it—45 gallons per minute. Such was the remarkable automatic ac-

tion of a Type "D" sprinkler head recorded for the first time in the history of the sprinkler industry by a high speed movie camera in the laboratories of the Rockwood Sprinkler Company at Wor-

NATIONAL SAFETY NEWS

cester, Mass. The recently developed high speed movie technique established a picture study of an operation that is too quick for the eye to follow.

Taken at the rate of 192 frames per second, these films showed that it required only one-tenth of a second for the sprinkler head to operate from the time heat of the proper degree struck the solder until water was deluged upon the fire by the heat. Besides showing the extreme speed of the sprinkler head, these films also furnished an excellent study showing the actual movement of parts and the distribution of water. In the various picture frames the flying parts of the head actually appear to float in the air; the acceleration due to gravity, increased by the snap action of the figure-4 linkage having comparatively little motion from one frame to the next.

COMING EVENTS

Of Interest to Safety Men

Sept. 23-27, Atlantic City, N. J.

American Transit Association, 54th Annual Convention. G. C. Hecker, general secretary, 292 Madison Ave., New York City.

Sept. 25-26, Portland, Me.

State of Maine, Eighth Annual Industrial Safety Conference. (Eastland Hotel.) Walter J. Brennan, safety engineer, Department of Labor and Industry, Augusta, Me.

Sept. 30-Oct. 4, Chicago

National Recreation Association, Annual Congress. (Sherman Hotel.) Secretary, Thomas E. Rivers, 315 Fourth Ave., New York City.

Oct. 7-10, Milwaukee, Wis.

American Public Health Association, Annual Meeting. Acting executive secretary, Dr. Kendall Emerson, 50 West 50th Street, New York City.

Oct. 14-18, Louisville, Ky.

NATIONAL SAFETY COUNCIL, Twenty-fourth Annual Safety Congress. W. H. Cameron, managing director, 20 N. Wacker Drive, Chicago.

Oct. 14-18, Chicago

American Gas Association, Seventh Annual Convention. (Palmer House.) Alexander Forward, managing director, 420 Lexington Ave., New York City.

Oct. 15-16, Louisville, Ky.

Institute of Traffic Engineers, Sixth Annual Meeting. Secretary, Hawley S. Simpson, 175 Fifth Avenue, New York City.

Dec. 12, Miami, Fla.

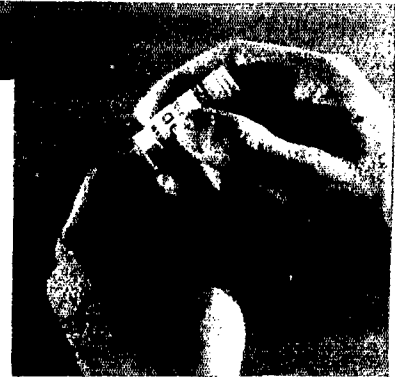
American Association of State Highway Officials, Annual Convention. Executive secretary, W. C. Markham, 1222 National Press Bldg., Washington, D. C.

SEPTEMBER, 1935

SAF-T-TOP

Antiseptic Applicators

Safe to carry in pocket, tool kit, hand bag or first-aid kit—shock proof wooden case prevents breakage of glass container holding solution. Patented feeder tip applies solution like a fountain pen exactly where wanted. Two cc. size treats over 100 average injuries.



Patented closure prevents evaporation and keeps solution at proper strength.

Saf-T-Tops are filled with your choice of Iodine, Mercurochrome, Metaphen, Merthiolate, Ferric Chloride or Iso-propyl-alcohol, in 2 sizes—the 2 cc. or pocket size, and the 15 cc. size.

FREE SAMPLE to officials interested in safety. Write today.

Robert A. Bernhard

Mfg. Chemist

153 ANDERSON AVE., ROCHESTER, N. Y.

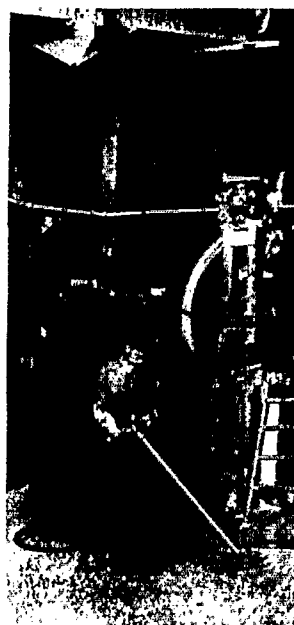
PROFITABLE CLEANLINESS FOR INDUSTRY

Industrial cleaning is no longer merely a necessity and an expense item. With a snappy vacuum and improved vacuum tools it is found that dirt and dust resulting from manufacturing processes can be removed as often as necessary during the day.

Spencer Central and Portable Vacuum Cleaning Systems in many types and sizes are reducing fire and health hazards, keeping dirt and dust from the finished goods, and improving production conditions by removing the dirt at its source before it spreads.

Quicker and more thorough than hand methods, easy to operate and with low maintenance costs, these units are showing the way to cleanliness with profit in many plants.

Our engineers will be glad to go over your plant layout and suggest methods of saving on production as well as on daily cleaning costs.



SPENCER

CENTRAL AND PORTABLE
VACUUM CLEANING SYSTEMS

THE SPENCER TURBINE COMPANY, HARTFORD, CONN.



**HERE'S
THE ANSWER—**

- **REAL SAFETY** is secured in the Brownbilt Women's SAFETOE Shoe by its strong reinforced box toe, its double leather sole, and its steel shank.

- **TRUE COMFORT** is assured because the shoes are scientifically designed. They are shaped to hold the foot in the most comfortable, healthful, and fatigue-resisting position.

- **GOOD STYLING** is provided so that women will be proud to wear them. The safety features are entirely concealed.

Brownbilt SAFETOE Shoes for Women are available in a wide range of sizes, in black or white, and welt or stitchdown construction... and the prices are LOW.

Safety Engineers — Without obligation we will gladly have our representative call and show you samples.

Brown Shoe Company
MANUFACTURERS — ST. LOUIS, MO.
Also manufacturers of Safetoe Shoes for Men—including the famous H-100 with its spring steel insert sole.

—And Sudden Death

By J. C. FURNAS

To most persons, 36,000 motor vehicle deaths and a million non-fatal injuries are just so many figures. Mr. Furnas translates these dry statistics into a sickening reality of blood and agony. This article is reprinted, with slight abbreviation, from *The Readers' Digest* of August, 1935, with the kind permission of the publishers. Reprints may be obtained from *The Readers' Digest*, Pleasantville, N. Y.

—The Editor.

PUBLICIZING the total of motor-ing injuries — almost a million last year, with 36,000 deaths — never gets to first base in jarring the motorist into a realization of the appalling risks of motoring. He does not translate dry statistics into a reality of blood and agony.

Figures exclude the pain and horror of savage mutilation—which means they leave out the point. They need to be brought closer home. A passing look at a bad smash or the news that a fellow you had lunch with last week is in a hospital with a broken back will make any driver but a born fool slow down at least temporarily. But what is needed is a vivid and sustained realization that every time you step on the throttle, death gets in beside you, hopefully waiting for his chance.

That single horrible accident you may have witnessed is no isolated horror. That sort of thing happens every hour of the day, everywhere in the United States. If you really felt that, perhaps the cold lines of type in Monday's paper recording that a total of twenty-nine local citizens were killed in week-end crashes would rate something more than a perfunctory tut-tut as you turn back to the sports page.

An enterprising judge now and again sentences reckless drivers to tour the accident end of a city morgue. But even a mangled body on a slab, waxily portraying the consequences of bad motoring judgment, isn't a patch on the scene of the accident itself. No artist working on a safety poster would dare depict that in full detail.

That picture would have to include motion-picture and sound effects, too—the flopping, pointless efforts of the injured to stand up; the queer, grunting noises; the steady, panting groaning of a human being with pain creeping up on him as the shock wears off. It should portray the slack expression on the face of a man, drugged with shock, staring at the Z-twist in his broken leg, the insane crumpled effect of a child's body after its bones are crushed inward, a realistic portrait of an hysterical woman with her screaming mouth opening a hole in the bloody drip that fills her eyes and runs off her chin. Minor details would include the raw ends of bones protruding through flesh in compound fractures, and the dark red, oozing surfaces where clothes and skin were flayed off at once.

Those are all standard, every-day sequels to the modern passion for going places in a hurry and taking a chance or two by the way. If ghosts could be put to a useful purpose, every bad stretch of road in the United States would greet the oncoming motorist with groans and screams and the educational spectacle of ten or a dozen corpses, all sizes, sexes and ages, lying horribly still on the bloody grass.

The automobile is treacherous, just as a cat is. It is tragically difficult to realize that it can become the deadliest missile. As enthusiasts tell you, it makes 65 feel like nothing at all. But 65 an hour is 100 feet a second, a speed which puts a viciously unjustified responsibility on brakes and human reflexes, and can instantly turn this docile luxury into a mad bull elephant.

Collision, turnover or sideswipe, each type of accident produces either a shattering dead stop or a crashing change of direction—and, since the occupant—meaning you—continues in the old direction at the original speed, every surface and angle of the car's interior immediately becomes a battering, tearing projectile, aimed squarely at you—inescapable. There is no bracing yourself against these imperative laws of momentum.

