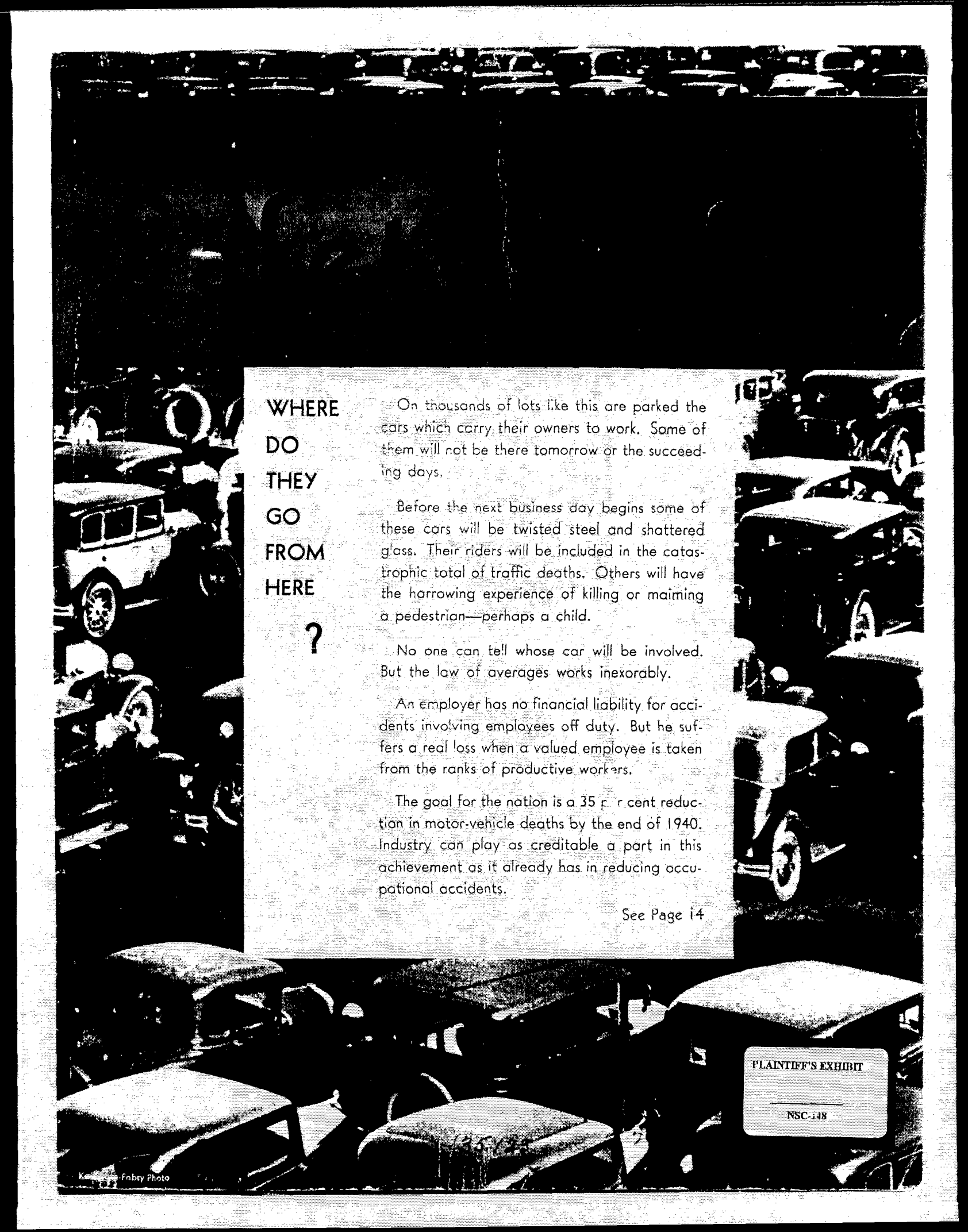




WHERE
DO
THEY
GO
FROM
HERE

?

On thousands of lots like this are parked the cars which carry their owners to work. Some of them will not be there tomorrow or the succeeding days.

Before the next business day begins some of these cars will be twisted steel and shattered glass. Their riders will be included in the catastrophic total of traffic deaths. Others will have the harrowing experience of killing or maiming a pedestrian—perhaps a child.

No one can tell whose car will be involved. But the law of averages works inexorably.

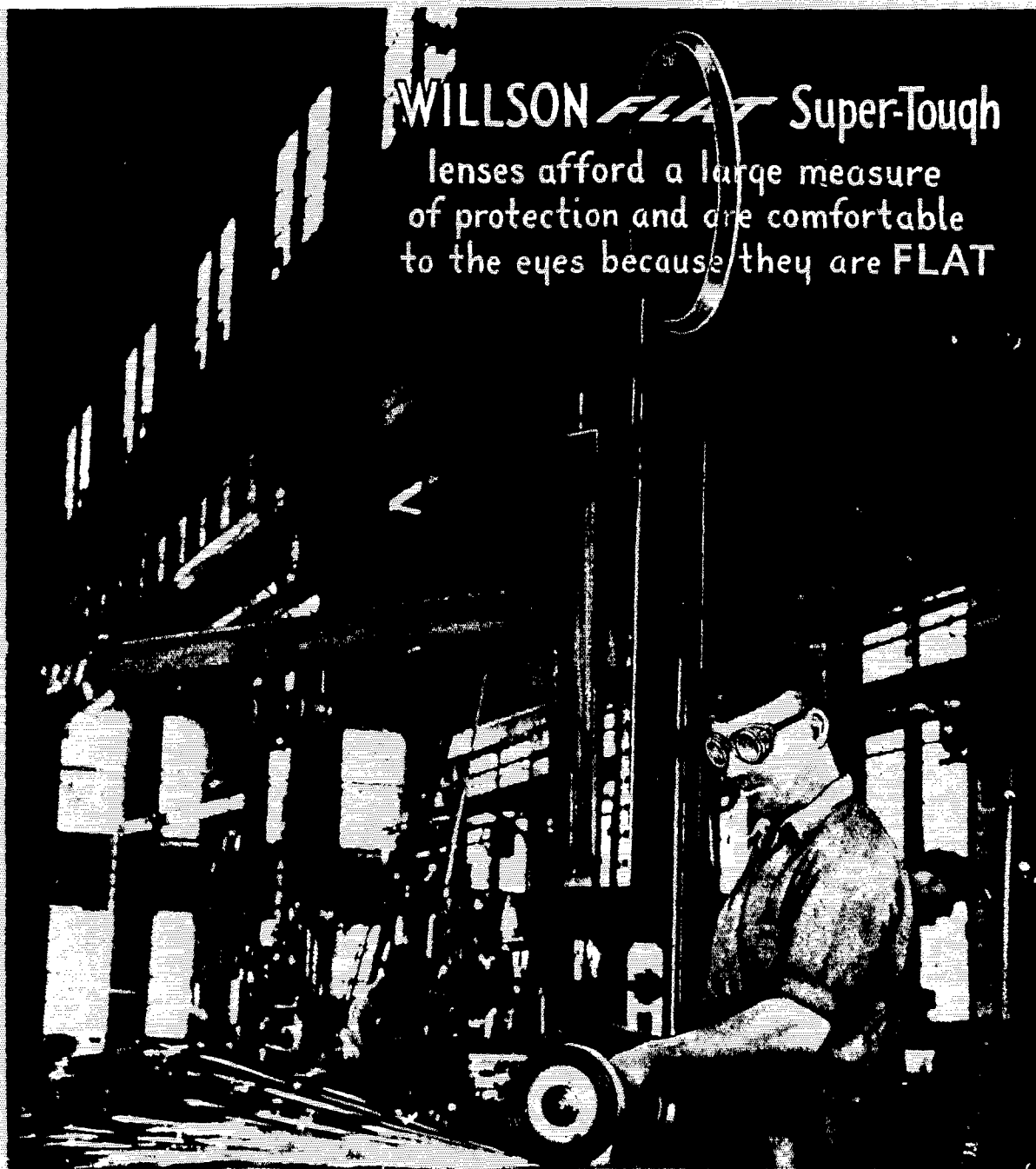
An employer has no financial liability for accidents involving employees off duty. But he suffers a real loss when a valued employee is taken from the ranks of productive workers.

The goal for the nation is a 35 per cent reduction in motor-vehicle deaths by the end of 1940. Industry can play as creditable a part in this achievement as it already has in reducing occupational accidents.

See Page 14

PLAINTIFF'S EXHIBIT

NSC-138



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MARCH, 1936



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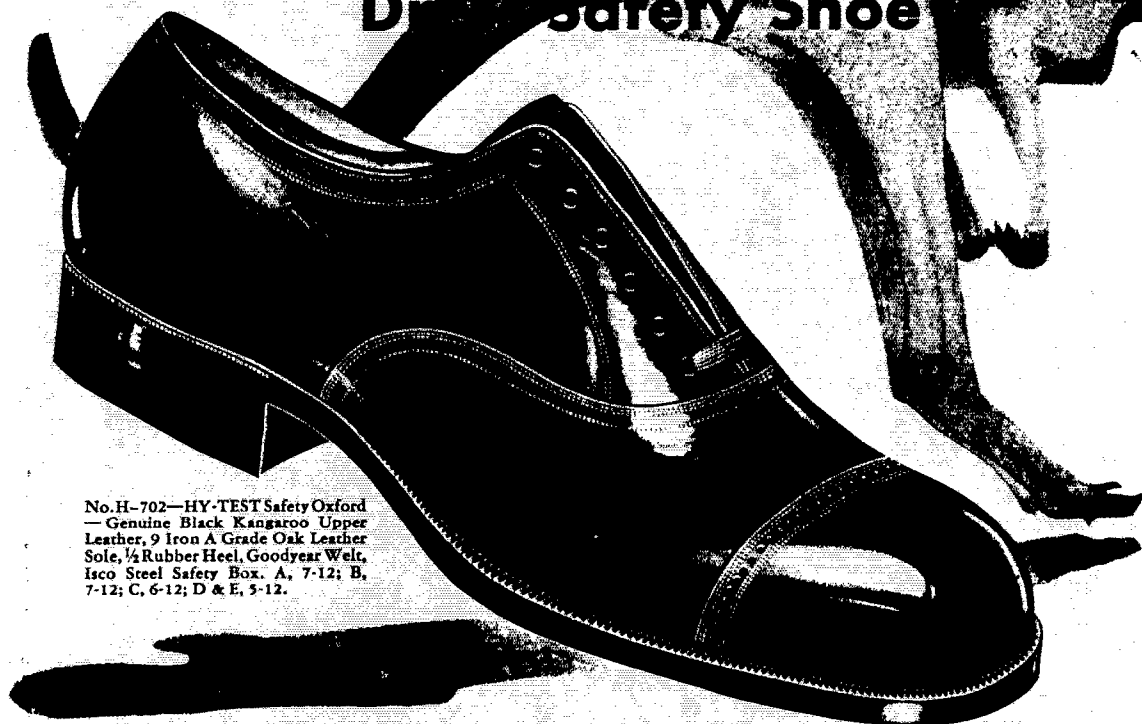


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NATIONAL SAFETY NEWS

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NATIONAL SAFETY NEWS

Published monthly in the interest of accident prevention and industrial health

Volume 33

MARCH, 1936

Number 3

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CARMAN T. FISH, Editor
S. H. KERSHAW, Poster Editor

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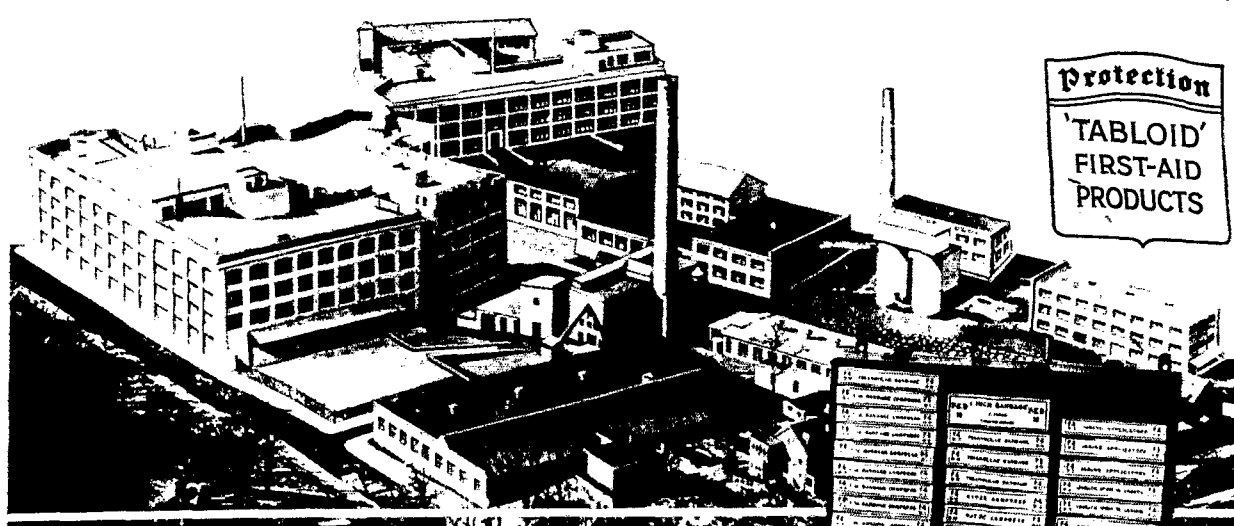
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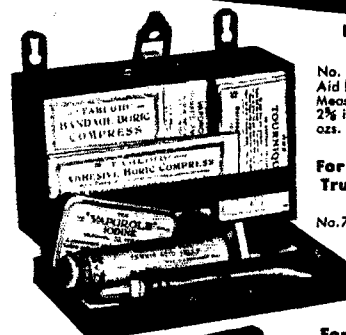
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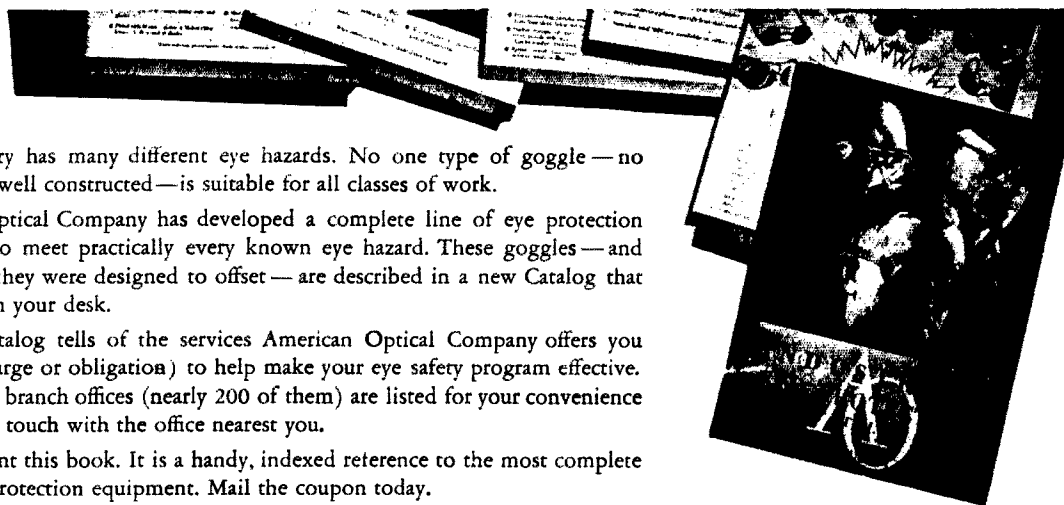
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MARCH, 1936

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Guerilla Warfare

SUPPOSE the railroads or the steamship companies or any other group of corporations killed 36,000 people and injured 864,000 in a single year. Suppose, also, that the chief cause of all this death and injury was plain human carelessness. Can you imagine the political passion which would be aroused against the guilty? Can you picture the denunciations and the oratory and the general fury?"

Thus *Collier's* opens an editorial entitled "Fools on Wheels." This short paragraph points to the greatest obstacle in the prevention of highway accidents.

Many will remember William Hard's castigation of industry nearly thirty years ago. Other crusaders of that period raised their voices against industry's by-product of death and mutilation.

Likewise many remember the railroad disasters of pre-safety days and the bitter criticism heaped upon railroad management. Not all of the censure was just but it did stimulate effort to prevent accidents. Better rolling stock and track, improved signal systems and stricter training and discipline brought about an enviable record. Perhaps safety saved transportation from financial disaster.

It is not difficult to arouse popular indignation against the sins—real or imaginary—of large corporations. But there is neither glory nor political profit in attacking a million drivers and pedestrians who are citizens and voters. In fact, most of them would be classed as "good" citizens.

Because of their size and organization corporations made fine targets. The war on the highways, however, is more like guerilla warfare. Heavy artillery is ineffective against a scattered enemy.

In past wars, guerilla activities have been overcome by building block houses at strategic locations and patrolling the territory with small mobile units of troops.

Traffic accidents will be checked in much the same way. The bulk of the effort for safety must come from within each community.

Every industrial plant with a well organized safety program is a center of influence in the community. Among the other forces for safety, we might include safety-minded police departments, strict and impartial courts, safety councils that enlist the active support of the community's leaders, schools that realize that education is incomplete without training in self preservation, churches that preach the spiritual value of preserving human life, and clubs that promote safety as a civic ideal.

Youth vs. Age

ISN'T there a place for the young man in safety work? After reading an article by Mr. N. M. Argabrite in the January NATIONAL SAFETY NEWS one of our readers felt discouraged. The specifications outlined in this article seemed to eliminate youth.

"It seems that Mr. Argabrite desires a seasoned veteran,"

our correspondent writes, "—a discarded superintendent or executive."

That, it seemed to us, was just the thing Mr. Argabrite did not want. In the past too many companies have regarded the position of safety director as a pension job. They didn't expect much and they paid accordingly. A safety department was regarded as a necessary evil—a gesture to pacify the state or the insurance carrier.

No man whose chief qualification is that he has outlived his usefulness in other capacities could meet the demands of safety work. The substance of Mr. Argabrite's article, as we interpret it, was: "Get the best man available and pay him what he is worth."

Age, after all, is something that cannot be measured in years alone. Some men seem to be endowed by nature with certain qualities; others develop them only after years of experience. Pitt became prime minister of England at 24; Gladstone was returned to power in his seventies.

A man could become quite proficient in the technical side of safety work before 30 but that is the least difficult part. Human beings do not function according to definite formula.

The reason why a mature man is often chosen to direct safety work is that he is more experienced in dealing with human nature. It usually takes years to develop sympathy, patience, tolerance and tact.

Occasionally, however, we find a young man with these qualities in a marked degree, one who can command the respect of the older heads of the organization. Such a man deserves an opportunity.

In This Issue

STATISTICS are dry reading to most people. Figures in themselves are not dramatic unless we stop to realize that each unit in the immense total represents a human life destroyed or marred temporarily or permanently. The brief summary of the accident experience of 1935 published in this issue abstracted from the preliminary edition of the pamphlet "Accident Facts." (Page 11).

When the employees leave for home after the day's work will they return to work safe and sound next morning? That is a problem that is perplexing many an employer. Many companies are extending their safety programs to keep workers from injury while off duty. (Page 14).

Here is the story of a safety campaign which brought exceptional results largely because it had executive interest and support back of it. (Page 16).

Workers are safe from shock when electrical equipment is installed, maintained and operated in accordance with approved practice. (Page 17).

Soybean processing is a comparatively new and growing industry. Recent explosions have shown the need for a better understanding of the hazards involved. (Page 18).

Radio has made navigation safer and it is performing a similar service in the development of aviation. (Page 19).

Mechanical hazards, as a rule, are obvious. The danger to health from processes or materials is often insidious and unsuspected. (Page 33).

MARCH, 1936

The Managing Director's Page

Distribution and Safety

THE problem of the "distribution" of commodities is probably the most vexatious and puzzling task in this and all countries. Many theories for its solution have been advanced—especially during recent years. The answer has not yet been found. Despite multitudinous remedies suggested, the fact remains that millions of people are in destitute circumstances right in the midst of plenty.

A learned scientist, speaking over a national hookup recently, announced that our use of important discoveries that should be of direct and lasting benefit to mankind has not kept pace with invention. He pointed out that if we would only reach out and grasp the blessings which science has made available it would soon be a much more comfortable and happier world.

Thus, the old story of acres of diamonds is re-enacted. Jewels all about us, shining right in our eyes—yet we do not see them.

The point is that there is something wrong with our system of distribution of these gifts; which of course, points right back at a similar situation in our economic life.

The deadly parallel might be carried a step farther. If the National Safety Council should close its doors tomorrow, the tools would still be available for reducing accidents—and the remedies, tested through long and costly years of experience would endure long after the Council had been forgotten.

The fact that hundreds of industrial plants have cut their accident rates almost to the irreducible minimum proves that results can be obtained through proper application of the tools. On the other hand when we review the records of those plants which have not made real safety progress the question naturally arises: Have they made the best use of the tools available? Have they applied *all* the remedies applicable to a many-sided problem? Have they been judicious distributors?

Never since the Council was organized has there been an accident problem that has so wrought up the public mind as that of our motor vehicle deaths and injuries. Industry too, is rightfully worried for the guerilla warfare on our

highways is taking an impartial toll among our plant workers. Yes, and among our executives too.

Here again enters the basic problem of distribution. Certainly the remedies are known—and they have been tested by experience. It can't be just a matter of chance that Milwaukee, year after year, maintains an automobile death rate less than half of the national average. There is no lucky star guiding the destiny of Evanston, Illinois, and making it one of the country's safest small cities. Rather it is because Milwaukee and Evanston, and other municipalities I might mention, have found the answer to their distribution problem of engineering, educational and enforcement activities. They have carried on a balanced program of safety on an intensive, year-round basis. The same parallels on individual, industrial and railroad organizations apply.

All through history the most important tasks have been performed by men who knew how to turn knowledge into action.

In self-defense industry should play a part in the National Safety Council's campaign to reduce highway accidents at least 35 per cent by the end of 1940. The worthy objective is the saving of at least 38,000 lives during this period. Just how important industry's part will be depends on the use of the tools, the application of the knowledge at hand; the proper *distribution* of the safety program so that it reaches out and appeals directly to the plant workers, many of whom drive automobiles; all of whom are pedestrians part of the time. A most comprehensive program of practical, helpful suggestions appears in this issue of the News.

A workable idea doesn't work until it is *put to work*. Knowledge is only a means to an end; and if not applied in some constructive effort the time and money spent in obtaining it is wasted.

Stimulation is but an idle mental gesture, unless it leads to positive action.

W. J. Ameron.

INTERESTING ITEMS

Our drive to Reduce Traffic Accidents 35 Per Cent by the End of 1940 is well under way.

One of the first major projects is the preparation of the biggest newspaper publicity releases ever undertaken by the Council. Within a month we shall place in the hands of the managing editors of the country's leading daily papers, illustrations, news and editorial copy and safe driving campaign material, sufficient for half a year's use. We believe this tremendous coverage will make publicity history.

Our mail receiving department has been swamped with Safety Calendar Contest entries. Announcement of the January contest winners will be found elsewhere in this issue. The popularity of this idea strongly suggests more contests on the backs of the 1937 Safety Calendar which is now in production. This contest is certainly directing attention to the valuable safety information on

the back of each calendar sheet. Are you promoting this safety contest idea in your company?

Some very interesting accident trends and accomplishments have been found within member companies who hold the *Complete Industrial Membership* classification. (For description of this type of membership see pages 15 to 22 in your "Service Guide"). Write us if you would like to review them.

Do you regularly read "The Safety Library" department? Has the change been an improvement? Comments are always welcome.

The preliminary edition of ACCIDENT FACTS for 1936 is ready for distribution. The article "Tragic Facts," in this issue, is an abstract of the booklet prepared by the Statistical Department of the Council. Members may obtain the 1936 booklet for 10 cents a copy, or may write for quotations on quantity lots.

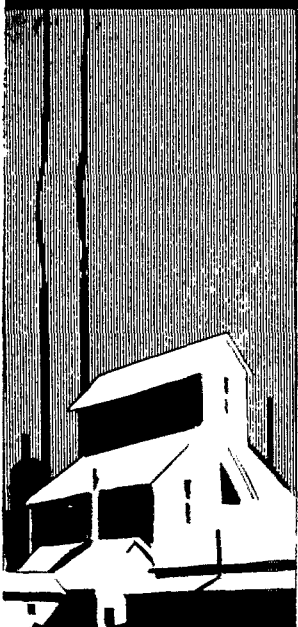
NATIONAL SAFETY NEWS

TRAGIC FACTS

A Brief Preliminary Summary of the
National Accident Experience in 1935



**MOTOR VEHICLE
FATALITIES
36,400**



**OCCUPATIONAL
FATALITIES
16,500**

ADD one million to the combined population of all the New England States and you would have the total number of victims of accidents in the United States during 1935. Making up this staggering total of casualties were 99,000 deaths, 365,000 permanent disabilities and 9,100,000 temporary disabling injuries.