It's like going over Niagara Falls in a steel barrel full of railroad spikes. The best thing that can happen to you—and one of the rarer things—is to be thrown

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out as the doors spring open, so you have only the ground to reckon with. True, you strike with as much force as if you had been thrown from the Twentieth Century at top speed. But at least you are spared the lethal array of gleaming metal knobs and edges and glass inside the car.

Death Is Erratic

Anything can happen in that split second of crash, even those lucky escapes you hear about. People have dived through windshields and come out with only superficial scratches. They have run cars together head on, reducing both to twisted junk, and been found unhurt and arguing bitterly two minutes afterward. But death was there just the same—he was only exercising his privilege of being erratic.

This spring a wrecking crew pried the door off a car which had been overturned down an embankment and out stepped the driver with only a scratch on his cheek. But his mother was still inside, a splinter of wood from the top driven four inches into her brain as a result of son's taking a greasy curve a little too fast. No blood—no horribly twisted bones—just a gray-haired corpse still clutching her pocketbook in her lap as she had clutched it when she felt the car leave the road.

On the same curve a month later, a light touring car crashed a tree. In the middle of the front seat they found a nine-months-old baby surrounded by broken glass and yet absolutely unhurt. A fine practical joke on death—but spoiled by the baby's parents, still sitting on each side of him, instantly killed by shattering their skulls on the dashboard.

By no means do all head-on collisions occur on curves. The modern death-trap is likely to be a straight stretch with three lanes of traffic—like the notorious Astor Flats on the Albany Post Road where there have been as many as twenty-seven fatalities in one summer month. This sudden vision of broad, straight road tempts many an ordinarily sensible driver into passing the man ahead. Simultaneously a driver coming the other way swings out at high speed. At the last moment each tries to get into line again, but the gaps are closed. As the cars in line are forced into the ditch to capsize or crash fences, the passers meet, almost head on, in a swirling, grinding smash that sends them caroming obliquely into the others.

Overturning cars specialize in certain injuries. Cracked pelvis, for instance,

guaranteeing agonizing months in bed, motionless, perhaps crippled. A broken spine resulting from sheer side-wise twist—the minor details of smashed knees and splintered shoulder blades caused by crashing into the side of the car as she goes over with the swirl of an insane roller coaster—and the lethal consequences of broken ribs, which puncture hearts and lungs with their raw ends. The consequent internal hemorrhage is no less dangerous because it is the pleural instead of the abdominal cavity that is filling with blood.

Flying glass—safety glass is by no means universal yet—contributes much more than its share to the spectacular side of accidents. It doesn't merely cut—the fragments are driven in as if a cannon loaded with broken bottles had been fired in your face, and a sliver in the eye, traveling with such force, means certain blindness. A leg or arm stuck through the windshield will cut clean to the bone through vein, artery and muscle like a piece of beef under the butcher's knife, and it takes little time to lose a fatal amount of blood under such circumstances.

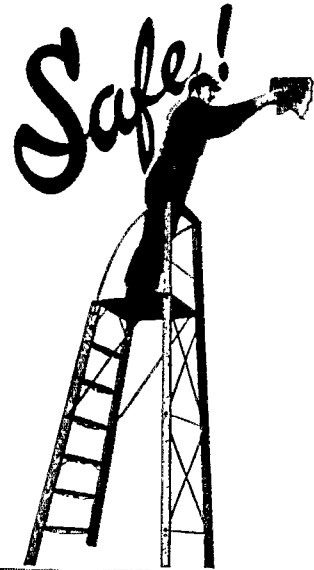
Even safety glass may not be wholly safe when the car crashes something at high speed. You hear picturesque tales of how a flying human body will make a neat hole in the stuff with its head—the shoulders stick—the glass holds—and the raw, keen edge of the hole decapitates the body as neatly as a guillotine.

Or, to continue with the decapitation motif, going off the road into a post-and-rail fence can put you beyond worrying about other injuries immediately when a rail comes through the windshield and tears off your head with its splintery end—not as neat a job but thoroughly efficient. Bodies are often found with their shoes off and their feet all broken out of shape. The shoes are back on the floor of the car, empty and with their laces still neatly tied. That is the kind of impact produced by modern speeds.

Not Scare Fiction

But all that is routine in every American community. To be remembered individually by doctors and policemen, you have to do something as grotesque as the lady who burst the windshield with her head, splashing splinters all over the other occupants of the car, and then, as the car rolled over, rolled with it down the edge of the windshield frame and cut her throat from ear to ear.

None of all that is scare-fiction; it is



WORKMAN TELLS WHAT "DAYTON SAFETY" MEANS . . .

"If the boss only knew it, he'd save money with Dayton's! If I fall, someone's got to pay the bills! And, besides, I could work faster and better on the safe platform of a Dayton Safety Ladder. I'd be worth more to him." Made of durable airplane spruce, sizes 3 to 16 feet. Stands firmly. Straight back permits work in corners, or against walls. Moderate in price. Write Dept. NSN—9 for details.

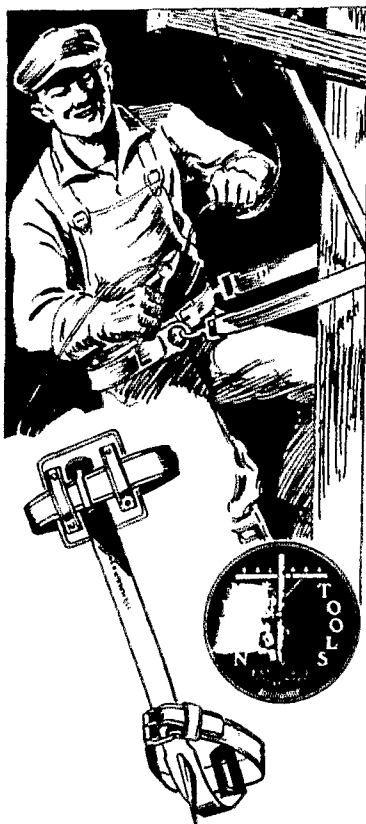
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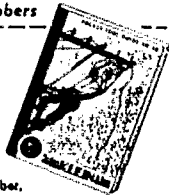
Swinging back on a strap of leather—gaffs dug deep in a wooden pole, an asphalt street or concrete curb below—the lineman knows that failure in equipment would probably be fatal. His job is free from worry because his equipment is Kleins.

"Since 1857" the name Klein on linemen's equipment has stood for the finest in quality, whether it's pliers or sleeve twisters, climbers or safety straps, torches or furnaces.

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The four pamphlets listed below will be sent without charge to anyone interested. Check the ones you want.

- ☐ Safety for the Pole Climber.
- ☐ Specifications on Linemen's Belts and Safety Straps.
- ☐ The Safety Factor on Linemen's Leather Goods.
- ☐ Pocket Tool Guide.



Mathias KLEIN & Sons
Since 1857
 3200 Belmont Avenue, Chicago, Illinois

a year's statistics as seen in the ordinary course of duty by policemen and doctors, picked at random. The surprising thing is that there is so little dissimilarity in the stories they tell.

It's hard to find a surviving accident victim who can bear to talk. After you come too, the gnawing, searing pain throughout your body is accounted for by learning that you have both collarbones smashed, both shoulder blades splintered, your right arm broken in three places and three ribs cracked with every chance of bad internal ruptures. But the pain can't distract you, as the shock begins to wear off, from realizing that you are probably on your way out. You can't forget that, not even when they shift you from the ground to the stretcher and your broken ribs bite into your lungs and the sharp ends of your collarbones slide over to stab deep into each side of your screaming throat. When you've stopped screaming, it all comes back—you're dying and you hate yourself for it. That isn't fiction either. It's what it actually feels like to be one of that 36,000.

And every time you pass on a blind curve, every time you hit it up on a slippery road, every time you step on it harder than your reflexes will safely take, every time you drive with your reactions slowed down by a drink or two, every time you follow the man ahead too closely, you're gambling a few seconds against this kind of blood and agony and sudden death.

Take a look at yourself as the man in the white jacket shakes his head over you, tells the boys with the stretcher not to bother and turns away to somebody else who isn't quite dead yet. And then take it easy.

Every Possible Measure

(Continued from page 22)

located near the tunnel portals. Hospitals with a high standard staff, equipment, and facilities, are located at strategic points on the aqueduct.

This article deals only with the more outstanding features of our safety program. There is a multitude of other items, such as hard toe shoes, respirators, abatement of dust, ventilation, sanitation, change houses, fire protection, tests and analyses of tunnel air, safety rules and discipline.

While maintaining good physical conditions has contributed to safety, experience indicates that the major credit for minimizing the number of accidents is due to the development of the safety spirit within the entire organization.

SPEAKING for SAFETY

No one who is ever called upon to make a talk on safety should be without a copy of this 80-page pocket-size, speakers' manual!

"Speaking for Safety" will tell what you need to know to make an effective address whether it is to be to a Rotary Club, a group of school children, a rally of hard-boiled workers, or the Women's Thursday afternoon Sewing Club! It contains hints on speaking, quotations, outlines, facts, stories—everything!

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NATIONAL SAFETY COUNCIL

20 N. Wacker Drive, Chicago, Ill.

NATIONAL SAFETY NEWS

Grand Rapids Is Safety Conscious

(Continued from page 20)

tin is published and is circulated to all of these groups. Hospital reports on all accident cases are received and studied. Speakers are sent out to the various clubs. The Home Division conducted an examination of the records of the Visiting Nurses' association recently which revealed that eight per cent of all of their charity cases were caused by accidents.

The industrial safety program in Grand Rapids reaches 63 plants with 9,000 employees. The Safety Supervisor's club holds monthly meetings. The Council also conducts an inter-plant contest so that competition aids in maintaining interest in the prevention of accidents. Periodical mass meetings with foremen and men are held and the council maintains a library of information on preventing industrial accidents.

Does this whole program in Grand Rapids pay? Records for recent years show that the program pays very great dividends indeed. In 1934 there were 41 fatalities for each 100,000 citizens in the city, which is to be compared to a rate of 50 per 100,000 in all cities between 100,000 and 250,000 population and a rate of 79.9 fatalities per 100,000 population in the country as a whole.

This record, which represents a 23 per cent decrease from the year 1920,

INSURANCE RATES ON AUTOMOBILES IN GRAND RAPIDS AND TEN OTHER CITIES

This rate includes Property Damage to the limit of \$5,000, and Public Liability of \$5,000 for injury to one person in one accident and \$10,000 for injury to more than one person in the same accident. These rates apply on Plymouth, Ford and Chevrolet cars.

City	Public Liability	Property Damage	Total
Grand Rapids, Mich.	\$16.00	\$ 6.00	\$22.00
Flint, Mich.	18.00	7.00	25.00
Reading, Pa.	19.00	9.00	28.00
Wichita, Kan.	20.00	8.00	28.00
Dayton, O.	22.00	9.00	31.00
Springfield, Mass.	30.45	9.57	40.02
Worcester, Mass.	31.80	9.57	41.37
Oklahoma City, Okla.	32.00	9.00	41.00
Hartford, Conn.	32.00	13.00	45.00
Syracuse, N. Y.	51.00	14.00	65.00
Youngstown, O.	65.00	13.00	78.00

was made despite the fact that Grand Rapids had a very unfortunate automobile accident increase last year. That is, unfortunate for Grand Rapids. Automobile fatalities in 1934 were double the toll in 1933 but even so the rate was 25 per cent lower than for its population group and exactly half the rate for the country as a whole. In the last ten years the population of the city has increased 22 per cent while the number of motor vehicles has increased more than three times.

Since 1929 when the inter-fleet contest was inaugurated the fleets of the city were averaging 26,205 miles per accident. In 1933 they were driving 63,657 miles for each accident and in 1934 this safe mileage had increased to 70,958 despite the nationwide increase in motor vehicle accidents.

In 1932 the city won third place in its group in the National Safety Contest and in 1933 the bronze plaque for first place.

On this page is a table which shows the comparative rates for insurance on automobiles in Grand Rapids and ten other cities.

Figures on other phases of safety are not available but it can be assumed that educational efforts which are effective in the most difficult field—automobile safety—would be at least as effective in industry and in homes.

Grand Rapids is a comparatively safe place to live.

Church Synod Urges Careful Driving

THE California Synod of the Presbyterian Church, meeting in San Francisco, passed a resolution on July 24 calling for automobile driving "with a courtesy and grace which becomes Christians," and advocating strict enforcement of laws against drunken and reckless driving.

"Whoever else may drive in disregard of the rights or safety of other people," stated the resolution presented by the sub-committee on social education, "let us at least not do so, but observe upon the highway the courtesy and grace which becomes Christians."

The Synod cannot contemplate the terrible mounting toll of human life and the increase of mutilation of human bodies by automobile accidents without a sense of responsibility to utter a word of warning and admonition to her members."

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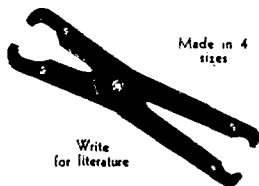


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Two New Film Strips Prepared by NSC

TWO new film strips have just been completed and added to the Council's services. One of these illustrates the safe methods of using machinist's hand tools, and the other is on wood-working machinery. With each strip a mimeographed lecture is available. Many members are planning to use these film strips as part of their regular safety training.

As an example, woodworking machinery operators may be called together for a meeting where the film strip is displayed and the accompanying text read. At any time the lecture may be interrupted to discuss any of the illustrations. Recent experiences in the plant may be drawn upon for the discussion, and lessons can be driven home very effectively.

The other strip provides excellent material to be used at a meeting of mechanics and machinists.

The total number of film strips now available to members of the Council is 49. The subjects already compiled include several of the leading industries, public safety, home safety, first aid, and vehicle operation. A list of these strips will be sent on request.

The film strips may be obtained without charge. Those who do not have 35 mm. strip film projectors may rent one from the Council for a rental charge of \$1.00 a day plus transportation charges.

The film strips prepared to date still leave many topics to be dealt with. Suggestions for future strips will be welcomed by the Council.

An Accountant Analyzes Safety Savings

(Continued from page 24)

submitted by 18 concerns all emphasized the savings effected by accident prevention work. To cite one case, the management of the concern reported, "In the light of such an experience, it is necessary to argue that safety pays."

Turning again to Safe Practices Pamphlet No. 21, I quote from paragraph 22:

"The National Safety Council makes no standard recommendations regarding the method of arriving at accident costs because it seems impossible at present to obtain enough uniformity in methods to permit accurate cost comparison as between companies. Each company,

however, could make valuable comparisons of its own costs from one period to another and from one operation to another, provided its methods of cost calculation are the same at all locations and at all times."

The question that may be reasonably asked in this connection is why a standardized method of determining accident costs cannot be established for each industry. To this end a central committee should be organized to study the possibility of developing standardization. If it is found feasible, a sub-committee could be formed for each industry, as for example, Metals, Mining, Chemical, Public Utilities, and so forth. In my opinion, the central committee should not be composed of safety engineers. With all due deference to them, they could receive valuable assistance by working in conjunction with an insurance casualty expert, a controller and an operating executive of each industry, and finally, a competent accountant.

I have tried to bring out the point that accident costs require far more attention than has usually been given them. At a previous conference a colleague of mine, Mr. R. D. Gracey, indicated on a much broader basis the accounting treatment of accident costs. He also pointed out the desirability of safety engineers consulting with accountants to the end that their reports could include more financial data relating to costs.

After all, results expressed in dollars can be better visualized by an executive than an elaborate tabulation of frequency and severity rates. A full report which included details of accident costs expressed in dollars should prove of the greatest use when presented at meetings of directors.



NATIONAL SAFETY NEWS

Raising the Standards of Industrial Medicine

(Continued from page 30)

the United States suffering from silicosis. This situation is a challenge to the industrial physician as well as to the employer—knowing that the silica hazard can be reduced to safe limits by proper sanitary measures. The practical application of medical knowledge will be just as necessary to industry in the future as it has been in the past. The Panama Canal could not have been built if medical science had not first solved the sanitary problem.

The industrial physician or surgeon should cooperate in every way possible in the accident prevention work. He should not be satisfied with treating his patient alone — he should analyze his accident cases as to causes, and in cooperation with the safety director, take steps to prevent their recurrence.

8. *He should be competent in the diagnosis and treatment of all traumatic lesions which he undertakes to treat.*

It is not necessary that the plant physician be capable of doing all of the major or special surgery that may be necessitated by industrial injuries, as long as such service is otherwise available. It is important, however, that the plant physician should realize his limitations and consultation called early rather than late. It should also be remembered that more than surgical healing is expected of the surgeon. A good surgical result is not obtained unless there is also a reasonably satisfactory functional result.

9. *He should be well versed in procedure for follow up and rehabilitation.*

The treatment of every injured employee should be closely followed until he is back to work—either at his old job or at some job suitable to the case. Not only should we treat the injury, but the mind as well in order to create in the employee a desire to return to his work—to resume his place in industry. Too often an injured worker is ill-advised by misinformed friends or by incompetent or shyder lawyers and physicians. In his effort to secure a greater award his malingering soon develops into a permanent disability complex.

10. *He should have a knowledge of compensation laws and of efficient record systems, including statistical methods.*

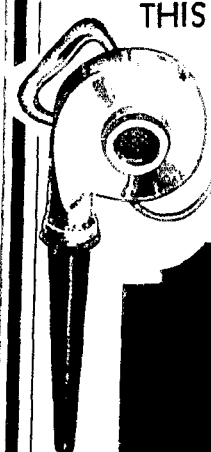
Adequate records should be maintained for the benefit of both employer and employee and to comply with com-

pensation laws. Annual statistical summaries should be made not only of injury and illness experience but of its costs as well. Such comparative studies will enable us to evaluate the efficiency of the medical service.

11. *He must be fair to both employer and employee.* To do otherwise would destroy confidence in the medical service. There may be a few exceptions but our surveys have revealed that industry as a whole expects a medical service that is just for all.

The value of industrial medical service in dollars and cents is not easily measured. Studies made by the College, however, have shown that it is cheaper to pay for good medical service than for disabilities. In a recent analysis of 134 industrial establishments totaling 750,000 workers, we found that in 1932 an average of \$6.32 per employee was spent for medical service. It was also shown that the smaller companies, had 39 per cent greater compensation costs than the larger companies in which adequate medical service had usually been provided. A good medical service will also return other dividends in the form of a healthier, happier and more efficient working force.