The cost of these accidental injuries to the nation was approximately \$2,350,000,000 in wage loss and medical expense. To this sum may be added, in round numbers, \$800,000,000 for property damage in motor vehicle accidents and \$259,000,000 property loss in fires, making a grand total of \$3,400,000,000.

Compared with previous years, 1935 ranked third in the total number of accidental deaths. The 1935 total was exceeded by that of 1934, when the all-time high of 101,139 deaths was reached, and of 1930 when the total was 99,300 deaths.

The accidental death rate was 77.8 per 100,000 population in 1935. Six out of the ten years ending with 1935 had higher fatality rates than this. Table I shows accidental deaths and death rates since 1931.

Main Classifications

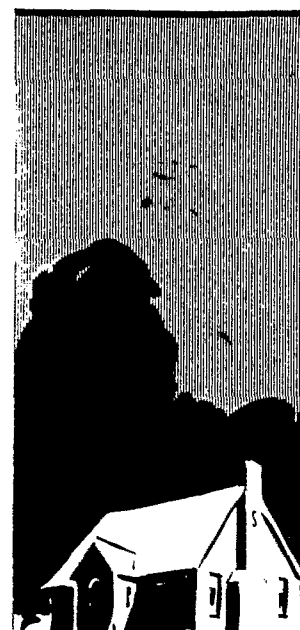
All accidental deaths decreased 2 per cent from 1934 to 1935. This was due largely to a return to normal from the excessive number of heat fatalities during 1934. In that year there were 3,250 such deaths; in 1935 there were probably between 600 and 700.

Most of the 1934 heat fatalities were classified as home accidents. As a result, home deaths declined 9 per cent in 1935.

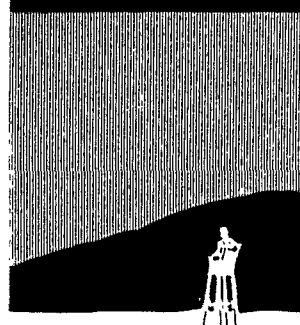
Motor vehicle fatalities increased about 1 per cent, and occupational fatalities 3 per cent. No change occurred in public accidents not involving motor vehicles. See Table II.

For 1935 information is not yet available on most of the detailed types of accidents causing death. Table III gives this information for 1934.

Accidental deaths of children under 15 declined



**HOME
FATALITIES
31,500**



**PUBLIC
(NOT MOTOR VEHICLE)
FATALITIES
17,500**

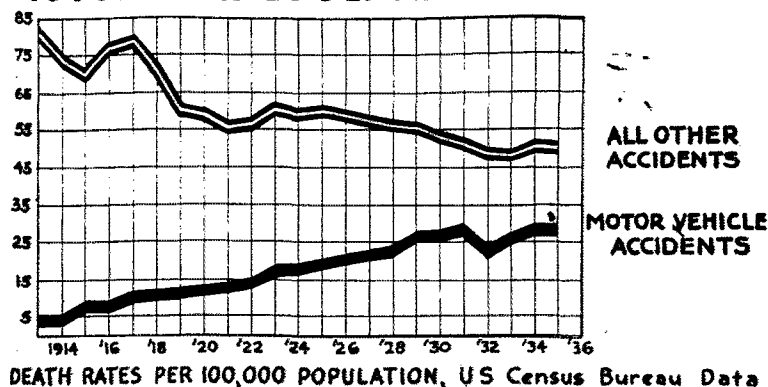
TABLE I

	All Accidental Deaths	Deaths per 100,000 Population
1931	97,415	78.5
1932	89,167	71.4
1933	91,087	72.5
1934	101,139	80.0
1935 (est.)	99,000	77.8

from 15,400 in 1934 to 14,300 in 1935, a drop of approximately 7 per cent. The decline in adult deaths was only about 1 per cent—from 85,600 to 84,700.

The drop in child fatalities during 1935 places them 23 per cent below 1922, when there were 18,576 child deaths. During the same years accidental deaths of adults (over 15 years) increased 46 per cent—from 57,844 to approximately 84,700.

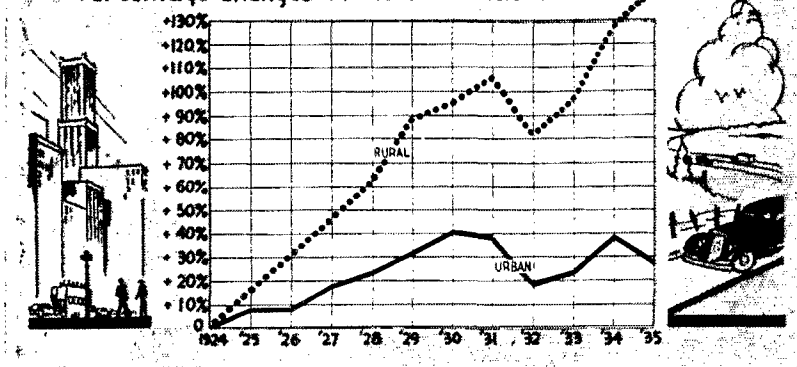
MOTOR VEHICLE DEATHS UP—OTHERS DOWN



DEATH RATES PER 100,000 POPULATION, U.S. Census Bureau Data

RURAL ACCIDENTS BIGGEST SAFETY CHALLENGE

Percentage changes in motor vehicle deaths since 1924



Motor Vehicle Accidents

Motor vehicle accidents in 1935 caused approximately 36,400 deaths, 107,000 permanently disabling injuries, and 1,170,000 temporary disabilities. Motor deaths outnumbered homicides three to one and diphtheria deaths almost ten to one.

The injuries in 1934 motor vehicle accidents represented a cost of approxi-

TABLE II

	1935	1934
Total	99,000	101,139**
Motor Vehicle	36,400	36,101**
Other Public	17,500	17,500
Home	31,500	34,500
Occupational	16,500	16,000

*Totals eliminate duplication of about 3,000 occupational motor vehicle deaths each year.

**U. S. Census Bureau figures; all others are National Safety Council estimates.

mately \$800,000,000 in wage losses and medical expense. To this may be added approximately \$800,000,000 for property damage, making a grand total of approximately \$1,600,000,000.

The year 1935 registered an all-time high in motor vehicle accidents. Deaths were twice as high as in 1923 and nearly 50 per cent above 1927. Nevertheless, the 1935 national record is favorable in at least two respects. First, motor vehicle fatalities increased only one per cent (just about as much as population increased) whereas motor vehicle registration increased 4 per cent and gasoline consumption 7 per cent. Second, the increase from 1934 to 1935 was less than that occurring in any previous year since the automobile became a factor in transportation, with the single exception of 1932.

This article has been adapted from the preliminary edition of the Council's annual statistical summary, "Accident Facts." This preliminary edition has been prepared to meet the demand for prompt information on the outstanding points in the accident experience of the past year. The information on certain subjects is still incomplete and all 1935 figures are subject to revision on receipt of later information. Copies of the preliminary edition in pamphlet form are available.

The final edition of "Accident Facts" will be issued in May.

Urban and Rural Experience. Two-thirds of all motor vehicle deaths in 1935 occurred in small towns under 10,000 population and in rural areas; only one-third in cities of 10,000 population or over. City deaths are estimated at 11,800, representing a decline of approximately 9 per cent from 1934. Fatalities in rural areas, on the contrary, increased 6 per cent from 1934, to a total of 24,600. Rural fatalities have increased

TABLE III

	Accidental Deaths in 1934	Per Cent of Total
Total	101,139	100.0
Motor Vehicle	36,101	35.7
Falls	23,828	23.6
All Burns	8,261	8.2
Drowning	7,326	7.2
Railroad Accidents	3,789	3.7
Excessive Heat	3,250	3.2
Firearms Accidents	3,023	3.0
Absorption of Poisonous Gas	1,695	1.7
Others	13,866	13.7

NATIONAL SAFETY NEWS

WINNING THE FIGHT AGAINST ACCIDENTS

Percentage reductions in Motor Vehicle Deaths 1934 to 1935

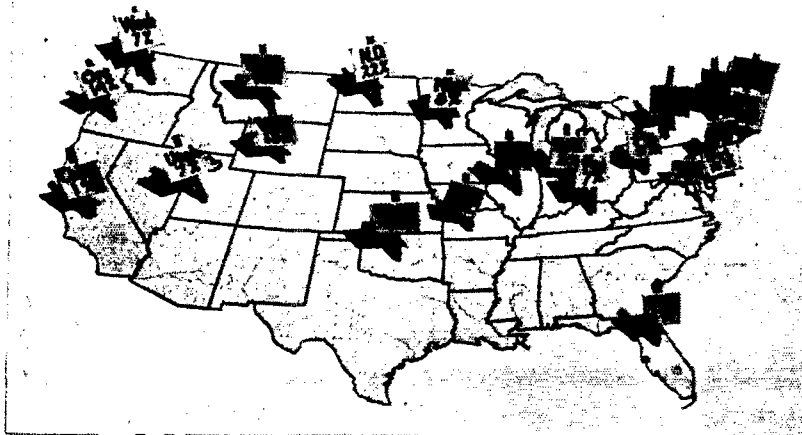


TABLE IV

	Motor Vehicle Deaths	Population Rate*	Gas Consumption Rate**
1931	33,675	27.1	21.9
1932	29,451	23.6	20.7
1933	31,363	25.0	22.0
1934	36,101	28.6	23.6
1935 (est.)	36,400	28.6	22.4

*Deaths per 100,000 population.

**Deaths per 10,000,000 gallons gasoline consumption.

44 per cent since 1924, whereas deaths in cities have advanced only 27 per cent.

Pedestrians. Pedestrian deaths in motor vehicle accidents are estimated at 15,900 for 1935, as opposed to 20,500 other kinds of motor fatalities. Corresponding figures for 1934: 16,200 pedestrians and 19,800 others. The proportionate increase in pedestrian deaths since 1927 has been just half as great as in other kinds of motor vehicle fatalities. Pedestrian deaths advanced 27 per cent, from 12,490 to 15,900, whereas other deaths increased 54 per cent, from 13,300 to 20,500.

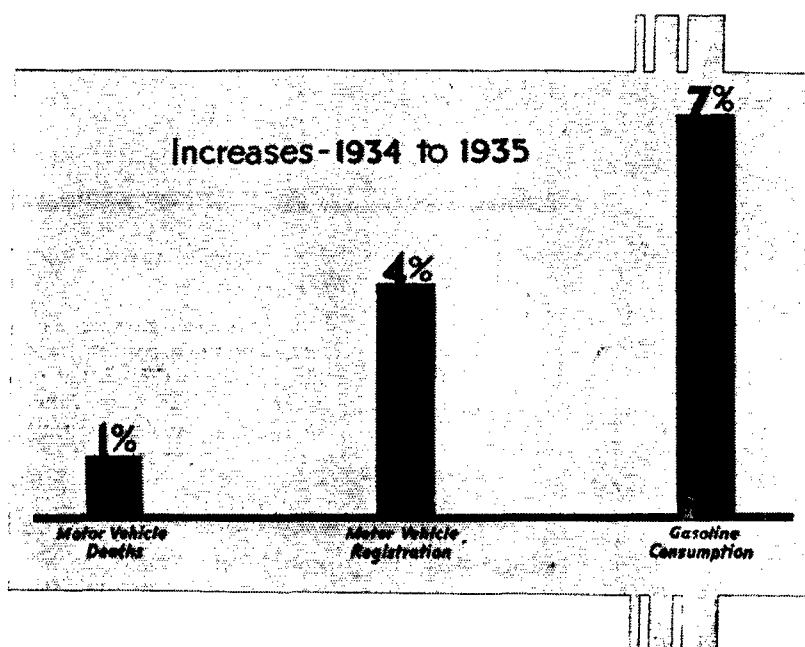
Child Deaths. Only among children from 5 to 14 years were there fewer motor vehicle deaths in 1935 than in 1934. No change occurred in the 15-24 age group. Children under 5 advanced 9 per cent, persons from 25 to 64 increased 1 per cent, and those over 64, 7 per cent. Child motor vehicle deaths have increased much less than those of adults since 1922, when child safety education began on a national scale.

Safest Cities. Cities with the lowest 1935 death rates per 100,000 population,

MARCH, 1936

ing accidents during the first eight months of 1935 than during the corresponding months of 1934. The annual totals for 1934 were 1,554 deaths and 4,300 injuries. If all twelve months of 1935 follow the same trend as indicated in the eight months' reports the approximate annual totals will be 1,600 deaths and 4,450 injuries. From 1928 to 1934 grade crossing deaths declined 40 per cent—from 2,568 to 1,554.

Sectional Differences. Two sections of the country were able to reduce motor vehicle deaths in 1935, despite the national increase. These were: (1) The eastern area, including New England and the middle Atlantic states, where the decrease amounted to 3.5 per cent, and (2) the western area, including the Rocky Mountain and Pacific Coast states where a drop of 1.6 per cent was registered. The North Central states, on the other hand, experienced an increase of about



based on preliminary annual reports, were:

TABLE V

Group	City	Rate
Group I	Milwaukee, Wis.	10.8
Group II	Providence, R. I.	7.0
Group III	Fall River, Mass.	5.2
Group IV	Evanston, Ill.	2.9
Group V	Central Falls, R. I.	0.0
Group VI	Ponca City, Okla.*	0.0

*Other cities also have perfect records but their populations are smaller.

Grade Crossings. Interstate Commerce Commission reports show 3 per cent more deaths and injuries in grade cross-

one per cent and Southern states had a sharp rise of 5 per cent.

In its five-year campaign for motor vehicle accident reduction the National Safety Council has set the goal of a 7 per cent decrease each year. Out of 22 states which showed some reduction from 1934 to 1935, fourteen declined 7 per cent or more.

License Laws. Sixteen states with standard drivers' license laws and administrations were able to reduce motor vehicle deaths nearly two per cent

(Please turn to page 64)



Safe till Tomorrow?

By GEORGE E. BURNS

Safety Engineer, Industrial Division, National Safety Council

A safety program is incomplete unless its influence follows the worker when he leaves the plant

WHAT an employee does after working hours is generally recognized as his own business. His employer has no authority to restrain him from using an unsafe substitute for a stepladder in his own home or from driving too fast for conditions in a car with defective brakes. And too often, it must be admitted, the employer really hasn't been interested. Of course, he didn't want any employee of his to get hurt, but if the employee was fool enough to take chances on his own time, what could the company do about it?

Human beings, too, are resentful of anything that resembles interference with their private lives. The worker who is willing to recognize authority in the plant often feels like asserting his independence when he leaves.

This will explain why non-occupation-

al accidents have been growing alarmingly in number while accident experience within factory walls, on the railroads and even in the more difficult field of commercial vehicle operation, has been steadily improving.

One member of the National Safety Council with a working force of several thousand persons made a study covering a period of eight successive years. The ratio of "outside" to "inside" injuries increased from 2 to 1 in the first year to 6 to 1 in the eighth. During the same period injuries to employees within the plant were reduced 50 per cent. The company simply declared war on plant accidents—said they must go, and they did. The difficulty in this plant, and apparently in many other plants, was inability to control employees after they left the company premises.

Another large establishment reported that 21 motor vehicle fatalities involving employees occurred during a nine-month period. During the same period there were no fatal cases in the plant.

Only recently has industry begun to realize the cost of these outside accidents

to the company. While no compensation payment is involved, the cost of hiring and training new workers is a serious item of expense. Each worker represents a definite investment, and often his experience and skill may be difficult to replace.

Not only is a man's efficiency impaired by injury to himself, but likewise it is often affected by injury to members of his family. A sincere and energetic safety program is productive of good will both in the organization and throughout the community. Indirectly, the prevention of accidents after working hours helps both employer and employee, since their combined experience is the basis for rates in fire, life, public liability and accident insurance.

The home and the highway are two locations where about 70 per cent of all accidental deaths and injuries occur. How can industry protect its employees and contribute its part to the nationwide goal of a 35 per cent reduction in motor vehicle deaths by the end of 1940?

Obviously attempts at compulsion are neither practicable nor desirable. But it

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is a mistake to assume that the employer has no influence over his employees when they leave the plant. In the following paragraphs are presented some of the methods used by members of the National Safety Council to develop a safety consciousness among employees that will not be discarded when the whistle blows. The order in which they are presented has no bearing on their importance. Some members have achieved excellent results by using a selected number of these activities while others have expanded their programs to embody them all.

Safe Drivers' Club or League. Where a number of employees own and operate motor vehicles, it is often advantageous to organize a safe drivers' club or league. The object of this club is:

1. To cooperate with local authorities in their efforts to promote and aid in the conservation of individual, industrial and community life;
2. To conduct a continuous educational safety campaign so that they as a class shall be known as the most careful drivers in the community and by their example set a standard of safe driving for all;
3. To teach and keep constantly before its members individual responsibility of safety to themselves, their families, their employer, and the community in general;
4. To promote acquaintance and develop good fellowship. Some members provide drivers with radiator emblems or other insignia. These are given when drivers join or when they have attained a given period of time or number of miles without a chargeable accident.

Letters to Company Employees. At frequent intervals, (some members do this monthly) a letter signed by the president, general manager, or some other ranking company official should be addressed to each employee. This message should outline the campaign, or deal with a specific activity if the campaign has already been started. Employees should be impressed with the fact that this campaign is for their good and that only by teamwork can real results be obtained.

Supervision of Activities. As in every worthwhile undertaking, this campaign needs direction. It cannot be expected that the supervising plant executive will handle the details and, therefore, it becomes necessary that responsibility for planning be delegated to the safety men, safety committee, or whoever handles the accident prevention program. To set up an independent group or committee merely for the "After-Hours" safety campaign may not be desirable, particularly when the plant already has a well organized industrial safety program.

Safety Pledges. Every employee from the chief executive to the errand boy should be asked to sign a safety pledge, to signify his (a) wholehearted support of the company safety program; (b) willingness to support the efforts of the National Safety Council to reduce street and highway accidents by observing traffic rules and regulations both as a motorist and as a pedestrian; (c) sincerity by setting an example for safety in the home to members of his family and others.

Inspection of Employee Cars. Many members of the National Safety Council maintaining company garages and repair shops extend to employees the privilege of having their automobiles checked for safety by competent mechanics without charge. These periodic inspections are highly essential, as many accidents are caused by faulty mechanical equipment. Obviously such inspections cannot cover every item because of time and expense. However, they do include the important factors such as

1. Checking of brakes
2. Tires—condition and inflation
3. Wheel alignment
4. Check on steering mechanism
5. Lights—headlight focus, tail lights, stop light operation
6. Efficiency of windshield wiper

Parking Facilities. Where parking facilities are provided for employee cars, a study will often reveal that more cars can be accommodated by laying out "service drives," "stalls," etc. The orderly manner in which parking lots are maintained aids materially in "loading" and "unloading," reduces the possibility of property damage and encourages motorists to respect traffic regulations. It bears the same relation to traffic accidents that good housekeeping does to industrial and home accidents. In some organizations no employee's car is permitted on the premises unless it has been inspected and passed by company mechanics or by a local "official" vehicle inspection station.

Entering and Leaving Company Premises. While most motorists appreciate that they should make a "complete" stop when entering a "through" street, state road, crossing a sidewalk, etc., some overlook these safe practices when entering or leaving company parking lots. Some Council members place an attendant at each entrance or exit who directs the flow of traffic and constantly reminds employees of their responsibility in respecting the right-of-way of others and the part they play in reducing street and highway accidents.

Vision Tests and Physical Examinations. In some organizations, where complete preemployment and periodic physical examinations are given only to selected groups or departments, or in states where effective drivers' license laws are not in force, vision tests and physical examinations are proffered to employees owning and operating motor vehicles. This generally is accepted as further evidence of the employers' sincerity in helping to combat factors which play an important part in traffic and home accidents.

Distribution of Literature. An effective means of "reaching" the employee and his family after hours is to provide him with safety literature which he can take home and keep. Local safety councils, state departments, insurance companies, various commercial corporations and the National Safety Council offer convenient sources for such literature.

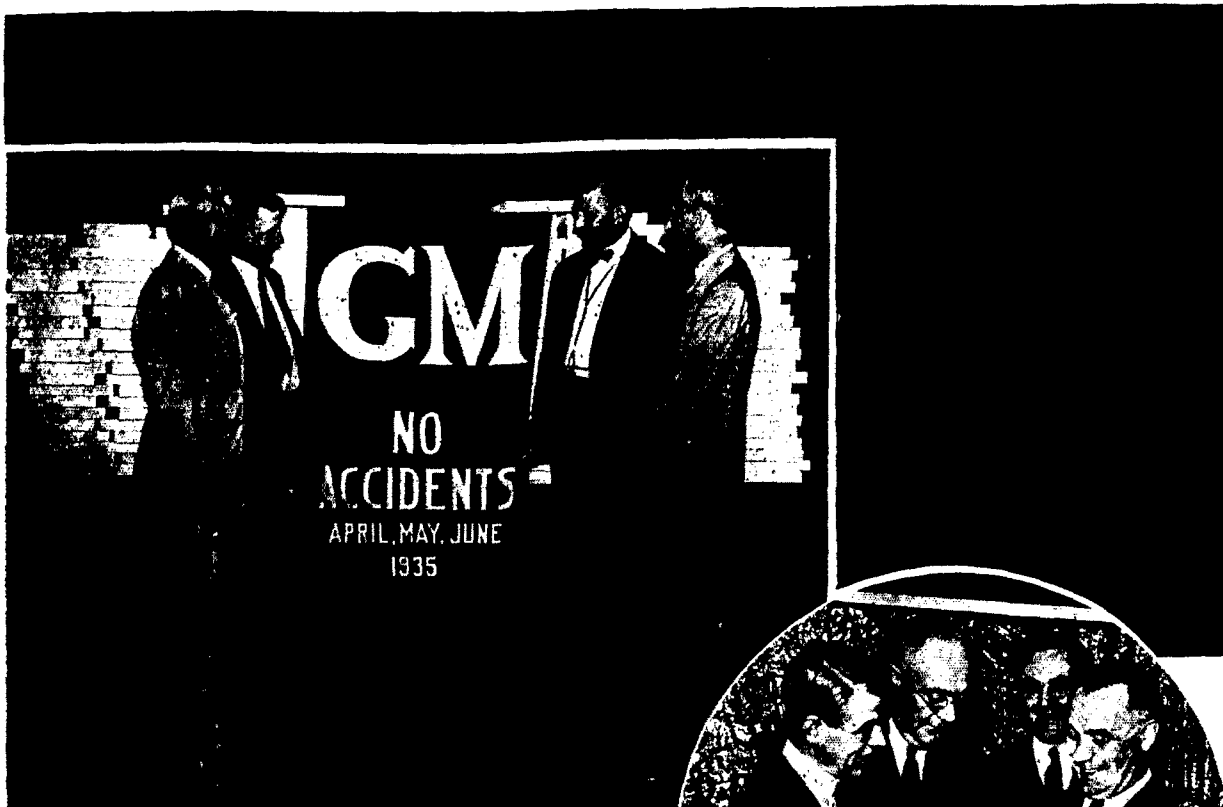
Bulletin Boards. Company bulletin boards or especially erected bulletin boards can be used to publicize regulations, after-hour accidents in which company employees are involved, newspaper clippings of current home and traffic injuries, safety posters, notices of safety committee meetings, and similar items.

Timely Articles in Employees' Magazines. Where plant publications or house organs are used, they afford an excellent educational medium. Not only is it possible to keep employees posted on the progress of the "inside" and "outside" accident prevention campaigns, but it likewise makes it possible to include safety items contributed by plant executives and employees.

Jumbo Posters. A recent innovation is the use of Jumbo posters, in striking colors, placed at conspicuous locations on the company premises. Such posters add prestige to the plant's safety program and identify the company as an advocate of accident prevention. Some members of the Council state that these outdoor posters (approximately 10 x 12 feet) impress employees leaving and entering the plant with a safety thought; also that the company at once rises in the estimation of the public generally as the latter sees or hears of the display.

Cooperation with Local Authorities. Employees should be encouraged to cooperate with the local safety council, fire and police departments, local chapter of the American Red Cross, Boy Scouts, Girl Scouts, public and parochial schools,

(Please turn to page 63)



Executives of General Motors examining one of the banners presented during the Wilson No-Accident Campaign in 1935. Left to right: C. E. Wilson, vice-president; John L. Pratt, vice-president; William S. Knudsen, executive vice-president, and Alfred P. Sloan, Jr., president.