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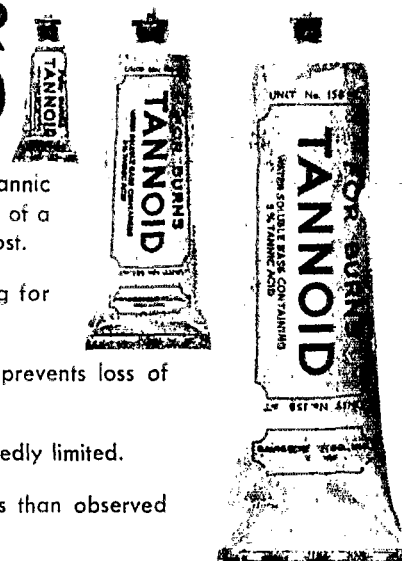
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WITH THE MANUFACTURER

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

Dual Purpose Car—Passenger or Ambulance

The increase in automobile accidents and loss of life, resulting frequently through delay and improper handling of the injured, has led B. E. Arntzen of Arntzen, Inc., 810 North Clark Street, Chicago, to perfect the Arntzen-Way of handling the sick and injured. This auxiliary and emergency stretcher and first aid kit is the result of many years of experimentation. The first patents on this unit were received in 1913.

The manufacturers state that any car converted and equipped with this new



equipment can be easily changed to an ambulance in a few seconds without changing the appearance of the car. This car has a capacity for two patients and two attendants when in use as an ambulance. This equipment is especially valuable for use by industrial plants, public utilities, construction firms, railroad companies, fire departments, police squad cars, hospitals and doctors. When one or more cars are equipped with this unit there is available at all times an ambulance for rushing emergency cases to the hospital. These same cars when not used as an ambulance may be used for other purposes.

The above illustration shows a patient placed in the first Ford car ever converted for use as a police squad car and ambulance. It is recommended that all men handling these first-aid cases be trained in the Red Cross standard first-aid methods.

Non-Sparking Safety Wrenches

Especially adapted for use in industries where fire and explosion hazards exist, I. H. Williams and Company, 75 Spring Street, New York, announce a non-sparking safety wrench. Drop-forged from beryllium-copper and accurately heat-treated they are of exceptional strength, toughness and hardness. It is claimed they are practically as strong as steel wrenches of similar design and size.

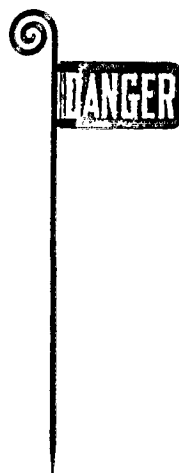


Non-corroding, non-rusting, these wrenches are finished in "safety-green" enamel, heads polished bright with opening sizes stamped thereon. They are available in both single and double-head patterns in a wide range of sizes. The

necessity of safety wrenches on any work where a chance spark might cause an explosion is clearly demonstrated by the news story recently carried by the New York Herald-Tribune. An ordinary wrench falling on a cement floor caused a spark that ignited fumes from a nearby gas tank. Nine people were hurt and four entire buildings shattered. Had the worker been using a non-sparking wrench, this catastrophe would not have occurred.

Pennant Danger Sign

Industrial Products Company, 800 W. Somerset Street, Philadelphia, Pa., announce a new pennant danger sign. It is composed of $\frac{1}{2}$ inch diameter iron rod, 68 inches high and a heavy metal sign plate 6 by 14 inches. The rod is looped at the top to provide a hanger for a lantern and for stringing rope in making up barriers. The bottom end of the rod is pointed for sticking into the ground. The



sign plate is finished in bright red background with the word "danger" in four inch white letters. This wording appears on both sides of the sign plate. The sign is securely fastened to the rod by means of two metal straps which are bolted in place. The entire assembly is attractive, sturdy and designed to give long service under the hard use to which they are naturally subjected. They are especially useful in street and road work, for gas companies, plumbers and contractors.

New Unit Gives Constant Check on Fire Extinguishers

Reduction to a minimum of maintenance on fire extinguishers has been a feature of the line developed by Walter Kidde and Company, 60 West Street, Bloomfield, N. J. In the past it has only been necessary to weigh the extinguishers of this

company once a year. Now with the development of this new continuous weight indicator this annual weighing is also eliminated. The unit is so constructed that upon any appreciable loss of gas, and thus weight, the target reading "fully charged" drops down and a notice to "recharge" may be read in its place. Operation depends on a heavy spring coil with

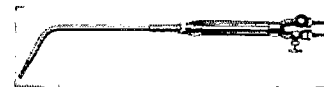


rod and pin connection to suspend target shown in lower position in the above picture. This unit is rigidly tested and is now available for all Lux portable models of 10, 15, or 20 pound capacity.

General Duty Welding Torch

A new welding torch known as the Purox No. 35 general duty welding torch has been announced by The Linde Air Products Company, 30 East 42nd Street, New York. Constructed of extruded brass, Monel metal, and drawn copper, and with silver soldered tubes, this torch is rugged and can stand rough treatment. Its range of usefulness makes it equally adaptable to the lightest as well as the heaviest work to be found in any welding shop. It is listed by Underwriters' Laboratories, Inc.

The ribbed design of the extruded brass handle reinforces the torch and enables it to be easily gripped. The connections are ferrule type and extend parallel to the axis of the handle. The individual mixers in each welding head are so designed that maximum resistance to flashback is afforded and at the same time the effective



range of each size tip is greatly increased. Improved seat protection is provided, which helps prevent leaks. The manufacturers further state the head cannot be made tight unless correctly assembled, thus practically eliminating any danger due to faulty assembly. The Monel metal seating surfaces are protected, wear-resistant, and easily removable for cleaning or replacement. A hexagonal socket arrangement permits the welding head to be assembled in the most convenient of six optional positions in relation to the

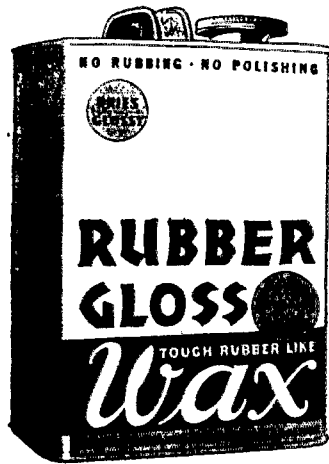
NATIONAL SAFETY NEWS

body. This arrangement also prevents injury or scoring of the seating surfaces. The tips are of hard-drawn copper. They are of the right weight to withstand excessive heat and to maintain perfect balance in the torch as a whole.

The standard Purox No. 21 cutting attachment can be used with the new No. 35 torch. The latter is transformed into a light-duty cutting torch having an unusual efficiency of performance given by the new design features of the torch itself.

Non-Slip Rubber Gloss Wax

This product, designed to reduce the slipping hazard of floor finishes, is announced by Franklin Research Company, 1226 Girard Street, Philadelphia, Pa. The manufacturers state this new wax will improve the appearance of floors and at the same time provide safety by reducing the hazard of slipping. To determine its safety features tests have been made by an independent laboratory. These were the artificial sole test and the artificial leg tests. In the report, for comparative purposes, they rate the possibility of slipping



on glass as 100 percent. The following table gives the relative comparisons:

	Artificial Sole Test	Artificial Leg Test
Oil Wax	57%	70%
Varnish	50%	65%
Ordinary Water Wax ..	57%	60%
Rubber Gloss Wax ..	30%	33%
Glass		100%

The manufacturers further state these tests were devised because they seemed more nearly to approach actual conditions of skidding and embody these conditions to a closer extent than other tests which might have been used. They report tests on wood flooring, linoleum, marble, terrazzo, asphalt tile and rubber tile.

NEWS ITEMS

The Portable Lamp and Equipment Company, Pittsburgh, Pa., announce the appointment of Carter-Loekard Company, 225 West Eleventh Street, Los Angeles, as distributors of Pleco safety equipment in Southern California.

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.

SEPTEMBER, 1935

Trade Publications

for your

SAFETY EQUIPMENT LIBRARY

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. **Protection Plus with MSA Skull-guards.** Bulletin DK-3. This interesting new bulletin describes a complete line of industrial protective hats. Illustrates seven different types designed to meet certain requirements. Mine Safety Appliances Company.

2. **Lux Makes the Difference.** This splendid booklet deals with fire protection service for industrial plants. Covers system protection for severe fire hazards. Particularly valuable for protection of all electrical and flammable liquid hazards. Walter Kidde and Company, Inc.

3. **How to Get Rid of Rats.** This little 16 page booklet is of value to those troubled with rat infestation. Deals with the habits of rats and how they may be exterminated with Ratmort. West Disinfecting Company.

4. **Friskie Safety Saw Guard.** This small folder illustrates and describes a safe guard for use on circular saws. Constructed so saw is entirely covered at all times so the operator is effectively protected from injury. Warren M. Friskie

5. **Safety Catalog No. 10.** This big 160 page catalog is appropriately called "Everything in Safety." Contains illustrations and descriptions of hundreds of safety products designed to help prevent many types of accidents. The Boyer-Campbell Company.

6. **Put to the Acid Test.** This folder describes the development of a special line of gloves and other clothing made from material processed so as to give protection against acids. Process provides a non-porous surface that is resistant to corrosive chemicals, acids and moisture. Safetex Company, Inc.

7. **Industrial Head and Eye Protection.** This new 20 page catalog deals with a line of goggles, welding shields, respirators, masks, helmets and grinder guards. Various types and styles are illustrated and described. Chicago Eye Shield Company.