In circle: Hugh Dean, (left) assistant general manager of Chevrolet, is presenting a plaque to W. J. Scott, manager of the Chevrolet spring and bumper plant in Detroit. Scott's plant won top honors by showing an 81 per cent improvement. Next to Mr. Dean is M. E. Coyle, president of Chevrolet, and at Mr. Coyle's side is C. E. Wetherald, general manufacturing manager.



THE General Motors Corporation in 1935 established an all-time safety record in the operation of 72 plants in the United States and Canada.

Working more than 331,000,000 hours last year, these plants reduced the number of accidents by 24 per cent; cut the frequency rate by 38 per cent; improved the severity rate by 35 per cent and saved General Motors plant employees 67,754 days in lost time due to accidents, compared to 1934. This improvement was made despite the fact that hours worked last year were 21 per cent higher than 1934.

The safety record becomes even more impressive when it is realized that operations include some of the most hazardous in industry—foundries, sheet metal work and machine shops.

If you should ask General Motors executives for an explanation of this phenomenal showing, the answer prob-

ably would be summed up by "continuous effort and interest on the part of executives, plant supervisory forces and employees in safety," for everyone in the production organization of General Motors is safety minded.

They have become that way because their chief, William S. Knudsen, executive vice-president, has admonished:

"Safeguarding our employees is in my opinion the greatest and most important task before us at all times."

C. E. Wilson, vice-president of General Motors, and assistant to Mr. Knudsen, has elaborated on this warning by the enunciation of five principles for safe plant operation, which have been widely copied by industrial executives.

Those principles include:

1. Interest in safety on the part of top management
2. Good housekeeping
3. Mechanical safeguards

4. Safety education

5. Periodic safety stimulation.

General Motors operations can be divided into three groups of approximate equal size in employment—the Chevrolet plants, the Fisher Body plants and "All Others." In promoting safety, Chevrolet and Fisher each has its own program, directed by their headquarters staff in Detroit. Last year, Mr. Wilson made it his responsibility to group "All Others" into competing organizations and conducted a three months' campaign, which was later continued in most of the plants by their own general managers.

So, throughout most of 1935, safety was being "sold" in General Motors by various and continuous effective methods.

The 21 Chevrolet plants, consisting of
(Please turn to page 61)

NATIONAL SAFETY NEWS



Courtesy Westinghouse Electric & Manufacturing Co.

By F. G. SCHOENFELD
Swift & Co., Chicago

Electrical equipment can be operated with a minimum of hazard, even under unfavorable conditions

ELECTRICAL installations in a meat packing plant must be planned to function safely under severe handicaps. Many of the operations of the industry are carried on under conditions of extreme moisture, low temperatures, steam vapor, salt brine laden air and brine solutions. Equipment is therefore subject to more than normal deterioration, and unless extra precautions are taken, the operating hazards will naturally be greatly increased.

Because of the unfavorable conditions under which electrical equipment must be operated, only the highest grade of equipment and materials is used. Metal conduit used for both power and light wiring is of the hot galvanized steel type which has been found highly resistant to corrosion. In some cases where the corrosion menace is extremely serious, aluminum conduit is used, but its use is restricted by the higher cost.

When first installed, all metal conduit lines are given a protecting coat of paint and this is repeated at regular intervals. Without this protection, deterioration will usually develop at the threads where the conduit is coupled together or where it is attached to the switch or distributing cabinet by lock nuts.

A ground in the winding of a motor

is an extreme hazard to any employee coming in contact with the motor frame unless the frame has a positive, dependable connection to ground.

All rubber covered wire installed in metal conduit is of the 30 per cent insulation type. This wire gives longer life and greater freedom from trouble than the so-called code or 20 per cent insulation wire.

In some of the coolers of packing plants where an abnormal amount of moisture is encountered and in other extremely wet locations, the light wiring is of the open type installed in a protecting V-shaped wood trough. The wire used with this system is a No. 12 special having 5/64 inch rubber insulation with a triple braid covering.

While a few of the plants of this company use a motor operating voltage of 440 or 550 AC throughout the plant, the majority use 220 volts. Wherever possible, all future extensions or additions will be for 220 volts. This voltage is less hazardous and less troublesome from the standpoint of maintenance of equipment.

While the use of 220 volts for motor operation does increase the initial cost of the supply lines somewhat as compared to a 440 or 550-volt system, this

A "dead front" switchboard is as nearly foolproof as any equipment can be. Not even suicide is possible from the front.

increase is kept at a reasonable point by installing transformers at various load centers and supplying them at 2,300 volts from the main source of current supply.

Line and Motor Equipment

The supply lines for power and light enter any building at the elevator or stairway vestibules and at the point of entrance an enclosed safety type fused switch is used. The feeders are carried to the various floors through conduit and on each floor a steel distribution cabinet is used.

Each motor or group of motors, where such grouping is possible, is provided with a set of feeders from the distributing cabinet and they are connected at the cabinet through either an enclosed safety type switch or through fuses of the dead front panel type. In either case fuses at the distributing cabinet can be replaced without hazard.

For starting equipment at each motor some of the following combinations are used, the choice depending upon the size of the motor and its location.

1. Enclosed safety type fused switch installed so that the switch blades and the fuses are "dead" when the switch is in the "off" position.
2. Enclosed safety type fused switch and a starting compensator having a no-voltage release device installed so that fuses, switch blades and compensator are "dead" when the switch is in the "off" position.
3. Enclosed safety type fused switch and automatic push-button controlled starting equipment installed so that fuses, switch blades and automatic starting equipment are "dead" when the switch is in the "off" position.
4. In any of the preceding cases the safety type switch might be replaced by an oil type switch or combined oil switch and circuit breaker.
5. When prompt stopping of a motor from more than one point is desired and where a starting compensator is used, a push-button circuit is installed in series with the no-voltage release device. This circuit is installed in conduit and the conduit is well grounded.

All enclosed safety switches are equipped with door interlocks to prevent the door being opened when the switch is in the "on" position. Some types of door interlocks have proved unsatisfactory and impossible to keep in good condition. In such cases, the doors are sealed with an ordinary car seal, to prevent their being opened when the switch is in the "on" position. When fuses are to

be replaced, the seal is broken and replaced by an authorized employee.

Each safety switch, distribution cabinet, etc., is provided with an enameled sign warning employees of the danger of coming in contact with any live part of the enclosed equipment, and against touching any part of the equipment without first being certain that the circuit has been killed.

Fuse Replacement

When fuses are not protected by switches on the line side of the circuit, their replacement is extremely dangerous, and negligence on the part of even experienced employees has resulted in many fatal accidents. Even where insulated tools were available, there have been cases where attempts to replace fuses with bare hands have resulted fatally.

Protecting all fuses with suitable switches so that when the switch is disconnected, the switch blades and the fuses are dead has removed the hazard of fuse replacement.

The use of the dead front type of fuse panel which eliminates the need of a switch has also proved very satisfactory from the standpoint of insuring safety in replacement of fuses. In this type of equipment the fuses are held in an insulated case that can be removed entirely from the fuse cabinet. The fuses are replaced with complete safety after which the case is again installed in the cabinet.

Grounding of Equipment

One of the most serious hazards is the lack of proper grounding of motor frames, compensator cases, switches, distributing cabinets and conduit lines. Contact with any of the equipment in the event the motor winding or the supply lines developing a ground is very likely to result in a fatal accident.

At each building where power is distributed there is installed a 3/16 x 1 inch flat copper bar and all distributing and switch cabinets in the vestibules on each floor are connected to this ground bar. At ground floor level this bar is connected to a 2-inch galvanized pipe perforated with 3/8 inch holes. The pipe is filled with crushed coke and driven 6 to 8 feet into moist ground.

Every effort is made to obtain a good contact where conduit lines connect to any metal box or cabinet to insure continuity of the ground system. If there is any doubt, the joint is shunted by a wire attached to the conduit by a standard ground clamp and to the cabinet or switch case by a soldered bolted lug.

Each motor is connected to the conduit system through a piece of flexible metal conduit attached to a steel box bolted to the motor frame and to the switch or compensator case. In addition, this flexible conduit is shunted by a ground wire attached to the motor frame and the switch or compensator case by a soldered bolted lug.

Lighting Circuits

Practically all current for lighting is distributed at 120 volts through 3-wire grounded neutral systems. Where service lines enter a building they are protected with enclosed safety type fused switches.

Feeders are run to the various floors where a steel cabinet is installed for the fuses controlling the various circuits on each floor.

In this system of lighting current distribution the neutral wire has white insulation to identify it and it is not fused at any point. At each switch cabinet this neutral wire is connected to a common ground through a screw connection so that it can be disconnected easily for testing. The neutral or ground wire is connected to the screw shell of all lamp sockets.

All lamp sockets are connected by metal conduit to the outlet box and the conduit system through either a stiff or a swivel connection to insure continuity of the ground system direct to the socket. Sockets connected to the outlet box in the conduit system by so-called drop cord are not used. This makes the lamp socket a possible hazard if the outer shell should become grounded.

Each single pole switch in each lighting circuit is connected only in a live line of the current supply so that when the switch is off the lighting circuit has no potential above ground.

Extension Lights and Portable Tools

Some types of portable machines, tools and extension lights cannot be installed or used in a manner to eliminate operating hazards. Some years ago special attention was given to such cases.

It was found possible to obtain extension lights having a 60 per cent para rubber insulated cord and a rubber covered and protected plug and socket. These are equipped with wire guards and 50-watt mill-type lamps. These extensions can be equipped with semi-waterproof sockets and wire guards or fully waterproofed sockets and vapor and waterproof glass globes.

Extension lights are limited in length

to 25 feet, and for general plant use they are operated at 120 volts from the regular lighting supply. All extension lights are inspected at regular intervals.

While these extension lights have proved satisfactory over a period of years, their use under some conditions was not considered free from hazard. When an employee enters a rendering tank or a boiler shell or drum through the manhole, an electric shock from a defective extension light operated at 120 volts is apt to be serious due to the effective grounding of such apparatus through connecting pipe lines and the area of contact of the employee's body with the shell of the tank or drum.

In all boiler rooms and tank houses there has been installed a 32-volt circuit, and the use of a 32-volt extension light insures further safety to employees engaged in such work.

Most packing plants use a semi-portable type of saw for hams, scribing loins, etc. While such equipment is portable, it is used within a limited space and protection presents no difficulties. In the plants being considered, these saws are operated on 3-phase, 110-volt current supplied from the regular 220-volt power supply through a small step-down transformer having a completely separated primary and secondary. Connection to the power supply is made through a 3-pole non-reversible plug having a grounding contact. A four-wire cord is used for connecting to the current supply, the fourth wire being used to ground the motor frame and entire saw.

Portable tools such as drills, saws, etc., presented a problem when operated at 110 volts because it was impossible to guarantee that the tool would be properly grounded during operation. The motor frame and the tool were supposed to be grounded through the use of a ground wire that was to be attached to some grounded object by a test clip. In practice it was found that the operators sometimes neglected to attach the ground clip.

It was finally decided that portable tools designed to operate on 32-volt single-phase AC current would be satisfactory and safe. A potential of 32 volts was considered low enough to prevent injury in case of accidental contact with any live part of the circuit or through contact with the tool should the motor winding become grounded.

The 32-volt single-phase current for the operation of these portable tools is supplied by a small transformer attached to and made a part of the connecting

(Please turn to page 54)

Explosions Reveal Hazards of Soybean Processing

By DAVID J. PRICE and
HYLTON R. BROWN*

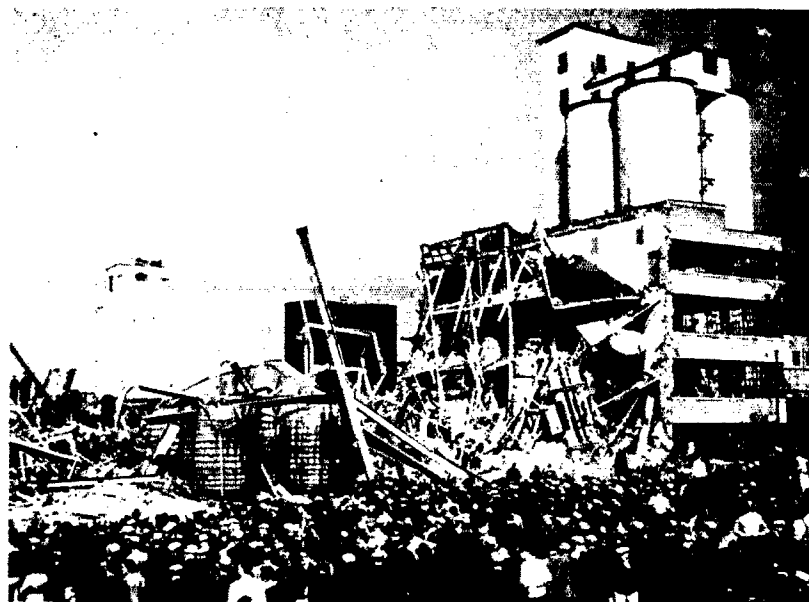
AN EXPLOSION which caused the death of 11 men and injured 45 others occurred at the soybean processing plant of the Glidden Company in Chicago, at 11:38 a.m. on Monday October 7, 1935. The processing section of the plant was almost totally destroyed with a loss estimated at \$600,000. Considerable glass was broken in surrounding residences and business properties.

Operation of the extraction unit had been suspended for about four weeks because the supply of beans had been exhausted. The new crop had just become available, and the unit had resumed operation on the morning of the explosion. The regular employees had been retained during the shut down and the plant had been completely overhauled.

About three hours after the plant was started, an odor of gas was noticed. One of the foremen of the Protein Department was on his way to report this when the explosion occurred.

Eye witnesses and others in the vicinity report that there was apparently one major blast which wrecked the buildings and rocked the neighborhood. Office employees and workers in the laboratory, drafting room and other sections of the plant were showered with broken glass when the windows were shattered. The walls of several buildings were demolished and bricks were scattered in all directions. Many automobiles parked near the plant were damaged when falling debris crashed through their tops.

The fire and police departments responded promptly, and ambulances rushed the injured to hospitals. Fortunately no fire broke out in the ruins. Rescue work was started promptly and continued day and night until all bodies were recovered. At the same time, in-



Wreckage of the soybean processing plant of the Glidden Company in Chicago after the explosion of October 7, 1935. Two weeks later an explosion destroyed a small rural plant in Mokena, Illinois.

vestigations were started by the company and other agencies to determine the cause of the explosion and develop methods of preventing a recurrence.

The Plant and Process

The plant was operated by the Glidden Company for the production of soybean oil, meal, protein and lecithin. It had a capacity of about 4,000 bushels of beans a day.

The sketch on page 20 shows the arrangement of the different units of the plant. Some of the buildings were new while others were old buildings which had recently been remodeled. Reports indicate that all were well maintained and in good condition. The principal buildings in the section affected by the explosion were the elevator, the bean preparation building, the extraction building, the lecithin building, the protein building, the tank building, and the warehouse.

Electric power was used throughout the plant, and underwriters' inspection reports state that approved explosion-

proof motors and equipment were used in all locations where flammable vapors or dusts were considered to be a hazard. Electric lights had vapor-proof globes, and where there was considered to be any explosion hazard, wiring was in conduit with approved explosion-proof switches.

Steam heat was supplied by radiators and unit heaters with air circulating fans.

At the elevator, beans were unloaded from cars and stored or elevated to the top of the house for transfer to the processing part of the plant. From the elevator the beans passed through an 8-in. pipe by gravity to the top floor of the bean preparation building. Here they passed over separators, through scales and up an elevator leg into a tank over a cracking roll which cracked the beans into 3 or 4 pieces. From the cracking roll the stock passed through a drier or temperer to the flaking roll. The flakes, $\frac{3}{8}$ in. to $\frac{3}{4}$ in. in diameter, fell to a belt conveyor which carried them to a second elevator leg. From the top of this leg the stock flowed through a spout which passed through the brick wall into the

*Dr. Price is Principal Engineer in Charge of the Chemical Engineering Division, Bureau of Chemistry and Soils, United States Department of Agriculture, and Chairman of the N.F.P.A. Committee on Dust Explosion Hazards. Mr. Brown is Engineer in the Bureau of Chemistry and Soils, and Secretary of the N.F.P.A. Committee. This article has been adapted from a report, authorized by the Department of Agriculture, which was published in the National Fire Protection Association Quarterly for January, 1936.

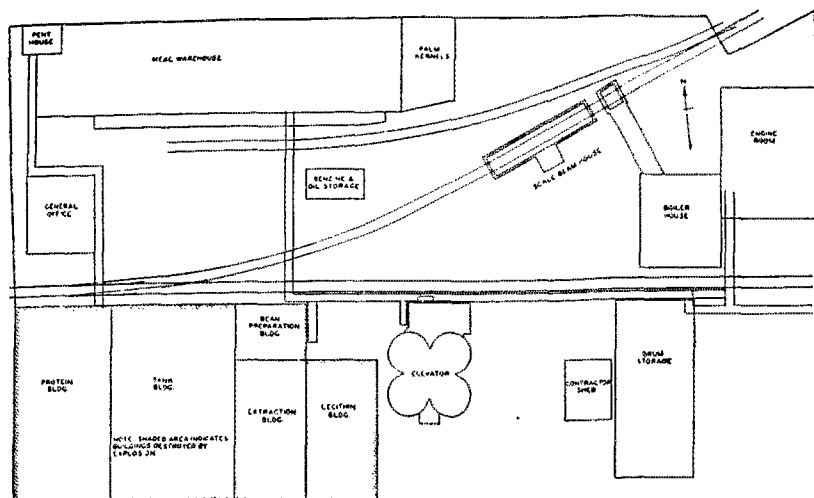


Diagram of the Glidden soybean plant. The buildings destroyed by the explosion were those in the lower left hand corner of the sketch.

extraction room where a belt conveyor carried it to the top of the extraction tower. This tower, a U-shaped apparatus, was about 28 ft. high, with tubes 39 in. in diameter. Screw conveyors with perforated flights operated downward on the entrance side across the bottom and upward on the discharge side. Hexane was pumped to the intake side of the tower, and the oil and hexane mixture was drawn off and piped to the distilling column, where the hexane was recovered and put back into the process.

The extracted flakes from the discharge side of the extraction tower passed through a spout to the drier, a series of steam-heated drums through which the material was carried back and forth and finally discharged into a screw conveyor on the first floor. This conveyor, set at an incline, carried the stock to the cooler, and the discharge from the cooler passed through the wall into the bean preparation building. Here it was elevated and dropped into an air stream, which carried it through an overhead pipe line to the bagging or warehouse section at the northwest corner of the plant, where it was caught in a cyclone and discharged to a packing bin.

In the lecithin plant, oil separated from the hexane at the distilling tower was processed to obtain lecithin, a product used in candy and chocolate coatings. The oil is used as an edible product and also in the manufacture of paints.

In the newly remodeled end of the plant known as the protein building, the extracted flakes, received either directly through a roof conveyor from the bean preparation building or in sacks after being bagged at the warehouse, were treated to produce protein in a

powdered form similar to casein. In the process batches of flakes or meal were mixed with warm water in slurry tanks in the south end of the protein building and then pumped into one of the south six tanks in the tank building. In these tanks the material was treated and agitated and pumped back into the protein building where the liquid was drained off and the residue dried. When discharged from the drier it was elevated and dropped into the meal bin on the fourth floor, where it was bagged for shipment as meal.

The liquor from the above process was pumped to filter presses on the sixth floor and the press cake from these presses was fed into a drier at the north end of the protein building. After being dried in the oil burner heated columns of the drier, the product was screened and packed for shipment.

Conclusions from Investigation

Before attempting to draw conclusions, consideration was given to the possible hazards present in the process used at this plant. At the elevator where the beans were received and stored the same dust explosion hazard existed that would be present in a similar elevator handling grain. In the bean preparation building where the beans were cleaned, cracked and flaked practically the same dust explosion hazard existed as in a feed mill. The extraction unit was considered the hazardous part of the plant, both by company officials and insurance inspect-

*Hexane is a light flammable liquid with flash point of 0° F. or lower. The vapor is explosive in mixtures with air, with explosive limits 1.1% to 4.2% according to data from a solvent producer. The maximum rate of flame propagation occurs with a 2% mixture. The specific gravity of the vapor is 2.97 (air=1).

ors, because of the use in this section of hexane* for the extraction of the oil from the bean flakes. At the other end of the plant in the protein building was another dust explosion hazard. At this point in the process press cake from the filter presses was broken up, dried in an oil-fired flash type drier, ground, screened and sacked. Here again the dust explosion hazard would be similar to a feed preparation plant with the additional hazard of the oil-fired drier.

It seems to be generally agreed by those studying the ruins that the explosion centered in the upper part of the tank building of the protein section, and the consensus is that the blast was an explosion of gas. The manner in which the building walls were shattered and the absence of fire following the explosion indicate that the explosive mixture was gas and air in proportions conducive to the rapid passage of flame. This opinion is upheld by the statements of employees who said that they smelled gas before the explosion and the fact that the manager and other officials were in the plant, endeavoring to find the source of the gas leak.

At variance with this conclusion is the fact that the only man burned in the explosion was the employee stationed at one of the flaking rolls in the bean preparation building and the evidence that the circuit breaker of the motor on one of the flaking rolls had opened four or five times during the morning. He thought he might have been burned by a flash of flame from the motor, but feels that the big explosion came from the protein building.

The problem in the investigation has been to determine how the gas accumulated in the tank building and how it became ignited. From the evidence assembled, it is our opinion that gas from the extraction building passed into the tank building at or near the top of the fire wall separating the two units, or possibly through the pipe carrying condenser water into the tank building. The tank building, a large open area without floors in its 50 foot height, had little or no ventilation because the weather was cool and windows had not been opened. Probably a large pocket of gas accumulated at that point. The gas could have been ignited when the flash occurred at the flaking roll. This flash, passing through the doorway between the bean preparation building and the tank building, could have been the source of ignition for the main explosion which wrecked the plant. It is also possible that gas was present in the bean preparation building as well as in the

tank building and that the motor circuit breaker opening or a flash at the roll provided a direct ignition for the gas and air mixture.

Recommendations

As a result of the study of the process made in connection with this investigation it is recommended that certain precautions should be taken in plants of this kind to guard against dust explosions as well as vapor explosions.

1. In elevators handling soybeans, the safety code for the prevention of dust explosions in grain elevators as prepared by the Dust Explosion Hazards Committee of the National Fire Protection Association should be followed.

2. In plants grinding or milling soybeans or preparing them for processing, the safety code prepared by the same committee for the prevention of dust explosions in flour and feed mills should be followed.

3. Soybean elevators and buildings in which grinding, milling or other preparatory processes are performed should be segregated from other sections of the plant, and should have vents in the walls or roof to release explosion pressures without structural damage. Such vents, in the form of hinged sash or light panels, should have an area of one sq. ft. for each 80 cu. ft. of the building, room or bin.

4. The same precautions suggested for soybean milling or preparation units should be adopted in plants preparing protein from soybeans, particularly in the drying section.

5. Dryers in all parts of a plant where flammable dust is present should be separated from other sections of the plant, and the outside walls should be equipped with the above recommended amount of venting facilities.

6. Dust collectors should be installed outside or vented outside of the building.

7. To guard against any inherent dust explosion hazard, special attention should be given to the type of drier used.

8. Where hazardous solvents are used consideration should be given to the practicability of installing instruments which will detect the presence of flammable vapors and give warning when the concentration approaches the lower explosive limits.

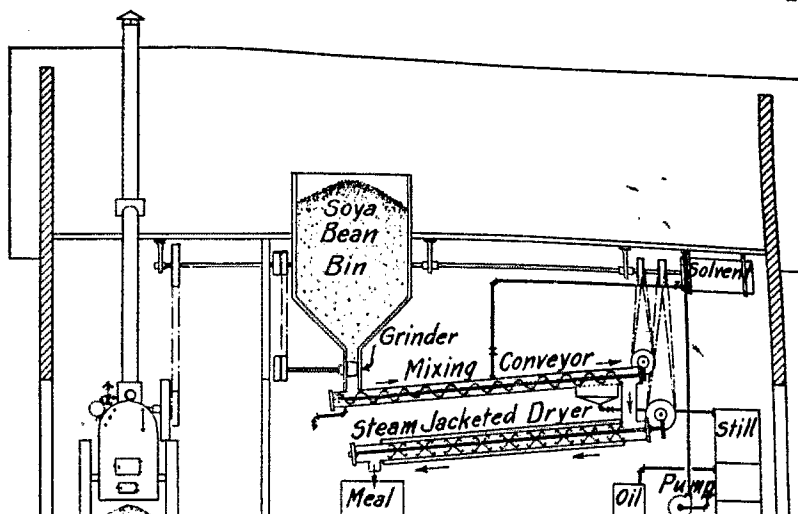
9. Attention should be given to the development of a non-flammable solvent.