8. **Pennant Danger Sign.** This new folder illustrates and describes this new sign together with other street and highway sign units. The pennant sign is especially useful in street and road work of public utilities, contractors, etc. Industrial Products Company.

9. **News Underfoot.** This interesting publication deals with the test made on the Rubber Gloss Wax on various types of flooring to prevent slipping and to improve and maintain floor appearance. Franklin Research Company.

10. **Non-Sparking Safety Wrenches.** This literature illustrates and describes a new line of non-sparking wrenches made of beryllium-copper. Especially adapted for use where a spark might ignite fumes or gases. J. H. Williams and Company.

11. **Inland Copper-Alloy Steel.** This folder incorporates impressive evidence that copper-bearing steel is economical material for combating corrosion, cites some interesting applications where loss from corrosion has been cut. Inland Steel Company.

12. **Fostoria Machine Lamp.** Attractive folder describes this special lamp designed for the definite purpose of providing illumination at the point where it is most needed. Furnished in two stock styles, each employing ball and socket joints and glareless shade. The Fostoria Pressed Steel Corporation.

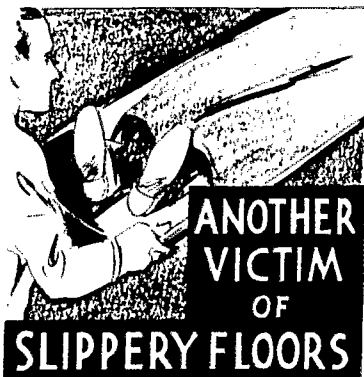
NATIONAL SAFETY NEWS

20 North Wacker Drive
Chicago, Ill.

September, 1935

Please have sent to me the publications I have checked:

Name
Title
Company
Address



Almost every day in every plant somebody falls on slippery floors. You can avoid these often serious accidents easily and economically by the application of PLASTIC FUT-SURE to all walking surfaces, old or new. It's easily applied, oil and grease proof—does not react to temperature change.

PLASTIC FUT-SURE has in hundreds of plants made very definite reductions in accident tolls. Prices and particulars upon request.

GENERAL ABRASIVE CO., INC.
2061 College Ave.
Niagara Falls, N. Y.

**PLASTIC
FUT-SURE**

FOR SAFER WALKING SURFACES

DRACCO Engineers
are DUST CONTROL
Experts

The soundness of our advice is not based upon superficial knowledge of DUST CONTROL, but is based upon years of experience in designing equipment that has SUCCESSFULLY solved dust problems over a period of many years in all types of plants. You may have the advantage of this experience.



The New DRACCO
Multi-Bag Filter

DUST

COSTS MONEY

DUST is a costly element that is dangerous to workers and destructive to even heavy equipment. It reduces plant efficiency and shortens the life of expensive equipment and increases cost of maintenance. The New DRACCO MULTI-BAG FILTER offers ECONOMICAL and EFFICIENT Dust Control, a very compact unit that's priced right, with low operating and maintenance cost. It will pay to write for Bulletin No. 301 and get details.

Write for Bulletin No. 301

DRACCO CORPORATION

Successors to The Dust Recovering & Conveying Co.

4073 E. 116th St. Cleveland, Ohio

Penn. Power Companies Reduce Accidents in June

ALTHOUGH the electric power companies operating in the State of Pennsylvania already enjoy a safety record which compares favorably with other industrial enterprise and with the public utilities industry as a whole, in June, 1935, they participated in a one-month campaign to further reduce employee accidents. The results exceeded the fondest expectations. Lost time accidents were reduced from a total of 23 in June 1934 and from a four year June average of 25 to 8 in June 1935, representing a 65 per cent reduction under the June 1934 rate.

Twenty-one companies, practically the entire operating personnel in the state, participated in the contest. These companies employ about 23,000 persons, with a total exposure of more than 4,000,000 hours monthly. The accident frequency rate (lost time accidents per million hours worked) for the month of June 1935 was 1.956; this compares with an annual state rate of 5.56 and with a national rate, for public utilities, for the year 1933 of 8.31. Seventeen of the 21 companies completed the month without a single disabling injury, and all companies with the exception of one made a record far better than either the state or national annual average.

The campaign was suggested by E. W. Judy, vice-president and general manager of the Duquesne Light Company, and president of the Pennsylvania Electric Association, under whose auspices it was conducted. The program was patterned after the experience of the Duquesne Light Company.

The program was developed and executed under the leadership of R. M. Godwin, chairman, Accident Prevention Committee, Pennsylvania Electric Association, and was carried on through the cooperation and support of the chief executive and employees of each company. Features of the activity included:

1. Appeal by the President of the Pennsylvania Electric Association to the chief executive of each member company.
2. Appointment of a contact man in each company to work with the Accident Prevention Committee of the Association.
3. Printed appeal letters in bulletin form over the signature of each executive of participating companies for bulletin boards.
4. Appeal letters to the supervisory group of

each participating company over the signature of the chief executive.

5. A calendar for bulletin boards carrying 30 date sheets, each day of the month being dedicated to a participating company setting forth its slogan on accident prevention.

6. Weekly pep letters originating with the Accident Prevention Committee of the Association advising and counseling the contact man on ways and means to carry on activities within his own company.

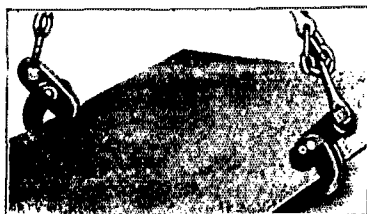
7. For competitive purposes, participating companies were divided into two groups: Group 1—companies employing more than 500 employees, and Group 2—companies employing less than 500 employees. The rules provided that the winner of the contest in each group would be that company which had the lowest frequency rate. In the event of a tie, the company in each group which had the greatest number of exposure hours would be the winner.

On this basis, the Duquesne Light Company, Pittsburgh, Pa. won first place award in Group 1. They completed the month without a lost time accident, with a total of 455,242 man-hours worked. In Group 2, the Pennsylvania Power Company of New Castle, Pa., earned first place award, completing the month without a lost time accident with 73,393 man hours worked. The following companies participated:

Duquesne Light Company, Metropolitan Edison Company, Pennsylvania Electric Company, Penn Central Light & Power Company, Scranton Electric Company, Pennsylvania Water & Power Company, Pennsylvania Power & Light Company, Philadelphia Electric Company, West Penn Power Company, Pennsylvania Power Company, York Railways & Subsidiaries, Erie Lighting Company, Keystone Public Service Company, Northern Pennsylvania Power Company, Bradford Electric Company, South Penn Power Company, Natrona Light & Power Company, Palmyerton Lighting Company, Home Electric Light & Steam Heating Company, Luzerne County Gas & Electric Company.

Trophies to first place award winners will be awarded by Mr. E. W. Judy, president of the Pennsylvania Electric Association, to the winning companies on their own property. Honor Certificates will be presented to all those which completed the month without a lost time accident at the Bedford Springs Convention of the Association, in September.

NATIONAL SAFETY NEWS



Boiler Plate Can Be Handled Safely

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

Made for horizontal and vertical lifting.

Write for details

Never Slip Safety Clamp Co.
P. O. Box 448
Grand Central Annex, New York City



The Bridgeport Hardware Mfg. Corp., Makers

THE NEW Safe SCREW DRIVER

TRY A NON-SKID—
PREVENTS INJURIES
Saves Time and Materials

Made for millwright—mechanic—electrician
(withstands 18000 volts).

THE SURTY MFG. CO., INC.
4139 W. Kinzie St., Chicago

We safeguard any machine at point of operation and COLLECT dust at point of GENERATION.

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Miss Dummle (Buying golf outfit):
"And I shall want a small rifle."
Clerk: "A rifle?"

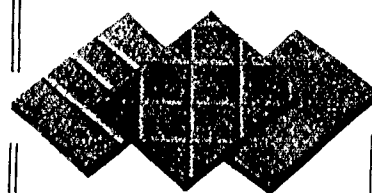
Miss Dummle: "Yes, I heard my
cousin say he shot two birdies and an
eagle on the course where I'm to play."

AMERICAN

MASON SAFETY TREADS

Formerly known as
"Carbo-Cast"

Iron
Bronze
Aluminum
Nickel



Fluted Diamond Hatched Plain

The carborundum or aluminum
abrasive embedded in these stair
treads is an integral part of the body
metal. The flint like particles project
above the surface, producing a surface
that effectively prevents slipping
whether wet or dry.

On 1 years experience is at
your service for the asking.

**American Mason
Safety Tread Co.**
Lowell, Massachusetts

Distributed by
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Chicago, Illinois



AN OUNCE OF PYROIL OFTEN SAVES MANY DOLLARS

Insure your plant against many operation haz-
ards by the regular use of Pyroil. Cut friction to
a minimum. Reduce fire hazards. Increase power,
speed up operation.

Pyroil shields frictional areas with a glossy,
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vincingly proved.) Any proper test reveals amazing
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write for important facts. Manufactured and
Guaranteed by Pyroil Company, W. V. K. K. Dot.
Pres., 280 LaFollette Ave., LaCrosse, Wis., U.S.A.

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every can.

THE BUYERS' SERVICE

See Advertisers' Index, Page 75—When writing, please mention National Safety News

A

Accident Prevention Service

National Safety Council, Inc.