A Rural Soybean Plant Explosion

By DAVID J. PRICE

SIX hours after it had been opened for operation, a soybean oil extraction unit at Momence, Illinois, was destroyed by an explosion. The owner, Varnum Parish, Jr., and his assistant were killed. Two others, the plant fireman and a visitor, were injured.

The plant was one of the first installations of its type in this section of Illinois. The equipment was made in an iron works in a nearby town and installed under the personal supervision of Parish in a building formerly used as



Sketch of soybean extraction unit at Momence, Illinois, which was destroyed by an explosion. This drawing was prepared from evidence on the ground after the explosion, no original diagram being available.

a chicken hatchery. As near as could be determined from examination* of the wreckage, the process was probably as follows:

The soybeans were dropped from a hopper on the floor above into a vertical pipe in which a small grinding mill was installed, as shown in the accompanying sketch. This mill, which was operated by a belt drive, crushed the beans into meal. The ground product dropped into a pipe about 18 inches in diameter, inclined upward at about 10 to 15 degrees from horizontal, in which a spiral conveyor was installed.

The solvent, a commercial form of hexane, was drawn from a 55-gallon drum on the floor and pumped into the extraction unit above. The hexane solvent entered the pipe, came in contact with the soybean meal as it was carried up by the spiral conveyor and extracted the oil. The extracted oil was carried off to receiving tanks, and the solvent recovered.

The oil-free meal dropped into another pipe set at about the same angle and located directly underneath the extraction pipe. In this pipe, which was steam-jacketed, the residual solvent was driven off as the meal passed through. The meal was then discharged into a container.

The steam for the soybean meal drier and for other purposes was supplied by a tractor engine boiler installed in an adjoining room.

The investigation revealed that plans

were made about 2:00 p. m. October 22 to get the extraction unit ready to resume operation after a previous short run in the forenoon. This consisted of running the beans from the hopper down through the grinder and into the extraction unit and also in pumping the hexane solvent from the containers on the floor. Apparently about one hour after these operations were started, or about 3:00 p. m., the explosion occurred.

A short time before the explosion took place a local man arrived at the plant to observe the operation of the new soybean unit. He stated that he observed an odor of "gas" which he called to the attention of the operators, who apparently had not been able to detect anything unusual. About ten minutes later the explosion took place. This observer was standing near the end of the unit next to the boiler room, and was blown out through a near-by door. He was burned about the head and hands. He stated that he saw fire flash from the fire box in the boiler room and heard a second explosion which he believed blew both operators out the door at the opposite end of the building.

The plant fireman had helped get the unit started and was standing in front of the fire box in the boiler room when the explosion occurred. The first thing he observed was that his trousers were on fire. He did not hear any violent explosion, and stated that the force of the blast seemed to be in the opposite direction from him, or toward the far end of the building.

From this investigation, it is very

(Please turn to page 68)

*The investigation of this explosion was conducted in cooperation with Deputy State Fire Marshal Frank W. Seeger, Streator, Illinois.

The Campaign is On!

Council expands public safety activities in drive to cut traffic deaths 35 per cent by end of 1940

WHEN the National Safety Council, late last fall, announced its five-year campaign to cut traffic accidents 35 per cent or more by the end of 1940, public authorities throughout the country accepted the idea with acclaim.

Many of them, however, quickly queried, "How are we going to go about it?"

As an answer to this, the National Safety Council announces an expanded public safety program, to be launched immediately.

The action, which will provide a definite, guided program of public safety activity, has been made possible by a generous grant to the Council from the automotive industry. The allotment is part of a widespread safety program recently undertaken by the automobile group.

The chief additions to the Council's former activities in the field of traffic accident prevention are:

1. The placing of eight field men in the various parts of the United States to assist state and community officials and organizations in their efforts to reduce traffic accidents.

2. The preparation of a series of booklets, written in popular style, for nationwide distribution. These pamphlets will tell how many states, counties and cities have successfully attacked their traffic problems along engineering, enforcement and educational lines and how others can pattern their activities after these successful methods.

3. A vastly improved service for newspapers, which have already given such valuable service to the cause of safety.

4. Substantial cooperation with the General Federation of Women's Clubs, the National Congress of Parents and Teachers, and the International Association of Chiefs of Police.

More than a score of states have sought aid in formulating a concrete state-wide public safety program to fit in with the Council's "Five-Year Plan." Hundreds of cities entered in the National Traffic Safety Contest want and need help in applying the Council's general safety program to their local conditions. These demands will provide

fertile ground and full-time work for the field men. The men, in all cases, will work with the public officials and the organizations that are already doing safety work or with those in the best position to do so.

The booklets are being prepared as a guide for public officials and others who are concerned with the traffic problem but who need information and precedent to work out the solution to the best advantage.

Requests have been received from hundreds of newspapers for timely accident-prevention material. Hitherto it has been impossible for the Council to supply this because of lack of time and money. Under the expanded program illustrated articles dealing with all phases of the subject, suitable for newspaper use, are being prepared for distribution to the nation's press. In addition, help will be given in the organization of local safety campaigns contemplated by newspapers.

Thus, through the timely grant of the automobile manufacturers, impetus has been given the Five-Year Campaign, and as a result many communities will be able to translate their traffic control efforts into actual lives saved.

Safety Has Prominent Place, Survey Shows

AN ORGANIZED safety program is in force in practically three out of every five establishments, according to a report of the National Industrial Conference Board which has just made a nation-wide investigation of industrial relations policies. The survey covered 2,452 business establishments in manufacturing, mining, transportation and communication, wholesale and retail trades, finance, and public utilities. Employment represented by these companies totalled more than 4,500,000. A total of 1,429 companies reported organized safety programs. These companies employ 3,742,000 workers, or 83 per cent of the total number covered in the survey.

Safety committees are functioning in 1,200 of these companies. These com-

mittees consist of management representatives, foremen, and key employees. They have as their special responsibility the correction of accident hazards in the plant, safeguarding of machinery, and instruction of employees in safety methods.

In 474 of these companies safety contests are carried on.

Organized safety work is considerably less prevalent in the very small establishments. Only 29 per cent of the companies employing fewer than 100 workers reported safety programs as compared with 55 per cent of the companies employing from 100 to 999; 75 per cent of companies employing 1,000 to 4,999, and 87 per cent of companies employing more than 5,000.

Among industrial groups, the highest proportion of companies with organized safety programs is found in the public utility group, including transportation, communication, gas and electric power companies. In this group, 85.4 per cent of the companies covered by the survey have such programs.

Petroleum refining comes next with 83.8 per cent. In manufacturing industries, the proportions range from 75 per cent in rubber manufacturing to 28 per cent in the manufacture of clothing. In only three of the 16 manufacturing classifications is the proportion of companies with organized safety programs lower than 50 per cent, and in five it exceeds 70 per cent.

Very few safety programs have been discontinued. The elimination of safety committees was reported by 25 companies, which is equivalent to only 2.1 per cent of the total number of such committees reported as still in operation. Safety contests have been abandoned by 40 companies, or 8.4 per cent of the number of such programs reported as in force.

Raising the Ante

THE Kendall Refining Company, Bradford, Pennsylvania, has "boosted the ante" in the 1936 National Safety Council Calendar Contest.

So keen has been the interest among the company's employees since the Safety Calendar was issued, that the firm posted prizes of its own, in addition to the award offered by the Council, to add zest to the competition. A company contest, independent of the National Safety Council Contest, is being conducted to determine the winners of these additional awards.

Better Posture, Less Fatigue

By F. W. SHUMARD

Dean, National School of Time Study, Norwalk, Conn.

Physicians, safety men and time study men all have a practical interest in methods which reduce fatigue

THE posture of operator's arms and other parts of the body while at work should receive particular attention. This applies equally to standing and sitting positions. Posture of workers is important to the time study man as well as to the industrial physician.

The proper height of work, whether standing or sitting, should be about two inches below the elbow height of the operator. If the machine or work is of such dimensions as to prevent this maintenance of height for all sections, then the mean section requiring the longest sustained effort, as perhaps indicated by the longer time elements, becomes the basis for rest allowances. Elements

for other sections which impose undue stretching, reaching, stooping, etc., must also be rewarded by heavier time allowances.

If the work station requires continual standing on concrete or other types of unyielding floors, an operator should stand on a fabric mat or on a soft wooden sub-platform to counteract the effects of vitality-reducing floors.

During the past few years valuable data have been collected by industrial and medical experts that prove the wisdom of having bench, chair and stool heights carefully specified for the minimizing of fatigue. Their figures prove that production costs in many instances have been materially lowered by using



Courtesy American Mat Corp.
A resilient non-slip mat conserves the worker's energy for productive effort.

benches and chairs of proper height and correct design and show that this has resulted in marked reduction of fatigue.

The correct height and general design of a work bench should be determined by the kind of work to be performed on it, and also by the average height of workers to be assigned to the bench. The height of benches should be from 29 to 39 inches as measured from the floor or sub-floor to the top surface of the bench. The top surfaces should be not over three inches in thickness (less if possible) and there should be no interfering braces or supports that will prevent operators from placing their knees well under the bench.

Sitting operators should rest their feet on a foot rest about ten inches wide, which is installed in a tipped position to the lower part of the bench. The front edge of the foot rest should be about 10 or 11 inches from the floor and flush with the front edge of the bench. The back of the inclined foot rest should be about two inches higher than the front edge. This foot rest, if adjustable, can be modified slightly to suit the convenience of different operators.

The stool or chair used for sedentary operators should also receive careful attention. Manufacturers of chairs who have made scientific investigations of fatigue, supply industrial chairs having wooden saddle type seats with suitable back rests. The chairs are adjustable, ranging from 25 to 31 inches from floor to top front edge of the chair seat.



Courtesy Anglo Steel Stool Co.
Posture chairs in use in a textile mill. Chairs which can be adjusted to fit the occupant permit more work with less fatigue than makeshift seating.



Courtesy Domore Chair Co.

Comfortable chairs designed for correct posture lessen fatigue and speed up service to policyholders in this large insurance office.

Where the work consists mostly of pressing attitudes, as when using screw drivers, electric drills, etc., the back edge of the chair seat should be raised enough to compensate for the strain of posture.

Standing or sitting positions are tiresome if either is constantly maintained throughout the day without change. An operation which requires alternate standing and sitting is the ideal combination of work to keep fatigue at its minimum

level. Where this type of combination of standing-sitting postures is not feasible, the time study man can often prescribe an incidental element of work in the cycle which requires the operator walking a short distance to obtain or to deliver small quantities of work, or for tools. This type of incidental element on monotonous operations offers relaxation in the form of productive work instead of heavier rest allowances for the workers.

No Accidents or Violations Is Aim in 20,000 Mile Tour

"NOT an accident, not a violation." That is the travel slogan of the General Motors Parade of Progress as it wends its way across country and through towns to take to the public the "circus of science" — revelations of the General Motors research laboratories.

The General Motors Parade of Progress has been called a "world's fair on wheels," a caravan of 28 motor units, designed to show industry's contribution to the happiness and well-being of the individual citizen. It will cover more than 20,000 miles this year and show to many millions of people. It is now touring Florida.

Every member of the personnel is pledged to safety, according to Herbert

R. Schaeffer, former U. S. Navy officer now commissioned in the Naval Reserve, and commander of the caravan.

General Motors officials insist that the rules of the road be respected to the letter; that the drivers be skilled; that 30 miles an hour be the maximum speed on highways and that city ordinances be observed. They demand full courtesy for the pedestrian and the passing car; respect for all signals and highway markers; physical fitness — everything that goes for safety.

Pilots of the "jumbo" transports that carry the circus have been chosen with the care shown in picking army aviators. Eight men, physically fit, are at the controls. Their muscle coordination is per-

fect. It must be, to handle the eight giant red and silver transports which, when loaded, weigh seven tons each. The trucks measure 33 feet from bumper to bumper, are 11½ feet from road to roof, and are eight feet in breadth.

The same care was used in selecting drivers for the tractors and trailer units, the sound sedan, and the passenger cars that form a part of the two-mile caravan, which, in transit, are spaced at 200-foot intervals, for safety and as a courtesy to passing motorists.

The mammoth transports also are equipped with a full complement of navigation lights and illuminated arrows indicating direction of turns and curves. The cabs have wide windows of safety glass giving the pilots full vision of the road ahead and at the sides. Dual rear-vision mirrors give a wide after-view. Comfort as a safety factor is insured by the broad pilots' seats.

State and city police cooperate with the caravan along the route, detailing escorts through congested traffic, that there may be no infractions of state law or city ordinance. It is the desire of Commander Schaeffer, that the "no violation" record may remain perfect.

The sound car, equipped with public address system, sounds traffic advice and warnings along the route. In towns and cities, local police are invited to direct traffic through the microphone of this car.

The vehicles undergo daily inspection, just as the pilots are examined daily by a medical man, member of the crew, to assure Commander Schaeffer that men and machines are in perfect condition before the caravan moves on.



Demonstrating the fire-fighting methods to be used in an emergency during the 20,000 mile tour of the General Motors Parade of Progress.

NATIONAL SAFETY NEWS



Figure 1. A United Air Lines plane equipped with radio-telephone

IN MARVELLING at the beauty of the airplane in flight, one must not forget the achievements that make safe flying possible. The radio is one of the greatest boons to aviators, for up in the lower limits of the stratosphere, man is in a hostile environment, and the psychological factor of maintaining contact with the ground does a great deal to bolster his courage.

Radio fulfills a number of important functions for the modern passenger airplanes, including: dispatching and schedule flying, reception of weather reports, determination of position, blind flying, and partial blind landing. As far as safe flying is concerned, direction finding is one of the most important functions. A typical radio installation in an airplane is shown in figure 2. The direction finder equipment may be observed on the right hand side. The antenna reel is located prominently in the center of the photograph, for on some installations it is necessary to reel out the antenna while the airplane is in flight.

In the United States a system of radio beacons is maintained and operated about the country by the Department of Commerce, and a well defined air-path is available to anyone flying along the Federal Airways System. The regular radio beacon range extends for about 100 miles. A series of dot and dash signals are broadcast upon a definite frequency from the radio beacon station. This frequency may be received by any radio receiver equipped for long-wave reception. The radio signals are "directional" and a pilot can easily determine whether he is on the right path of flight or not, as the radio range beacon signals give indication of the direction in which he is flying. The pilot can fol-

How Radio Protects the Air Traveler

By JACK DELMONTE

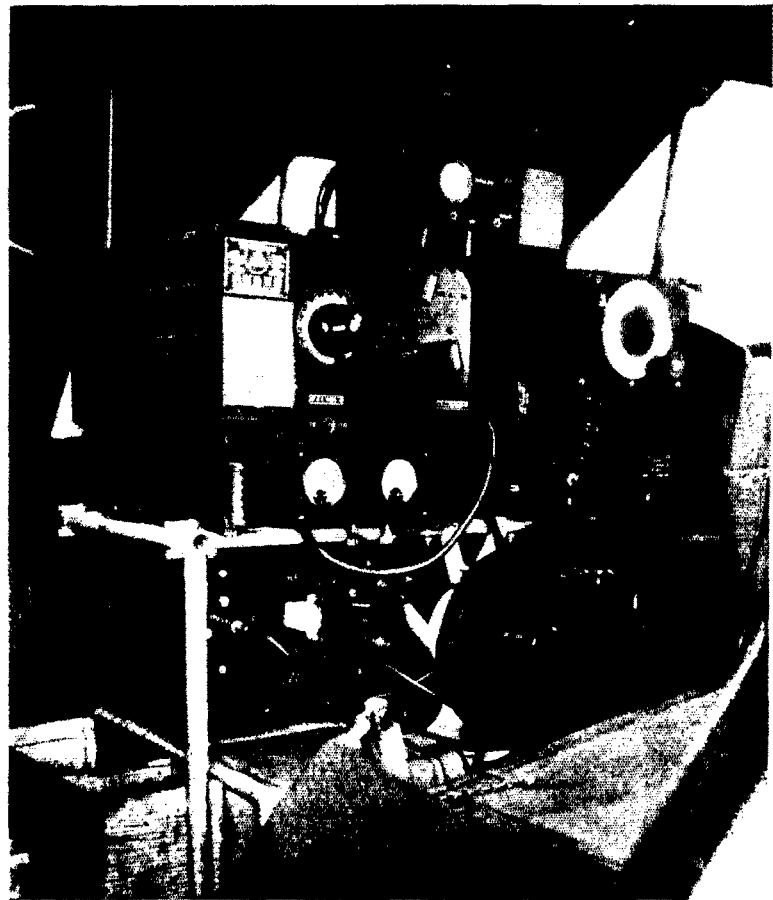
Electrical Engineer

low a predetermined course by listening to the cone of signals that originate from the radio beacon station.

One of the difficulties experienced with beacon signals is a multiple reflection of the radio waves in mountainous regions, which may be confusing to the pilot. Familiarity with a route, however, should minimize the effect of these extraneous influences. When the pilot arrives at a "dead zone" insofar as the radio signals are concerned, he is over the station emitting the signals. It has been the practice to interrupt the radio

beacon signals to broadcast weather reports, which usually take a period of about three minutes. This short interval of time may be enough to mislead a pilot or cause him to lose his course, and efforts are being made to make possible the simultaneous broadcast of the beacon signal and the weather reports upon one radio frequency wave.¹ Another alternative is to make a brief announcement upon what frequency the weather reports are to be broadcast, and im-

¹ R. Martin—"Radio" Nov., 1934, Aviation.



Courtesy Westinghouse Electric

Figure 2. Through radio the plane maintains contact with the ground.

mediately resume the beacon signals, allowing a minimum of interruption for those closely following the signals. Thus the interested pilots can tune from the beacon to the weather reports.

The knowledge of weather reports is vitally important to the pilot, for in this fashion he can be warned against adverse flying weather. Upon reception of the reports by radio, the pilot may re-route his course to one of comparative

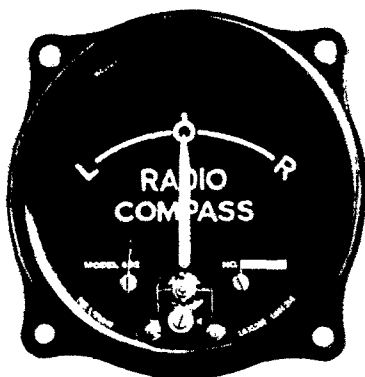


Figure 3. With the radio compass there is little danger of the pilot getting lost.

safety or ground the airplane before the advent of a violent storm. An outstanding example of this service is the "hurricane watch" of the Pan-American Airways in the storm centers of the Caribbean. A system of 47 radio and weather-reporting radio stations is maintained for the large airfleet in service between the United States, Central, and South America. The Red Cross and official sources credit this service with being instrumental in saving more than 26,000 lives through warnings issued to communities lying in the path of the hurricanes. The large flying boats may safely negotiate about any storm area when they are warned of the location and direction of the storm travel.

In Europe, the majority of the airlines rely for navigation upon ground stations equipped with some form of direction-finding apparatus. The pilot of the aircraft sends out signals asking for his position. These are received by three ground stations, and one of them directs him to transmit a certain note. Bearings are taken upon the signal, and are transmitted from two of the stations to a central main station. The course of the plane is plotted on a map, and the pilot of the aircraft is then notified of his position. This system of control requires a transmitter in addition to the radio receivers; it is believed in the

Spread This Message Through Your Community

By H. P. HEYNE

Safety Engineer, Canton, Ohio

THE chief cause of accidental death among children is the automobile. In recognition of this, the prevention of automobile accidents should not be left wholly to public authorities.

As motorists, adults can safeguard the lives of children by driving carefully. As parents, they can educate their children to recognize the prevailing dangers and to avoid them.

A community safety council on child safety activities, working with the cooperation of parent and teacher groups and individual householders, can do much to promote child safety. The program may be fostered by a letter such as the following, distributed by safety council representatives in each precinct, so that every family in the community is reached:

For the past few months we have seen a number of children on our streets narrowly escape death or injury from automobiles. Many traffic accidents occur on the residential streets.

The adults in residential sections can curtail these accidents by the proper training of their children. Will you cooperate in this movement?

The following nine recommendations, when followed through, will make it safe for your children:

Park your car in the garage. A parked car in the street obscures the view of children who are apt to leap into the street from behind the car.

Be watchful when backing out of the yard. You cannot see children close to the car when depending on your rear view mirror alone.

Be careful in backing and turning your automobile at dead-end streets. Be sure no one is in a position to get hurt.

Keep your own children out of the streets. This will help others to teach their children to play in back yards and on sidewalks.

Teach children to use the playgrounds, yards, and sidewalks

Teach your children the need for looking first to the left and then to the right before crossing the streets or highways or railroad crossings, and only to cross when the roadway is clear.

Drive your car at a moderate speed, especially in residential sections and near schools. Your brakes and tires should always be in good condition.

The home—a place for everything and everything in its proper place, and nothing stored on stairways. Conduct weekly meetings for a check-up in the elimination of unsafe conditions and unsafe practices in the home.

Let us all cooperate in home safety and in safe driving. Make our city the safest in the country. With your help this can be done!

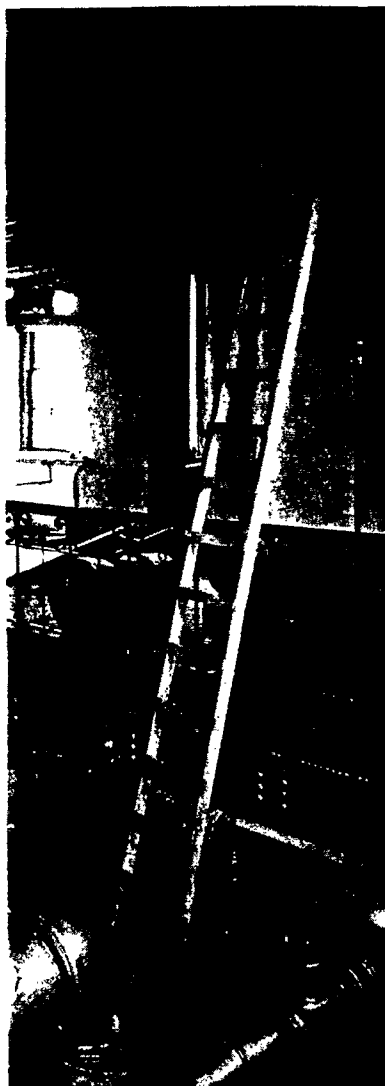
WILL YOU DO YOUR PART?

United States that the beacon signals are superior and more generally practicable.

Another form of direction-finding radio equipment is the homing device, which enables aircraft to be flown direct to any station which is sending out radio transmissions. This is the most recently developed safety feature of aircraft radio, and is limited in its application at present by the high cost. The simplest form of the radio compass devices is the visual indicator. A pilot lost above the clouds can head his airplane toward any broadcast station whose location he knows, and guide the airplane merely by watching a needle upon the instrument dashboard. This development makes use of a loop aerial which is mounted outside the fuselage. On some installations it is fixed, on others it is possible to rotate the loop and observe on the direction finder the origin of radio signals. Beyond doubt, this is superior to the radio beacon signal, as the 600

commercial stations in the United States afford the pilot a wide range of choice for setting his course.

Equipped with the radio compass, there is little danger that the pilot will get lost, for he directs the airplane to a broadcast station of the city to which he is flying, and a zero indication on his instrument connotes "on course." A typical radio compass indicator that is used in conjunction with the loop antenna, and direction finding equipment is shown in figure 3. Assuming a fixed loop antenna, if the airplane veers to the right, the needle goes to the right, and likewise for the left. However, if the pilot veers the airplane to the right and the instrument reads to the left, he is flying in the wrong direction. To make sure that the instrument is working when the airplane is on course, the pilot may veer the aircraft itself in either direction to check the response of the instrument. The radio compass (Please turn to page 67)



There may have been a reason for this set-up but it would make a safety man shudder. Lashing the ladder to the railing would reduce the hazard.

EVERY industrial establishment boasts of at least one ladder. It is impossible to carry on the daily activities of the factory without some means of reaching elevated locations. And probably no piece of equipment is subjected to more abuse and neglect. Too often a ladder is bought on price alone and kept in service with the minimum of maintenance until it finally collapses.

Unlike many of man's appliances, the ordinary ladder of today is very much like that used hundreds of years ago. Wood is still the most popular material. Ladders of light weight aluminum alloys have been introduced and have found a limited market, but they cannot compete

Ups and Downs

Keep a watchful eye on the ladders and there will be fewer accidental "downs"

with wooden ladders in price. When light-weight alloys can be produced at competitive prices, safer and more durable ladders will be more widely used.

Safety begins with the purchase of equipment. There are few more conspicuous chances to purchase either safety or accidents than with ladders. A good ladder costs more, but it will last longer, and with proper care it will help its user to avoid accident.

No ladder is safer than the poorest piece of stock used in its construction. This means that only well seasoned, straight-grained woods should be used. For extension and straight ladders, the rails should be of spruce, Douglas fir, Norway pine, or long leaf yellow pine. The last named wood, being heavier, is less used for ladder construction.

Oak, hickory and ash are the best woods for rungs, and a straight grain is highly important. The best rungs are hand-split, which makes it impossible to get anything but a straight grain. A machine-turned rung is far less reliable.

The sectional size of side rails must vary with the length of the ladder, and the diameter of the rungs must vary with the width of the ladder between side rails. The diameter of the rung should not be less than 1 1/8 inches nor the tenon less than 7/8 inches.

Extension ladders should be equipped with automatic locks instead of gravity locks. In the automatic lock the keeper is forced by a spring to grip properly and seat under the rung. Malleable iron or mild steel should be used for the hardware; cast iron fittings should not be permitted.

There has been considerable discussion of whether the rung tenons should extend fully through the side rails or only to within one-quarter inch. The preference seems to be for the latter

type of construction. Such ladders retain their rigidity better, and there is that much less opportunity for moisture to get at the tenon of the rung and cause rot.

Stepladders

The poorly constructed stepladder is an accident maker, but thousands of them are in use. The demands of industry are more exacting than those of the home, but many of the stepladders on the market would become wobbly after one spring housecleaning.

For industrial use a stepladder should have side rails at least 7/8-inch (preferably one inch) by 3 1/4 inches. To give a good footing the treads or steps should be not less than 3 1/4 inches wide. Steps should be truss-rodged or braced to the side rails with angle braces.

Frequently it is necessary for a helper to assist a worker from the back of the ladder. For this reason the rung-back type of stepladder is preferable. It is stronger than the slat-back type and will not become wobbly. The spreader is a frequent source of bruised hands, but it is possible to obtain safety spreaders with a shield over the joint.

An important contribution to safety had origin in England some 75 years



Light weight alloys make strong, serviceable ladders but they cannot compete with wood in price. This 44-foot extension ladder weighs only 172 pounds complete. The leg brace is removable.



A ladder foot combined with a spike is shown in this picture. Either may be used, depending on the nature of the floor surface. When the spike is used the foot is hooked in an out of the way position. This device has the disadvantage of being rather cumbersome.

ago when an enterprising individual constructed a crude stepladder with a large platform on which a worker could stand comfortably and use both hands to work. This crude idea was developed into the modern platform or safety ladder. Platform ladders were used by Admiral Byrd's expedition to the South Pole, and they are widely used in industrial plants. With this type of stepladder the worker stands on a solid platform guarded on three sides. There is a marked gain in both efficiency and safety.

Another type of ladder frequently used for maintenance work is the extension trestle. This ladder is of the "A" type, with a center section which slides up and down. These are generally used in pairs with a stage between them or in sets of four with two stages, and with planks from stage to stage. In selecting extension trestles, the principal points to look for are adequate length guides, strong locks for the sliding section, and a safety spreader.

The surest way to get safe ladders is to purchase those which are guaranteed to conform to the National Ladder Code* drawn up by the American Standards Association.

Inspection and Maintenance

Even the most durable of ladders requires careful inspection and maintenance. More structural failures occur as a result of misuse in handling and

storing rather than from the strains imposed by actual use. Ladders are dropped in handling and slide off piles or trucks. Frequently they are stored horizontally with supporting points near the ends, resulting in sagging which may put a permanent set in the ladder and weaken the rails. To avoid this possibility, ladders should have several support points when stored horizontally. They should be stored in a place protected from the weather. Dampness will cause the wood to check and rot the rung tenons. The latter damage is difficult to detect.

To afford protection against moisture, ladders should be given first a coat of linseed oil and then a coat of colorless shellac. Paint should not be used. It saves the surface but it also covers a multitude of defects.

No program of inspection can be too rigid. Constant vigilance is needed to keep unsafe ladders from being used "just this once." All workmen should be told to return to their foremen any damaged ladder. It should not be put back where somebody else might use it. If the damaged ladder is beyond repair, the foreman should break it up so that nobody can risk his life on it. If it is to be repaired, it should be conspicuously tagged.

When there is doubt about the strength of the ladder, a test should be made. Support the ladder horizontally at points about six inches from each end, and apply a load of 200 pounds at the center. Permissible deflection increases with the length of the ladder. Reference to the National Ladder Code will show the permissible deflections.

If the ladder exceeds the permissible deflection, it should be discarded or cut down to a length at which it will conform to the code. Frequently a wobble in the ladder can be corrected by tightening the tie rods.

Regardless of the quality built into a ladder and in spite of faithful inspection and maintenance, an accident may occur if the ladder is not suited to the job. Frequently an extension ladder is just a trifle too short, and the worker forgets that there must be a proper lap of the sections. If he gets by, he is lucky. Extension ladders up to 36 feet should have a minimum lap of three feet; ladders 40 to 44 feet a lap of four feet; 46 to 50 feet take five feet, and over 50 feet, six feet is needed.

An example of unsafe practice is a steamfitter standing on a stepladder and using a large stillson wrench. His ladder may meet all code specifications, but it was never intended to take such a load. The pressure exerted upward on the wrench plus his own weight is enormous. A stepladder should not be used when a stout scaffold is required.

Many accidents have also resulted from placing ladders at incorrect angles against walls. If the ladder is placed so that it is too close to the wall at the bottom, there is the danger of overbalancing when the user ascends. If it is too far from the wall at the bottom, there is too much bending strain on the side rails. A good rule to remember is to keep the horizontal distance from the wall to the ladder at the bottom one fourth the length of the ladder.

When ladders are being used where people or moving objects are passing by, a helper should be stationed at the bottom of the ladder. This precaution should also be taken when a ladder must be used in front of a door.

Ladder Feet

Mounting a ladder securely on a slippery surface calls for special ladder feet, many kinds of which are available. Three general types are on the market: (1) Those having an abrasive metal surface; (2) those with cork soles or vacuum type rubber treads; (3) those with spiked points.

Conditions of use are so varied that no hard and fast rules can be laid down for the choice of types of ladder feet. In general the cork or rubber vacuum type will be found most satisfactory for smooth floors. On wet or oily concrete surfaces the abrasive metal feet are preferred. On wood or hard ground the steel point is effective but its disadvantages on wood floors are obvious.

*In addition to the National Ladder Code, helpful information on the subject will be found in Safe Practices Pamphlet No. 1, "Ladders"; Industrial Data Sheet D-Gen. 5, "Inspection of Ladders." Brief suggestions to employees for the safe use of ladders are found in several posters and safety instruction cards published by the National Safety Council.

Every Bus Run Was a Safety Drive

EVERY run made by a motor coach operator for the Southeastern Greyhound Bus Lines is a "safety drive" since that division of the nationally known transportation system began a determined safety campaign June 1, 1934.

Since that time, no-accident mileages formerly believed impossible have been accomplished by the drivers, and one unit, the Birmingham region, has built up a record of 1,249,143 miles without a single accident. This is believed to be the best record ever made by any fleet or bus organization. In recognition of the achievement the Bureau of Safety, Chicago, presented the Birmingham group a beautiful trophy.

So skillfully has the contest been organized that it perpetuates itself by its own momentum and also automatically extends its goal as each contest period ends.

When officials of the division undertook the campaign, they realized that the first need was to outline a definite program and the second to create and maintain interest among all employees. The Southeastern System was divided into six regions—Nashville, Birmingham, Cincinnati, Louisville, Knoxville, and Lexington. The regions in turn were divided into teams. Thus competition was placed on a personal and individual basis.

Chargeable accidents were defined precisely. Included in the list were such items as passengers falling while boarding a bus or alighting from it, or baggage falling from the top of the bus or from the rack inside, regardless of damage done.

Each contest lasted for sixteen weeks, and since another one started as soon as one was finished, eager interest was created among employees, and the possibility of a let-down was obviated. With each succeeding contest the winning group has had to exert itself to greater lengths to outstrip its competitors, for as the safety idea began to be ingrained into the operators, the no-accident mileage began to rise to unexpected heights.

In connection with the contest the management inaugurated what is known as the "Safety Button Record," awarding safety emblems to operators who

drive a specified length of time without a single chargeable accident. A six-months no-accident period entitles a driver to a bronze button; one year, a gold button; two years, a pearl-studded button; three, a ruby-studded button; four, sapphire-studded; and five, a diamond-studded emblem.

A discipline and bonus plan dovetails with the "Safety Button Record." At every pay period each coach operator is paid a bonus amounting to 7½ per cent of his salary. The bonus is withheld, however, if the operator is at fault in any chargeable accident during the period; if he is guilty of any act of recklessness or carelessness, even though this did not result in an accident; if he is involved in an accident in which he is not directly responsible, but which he might have avoided by greater caution; and many no-accident offenses, such as discourtesy, speed, violation of rules, and drinking.

At the start of the contest a goal of

70,000 miles was set—the highest system average of any bus company in America at that time. The best no-accident average of the Southeastern Greyhound Lines up to that time had been 23,000 miles. The goal seemed hopeless, but the first contest was concluded with a system average of 64,258 miles. The second contest raised this mark to 85,247 miles. And the fifth contest, concluded on January 5, of this year, set a record of 136,189 safe miles as the average for the division. Regional winners have piled up amazing figures in the meantime. Winners in the five contests have been as follows:

1. Louisville Region, 116,104 miles.
2. Knoxville Region, 165,734 miles.
3. Knoxville Region, 325,432 miles.
4. Birmingham Region, 689,210 miles.
5. Birmingham Region, 695,799 miles.

Suitable awards have been presented to winners at banquets held at the conclusion of each contest.

ONE of the outstanding features of the competition has been the work of the Birmingham Region in setting its "million mile record."

During the latter part of 1934 the Greyhound Management Company of Cleveland issued a statement that its Indianapolis Region had set a record of 1,024,003 miles without a chargeable accident. The entire bus industry and safety organizations throughout the country recognized this record, and the Southeastern Greyhound Lines looked upon it as a challenge.

The Lexington Region was on its way to make a strong bid for similar honors, when a scraped fender damaged a perfect record that had reached 700,000 miles. The Birmingham Region, however, stepped into the competition and on December 24, 1935, broke the record, with 1,249,143 safe miles to its credit—a fine Christmas gift to the management which sponsored the safety activity.

Translated into comparative terms, the record would mean driving across the continent 416 times or around the world 54 times without a single accident.

Because of the success attained by the operators' contests during the first few months, a contest for mechanical forces was inaugurated on January 1, 1935. Since that time these employees have worked more than 607,000 man-hours without a lost-time accident.

Recognition was given the Southeastern Greyhound Lines in 1935 for winning the Middle West Safety Contest, in which 27 companies are entered.



THE SAFETY EXCHANGE

— "A ROUND TABLE IN PRINT" —



Simplify Carrying of Compressed Gas Cylinders

These two devices make the carrying of compressed gas cylinders easy. The one for carrying cylinders horizontally is formed by a metal tong with a wooden handle, attached so that it will not slip. When pressure is applied to the handle by lifting, the tong closes and the cylinder is held firmly.

The device for carrying cylinders in a vertical position is formed by a metal collar with two projecting wooden handles. The distance from the bolt in the handle to the end of the handle near the tank is slightly greater than the distance from the bolt to the tank; therefore, when the handles are lifted upward, the ends press firmly against the tank and it is easy to lift and carry the cylinder.

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

Chock for Mine Cars Prevents Runaways

This photograph of a block to prevent runaways, and protect men working on track comes from the U. S. Bureau of Mines. The wooden block, shaped to the curvature of the car wheel, is 18 inches long, six inches high, and 3 or 4 inches wide. A $\frac{1}{2}$ inch iron strap is bolted to the block two inches from the top by a $\frac{3}{4}$ inch bolt. The strap is bent at right angles, passed under the block through a groove, and bent at right

angles in the opposite direction. The end is then bent to form a sleeve for a $\frac{3}{4}$ inch bolt.

The strip of $\frac{1}{2}$ inch iron, 6 inches wide, is bent to form a sleeve for a $\frac{3}{4}$ inch bolt. A piece cut from the center allows the sleeve at the end of the iron strap to be inserted, and form a hinge. The large piece is then bent to fit over the flange of the rail, and the end carried under the rail. A lug bolted to this end holds the block to the rail.

Rubber Stamps Speak for Safety

The Youngstown Sheet and Tube Company, Youngstown, Ohio, stamps all correspondence going through its plant with a suitable safety reminder. Each letter going to the foreman, superintendent, safety engineer or anyone directly connected with shop operation is so stamped. Thus these men are reminded to keep up the job of safety. The messages vary from time to time and have met with very good response in all departments in which they are introduced.

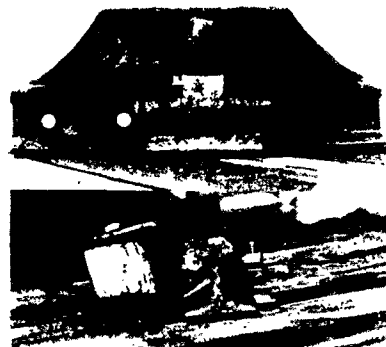
One recent message reads, "Mr. Foreman, ask yourself 'Is my department safe?'" Another is: "Mr. Foreman, you are responsible for the safety of your men. Study all jobs and warn your men. Keep your safety record in mind."

"Hezekiah" Is Grim But Effective Reminder

A skull dug up in the course of a construction job by employees of the Piqua Stone Products Company, Piqua, Ohio,



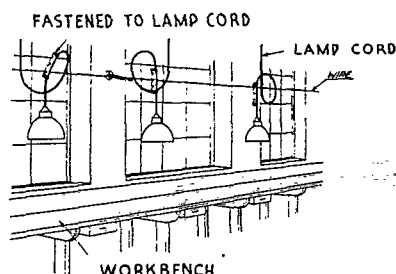
has been used in safety displays. "Hezekiah," as the employees christened the grisly souvenir, has apparently been an effective reminder. The company has not had a disabling injury since February 21, 1934, and was awarded the safety trophy of the Ohio Crushed Stone Producers Association for the first half of 1935. In the accompanying illustration, the trophy is shown in the upper right hand corner and "Hezekiah" at the lower left.



Efficient Way To Light Work Bench

To give better light and at the same time not interfere with operations, this method of lighting workbenches was developed.

A wire, at a height where it may be easily reached, is run over the workbench. A notched wood block is attached to the cord of the electric light and hooked onto the wire. Since the block has three or four notches, the light may be suspended at different levels.



thus permitting a variance in illumination according to the kind of work being done.

Railroad Maintenance Men Flag Way to Safety

The Gulf, Mobile and Northern Railroad has built a novel safety campaign around motor cars which transport section crews along the right of way. They equipped the cars with red pennants atop a 15-foot pole to warn motorists when a rail car was approaching. Because these flags attracted so much attention from both outsiders and railroad



MARCH, 1936



Manhole Covers Easily Lifted with This Hook

This manhole lifting hook was devised by the Consolidated Gas Company of New York, to make lifting easy, and to provide perfect control of the cover.

It consists of a telescopic arm of metal tubing welded to a foot piece fashioned of two pieces of boiler plate, bolted and pressed to permit the arm to swivel and to give ample gripping surface on the pavement. To this handle a two-purpose hooking device is fastened; the long

hook is used for round covers, and the short one for rectangular covers.

To operate the lifter, the foot piece is set beside the manhole at the point where the cover is to be placed. The hook is inserted in the manhole cover hole, and the operator walks around the manhole, lifting the cover by raising the handle of the lifter and pivoting the weight of the cover on the foot piece. The overall length of this device is 56 inches. Being telescopic, it allows for adjustment.

employees, Chief Engineer Exley built a more extensive campaign about them.

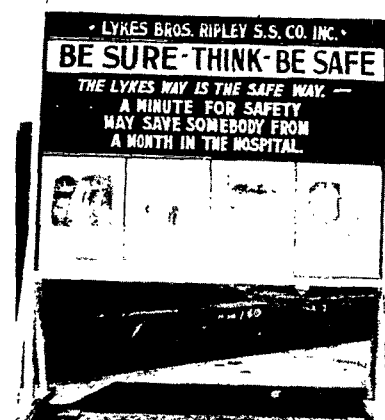
He made two rules governing the use of the flags. One, that whenever a motor car is on the main track or not entirely clear of it, the safety flag must be in a raised position. Two, that whenever the motor car is entirely clear of the main track, the flag must be down.

Furthering this idea, Mr. Exley started a "Safety Crusade." Crusade flags (red flags with golden colored crosses in their centers) were awarded all foremen, linemen and supervisors each month they maintained a perfect safety record. If an accident occurred in which they were at fault, their crusade flag was forfeited and a plain red flag substituted until they had a perfect safety record for a month.

Since it was necessary for the average crew to handle the flag six or eight times a day, the men became familiar with the safety idea. The flag contest has developed into a safety campaign in which all maintenance-of-way workers are striving for honors.

Bulletin Boards Are Movable

This bulletin board is one of twelve used on the docks by the Lykes Brothers - Ripley Steamship Company. The boards are double faced and mounted on casters. They are placed on the dock alongside each vessel.



THE SAFETY LIBRARY

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

Commerce and Traffic

TRAFFIC AND TRADE. By John Paver and Miller McClintock. Published by McGraw-Hill Book Co., New York City, 1935. Price \$4.50.

This book is an introduction to the analysis of the relations between street traffic flow and retail trade activities. It is divided into four parts, representing different phases of the analysis.

Part 1 is devoted to the reasons for traffic movements of various patterns in relation to the market variations. It deals with variations in traffic flow patterns at different times of the day, different days of the week and different seasons of the year.

Part 2 deals with the distribution of retail trade by location and time. It shows how different kinds of retail business are distributed over city areas and shows the variations in sales for characteristic businesses by times of day. It relates these to the traffic pattern, both vehicular and pedestrian.

Part 3 defines urban markets and trading areas and shows how they may be determined from information about traffic flow.

Part 4 deals with the adjustment of methods of distribution to moving buying power. It analyzes the different types of advertising and selling methods in relation to the distribution of buying power.

The authors emphasize that the book is only an introduction to the subject, intended to point out some of the basic relationships and the method of approach in pursuing the studies farther.

—EARL J. REEDER

Traffic Control

THE STEADY FLOW TRAFFIC SYSTEM, by Fritz Malcher. Published by Harvard University Press, Cambridge, Mass., 1935. Price \$1.00. (Book)

The steady flow traffic system had for several years prior to the death of the author been a subject of development and investigation by him. This book, which is Volume 9 in the Harvard City Planning Studies, presents the work so far as it had developed at the time of Mr. Malcher's death and includes some

specific applications of the steady flow principles to various complicated intersections and areas, arranged by friends of the author.

The book presents well the fundamentals of street layout for uninterrupted traffic and discusses at some length the economic aspects of this development. An evidently uncompleted chapter on "Express highways under the Steady-Flow System" appears to mark the end of the author's work on the book, which is followed by the specific applications on which the author had worked but which he had not prepared for publication.

—EARL J. REEDER

Training Supervisors

The growing attention being given to employer-employee relations has served to focus attention on foremen and other supervisory employees because of their key position between management and the rank and file of the organization. This explains why, according to a report recently issued by the Policyholders Service Bureau of the Metropolitan Life Insurance Company, increasing emphasis is being placed on the training of such supervisors as foremen and the other "non-commissioned officers" of managerial staffs. A report of the survey, entitled *Training Supervisors and Key-Men*, presents an outline of the practices of 85 companies that have inaugurated such training programs.

A clearly defined purpose is essential to the success of training programs, the report points out. Analysis of the training methods of the 85 companies shows that there are three predominating objectives: (1) providing foremen with an opportunity to acquire information, (2) helping them think clearly about their jobs and (3) developing ability to do what is required of them. Methods of training discussed in the report vary from the studied informality of the "conference" method to schedules of lectures on such subjects as economics, psychology, time study and cost accounting, also on company organization and history, products and markets, plant policies and practices. The report, referring to discussions used in connection with

training lectures, states that information acquired through such methods is better understood and more readily accepted.

The essentials for success in a program of foreman training, according to the report, are active interest from the management, a competent leader, a carefully selected group, practical subjects for discussion. The report states that there is difference of opinion as to the possibility of measuring results of training programs. Some companies however, point to specific improvements in departmental production, to changes in attitude of certain foremen, or to the fact that trained foremen have developed faster as a group than those who have not received training.

The report also discusses methods of planning a training program, and the costs of a training program. The details of the practices of seven companies are outlined at some length. Copies of this report are available on request to the Policyholders Service Bureau, Metropolitan Life Insurance Company, One Madison Avenue, New York City.

Dusts

EXPLOSIBILITY OF AGRICULTURAL AND OTHER DUSTS AS INDICATED BY MAXIMUM PRESSURE AND RATES OF PRESSURE FALL. By Paul W. Edwards and L. R. Leinbach. (U. S. Department of Agriculture, Technical Bulletin No. 490) For sale by the Superintendent of Documents, Washington, D. C. Price 5c. (Pamphlet)

The explosibility of 133 dusts was determined at two concentrations, 100 and 500 milligrams of dust per liter of air.

Printing Industry

ACCIDENT AND HEALTH HAZARDS IN THE PRINTING TRADE. HOW TO PREVENT THEM. By R. Randolph Karch. Published by the Author, Arsenal Junior High School, Pittsburgh, Pa., 1935. Price 25c. (Pamphlet)

"Presented in both text and outline form for easy reading and study, covering the major accidents and health haz-

(Please turn to page 58)

NATIONAL SAFETY NEWS

INDUSTRIAL HEALTH

A Non-Technical Symposium for Physicians and Laymen

Unseen Dangers

By C. E. BLEICHER

General Master Mechanic, Dodge Brothers Corporation

THE inception of Workmen's Compensation laws brought added expense to the cost of manufacturing but the more progressive plants were quick to start on a program of safety. However, as employees could not be made safety minded by passing laws or making rules, it was necessary to put on educational campaigns.

The machinery manufacturers began to study their problem from a more serious angle than just putting a light guard over a chain of gears. A large number of safety devices for different types of machinery were introduced, and with the introduction of direct motor drives, the machines in themselves have been made fairly safe. In fact, a good job has been done and I am sure will continue to be done. About the same time, the tool and die designer began to think in terms of safety.

There is still a lot to be done by the plant engineer and the plant supervision, for no matter how safe the machine is, or how well the tools are protected, there will be accidents if the operators are not given sufficient room to do their work. Some of our most serious accidents come from the haphazard arrangement of machinery.

Careless housekeeping, such as allowing the floor to become covered with oil so that it becomes very slippery and the setting of stock boxes in the aisle or along the assembly line in disorderly fashion, is another source of numerous injuries. This is entirely a question of plant supervision and can be controlled.

Up to this point, the safety engineer has done his work well but we are coming into an era where it will be just as

necessary to protect a workman's health as it is to protect his body from physical injury. Let me present an example of what is happening in the way of changes to the Workman's Compensation Law. (Quoted from *Industrial Medicine*, October, 1932.)

The effect of repeated changes in compensation laws is apparent only when their cumulative experiences are studied. As an example, the Ohio law is summarized below:

1911. Enacted; 1912—Became effective.

1914. Death benefit increased, permanent partial disabilities scheduled, maximum benefits for temporary total and temporary partial disabilities increased.

1917. Medical service maximum increased, permanent partial in addition to temporary total compensation payable.

1918. Death benefit increased.

1919. Temporary total rate of benefit increased; partial loss of eye considered as permanent partial.

1921. Permanent total benefit rate increased; temporary partial and permanent or partial rate increased; compensation for facial disfigurement established (at a maximum of \$3,750); occupational disease law became effective.

1924. Death benefit increased; all disability benefit rates increased; additional award in cases of violation of safety requirements.

1925. State department of Safety & Hygiene established.

1931. Maximum benefit for temporary partial increased; benefit for specific permanent partial increased; funeral expense benefit increased; other occupational diseases added.

Legislative Trends

This brief summary includes major changes only. But those are sufficient to indicate the trend of legislation. What such changes do to cost is reflected in the losses experienced under the act. Since Ohio operates a monopolistic state fund, the loss experience of that fund is sufficiently inclusive to indicate the total cost of changes.

During the first three years the law was in force the average annual losses incurred amounted to \$1,185,814. In the three-year period preceding the 1931 revisions the average annual losses incurred amounted to \$14,472,079, an increase of 1220 per cent.

That Ohio experience is indicative of the experience of other states is shown by an analysis of the changes as in compensation laws brought about in the legislative sessions of 1931. In that year the laws were changed in 33 states and three territories.