Alarms, Fire

Mine Safety Appliances Co.

Anemometers

Bullard Company, E. D.
Mine Safety Appliances Co.
Portable Lamp & Equipment Co.

Aprons

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Safety First Supply Co.
Standard Safety Equipment Co.
Strauss Company, The

Arrestors, Dust

Bullard Company, E. D.
Draco Corporation
Pangborn Corporation
Surtz Mfg. Co., The

Awards, Prize

Mine Safety Appliances Co.

B

Badges and Buttons

Bullard Company, E. D.
Mine Safety Appliances Co.

Bags, Tool, Linemen

Buhrke Company, R. H.
Bullard Company, E. D.
Davis Emergency Equipment Co., Inc.
Industrial Products Co.
Safety Equipment Service Co., The
Sellsbury & Co., W. M.
Strauss Company, The

Belts, Linemen

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Bullard Company, E. D.
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Klein & Sons, Mathias
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Portable Lamp & Equipment Co.
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Safety Equipment Service Co., The
Safety First Supply Co.
Standard Safety Equipment Co.
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Belts, Safety

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Pulmonan Safety Equipment Corp.

Safety Clothing Co., The
Safety Equipment Service Co., The
Safety First Supply Co.
Standard Safety Equipment Co.
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Belts, Tree Trimming

Buhrke Company, R. H.
Bullard Company, E. D.
Industrial Products Co.
Mine Safety Appliances Co.
Strauss Company, The

Blowers, Hose Mask
Bullard Company, E. D.
Davis Emergency Equipment Co., Inc.

Blowers, Portable, Electric

Bruehr Electric Mfg. Co.
Clements Manufacturing Co.
Pangborn Corporation
Spencer Turbine Co.
Surtz Mfg. Co., The

Cans, Waste

Bullard Company, E. D.
Davis Emergency Equipment Co., Inc.
Industrial Products Co.
Justice Mfg. Co.
Mine Safety Appliances Co.
Protectoseal Company
Pulmonan Safety Equipment Corp.
Safety Equipment Service Co., The
Standard Safety Equipment Co.

Clothing, Acidproof

Clothing, Fireproof
Bullard Company, E. D.
Davis Emergency Equipment Co., Inc.
Industrial Products Co.
Mine Safety Appliances Co.
Safety Clothing Co., The
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Safety First Supply Co.
Standard Safety Equipment Co.
Strauss Company, The

Clothing, Weatherproof

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Industrial Glove Corp.
Industrial Products Co.
Mine Safety Appliances Co.
Safety Clothing Co., The
Safety Equipment Service Co., The
Safety First Supply Co.
Standard Safety Equipment Co.

Cloths, Wiping

Sanitary Institute of America

Collectors, Dust

Draco Corporation
Pangborn Corporation
Surtz Mfg. Co., The

Compounds, Cleaning

Safety Clothing Co., The

Containers, Explosive Liquid

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Industrial Products Co.
Justice Mfg. Co.
Mine Safety Appliances Co.
Portable Lamp & Equipment Co.
Protectoseal Company
Safety Equipment Service Co., The
Strauss Company, The

D

Detectors, Gas

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Davis Emergency Equipment Co., Inc.
Mine Safety Appliances Co.
Portable Lamp & Equipment Co.

Detectors, Indicators, Recorders, Carbon Monoxide

Bullard Company, E. D.
Davis Emergency Equipment Co., Inc.
Mine Safety Appliances Co.

Detectors, Pyrotechnic

Mine Safety Appliances Co.

Disinfectants and Deodorants

Dusters, Rock

Mine Safety Appliances Co.
Portable Lamp & Equipment Co.

E

Emblems, Safety

Mine Safety Appliances Co.

Exhausts, Grinding Wheel

Surtz Mfg. Co., The

Why Safety Equipment Helps Workers Turn Out More and Better Work

Industrial workers turn out more and better work when they can perform their tasks in comfort and with peace of mind.

By providing for comfort, and by affording workers a feeling of security against injury, suitable protective equipment permits them to give closer, more interested attention to their work, thereby enabling them to improve both the quality and quantity of their production.



Belts, Window Cleaning

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Mine Safety Appliances Co.
Portable Lamp & Equipment Co.
Safety Clothing Co., The
Strauss Company, The

Blankets, Fireproof

Bullard Company, E. D.
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Mine Safety Appliances Co.
Pulmonan Safety Equipment Corp.
Safety Clothing Co., The
Safety Equipment Service Co., The
Safety First Supply Co.
Standard Safety Equipment Co.

Blockers, Mine Car

Industrial Products Co.
Mine Safety Appliances Co.

Blockers, Railroad Car

Bullard Company, E. D.
Industrial Products Co.
Safety Equipment Service Co., The
Safety First Supply Co.
Standard Safety Equipment Co.

Buckets, Hoisting

Bullard Company, E. D.
Davis Emergency Equipment Co., Inc.
Industrial Products Co.

Bulletin Boards

Bullard Company, E. D.
Davis Emergency Equipment Co., Inc.
Elliot Service Co.
Mine Safety Appliances Co.
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Safety Equipment Service Co., The
Safety First Supply Co.
Standard Safety Equipment Co.

Cans, Oil

Bullard Company, E. D.
Industrial Products Co.
Mine Safety Appliances Co.
Protectoseal Company
Safety Equipment Service Co., The

Chain, Factory

McKay Company

Chairs, Safety

Bullard Company, E. D.
Mine Safety Appliances Co.
Strauss Company, The

Clamps, Rail

Industrial Products Co.
Safety Clothing Co.
Safety First Supply Co.

Clamps and Sockets

Heater Ship Safety Clamp Co.

Cleaners, Vacuum

Bruehr Electric Mfg. Co.
Clements Manufacturing Co.
Inventive Vacuum Cleaner Mfg. Co.
Spencer Turbine Co.
Surtz Mfg. Co., The

Clothing for Industrial Workers—See Aprons, Gloves, Hand Leathers, Heggings, Shoes

NATIONAL SAFETY NEWS

THE BUYERS' SERVICE

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Extinguishers, Fire
Bullard Company, E. D.
Kidd & Co., Inc., Walter
Mine Safety Appliances Co.
Portable Lamp & Equipment
Co.
Pulmonan Safety Equipment
Corp.
Pyrene Mfg. Company

F

Fans, Exhaust
Draco Corporation
Pangborn Corporation
Sury Mfg. Co., The

Fasteners or Lacers, Belt
Clipper Belt Lacer Co.

Films or Slides, Safety, for Rent and Sale
National Safety Council, Inc.

First Aid Equipment
Bauer & Black
Bernhard, Robert A.
Bishinger-Koehler Mfg. Co.,
Inc.
Bullard Company, E. D.
Burroughs-Wellcome Co.,
(U.S.A.) Inc.
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Co., Inc.
Hynson, Westcott & Dunnings,
Inc.
Industrial Products Co.
Johnson & Johnson
Merk & Company
Mine Safety Appliances Co.
Pulmonan Safety Equipment
Corp.
Safety Clothing Co.
Safety Equipment Service
Co., The
Safety First Supply Co.
Standard Safety Equipment Co.

Flags, Danger
Bullard Company, E. D.
Industrial Products Co.
Safety Equipment Service
Co., The
Stonehouse Signs, Inc.

Flashlights, Permissible
Bullard Company, E. D.
Portable Lamp & Equipment
Co.

Floor Cleaning Machines, Electric
Lincoln Schleuter Floor
Machinery Co.

Flooring Material, Safety
American Abrasive Metals Co.
American Mason Safety Treat
Co.
Carnegie Steel Co.
Durable Mat Co.
General Abrasive Co.
Illinois Steel Company
Industrial Products Co.
Inland Steel Co.
Safety First Supply Co.
Sury Mfg. Co., The

Footwear, Rubber
Bullard Co., E. D.
Industrial Products Co.
Lehigh Safety Shoe Co.
Mine Safety Appliances Co.
Portable Lamp & Equipment
Co.

Fountains, Drinking, Factory

Fumigants
Bauer & Black
Liquid Carbonic Corp.

G

Germicides

Germicides, Cutting Oil

Glasses, Safety
American Optical Company
Bullard Company, E. D.
Chicago Eye Shield Co.
Industrial Products Co.
Libbey-Owens-Ford Glass Co.
Mine Safety Appliances Co.
Pittsburgh Plate Glass Co.
Safety Clothing Co., The
Safety Equipment Service
Co., The
Standard Safety Equipment Co.
Sury Mfg. Co., The
Willson Products, Inc.

Gloves and Mittens
Bullard Company, E. D.

Gongs, Sirens, Horns and other Signaling Devices
Bullard Company, E. D.
Industrial Products Co.
Mine Safety Appliances Co.

Gratings, Safety

Guards, Chip and Spark
Bullard Company, E. D.
Chicago Eye Shield Co.
Industrial Products Co.
Safety Clothing Co., The

Guards, Jointer
Industrial Products Co.
Safety Equipment Service
Co., The
Standard Safety Equipment Co.
Sury Mfg. Co., The

Guards, Kick Press
Sury Mfg. Co., The

Guards, Power Press
Chicago Eye Shield Co.
Industrial Products Co.

Guards, Treadle
Sury Mfg. Co., The

H

Hand Cream
Bullard Company, E. D.
Davis Emergency Equipment
Co., Inc.
Industrial Products Co.
Mine Safety Appliances Co.
Safety Clothing Co.