The Vital Problem of Health

Following is a quotation from an article (Occupational Diseases) written by A. D. Lazenby, M.D., F.A.C.S., chief surgeon of the Maryland Casualty Company of Baltimore:

"There is no more vital problem confronting the industrial employer today than the conservation of the health of his working force. This thought is not to be associated alone with the specific hazards of manufacturing methods, but relates even more definitely to the physical efficiency of his employees, their workmanship and attendance. Absenteeism, labor turnover, work spoilage, and diminished output are all factors which bear heavily upon production costs. They bear much more heavily than the average employer can be made to believe, because their influence cannot be entered as a red item in the ledger.

"As a reasonable man, however, how can the average employer fail to appreciate the cost of work spoilage, impaired output, inaccuracy and of accidental injury resulting from the efforts of the worker with tortured eyesight? How can the owner of a fleet of trucks fail to comprehend that the cost of accident caused by his one-eyed chauffeur must come directly out of his profits? How can the salesman with an abnormal blood pressure, and a chronic headache, properly extol the merits of the article he is merchandising? Can one properly criticize the salesgirl who is discourteous to her customer when she is in a state of physical exhaustion through the poor

*This article is based on a paper prepared by Mr. Bleicher and read by George P. Everson of the General Master Mechanic's Division, Chrysler Corporation, before the Detroit Industrial Safety Council.

ventilation and illumination of her working environment?

"Industry, as the years advance, is coming more and more to regard as significant those flesh-made machines we call men. Workmen's compensation legislation, which brought home in a financial way the realization that human wreckage was quite as much a matter of production cost as machine wreckage, has done much to foster the interest which is now becoming more and more manifest toward the worker. Self-interest must motivate industry in its constant progress toward a tangible manifestation of its concern for the physical well-being of its employees. This is as it should be. The American does not seek paternalism, nor does he want something for nothing. There is, moreover, no more compelling drive than the need to help oneself, whether one be an individual or an industry.

"In considering the relationship existing between industry and the health of its workers, one must realize the community of interest that exists. Neither capital nor labor stand to lose anything, but each to gain greatly by cooperative efforts leading to health conservation activities, proper ventilation, illumination, and the creation of a proper and healthful working environment.

"And now, with the threat presented by the increasing recognition of occupational disease, and the fertile field for illegitimate claim practice that accompanies it, the employer must be on the alert. Eventually he is going to be called upon to pay, in one form or another, for the ravages of the diseases of occupation, and the bill is likely to be staggering. Certain it is, the employer must look well to the health of his employees, to the suitability of their working environment, to adjustments in his manufacturing processes, perhaps to his advantage, if he wishes to avoid the devastating cost of the specific diseases that his factory may produce. Thus may he minimize his financial losses, and at the same time gain those intangible benefits accruing through health conservation that he cannot see in his annual financial statement."

Among the health hazards to be found in industrial plants are dusts, gases, vapors, noises, high temperatures, chemical rays, abnormal posture requirements, poisonous chemicals.

It is along these lines that a marked need exists for the extension of safety activities. The worker who has been killed through the toxic action of benzol vapors is just as dead as though he had

ARMCO Trophy Awarded



C. H. Murray, (right) assistant to the president of the American Rolling Mill Company, presents the ARMCO safety trophy to George Bayer, superintendent, Wheel Works department, Butler Division.

THE ARMCO Iron Man, bronze safety trophy, awarded annually to that group in the operating divisions of The American Rolling Mill Company which has had the lowest major accident frequency record during the past year, was presented to the Wheel Works department of the Butler, Pennsylvania, plant on January 13, 1936. The Wheel Works Group won the trophy for the 1935 period by having a clear record of no major accidents.

In a letter of congratulation addressed to the winning group, Charles R. Hook, president of the company, stated: "Twenty-seven groups competed dur-

ing the contest year, and the Butler Wheel Works group was the only one which finished with a perfect record. Such a record could only have been made through team work and cooperation. A good many years ago I came to realize that good safety records and good workmanship go hand in hand."

The presentation was made by C. H. Murray, assistant to the president.

The ARMCO Iron Man is the work of that well-known sculptor, the late Clement J. Barnhorn of Cincinnati. Inscribed on the base of the trophy are these words: "The Straight-Thinking Man Respects Safety."

been struck by a crane. The worker who is completely paralyzed as a result of the action of manganese is just as disabled as though his paralysis was due to cutting of the nervous system in an injury from falling down an elevator shaft. His wife and children are confronted with the same needs as to provisions of food, paying of rent and obtaining of clothing, so that, from the point of view of the worker, no difference is likely to exist.

At the present time, in most states, consideration given to a worker dam-

aged in an occupational injury is markedly different to that accorded the worker damaged in industry by an occupational disease or some sanitary hazard. One example will clarify this situation:

Let it be assumed that a worker loses an arm as a result of having been caught in some machine. At once he is extended the best of hospital and surgical care without cost to himself or his family. Provisions are made for prompt compensation on a weekly basis, or at times in a lump sum. On recovery, this damaged

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NATIONAL SAFETY NEWS



Just "Average" Drivers

But they completed the equivalent
of sixty years of safe motoring

These 21 "average motorists" who
drove six "average automobiles" the
equivalent of 24 times around the
world without accident.

SHOULD any motorist drive for sixty years under average motoring conditions with no worse mishap than the loss of a rear fender he would feel entitled to a gold medal. But 21 amateur drivers recently amassed this total. They finished 60 years of average motoring, 600,000 miles of safe driving.

Night and day, six days a week for five months, these men drove their cars so carefully that their experiences are a graphic proof of what could be done if all motorists would exercise the same care.

These 21 men were amateur drivers. Their ages ranged from nineteen to 48, and among them were clerks, a golf professional, a fisherman, a haberdasher, and an electrician.

This five-months motoring test was not arranged primarily as a safety demonstration. It was planned by the Atlantic Refining Company as a climax of four years' laboratory experimenting to develop a high film strength oil for modern high-compression motors. This practical road test not only showed what could be expected of the oil under actual driving conditions, but it also produced valuable lessons in safe driving.

An 80-mile course was laid out, extending two miles north of Toms River, N. J., to Medford and back. John Helwig, of the Atlantic Refining Company, went over the route three times to study the traffic problems involved. He consulted the town officials and set speed limits to suit local requirements. He

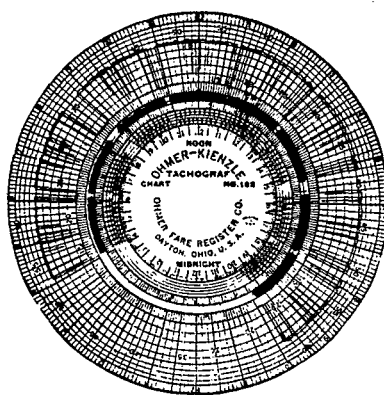
then tried each turn on the course at varied speeds and, when he found what he considered a safe limit for each turn, set the top limit for the test at ten miles an hour less.

For the test, six cars in the lower priced group were purchased from local distributors—two Chevrolets, two Plymouths and two Fords. Of the 21 men

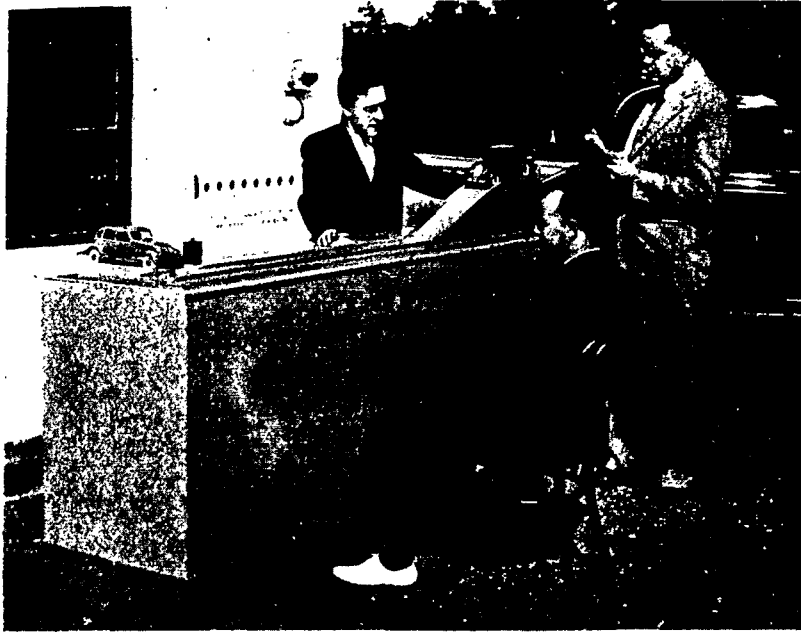
selected, none had had professional driving experience, and the company tried to make the group as representative of the driving public as possible. The oldest of the drivers, who was 48 years old, had never before driven a car 40 miles an hour. When he learned that he was expected to average 40 miles an hour for eight hours a day, he was rather doubtful about the job.

Strict driving regulations were laid down by Willard Lord, safety engineer for the Atlantic Refining Company and author of numerous articles on motoring safety, and after thorough instructions, the six cars started out on June 3 on their 600,000-mile run. A tachograph automatically registered each car's exact speed at every moment, from the time it left the test space until it completed the 80-mile tour. The drivers were required to complete each tour in not more than one minute under or over two hours. If they operated at excessive speeds and later slowed down, the tachographs showed the variations. When the record of each car was checked at the close of the test, it was shown that none of these men had gone faster than 46 miles an hour.

The drivers were under strict instructions to be courteous in every way and to give all possible aid to motorists in trouble. About every other night, a driver would have to stop and help with a flat tire or repair a carburetor. One driver who encountered a severe motorcycle accident involving two men administered first aid, hailed a passing car and sent the injured men to the hospital. These courtesies, however, seldom threw



Typical tachograph record of a test car. Each car was equipped with a tachograph, essentially a clock and recording speedometer which provides a complete automatic record of the action of the car. The numbers on the outside circles give the hours of the day divided into five minute periods. The concentric circles between the heavy black line and the outer rim show speeds from 15 to 60 miles an hour. The wavy line shows the action of the car.



Scientific tests proved that the drivers in the "Atlantic Refining Company's road tests possessed no unusual ability. In the above illustration, a driver is being tested for reaction speed on the reactometer developed by the Yale University research laboratory.

schedules off more than two or three minutes, and these were made up out of the drivers' frequent rest periods.

The entire schedule was planned to give each driver the widest possible experience. Every six weeks each man completed a cycle during which he had driven all of the six cars at every hour of the day and night. The daily schedule was: Drive two hours, rest ten minutes; drive two hours, rest thirty minutes; drive two hours, rest ten minutes; drive two hours, go off duty. Each day he reported for duty three hours later under an arrangement that allowed each car to go 5,000 miles every six-day week.

Following the completion of the tests, an analysis was made of the drivers' experiences on their long run. One of their findings indicates a possible danger spot for the motorist—at the start of driving. At this time, a driver is more comfortable and relaxed, and his reaction is somewhat slower than after he has been driving two to four hours. Later the motorist may be slightly fatigued, but he will usually react more quickly.

The test also showed that:

1. Drivers react faster during the day than at night.
2. They are sluggish in hot weather and more alert in cool.
3. When a motorist eats a heavy substantial lunch during a long trip, he is not so quick at bringing his car to a stop as when he has eaten sparingly.

The varied experiences of the tests were typical of the situations any driver

will meet during a life-time of motor-ing. The route was through towns and open country, over grade crossings at busy sections, up and down steep hills, and around sharp curves. The drivers also ran into a variety of weather conditions.

While officials in charge of the test feel that final conclusions should not be drawn without a still more thorough study of the assembled data, they do believe that the test was successful because of rigid adherence to rigid safety

rules. These rules, which closely approximate most traffic ordinances, included:

1. No liquor.
2. No speed greater than permitted by traffic.
3. Top speed of 50 miles an hour.
4. Strict observance of all highway safety signs and white lines; slower speed going down hill; not more than 30 miles an hour around open curves, no faster than 20 miles through towns; complete stop before crossing railroad tracks and busy intersections; keeping at a distance of at least 75 feet from the car in front.
5. Certainty that the road was safe in front and in rear before passing another car.
6. Courtesy with headlights.

Each driver was impressed with this advice: Test conditions must always be secondary to safety.

Despite the remarkable safety record which these drivers set, scientific examinations conducted by an insurance company proved that they were just average drivers in their reactions. They proved to be no quicker than the average—and in some cases they were noticeably slower—in their eye, ear and nerve reactions to traffic signals and other highway conditions.

The condition of the cars was an important factor in making the safety record. The cars were serviced regularly, but they received no special treatment. They were lubricated according to specifications or the car manufacturer but received no maintenance beyond what was recommended for all cars by the Atlantic Refining Company.

Two simple but important rules for every motorist may be drawn from this experience:

1. Drive with care that is based on courtesy.
2. Keep your car in perfect condition.



Arthur L. Clayton had never driven as fast as 40 miles an hour in his pre-streamline Ford. But with a modern car kept in perfect condition his driving performance was equal to the requirements of the test.

After a thorough investigation of the evidence for and against at the close of the last period of acceptance, the Council on Pharmacy and Chemistry of the American Medical Association has again reaccepted (1935)

MERCUROCHROME, H. W. & D.

(Dibrom-oxymercuri-fluorescein-sodium)



PROMPT care is important in preventing infected wounds. Even minor wounds may become infected when antiseptic treatment is delayed.

Mercurochrome, H. W. & D.

(Dibrom-oxymercuri-fluorescein-sodium)

is non-irritating and exerts bactericidal and bacteriostatic action in wounds. Industrial injuries are reported more promptly when Mercurochrome is the clinic antiseptic, because treatment is not painful. Be prepared with Mercurochrome for the first aid care of all minor wounds. In more serious cases, a physician should be consulted.

HYNSON, WESTCOTT & DUNNING, INC.

Carbon Bisulphide

(Carbon Disulphide)

Industrial Data Sheet D-Chem. I

A. Problem

1. What are the hazards of carbon bisulphide and what precautions are necessary in its use?

B. Hazards

2. The principal hazards are those of explosion, fire and of poisoning by contact with the liquid and by inhalation of the vapor.

C. Discussion

3. Carbon bisulphide in its normal state is a clear, practically colorless, highly volatile and flammable liquid. The chemically pure liquid has an odor similar to that of ether or chloroform. The commercial grade has an offensive odor like that of decaying cabbage. The liquid is about 25 per cent heavier than water. It boils at about 114 degrees F. and is slightly soluble in water, but mixes readily with many of the organic solvents such as alcohol, ether, and solutions of phenol and chloroform. The vapor is approximately $2\frac{1}{2}$ times as heavy as air and tends to collect in low places. It has a flash point varying from 40 degrees below to 4 degrees above zero F. The ignition temperature of the vapor ranges from 212 to 338 degrees F. Mixtures of air and carbon bisulphide vapor containing from 1 to 50 per cent of the vapor are explosive. The vapor burns with a blue flame and forms sulphur dioxide gas which is toxic to both animal and plant life.

4. Carbon bisulphide is found in a natural state in grains of black mustard. Industrially it is prepared by passing sulphur vapor over highly heated charcoal in vertical iron or clay retorts, the vapor being introduced through a tube on the side of the retort.

5. Liquid carbon bisulphide is used as a solvent for extracting oils and fats; as a cleaner for removing grease; to some extent in rubber mills; in the manufacture of varnishes, artificial silk, and certain chemicals such as prussiate of potash and chloride of sulphur. The vapor is extensively used as a disinfectant and insecticide. In small quantities carbon bisulphide is sold in tight tin cans; in large quantities (50 to 1,000 pounds or more) in steel drums or tank

cars which must conform to the regulations of the Interstate Commerce Commission.

Symptoms

6. Liquid carbon bisulphide on the skin, unless washed off immediately, dissolves the layer of fat on the surface and causes skin irritation. Contact of it with the mucous membranes results in intense congestion. A drop splashed into the eye is sufficient to cause inflammation of the eye and eyelids. The inhalation of carbon bisulphide vapor causes both acute and chronic poisoning. Acute poisoning follows exposure to high concentrations (above 322 parts per million parts of air) for a short period of time. The chief symptoms in such cases are weak pulse, paleness, headache, throbbing of temples, pains in the back of the neck, radiating through the temples and forehead, palpitations, fainting, drowsiness, digestive disturbances, particularly nausea, repeated vomiting and sometimes diarrhea, weakness in the legs, fatigue, unsteady gait, impulsive acts or mania. There also may be hallucination of sight, hearing, taste and smell. The breath has a foul odor of sulphides. Death may follow a convulsion or occur during coma.

7. Chronic symptoms are due to inhalation of small quantities of the vapor over a period of time ranging from a few weeks or months to a year or more. The first symptoms usually are nausea, tremor, numbness, indigestion, headache and giddiness, sometimes accompanied by emotional activities which may be hysterical or which resemble delirium tremens. There also may be muscular weakness of the face or forearms and of the lower limbs with unsteady gait and disturbances of vision, hearing, taste and smell. As the effects become more pronounced, there is difficulty in breathing. Finally the affected person may become paralyzed, bed-ridden and unable to feed himself. Recovery in advanced cases may occur after removal of the affected person from the toxic vapors but may not occur for a year or more. However, if paralysis has taken place, the result may be permanent disablement.

First Aid

8. In case of poisoning by carbon bisulphide vapor, the affected person should be removed promptly from the toxic atmosphere and, if unconscious, the prone pressure method of resuscitation should be started at once. In all cases, the services of a physician should be secured without delay.

Precautions

9. All lights, matches, open flames or any flame or heat producing device should be kept away from parts of the plant where carbon bisulphide is stored or used. Even steam coils should be prohibited because of the low ignition temperature of the material.

10. No smoking should be permitted in or about any place where carbon bisulphide is used or stored. Clearly legible signs calling attention to this prohibition should be posted in conspicuous places about the plant.

11. All carbon bisulphide containers should be plainly marked with the words, "Flammable Liquid. Keep Fires and Open Flames Away."

12. All artificial illumination should be by means of electric incandescent lamps encased in vapor-tight globes.

13. All electric wiring should be in conduit and all electric equipment installed and operated in strict accordance with the "Regulations of the National Board of Fire Underwriters for Electric Wiring and Apparatus as Recommended by the National Fire Protection Association."

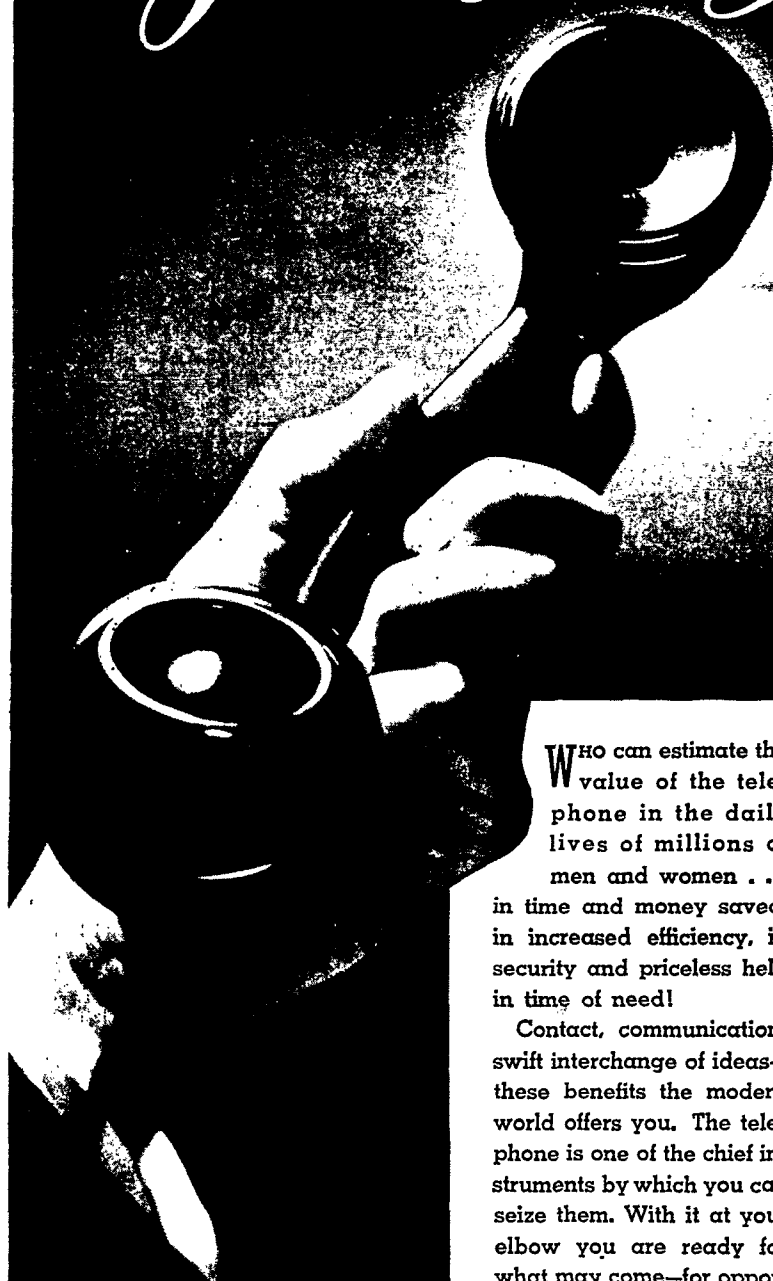
14. In case of fire it is best to use foam, sand or carbon dioxide extinguishers. A hose stream should not be used because it scatters the burning liquid and may spread the flames.

15. Carbon bisulphide should be unloaded from tank cars to storage tanks by water displacement and not by compressed air. The use of air may develop explosive mixtures in both the tank car and the storage tanks. All equipment should be electrically grounded to prevent static electricity accumulations.

(Please turn to page 48)

NATIONAL SAFETY NEWS

"It's for You"



WHO can estimate the value of the telephone in the daily lives of millions of men and women . . . in time and money saved, in increased efficiency, in security and priceless help in time of need!

Contact, communication, swift interchange of ideas—these benefits the modern world offers you. The telephone is one of the chief instruments by which you can seize them. With it at your elbow you are ready for what may come—for opportunity, for emergency, for

the brief word that may open a fresh chapter in your life.

Within the next twenty-four hours, sixty million telephone calls will be made over Bell System wires—each a separate transaction, complete in itself. Yet your own calls will go through as quickly and efficiently as if the entire system had been built especially for you.

NOW IN EFFECT—Special Sunday Rates for station-to-station Long Distance telephone calls, and **Reduced Person-to-Person Rates after 7 Every Evening and All Day Sunday.** The reductions apply, in general, to calls on which the day station-to-station rate for three minutes is more than 35 cents.

BELL TELEPHONE SYSTEM



THE BULLETIN BOARD

A page for those who maintain the Show Windows of Safety

Conducted by STAN KERSHAW

Bring Out the Broom!

THERE are two very logical and important things to think about in connection with safety bulletin boards at this time of the year. They are: (1) how to make the most of the bulletin board displays to stimulate interest in clean-up and paint-up work; and (2) what to do about cleaning up the bulletin boards themselves and making them attractive.

Perhaps it would be wise to reverse the order of these two jobs, for it would hardly seem right to undertake a publicity campaign, in an effort to bring about good housekeeping, on bulletin boards that need a touch of housekeeping themselves.

There is still a little time to prepare for launching a clean-up campaign. Why not overhaul the bulletin boards and relocate them if a study indicates that they are not in the best possible position? Perhaps it will be found that more stationary boards could be used to good advantage and that the addition of a few portable ones would facilitate the job of placing posters where they will command attention.

It's surprising what can be done with a little fresh paint, lacquer or varnish. Have you thought of giving your bulletin boards a finish similar to that given automobiles? It makes a good looking weather-proof job and can be kept bright by polishing and applying wax occasionally.

A complete change in the color scheme will advertise the renovating job to good advantage and make the boards sparkle with new life.

A new supply of background boards and materials to replace the old worn ones will help too. And don't forget that electric light globes become dim with age and should be renewed occasionally.

Maybe it will be possible to dress up the space around each bulletin board. There is usually someone in the plant whose love of nature will make him willing to plant a few shrubs or flowers and landscape the site of an outdoor board if conditions permit. A little fresh paint

on the buildings and structure in the immediate vicinity will often help attract attention. White lines can be used effectively to mark off the aisle spaces leading to indoor boards, and a good way to remind people to look at outdoor ones is to paint large white footprints on the pavement.

How about your supply of posters, plant accident stories, snap shots and clippings with which to put over the clean-up campaign? A review of the plant accident records should provide some good material for interesting messages. Snap shots of existing bad housekeeping conditions, without captions, are useful in correcting those conditions. Clippings from articles on the value of good housekeeping also make interesting reading matter on the bulletin boards. Such items, however, should be brief.

Novelty Gives Life To Bulletin Board

A discarded gasoline pump globe lettered in green enamel, and a flicker button in the light socket, give novelty



to this bulletin board. The two panels of the board are made of Masonite: the blackboard is pressed Masonite treated with several coats of liquid slate, and the poster board is porous Masonite covered with aluminum paint. Both panels are held in place with clips, so that they may be taken off the board and moved to another work place if desired.

This bulletin board was devised by the Lone Star Cement Company New York, Inc.

And posters should be used, of course.

The following list of available posters will assist you in making selections to complete your supply:

No.	Size	Units	Wording
5491	9x12 inches	1	You Can Judge a Man by His Workplace
4694	9x12 inches	1	Only a Workbench, but—
5075	9x12 inches	1	A Breeding Place for Accidents
5443	9x12 inches	1	Keep Your Workplace Clean
2949	9x12 inches	1	Wattamess
5249	9x12 inches	1	Wotta Place
5658-B	17x23 inches	4	Good Housekeeping is Good Safety
2887	9x12 inches	1	Cleaning Up is Part of the Job
4652	9x12 inches	1	Be Orderly
5297	9x12 inches	1	Is Your Housekeeping as Good as You Can Make It?
4800	9x12 inches	1	—A Lot Better to Work in a Clean and Orderly Place
4775-B	17x23 inches	4	Every Man a Clean-Up Fan
4886	9x12 inches	1	The Foundation of Safe and Pleasant Work
4472-B	17x23 inches	4	Good Housekeeping is Part of Your Job
4472	9x12 inches	1	Clean Up for Safety
4567	9x12 inches	1	You Expect Your Wife to Keep Her Workplace Clean
5141	9x12 inches	1	Sloppy Habits

From the Scrap Book

A bulletin board that is not read by more than 15 or 20 per cent of the men, is bad advertising—wasteful, extravagant and a missed opportunity. A bulletin that is an ineffective advertising medium is expensive at any price. An efficient bulletin board system which reaches the greater majority of workers every day, keeps them interested and gives them the information they want is, in a sense, a daily current newspaper. It may be confidently expected to pay dividends.

NATIONAL SAFETY NEWS



Reduce Traffic Accidents
35% by the end of 1940
SAVE 38,000 LIVES

NATIONAL SAFETY COUNCIL

SAFETY LESSONS FROM NATURE



BIG AND TOUGH
 BUT HE TAKES NO CHANCES

NATIONAL SAFETY COUNCIL

*"was daddy
 hurt much"?*



NATIONAL SAFETY COUNCIL



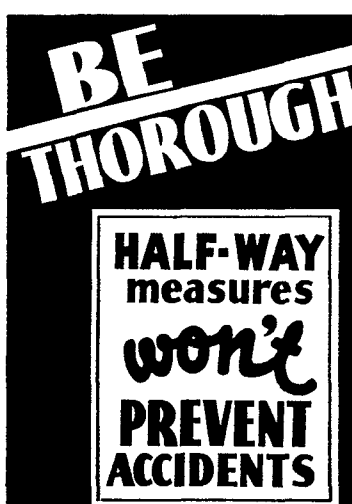
Health is wealth
 Said someone wise
 Take care of your teeth
 And save your eyes

NATIONAL SAFETY COUNCIL



**BRING THEM
 BACK ALIVE**

NATIONAL SAFETY COUNCIL

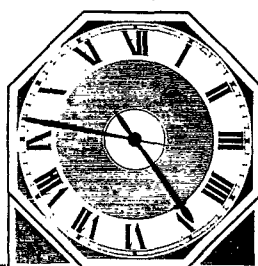


NATIONAL SAFETY COUNCIL



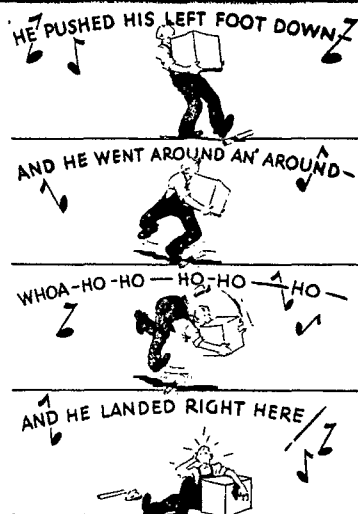
NATIONAL SAFETY COUNCIL

EVERY 24 Hours..



**274 PEOPLE ARE KILLED BY
 ACCIDENTS IN THE U.S.
 DO NOT BE ONE OF THEM
 TODAY-**

NATIONAL SAFETY COUNCIL



NATIONAL SAFETY COUNCIL



BIG BAD BILL
is Sweet William
NOW

NATIONAL SAFETY COUNCIL

Honestly
now?

DO YOU TAKE GOOD CARE OF YOURSELF

DO YOU *have a doctor examine you once a year* ?

DO YOU *see your dentist twice a year* ?

DO YOU *get plenty of sleep* ?

NATIONAL SAFETY COUNCIL

If you want to get the real meaning of safety

IMAGINE YOURSELF WITHOUT EYES



NATIONAL SAFETY COUNCIL

NEVER LET AN ACCIDENT

Cheat you



OUT OF the PAY

YOU'VE EARNED

NATIONAL SAFETY COUNCIL

Double
your CAUTION
in

**RAIN
SNOW
SLEET
FOG**

NATIONAL SAFETY COUNCIL

LOOK Before YOU GRAB



NATIONAL SAFETY COUNCIL

WE'RE NEVER IN SUCH A HURRY THAT SPEED IS MORE IMPORTANT THAN YOUR SAFETY



NATIONAL SAFETY COUNCIL

ALWAYS label containers before filling them



IT PREVENTS:
Product mixtures, fires and Accidents

NATIONAL SAFETY COUNCIL



ACCIDENTS MADE to ORDER HERE

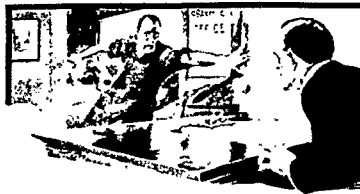
NATIONAL SAFETY COUNCIL

TAKE IT EASY



**Your Hurry to get Home
may result in your
NOT GETTING THERE**

NATIONAL SAFETY COUNCIL



A DOCTOR

***Let's avoid the
grief and suffering
that follow accidents***

NATIONAL SAFETY COUNCIL



IF ALL THE ACCIDENT VICTIMS COULD
BE MOVED OUT OF HOSPITALS AND
INTO SHOP WINDOWS THERE
WOULDN'T BE SO MANY ACCIDENTS

NATIONAL SAFETY COUNCIL



You can help to make working conditions
safe by reporting unsafe conditions that come
to your attention. Never wait for others to do it.

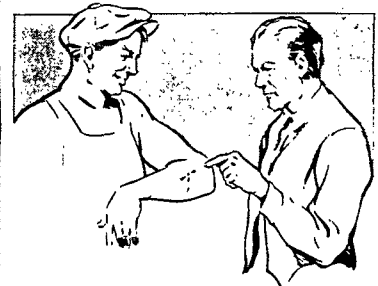
Suggestions are always welcome.

NATIONAL SAFETY COUNCIL

OUR SAFETY RULES

were made for your
protection . . . Failure
to observe them
may not only result
in personal injury,
but will also make
the offender liable
to such disciplinary
action as the offense
may demand . . .

NATIONAL SAFETY COUNCIL



I laughed too when
told to get first aid.

*I point with my
left hand now . . .*

My right is gone.

NATIONAL SAFETY COUNCIL

OBJECTS THAT ARE SLIPPERY HEAVY UNWIELDY

**NEED
EXTRA CARE
EXTRA SKILL
and maybe
EXTRA HELP**

Don't cause an injury

NATIONAL SAFETY COUNCIL

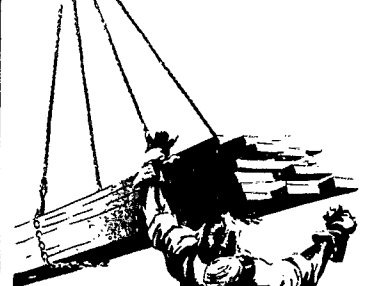
Tired before you start work

Get your rest and
sleep at night
When you are tired
your reactions
are slow

You may not be
able to avoid
accidents

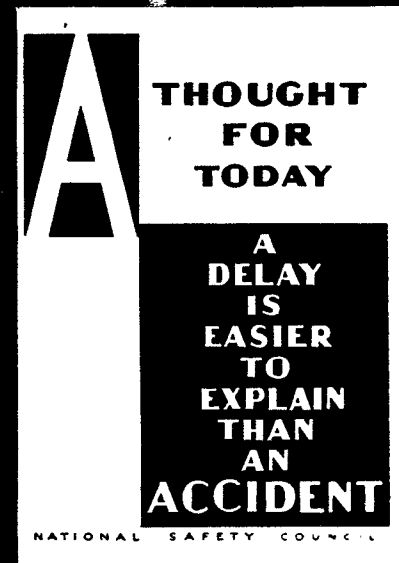
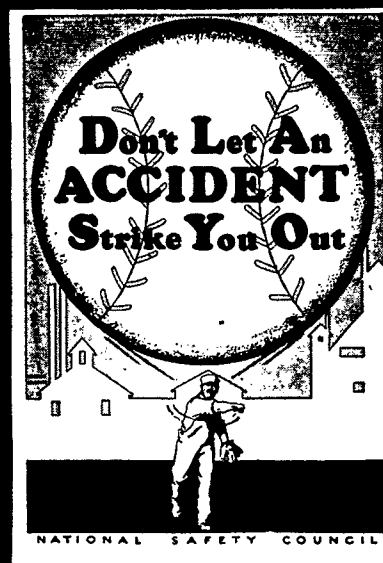
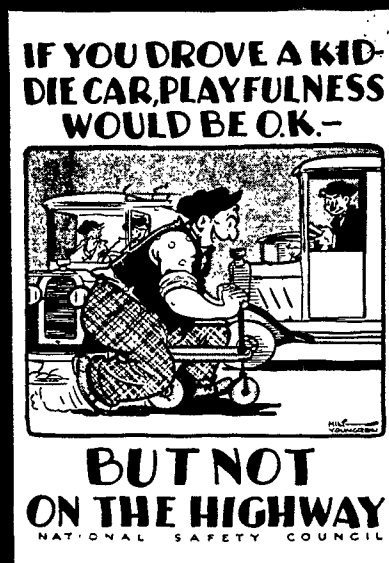
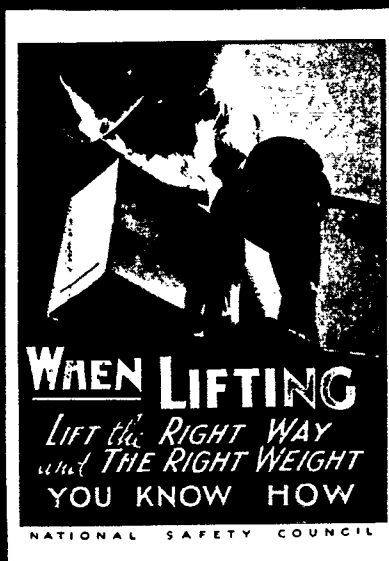
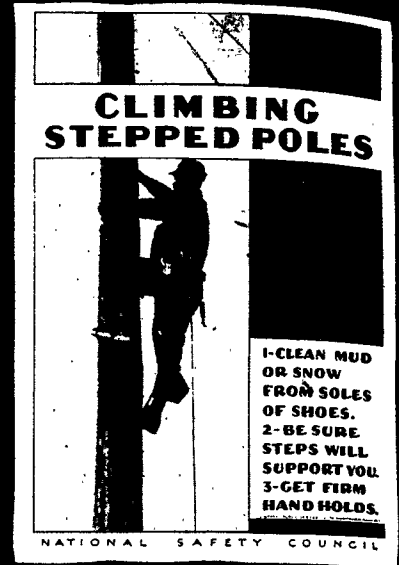
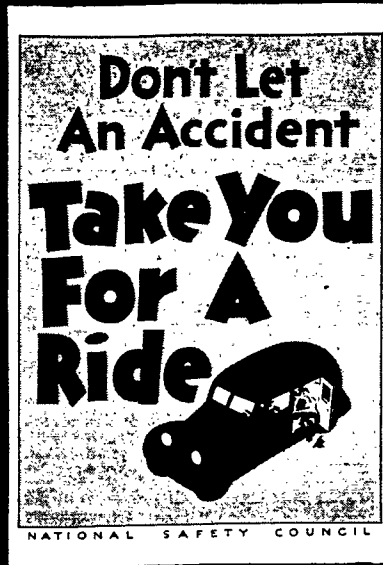
NATIONAL SAFETY COUNCIL

Swinging loads are **MANKILLERS**



STAY IN THE CLEAR

NATIONAL SAFETY COUNCIL



BE A LIFE SAVER

Guards are for your protection. If you know of any that are not satisfactory, report them so they can be changed, but whatever you do, don't remove them while machinery is in motion or leave them out of place after repairing, oiling or adjusting machinery.



NATIONAL SAFETY COUNCIL



LOOSE CLOTHES AND A REVOLVING DRILL DID THIS

NATIONAL SAFETY COUNCIL

STOP ALL LEAKS OF FLAMMABLE LIQUIDS



They may cause
serious fires
and explosions

NATIONAL SAFETY COUNCIL

NEVER LET YOUR MIND AND YOUR FINGERS WORK SEPARATELY



They MIGHT BECOME
SEPARATED PERMANENTLY

NATIONAL SAFETY COUNCIL

WISE MEN PROFIT
BY THEIR OWN
EXPERIENCE - BUT
THE WISEST MEN
PROFIT ALSO BY
THE EXPERIENCE
OF OTHERS



NATIONAL SAFETY COUNCIL

The FELLOW WHO LAUGHS AT SAFETY IS HEADED FOR AN ACCIDENT

NATIONAL SAFETY COUNCIL

"WORST AID"

*There are surer ways of getting
your eye into trouble-but Not Many*



NEVER TRUST EYES TO
ANYONE BUT A DOCTOR

NATIONAL SAFETY COUNCIL

GET
this
SAFETY
HABIT

NEVER TURN YOUR
HEAD TO TALK
WHILE DRIVING



KEEP YOUR EYES *on the* ROAD

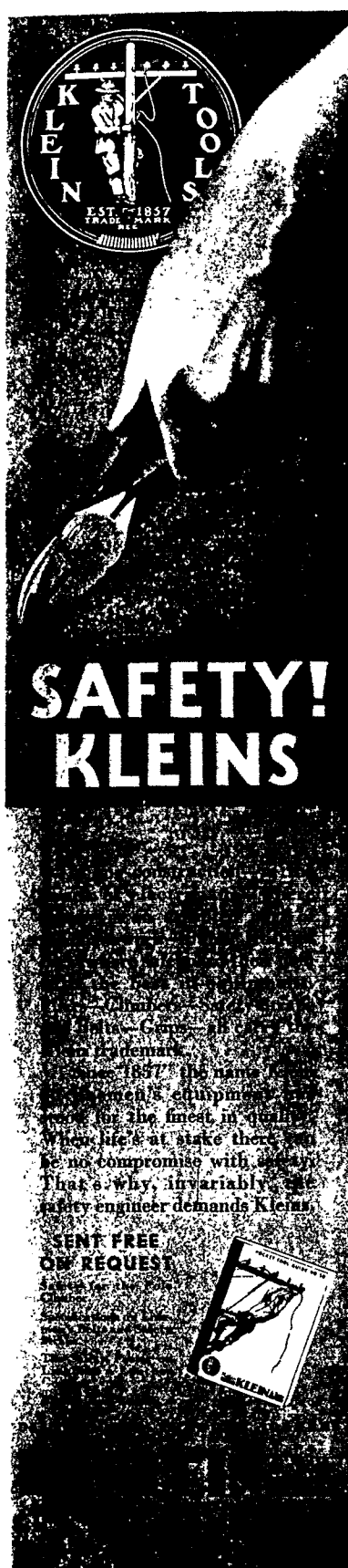
NATIONAL SAFETY COUNCIL



Cracked callouses

need first aid before
infection sets in!

NATIONAL SAFETY COUNCIL



SAFETY!
KLEINS

Since 1857 the name Klein has been synonymous with the finest in quality tools. When life's at stake there can be no compromise with safety. That's why, invariably, the safety engineer demands Kleins.

SENT FREE ON REQUEST

Send for the following:

1. **SAFETY PAMPHLET NO. 1** "Safety in the Shop"

2. **SAFETY PAMPHLET NO. 2** "Physical Examinations in Industry"

3. **SAFETY PAMPHLET NO. 3** "Protective Clothing"

4. **SAFETY PAMPHLET NO. 4** "Goggles"

5. **SAFETY PAMPHLET NO. 5** "Exhaust Systems"

6. **SAFETY PAMPHLET NO. 6** "Industrial Ventilation"

7. **SAFETY PAMPHLET NO. 7** "Respirators, Gas Masks, Hose Masks and Breathing Apparatus"

8. **SAFETY PAMPHLET NO. 8** "Safe Practices"

9. **SAFETY PAMPHLET NO. 9** "Safe Practices Pamphlet No. 64, 'Respirators, Gas Masks, Hose Masks and Breathing Apparatus'"

10. **SAFETY PAMPHLET NO. 10** "Safe Practices Pamphlet No. 32, 'Exhaust Systems'"

11. **SAFETY PAMPHLET NO. 11** "Safe Practices Pamphlet No. 37, 'Industrial Ventilation'"

12. **SAFETY PAMPHLET NO. 12** "Safe Practices Pamphlet No. 16, 'Protective Clothing'"

13. **SAFETY PAMPHLET NO. 13** "Safe Practices Pamphlet No. 14, 'Goggles'"

14. **SAFETY PAMPHLET NO. 14** "Safe Practices Pamphlet No. 2, 'Physical Examinations in Industry'"

15. **SAFETY PAMPHLET NO. 15** "Safe Practices Pamphlet No. 64, 'Respirators, Gas Masks, Hose Masks and Breathing Apparatus'"

16. **SAFETY PAMPHLET NO. 16** "Safe Practices Pamphlet No. 32, 'Exhaust Systems'"

17. **SAFETY PAMPHLET NO. 17** "Safe Practices Pamphlet No. 37, 'Industrial Ventilation'"

18. **SAFETY PAMPHLET NO. 18** "Safe Practices Pamphlet No. 16, 'Protective Clothing'"

19. **SAFETY PAMPHLET NO. 19** "Safe Practices Pamphlet No. 14, 'Goggles'"

20. **SAFETY PAMPHLET NO. 20** "Safe Practices Pamphlet No. 2, 'Physical Examinations in Industry'"

Unseen Dangers

(Continued from page 34)

worker is likely to be provided an artificial arm, and a new type of employment suited to his handicap. Although compensation never compensates, and although none of these alleviating measures ever adequately balance the loss of the arm, this worker is extended special consideration on account of his injury.

Now, in contrast, let us consider the plight of an industrial worker who, through long years of exposure, develops cataracts in his eyes because of the action of chemical rays emanating from molten metal. Perhaps twenty or thirty years of exposure may be necessary. During this time, this worker may have been employed in many establishments. At no time did any accident take place and perhaps no one day was responsible for the causation of this condition. Yet, in due time, this worker notices the failure of his eyesight, and he is no longer able to continue at work. His employer does not speedily place him in the hospital, no one brings a compensation check to him or to his family, no one associates his condition with his work as a direct cause, and yet in the long run his handicap may be as great, or greater than that of the previous worker who loses an arm.

It is to this type of hazard, which may be multiplied scores of times, that much more consideration should be given in terms of protection than ever has been found in the industry, taken in its entirety.

One of the great handicaps to the procurement of protection against hygienic hazards or occupational disease hazards in industry is due to their being little known to anyone, including the medical department.

It is therefore necessary that we broaden ourselves as much as possible against these unseen hazards. In connection with this, I would also like to suggest that such materials as lubricants, coolants, chemicals, cleaners, etc., be sent to the laboratory to be tested to make sure that they are not injurious to the skin before the workmen are allowed to use them.

There are many other precautions, tests, and analyses in which we should broaden our field of investigation to protect our workmen against occupational diseases. We are on the threshold of a new scientific research into these causes

that will give us more knowledge in the future.

No occasion exists for any letup in safety measures against mechanical injuries in the plant, on the street, or at home, but where the safety engineer can do the most good today is by making a relentless drive against what we might call the unseen dangers.

Carbon Bisulphide

(Continued from page 38)

16. Carbon bisulphide should be handled and stored in strict accordance with "Regulations of the National Board of Fire Underwriters for the Installation of Containers for Storing and Handling Flammable Liquids" or "Flammable Liquids, Industrial Storage and Use" of the Associated Factory Mutual Fire Insurance Companies.

17. Canister gas masks of a type approved by the United States Bureau of Mines should always be in readiness for use in case of emergency such as a leak or break in an open room. When it is necessary to enter a tank which has contained carbon bisulphide, only a fresh air hose mask should be used. (See Note W.)

18. Carbon bisulphide fumes should be removed at point of origin by suitable ventilation or by a well designed exhaust system. (See Note X.)

19. Workers handling carbon bisulphide should be provided with splash proof goggles and with waterproof clothes, gloves and footwear and should be required to wear them. (See Note Y.)

20. All persons using or handling carbon bisulphide should be given thorough physical examinations at regular intervals. (See Note Z.)

NOTE W: Gas masks of the canister type do not supply oxygen and should not be used in atmospheres where the oxygen content is less than 10 per cent. In case of doubt as to the amount of oxygen in an atmosphere, it is best to use a fresh air hose mask. Also see Safe Practices Pamphlet No. 64, "Respirators, Gas Masks, Hose Masks and Breathing Apparatus."

NOTE X: Complete detailed information on exhaust and ventilation systems will be found in Safe Practices Pamphlets No. 32, "Exhaust Systems," and No. 37, "Industrial Ventilation."

NOTE Y: Valuable information on workers' clothing will be found in Safe Practices Pamphlet No. 16, "Protective Clothing." Information on splash proof goggles will be found in Safe Practices Pamphlet No. 14, "Goggles."

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

National Safety Council, Inc.

20 North Wacker Drive
Chicago, Illinois

NATIONAL SAFETY NEWS

Raytheon Trophies Make Impressive Display

SINCE the plant of the Raytheon Production Corporation began operation in July, 1929, it has received numerous honors for safety. The awards in the



above illustration are displayed prominently at the plant.

From January 26, 1930, to October 17, 1935, there were no disabling injuries in a total exposure of 7,243,532 man-hours, which is outstanding among the many excellent records that have been established.

The plant, which is located in Newton, Mass., manufactures radio tubes.

Moral Support In Railroad Record

THE National Safety Council's public safety drive, with a goal of 35 per cent reduction in traffic accidents by the end of 1940, is given its most recent bit of encouragement in an annual report filed by the Atlantic Coast Line Railroad Company.

In 1923 the railroad had 29 employee fatalities. Then came the railroads' campaign for a 35 per cent reduction in employee fatalities over a seven-year period. By the end of 1930 the Atlantic Coast Line, reflecting the experience of all railroads which had taken part in the campaign, found that it had reduced employee fatalities not 35 per cent but in excess of 55 per cent.

It is not surprising, then, that the campaign was continued even after the initial period had expired. And its effectiveness has not waned in the past five years. Since 1931 employee fatalities have been held down to five each year. During the past year 1935, the death toll was cut to two.

MARCH, 1936

HERC-ALLOY

Revolutionizes
OLD IDEAS ABOUT
STRENGTH

IN
SLING CHAINS

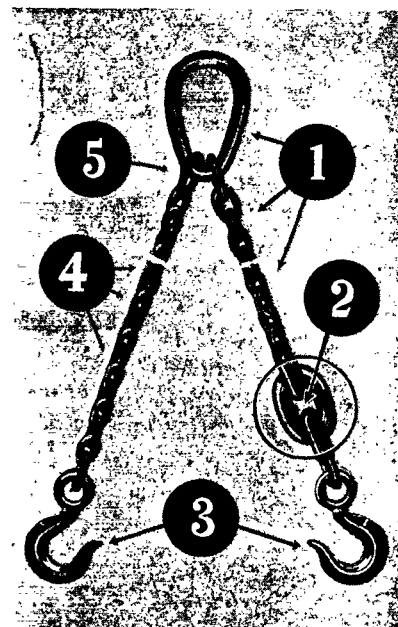
One of the most important chain achievements in industrial history! Tested under severe conditions for over 3 years, the new HERC-ALLOY Heat Treated Steel Sling Chain has proved itself a "double duty" chain in both strength and endurance. And, best of all, it cuts sling chain maintenance to a *new low*. Check through these HERC-ALLOY superiorities:

- ① Heat Treated HERC-ALLOY throughout the entire chain to give maximum uniform strength.
- ② Links are INSWELL Electric Welded by a new process fully covered by patents.
- ③ HERC-ALLOY Heat Treated Hooks give maximum strength at these vital points.
- ④ Short, narrow links reduce to a minimum the danger of bending or gouging when used around sharp corners.
- ⑤ All Joiner Links are of Heat Treated HERC-ALLOY.