Hats, Safety
Bullard Company, E. D.
Industrial Products Co.
Mine Safety Appliances Co.
Portable Lamp & Equipment
Co.
Safety Clothing Co., The
Safety First Supply Co.
Strauss Company, The

Heat Cramp Preventives
Fairway Laboratories, Inc.

Helmets, Safety
American Optical Company
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Inc.
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Co., Inc.
Industrial Products Co.
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Co.
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Corp.
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Safety Equipment Service
Co., The
Safety First Supply Co.
Standard Safety Equipment Co.
Willson Products, Inc.

Holsts, Electric

Hooks, Safety Belt
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Davis Emergency Equipment
Co., Inc.
Industrial Products Co.
Mine Safety Appliances Co.
Portable Lamp & Equipment
Co.
Safety Equipment Service
Co., The
Strauss Company, The

Hooks, Safety, Hoisting
Industrial Products Co.

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Bullard Company, E. D.
Burroughs-Wellcome Co.,
(U.S.A.) Inc.
Davis Emergency Equipment
Co., Inc.
Industrial Products Co.
Mine Safety Appliances Co.
Safety Equipment Service
Co., The
Safety First Supply Co.

I

Inclinators, Carbox
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Industrial Products Co.
Safety Clothing Co.
Safety Equipment Service
Co., The

Indicators, Flammable Vapor
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Davis Emergency Equipment
Co., Inc.
Mine Safety Appliances Co.

Could You Crush a Man's Toes with a Sledge Hammer?

Not if he had on a pair of up-to-date SAFETY SHOES!

On one occasion, even a 3,000-lb. blow from a steam hammer, accidentally tripped, failed to injure the toes of a repair man so protected.

Safety shoes can't prevent accidents, but they can and do prevent toe injuries. They are comfortable, durable, and cost the workers no more than other good work-shoes.



Chicago Eye Shield Co.
Davis Emergency Equipment
Co., Inc.
Industrial Gloves, Corp.
Industrial Products Co.
Mine Safety Appliances Co.
Pangborn Corporation
Pulmonan Safety Equipment
Corp.
Safety Clothing Co., The
Safety Equipment Service
Co., The
Safety First Supply Co.
Sallisbury & Co., W. H.
Standard Safety Equipment Co.

Safety Equipment Service
Co., The
Standard Safety Equipment Co.

Standard Safety Equipment Co.
Sury Mfg. Co., The

Guards, Flywheel
Harrington & King Perforat-
ing Co.
Industrial Products Co.
Sury Mfg. Co., The

Guards, Safety
Bullard Company, E. D.
Davis Emergency Equipment
Co., Inc.
Harrington & King Perforat-
ing Co.
Industrial Products Co.
Safety Clothing Co., The
Safety Equipment Service
Co., The
Sury Mfg. Co., The

Guards, Foot and Toe
Bullard Company, E. D.
Ellwood Safety Appliance Co.
Industrial Products Co.
Mine Safety Appliances Co.
Portable Lamp & Equipment
Co.

Guards, Saw
Bullard Company, E. D.
Industrial Products Co.
Safety Equipment Service
Co., The
Standard Safety Equipment Co.
Sury Mfg. Co., The

Guards, Gear
Sury Mfg. Co., The

Guards, Grinding Wheel
Sury Mfg. Co., The

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Chicago Eye Shield Co.
Cover, H. S.
Davis Emergency Equipment
Co., Inc.
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Co.
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Co., The
Safety First Supply Co.
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Willson Products, Inc.

SEPTEMBER, 1935

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Inhalators

Bishinger-Koehler Mfg. Co., Inc.
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Mine Safety Appliances Co.

Insurance

Metropolitan Life Insurance Co.

J

L

Ladder Shoes or Feet

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Surtz Mfg. Co., The

Ladders, Safety

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Mine Safety Appliances Co.
Patent Scaffolding Co., The
Safety First Supply Co.

Lamps, Safety

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Bullard Company, E. D.
Davis Emergency Equipment Co., Inc.
Mine Safety Appliances Co.
Portable Lamp & Equipment Co.

Lanterns, Carbide

Bullard Company, E. D.

Lanterns, Electric

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Justrite Mfg. Co.
Mine Safety Appliances Co.
Portable Lamp & Equipment Co.

Leathers, Hand

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Safety First Supply Co.
Standard Safety Equipment Co.
Strauss Company, The

Leggings

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Davis Emergency Equipment Co., Inc.
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Industrial Products Co.
Mine Safety Appliances Co.
Pulmonan Safety Equipment Corp.
Safety Clothing Co., The
Safety Equipment Service Co., The
Safety First Supply Co.
Standard Safety Equipment Co.
Strauss Company, The

Lighting Equipment

Benjamin Electric Mfg. Co.
Westinghouse Electric & Mfg. Co.

Lockers and Hangers

Industrial Products Co.

Locks, Lamp

Industrial Products Co.
Mine Safety Appliances Co.

Safety Equipment Service

Co., The

Locks, Locker and Padlock, Keyless

Dudley Lock Corp.

Lubrication

Pylon Company

M

Machines, Floor Cleaning, Electric

Lincoln Schleuter Floor Machinery Co.

Industrial Products Co.

Safety First Supply Co.

Metal, Expanded

Surtz Mfg. Co., The

Metal, Perforated

Harrington & King Perforating Co.
Industrial Products Co.

Movers, Railway Car

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Industrial Products Co.
Safety Equipment Service Co., The
Standard Safety Equipment Co.

Protectors, Arm

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Davis Emergency Equipment Co., Inc.
Industrial Gloves Corp.
Industrial Products Co.
Mine Safety Appliances Co.
Pulmonan Safety Equipment Corp.
Safety Clothing Co., The
Safety Equipment Service Co., The
Safety First Supply Co.
Standard Safety Equipment Co.
Strauss Company, The

Protectors, Finger

Rauer & Black
Industrial Gloves Corp.

R

Respirators

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Bishinger-Koehler Mfg. Co., Inc.
Bullard Company, E. D.
Chicago Eye Shield Co.
Cover, H. S.
Davis Emergency Equipment Co., Inc.
Hygeia Respirator Co.
Industrial Products Co.
Mine Safety Appliances Co.
Pangborn Corporation
Portable Lamp & Equipment Co.
Pulmonan Safety Equipment Corp.
Safety Clothing Co., The
Safety Equipment Service Co., The
Safety First Supply Co.
Standard Safety Equipment Co.
Wilson Products, Inc.

Resuscitation Equipment

Bishinger-Koehler Mfg. Co., Inc.
Bullard Company, E. D.
Davis Emergency Equipment Co., Inc.
Mine Safety Appliances Co.

Rope, Wire

Macwhitte Company

Scaffolding, Safety

Patent Scaffolding Co., The

Screw Drivers, Non-skid

Surtz Mfg. Co., The

Shades, Eye, Non-breakable

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Industrial Products Co.
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Mine Safety Appliances Co.
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Safety Equipment Service Co., The
Safety First Supply Co.
Safety First Supply Co.
International Shoe Co.

Shoes, Wooden Sole

Industrial Products Co.
Safety Clothing Co., The

Signs, Accident Prevention

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Industrial Products Co.
Mine Safety Appliances Co.
Portable Lamp & Equipment Co.
Safety Clothing Co., The
Safety Equipment Service Co., The
Safety First Supply Co.
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Lima Cord Sole & Heel Co.

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Markers, Traffic

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Bullard Company, E. D.
Chicago Eye Shield Co.
Davis Emergency Equipment Co., Inc.
Industrial Products Co.
Mine Safety Appliances Co.
Pangborn Corporation
Pulmonan Safety Equipment Corp.
Safety Clothing Co., The
Safety Equipment Service Co., The
Safety First Supply Co.
Standard Safety Equipment Co.
Wilson Products, Inc.

Mats, Standing, Safety

Bullard Company, E. D.
Rushbaum Co.
Davis Emergency Equipment Co., Inc.
Durable Mat Co.

Oxygen Breathing Apparatus

Bishinger-Koehler Mfg. Co., Inc.
Davis Emergency Equipment Co., Inc.
Mine Safety Appliances Co.

P

Packs, Miners'

Leigh Safety Shoe Co.
Portable Lamp & Equipment Co.

Pads, Knee

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Industrial Gloves Corp.
Industrial Products Co.
Mine Safety Appliances Co.
Portable Lamp & Equipment Co.
Safety Equipment Service Co., The
Safety First Supply Co.

Poster Service

Elliott Service Co.
National Safety Council, Inc.
Bullard Company, E. D.
Chicago Eye Shield Co.
Davis Emergency Equipment Co., Inc.
Industrial Products Co.
Mine Safety Appliances Co.

Safety Clothing Co., The
Safety Equipment Service Co., The

Protectors for Linemen

Bullard Company, E. D.
Davis Emergency Equipment Co., Inc.
Industrial Gloves Corp.
Industrial Products Co.
Mine Safety Appliances Co.
Pulmonan Safety Equipment Corp.
Safety Equipment Service Co., The
Safety First Supply Co.
Surtz & Co., W. H.
Standard Safety Equipment Co.

Publishations, Safety

National Safety Council, Inc.
Safety Magazine Publishing Corp.

Pullers, Fuse

Bullard Company, E. D.
Industrial Products Co.
Mine Safety Appliances Co.
Tricon Fuse Mfg. Co.
Safety Equipment Service Co., The

Pumps, Oxygen

Bishinger-Koehler Mfg. Co., Inc.
Mine Safety Appliances Co.

THE BUYERS' SERVICE

See Advertisers' Index, Page 75—When writing, please mention National Safety News

Portable Lamp & Equipment Co.	Tents, Pneumonia	Tools, Emergency Equipment	Valves, Oxygen	Washers, Safety for
Surveys, Eye Sight	Bishinger-Koehler Mfg. Co., Inc.	Pulmonar Safety Equipment Corp.	Highing-Koehler Mfg. Co., Inc.	Grinding Wheels
Systems, Cleaning, Vacuum	Mine Safety Appliances Co.	Torches, Blow	Mine Safety Appliances Co.	Industrial Products Co.
Brouer Electric Mfg. Co.	Testers, Fuse	Klein & Sons, Mathias	Trestles, Safety, Extension	Standard Safety Equipment Co.
Clametta Manufacturing Co.	Tools, Linemen	Trends, Safety	Industrial Products Co.	Washroom Equipment, Industrial
Intricate Vacuum Cleaner Mfg. Co.	Bullard Company, E. D.	American Abrasive Metals Co.	Parent Scaffolding Co., The	Welding Equipment
Spencer Turbine Co.	Co., Inc.	American Mason Safety Tread Co.	Safety First Supply Co.	Wrenches, Hopper Car
Surry Mfg. Co., The	Industrial Products Co.	Burbaum Co.	Trumbull Mfg. Co., The	Industrial Products Co.
Systems, Dust Control	Klein & Sons, Mathias	Carnegie Steel Co.	Trumbull Mfg. Co., The	Safety Equipment Service Co., The
Dracoo Corporation	Tools, Marking or Stamping	Illinois Steel Company	Trumbull Mfg. Co., The	Safety First Supply Co.
Pangborn Corporation	Tools, Non-sparking	Industrial Products Co.	Trumbull Mfg. Co., The	Trumbull Mfg. Co., The
Surry Mfg. Co., The	Ameco Metal, Inc.	Inland Steel Co.	Trumbull Mfg. Co., The	Trumbull Mfg. Co., The
Systems, Interlock	Bullard Company, E. D.	Inland Steel Co., The	Trumbull Mfg. Co., The	Trumbull Mfg. Co., The
Union Switch & Signal Co.		Trends, Safety, Car Step	Trumbull Mfg. Co., The	Trumbull Mfg. Co., The
Systems, Lubricating		American Abrasive Metals Co.	Trumbull Mfg. Co., The	Trumbull Mfg. Co., The
		American Mason Safety Tread Co.	Trumbull Mfg. Co., The	Trumbull Mfg. Co., The
		Bullard Company, E. D.	Trumbull Mfg. Co., The	Trumbull Mfg. Co., The

The following companies are those whose names appear under the various headings contained in this Buyers Service

American Abrasive Metals Co.	Irrington, N. J.	General Abrasive Co.	Niagara Falls, N. Y.	Pangborn Corp.	Hagerstown, Md.
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Bishinger-Koehler Mfg. Co.	Bohaster, N. Y.	Industrial Glove Corp.	Vanilla, Ill.	Pulmonar Safety Equipment Corp.	Newark, N. J.
Brown Shoe Company	Pittsburgh, Pa.	Industrial Products Co.	Philadelphia, Pa.	Pyrene Mfg. Co.	Newark, N. J.
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Bullard Co. E. D.	San Francisco, Calif.	Johns & Johnson	New Brunswick, N. J.	Safety Equipment Service Co., The	Chicago, Ill.
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Clippoe Belt Lacer Co.	Grand Rapids, Mich.	Linher-Owens-Ford Glass Co.	Colado, Ohio	Spencer Turbine Co., The	Hartford, Conn.
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Davis Emergency Equipment Co., Inc.	New York, N. Y.	Lincoln Schleuter Floor Machinery Co.	Chicago, Ill.	Stonesshouse Signs, Inc.	Pittsburgh, Pa.
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Dudley Lock Corp.	Chicago, Ill.	Merck & Co., Inc.	Pittsburgh, Pa.	Trumbull Mfg. Co.	Chicago, Ill.
Durable Mat Co.	Akron, Ohio	Metropolitan Life Insurance Co.	New York, N. Y.	Trumbull Mfg. Co., The	Chicago, Ill.
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THE ACCIDENT BAROMETER

Prepared by the Statistical Bureau, National Safety Council

ACCIDENTAL DEATHS OF ALL TYPES declined slightly from May to June, thus indicating an improved trend for this year: usually there is a sizeable increase in June. The June total of 7,310 deaths also represents a good reduction from the same month of 1934, amounting to 800 deaths or nearly 10 per cent. All types of fatal accidents decreased, with public (not motor vehicle) deaths showing a drop of more than 20 per cent. The half-year's death total is estimated to be 44,550, or 3 per cent under last year's total for the same months.

OCCUPATIONAL ACCIDENT FATALITIES occurring in June numbered about 1,300. This indicates a reduction of about 100 from the May death total, but no change from the figure for June 1934. Present estimates for the first six months of the year indicate 7,800 deaths, or $2\frac{1}{2}$ per cent more than occurred during the same months last year. Reports on the inter-plant contests of community safety councils show an average June frequency rate per million man-hours of 9.29, or 39 per cent less than for June 1934—an exceptionally good record. The severity rate also improved, declining 5 per cent from 0.75 to 0.71. The six-months' frequency rate, at 14.62, is 9 per cent under last year, and the severity rate, 0.75, is down 25 per cent. In five sectional contests conducted by the National Safety Council, June showed continued improvement. The frequency rate stood at 8.66, or 15 per cent below the rate for June 1934, while the six months' rate was 8.84 or just 11 per cent under last year.

STEAM RAILROAD ACCIDENTS occurring in April resulted in 402 deaths and 2,021 injuries. This is an increase of 7 per cent in fatalities over the same month of 1934, but a decrease in injuries of 5 per cent. The increase in deaths is limited to highway grade crossing accidents. If these deaths had remained the same as in April 1934, the total would have decreased 4 per cent. For the first four months of the year the fatality total is 1,432 compared with 1,369 last year, while the injury total shows practically no change. The increase in deaths is somewhat greater for trespassers than for non-trespassers. Traffic (indicated by locomotive-miles) rose 1 per cent.

All Accidental Deaths

January-June

1935	44,550
1934	45,960
1933	41,199

U. S. Census Bureau total for 1933;
National Safety Council estimates
for 1934 and 1935.

MOTOR VEHICLE DEATHS in June numbered approximately 2,710, or 3 per cent fewer than were recorded in the same month last year. This brings the estimate for the first six months of the year up to 15,350, which is only 50 deaths less than occurred in the same period of 1934. Some cities and states have achieved excellent reductions from last year, which serves to emphasize the poor records of other localities. One encouraging feature of this year's record is that during the first four months deaths were only 1.6 per cent above last year, while traffic (measured by gas consumption) increased 3.7 per cent.

COMMERCIAL VEHICLE ACCIDENTS in June averaged 1.37 per million vehicle-miles, according to reports covering fleets competing in the National Fleet Safety Contest. This is an increase over June 1934 of 6 per cent. For the whole Contest year (July 1, 1934 to June 30, 1935) the rate averaged 2.13, or practically the same as for the previous Contest year. Both passenger car and truck fleets recorded reductions, the former from 1.57 to 1.49, the latter from 3.20 to 3.10; but buses had an increase from 1.26 to 1.51.

PUBLIC (NOT MOTOR VEHICLE) DEATHS were more frequent in June than in any earlier month this year, numbering about 1,500. However, when compared with the total for the same month last year the June figure represents a reduction of 25 per cent—a very favorable trend. This large decrease appears to come principally from fewer drownings this year, although there also have been declines in other types of accidents, particularly in falls in buildings and other public places. The six months' total of

public (not motor vehicle) deaths is now placed at 7,300, or 8 per cent under last year's comparable total.

HOME ACCIDENTAL DEATHS numbered only about 2,100 in June, a reduction of 9 per cent from June, 1934. This brings the total for the first half of the year to 15,400, which is 6 per cent under last year's comparable total of 16,400. According to reports now in file, this decrease is spread over falls, asphyxiations, and burns. The experience of children has been relatively favorable.

FIRE LOSSES in the United States during 1934 were recently placed at \$262,-\$48,122 by the National Board of Fire Underwriters, thus confirming that body's estimate made last spring. This figure represents a decrease from 1933 of over \$8,000,000, or 3.2 per cent. Also, it is the smallest annual total since 1916. The National Board also estimates that in the first five months of 1935 fire losses were approximately \$118,000,000 or 14 per cent under 1934. If this favorable trend continues during the rest of the year, the 1935 total will be only about \$226,000,000.

LOOKING AHEAD . . . In each of the last ten years there was a reduction in accidental deaths from August to September. It seems almost certain, therefore, that there will be a decrease this year. According to the records of earlier years, this decrease will be somewhere between 500 and 1,000 deaths, depending in large part on the size of the August total of drownings. Motor vehicle deaths will probably be as numerous as in August, and may even show some increase as a result of less daylight and more dusk and night driving.

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

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