Write for descriptive folder on this new extra-strength, low cost chain.

**COLUMBUS McKINNON
CHAIN CORPORATION**

General Sales Office:
TONAWANDA, N. Y.



HERC-ALLOY Heat Treated Steel Chain is manufactured from a high grade alloy steel containing nickel and molybdenum. Heat Treated under the most modern pyrometer control by an exclusive process. The result: an alloy combining in the highest degree these requisites: ductility, extreme strength and resistance to wear.

Designed and built by **COLUMBUS-McKINNON**

NEW MACWHYTE SLING THIMBLES (Patent applied for) are both the SAME SIZE!

... yet pass freely through each other. Easy loading on both Choker and Basket Hitches.



Braided Sling Construction Gives Greater Flexibility • Macwhyte ATLAS and DREW Slings have a patented braided body—made from endless elements of wire rope. Extremely flexible. Unusually high safety factor. Write for descriptive folders.

Macwhyte Company, Dept. NS.3, Kenosha, Wis.

**MACWHYTE
WIRE ROPE
Slings**
ATLAS • DREW • MONARCH

When the Whistle Blows at the Stockyards

GETTING to and from work is not the least of the hazards of employment. This problem seems to be a universal one, and it has been a matter of real concern to the packing companies in the stock yards district of Chicago.

Of the main thoroughfares offering access to the packing plants, Ashland Avenue has provided the most serious difficulties. Within the section bounded on the north by 41st Street and on the south by 45th, approximately 25,000 workers enter and leave the stock yards area each day, more than a majority of them using Ashland Avenue. Most of them are employed at the Swift, Wilson and Armour plants. The periods of heaviest traffic are 6:15 to 7:00 and 8:15 to 8:30 in the morning, and 2:30 to 3:00 and 4:30 to 5:00 in the afternoon.

Ashland Avenue is a through street with car lines and a heavy volume of motor vehicle traffic. It carries a great deal of local and long distance trucking, which has been increased in recent years by the use of motor transportation for incoming livestock and for the outgoing products of the packing plants.

In addition to those who use the elevated and surface lines, there are large numbers of employees who use automobiles for transportation to and from work as well as for company business during the day. Swift & Company maintain a garage with a capacity of 600 cars, and 800 additional vehicles can be accommodated on parking lots. Other companies have provided accommodations for large numbers of employees' cars.

For several years traffic conditions, particularly on Ashland Avenue, have been growing more and more serious. A few years ago street car loading platforms were provided at the intersections. These are well lighted and conspicuously marked and substantially barricaded at each end. The risk, however, was between the loading platforms and the sidewalk. With comparatively light cross traffic, motorists on Ashland Avenue seemed to have a through-street complex.

In 1932 the safety committee of the Swift and Company plant assembly urged the stationing of an officer at 41st and Ashland to control traffic. This committee, which had already made some notable achievements in safety

within the plant, felt that its responsibilities did not stop when the employees checked out at night. Studies were made of traffic conditions on public thoroughfares near the plant, and these problems were discussed with representatives of Wilson, Armour and other companies in the stock yards district.

At 41st and Ashland the situation was particularly difficult. To the north of the intersection, Ashland Avenue sloped down to an underpass beneath a railroad viaduct. To the south the pavement had been widened, leaving a bottle-neck at the viaduct which could not be improved immediately. The northeast corner stood out against oncoming traffic like the rock of Gibraltar. A car traveling in the outer line had to swerve to the left with the ever-present possibility of having the right fender crumpled against the concrete or having the left side sideswiped by the car following alongside.

One of the improvements brought about with the cooperation of the city was the cutting back of the northeast corner. While it was impossible to make the high concrete curb less unyielding, the hazard to northbound traffic was greatly reduced by rounding off the corner with a sweeping curve. It also permitted vehicles entering Ashland Avenue from 41st Street to make the right turn with greater convenience and safety.

Most of the old curbing in cities was laid without consideration for the turning radius of an automobile. At such corners it is difficult, if not impossible, to start the right turn from the lane next to the curb and to complete the turn without swinging far from the curb of the street entered. Such turns add to both congestion and hazard. Reconstruction of curbing, similar to the Ashland Avenue project, is now under way at many other intersections in Chicago.

Other improvements in the stock yards area have been the erection of signs and the painting of cross walks on the street pavements. The greatest improvement, however, was the installation of traffic control lights at 41st, 42nd and 43rd streets.

During 1934, six fatal accidents occurred on Ashland Avenue between 41st and 45th Streets, one of the victims being a traffic officer on duty. Stimulated by this unfavorable experience, officials of the leading packing companies and

NATIONAL SAFETY NEWS



Frank

Patented Aug. 25, 1925
Any infringement will be prosecuted.

**Knee Leggings
Hip Legging
Spats**

Wherever leggings are used you will find that FRANK LEGGINGS are regarded as outstanding on account of their high quality and long service. This approval of thousands of workmen in hundreds of plants is our best recommendation and your best guarantee of satisfaction.

NOTE: "Frank" Leggings are accepted standards in nearly every state and by insurance companies.

Write for Information and New Price List

THE SAFETY CLOTHING COMPANY

MANUFACTURERS

3804 Payne Ave.

Cleveland, Ohio



DEPENDABLE PROTECTION

"Safco" Clothing is designed to give complete, adequate protection; made from high quality materials by expert workmen; built for long service and dependability.

THE RESULT—Lowest Cost per Hour of Service!

"SAFCO" CLOTHING INCLUDES THESE ITEMS:

Aprons	Enameler's Mittens
Armlets	Finger Cots
Belts	Gloves
Blankets	Goggles
Clothing	Hand Pads
Coats	Hats
Curtains	Shoes
Helmets	Sleeves
Leggings	Spats
Masks	Sweat Bands
Mittens	Welding Protection
Pants	Respirators



MODERN PRECAUTIONS FOR ELECTRICAL HAZARDS

EVERY industry has a multitude of Electrical hazards that should be guarded with forceful warning signs. Serious injuries often occur thru carelessness and failure to think.

Stonehouse Electrical Hazard Signs give powerful warning and practical safety instructions. They are in full color, dependable, long-lived. Furnished in 18, 20 or 30 gauge steel . . . or hard vulcanized fibre where a non-conductor sign is desired. Thousands of signs in stock for all general requirements . . . special signs made to order. Send for Stonehouse Catalog No. 4. It's free.

"Signs since 1863"



Stonehouse

SIGNS, INC.

Manufacturers

9th at Larimer

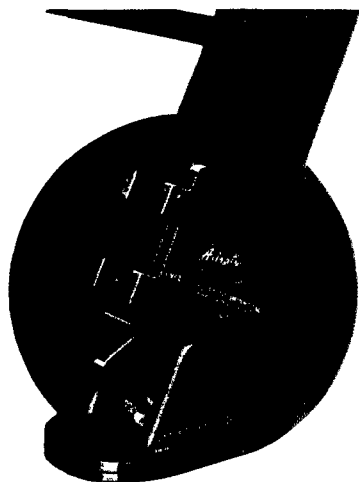
Denver, Colorado

There's a Stonehouse Accident Prevention Sign for every industrial purpose.



ACCIDENT PREVENTION Steel • SIGNS IN STANDARD COLORS AND DESIGNS

You CAN'T SLIDE on CARBORUNDUM



Allsafe

NON-SKID LADDER SHOES

Allsafe Carborundum grits, cast integral with light weight aluminum alloy feet, assure a Non-Skid grip on Wet, Icy, Oily, Rough or Smooth Iron, Steel Plate, Concrete, Tile and Wood Surfaces.

No spikes to get dull and slip. No danger in carrying.

Large bearing surface gives solid footing on soft ground.

Attached to ladder with saddles, no holes to drill, no splitting of ladder rails. Rubber overshoes easily attached for use on polished floors.

Low cost. Fits all ladders. Thousands have been preventing accidents for 8 years. Write for bulletin.



Pat. Pending

AMERICAN **ALLSAFE** COMPANY INC.

Huron at Franklin Sts.

Buffalo, N. Y.

the city authorities joined their efforts to provide greater protection for employees and others exposed to serious hazards in this area. Early in 1935 traffic control lights were installed at the three intersections. During 1935 one person was killed in this area, the accident occurring at the 44th street intersection.

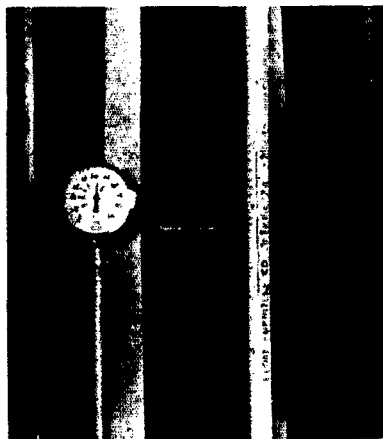
At first many motorists were inclined to ignore the signals, but a number of them found to their sorrow that a red light really meant "stop." Through bulletin board publicity and the employee magazines, the three packing companies have stressed safety after working hours.

New Principle in Tire Treads Prevents Skidding

LOOKING over a pile of old worn-out truck tires one day, Herman Kraft, development engineer for the General Tire and Rubber Company, noticed that on the otherwise smooth surface of the worn-out tires there were rubber "fins," or long, knife-like protrusions of rubber that had not been worn off.

Convinced that these rubber fins had not been worn off the otherwise smooth treads because they were flexible and had folded under rather than resisted the wear of the highway surface, Kraft conceived the idea of a tire surface made up entirely of thin rubber ribs or vanes, which would be flexible and bend from side to side with the weight of the car.

Kraft and his associates were trying to design a tire that would be easy riding, with uniform tread wear and reasonably good traction. They found, how-



When the brakes are applied, the vanes of the tire squirm into a squeegee action, making it possible for adjacent vanes to grip a substantially dry surface. The above photograph was taken through plate glass three-fourths of an inch thick.



Col. Roscoe Turner, holder of trans-continental flight records, and W. O'Neill, president of General Tire and Rubber Company, inspecting the new multi-vane tires.

ever, that the new tire also had greatly increased non-skid ability.

Car makers and brake manufacturers have estimated that the shortest distance that a 3,500-pound car, traveling at 60 miles an hour, can be stopped without advance warning to the driver is 226 feet. After the driver has been warned, the car travels 66 feet before he thinks to apply the brakes. After the brakes have been applied, the car will travel at least 160 feet before stopping completely.

In several tests on a 3,500-pound car traveling at 60 miles an hour, on wet pavement they stopped the cars at 120 feet from the point where the brakes were applied, according to officials of the General Tire and Rubber Company.

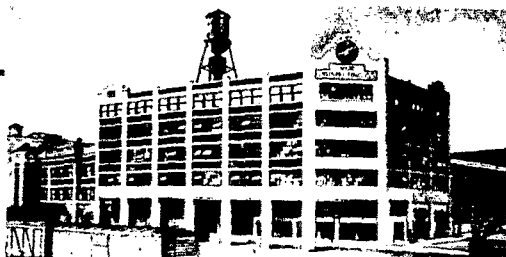
In order to see what actually happens on the road surface when the brakes are applied and the tires take hold of the highway, tests were conducted through heavy plate glass with the "multi-vane" tread tire. The tires were forced against the plate glass at a pressure of 1,025 pounds. Then an effort was made to pull the tires forward, representing the momentum of the car when brakes were applied with the car in motion. Examination of the tread through the glass showed that the thin parallel ribs of rubber had taken on a serpentine shape at the point of greatest contact, and that this serpentine tread design actually formed an effective non-skid surface. This serpentine pattern enables the longitudinal rubber vanes to squirm into a squeegee action that wipes the pavement clean of moisture to provide a substantially dry surface for the adjacent vanes to cling to.

Other tests, it was reported, have shown that the multi-vane tread has remarkable power in pulling itself out of sand or mud.

NATIONAL SAFETY NEWS

WEST DISINFECTING COMPANY

42-16 Barn Street, Long Island City
New York City



LARGEST ORGANIZATION
OF ITS KIND IN THE
WORLD

Branches in 55 Principal Cities

PROTECT YOUR WORKERS from the Menace of Oil Dermatitis with **WESCOL**

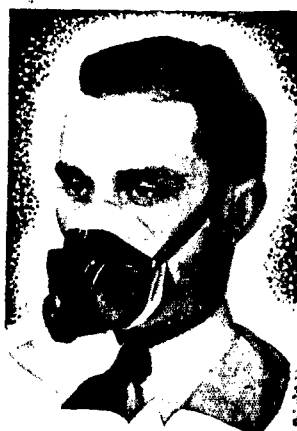
WESCOL is a very powerful germicide, guaranteed to be 18.20 times as strong as carbolic acid. Because of its very high coefficient, WESCOL is an effective and economical disinfectant to use where a powerful germicide is required, and one that will not change the nature of the material in which it is used. WESCOL used in cutting oils and compounds keeps the material sterile and safeguards the workers against the menace of Oil Dermatitis.

OIL DERMATITIS is caused by pus germs carried

into the pores, hair follicles and abrasions of the workers' skins by cutting oils and cutting compounds. Even germ-free cutting oil becomes infected during use. Factories have had epidemics of Oil Dermatitis in which almost the entire force has become infected. The disease is a serious one, which may lead to blood poisoning and amputation. It is covered by compensation laws in many states.

One pint of WESCOL to 50 gallons of cutting oil or cutting compound will keep the material sterile without injuring its cooling properties.

Send for our Special Booklet on WESCOL



Better Safer...
RESPIRATORS
with the Original
DOUBLE FILTER CHAMBER
DUPOR
REG. U.S. PATENT OFF.



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

The DUPOR Respirator No. 16 has a much enlarged area of the filter chambers with the screw cap threaded clear over the edge thus saving much space; and has a THUMB REST on the side (patent applied for) making possible this light weight construction. Total weight only 5 ounces. This new invention makes possible a superior respirator that provides a large filter area, as small dead air space as possible, low breathing resistance and comfort. Write today for additional information! THOUSANDS OF DUPOR RESPIRATORS NOW IN USE Used for all kinds of dusts, smoke, light fumes, vapors and paint spray that are free from harmful gases.

BASIC PATENT NO. 2,000,064

DETAIL PATENTS PENDING AND ALLOWED

MANUFACTURED ONLY BY

H.S. COVER

BULB VALVE TYPE NO. 16

This DUPOR has enlarged adjustable filter chambers of screw cap type and the very large aperture of 16 sq. in. Extra ¼" thick pads 4c 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.

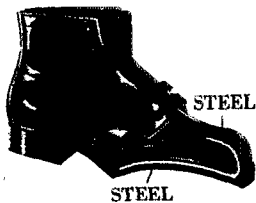
MARCH, 1936

I Special Memo
for
Safety Engineers!

RECOMMEND SAFETY SHOES WHICH ARE FULLY TESTED

MR. SAFETY ENGINEER! In your job you can't afford to gamble with unknown safety factors . . . that's why we suggest that you recommend Brownbilt SAFETOE Shoes . . . They are Fully Tested . . . with steel toecaps which have successfully passed the Rockwell Impact and Compression Tests made by an impartial laboratory.

But further than that, Brownbilt SAFETOE Shoes also provide all these other important features:



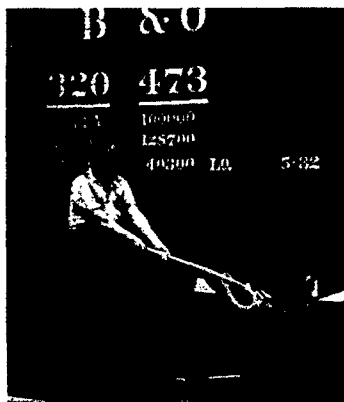
H100—"Brownbilt Safe-toe" Men's Black Elk Blucher, Puncture-Proof Sole, Steel Box, Steel Shank, Flex-Dry Oak Sole, Leather Heel, Welt, Safetoe Last. C 6-12, D, E 5-12.

1. **Utmost Comfort**—ample toe clearance—inside finished smooth—no chafing or rubbing.
2. **Finest Construction**—every detail carefully checked to provide strength and service—leather where leather ought to be.
3. **Rugged Dependability**—selected materials throughout, and with choice of three kinds of soles—Oak Bend Leather, famous Cord soles, and long-wearing composition.
4. **Puncture-Proof Sole**—Model H-100 is made with flexible spring steel plate between insole and outsole.
5. **Types and Patterns**—including oxfords and high shoes—distinct types to meet the demands of every industry and every worker.

Write or wire for complete details on our special Industrial Plant sales plan. This will place you under no obligation whatsoever.

Brown Shoe Company ST. LOUIS

BROWNbilt SAFETOE SHOES



**Close Hopper-Bottom Car
Doors with**

EASE and SAFETY

with the

Prescott Safety Tool

This special tool will close hopper-bottom car doors. Prevent smashed fingers, strained backs, ruptures and other serious injuries. Saves time—Is inexpensive.

The Trumbull Mfg. Co.

Warren

Ohio

Safe from Shock

(Continued from page 18)

cord. The connecting cord is a 60 per cent para rubber insulated cord of the type used for extension lights. Over a four-year period this reduced voltage has proved satisfactory and no cases of injury by shock have been reported.

The experience of the various plants of our company has shown the value of the following factors affecting safety:

1. Use of good material and equipment, especially wire and metal conduit.
2. Positive and dependable grounding of all motor frames, compensator and switch cases, distributing cabinets and conduit lines.
3. Installation of switches in the line side of all fuses in power circuits or the use of fuses of the dead front panel type so that fuse replacement can be made in safety.
4. Use of 32-volt portable extension lights when employees must enter any closed vessel, such as a tank or boiler drum or shell.
5. Use of 32 volts for operating portable drills, saws, etc.

Springfield Street Cars Do Their Part

COOPERATING with the Springfield, Massachusetts, Safety Council, the Springfield Street Railway Company has been doing its part in reminding the



public by carrying safety dash posters on all cars. The posters bear the name of the Springfield Safety Council. During the last week of December the Council's message to the motorists and pedestrians of Springfield was "Let Your New Year Resolution Be the Saving of a Human Life."

NATIONAL SAFETY NEWS

PERSONALS

R. H. Balensiefer has resigned from the safety department of Armour & Co., Chicago, to become director of engineering inspection for the Hardware Mutual Casualty Company, Stevens Point, Wisconsin. Mr. Balensiefer succeeds R. C. Salisbury who has been transferred to the Oshkosh office in charge of sales.

OBITUARY

ARTHUR BERQUIST

ARTHUR BERQUIST, safety inspector at the Indiana Harbor Works of the Youngstown Sheet & Tube Company, died February 14, following an illness of several months. He was 42 years old. Surviving are his widow, a daughter and a son.

Mr. Berquist entered safety work with the Inland Steel Company in 1918 and in 1920 went with the Steel and Tube Company of America which later merged with the Youngstown Sheet & Tube Company.

No member of the Metals Section of the National Safety Council was more zealous than Art Berquist and his loss will be keenly felt, not only in the section but also among safety men in the greater Chicago area where he was active in the work of the Chicago Safety Council and the East Chicago Safety Forum. At the Louisville Congress in 1935 he was elected vice-chairman of the Metals Section, which he had served faithfully for more than a decade.

W. A. DEARBORN

WILLIAM A. DEARBORN, director of safety for the Lumbermen's Mutual Casualty Company at the New York office, died February 3. He is survived by his widow and one daughter.

Mr. Dearborn was born in Brookline, Massachusetts, May 4, 1880. After leaving college he entered the engineering department of the Boston & Albany Railroad. In 1918 he became associated with the Federal Mutual Liability Insurance Company as chief inspector and was later promoted to the position of

MARCH, 1936



EAST

NEW YORK
W. S. Wilson Corp.
123 Varick St.
PITTSBURGH
Safety First Supply Co.
Brady Building
PHILADELPHIA
J. A. Hunt Co.
2036 Sansome St.
BRAINTREE, MASS.
Direct Sales Co.
108 President Road

SOUTH

CHATTANOOGA,
C. D. Genter Company
Chattanooga Bank Bldg.

MID-WEST

DETROIT
C. H. Dockson Company
2885 E. Grand Blvd.
CHICAGO
E. D. Bullard Company
215 South Leavitt St.
GREEN BAY, WIS.
Safety Service Company
108 No. Quincy St.
DULUTH
W. P. & R. S. Marx Co.
324 W. Michigan St.
HOUSTON
E. D. Bullard Company
1 Main Street

WEST

SAN FRANCISCO
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Everything
BULLARD
in Safety



A ONE-PIECE MOLDED FACE PIECE

Different in theory and design

Wide Vision Triangular eyepieces, set close to the head, give clear vision and wide vision.

Nose Space Projects out—for comfort and easy breathing.

Course of Air Through a Y tube to the lower edge of each lense; then fanned over the lenses to eliminate fogging.

Lowered Breathing Resistance Plenty of fresh air coming in. Extra-large exhalation valve (1 1/4 inches in diameter) makes respiration easy. Wearer can actually talk through this exhalation valve!

Anatomically Molded Shaped under heat and pressure to conform to the face. This eliminates strap tension, not needed to secure a tight fit. Much more comfortable!

Catalog describing the Bullard molded facepiece and the complete line of Bullard gas masks will be sent on request.

Masks may be examined at any office listed.

BULLARD

STEEL TOE • PLATER'S SHOE Wooden Sole • • •

There are many places in industry where there is no substitute for non-conductive WOOD SOLES . . . These soles made over the REECE "PERFECT ROCKER" last and combined with the new high improved STEEL TOES . . . provide complete and comfortable . . . FOOT PROTECTION . . . at a very low cost. Write today for catalog.

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



Stock No. 504S

DOCKSON

Feather-weight DOWMETAL GOGGLES



COMFORT, in an almost unbelievable degree, is afforded users of these remarkable new feather-weight goggles. The reasons . . . amazing light weight, being made of Dowmetal—36% lighter than aluminum . . . Individual right and left eye cups designed, after exhaustive survey, to really fit all faces . . . Simplest possible nose bridge adjustment permits accurate spacing of eye cups—varies with each individual . . . Unequaled visibility and ventilation . . . And a host of additional exclusive features.

Literature upon request

C. H. DOCKSON CO., 2885 E. GRAND BLVD., DETROIT, MICH.

For Visual Safety

Departmental Bulletin Boards

These handy, readily portable bulletin boards have a cork center that takes thumbtacks and pins easily. Bulletins, announcements, reports and departmental contests can be quickly brought to the attention of all employees. Inexpensive and long lived.

Revolving Blackboards

It is easy to illustrate the important points you want emphasized at your safety meetings when you have one of these blackboards. Furnished with a substantial standard on rollers. Blackboard revolves so both sides may be readily used.

Write for descriptive folders.

New York Silicate Book Slate Co.

20 Vesey Street, New York City

chief engineer. When the Federal became affiliated with the Lumbermen's Mutual Casualty Company he became assistant secretary in charge of the safety engineering department of the eastern and New England branches of affiliated companies. Later he was transferred to the New York office.

Mr. Dearborn had been a member of the American Society of Safety Engineers — Engineering Section, National Safety Council, since 1923, and had served on numerous safety code committees. For many years he was actively identified with the Construction Section which he served as vice chairman and chairman of the Program and Engineering Committees.

Foundrymen Organize Safety and Hygiene Section

WITH a view of increasing the effectiveness of the work carried on for a number of years by The American Foundrymen's Association, in plant safety, good housekeeping, and protection of foundry workers, the Board of Directors has authorized the formation of a Safety and Hygiene section.

E. O. Jones, for many years associated with Belle City Malleable Iron and Racine Steel Casting Companies, Racine, Wis., and for the past three years Consultant of Industrial Relations Bureau of the National Founders Association, has been made Director of the Safety and Hygiene Section, and will have his office at the Association headquarters in Chicago.

A plan has been arranged with the Saranac Laboratory of the Edward L. Trudeau Foundation for research and consulting service.

Films Dramatize Driving Responsibility

VIVID portrayal of the horrors of automobile accidents is being brought before millions of American theater-goers through a new series of motion pictures. Although the presentations are sponsored by retail advertisers interested in selling equipment and automobile insurance to motorists, the lessons of the films are just as compelling as if a disinterested person had produced the pictures.

It is an acknowledged fact that a particularly vivid scene in the movies is long remembered. Reproducing a bad traffic crash, with all the sound effects

NATIONAL SAFETY NEWS

of the impact and shrieking ambulance sirens, injects stark realism into a reminder that good tires, good brakes and careful precaution are important.

More than 950 dealers in safety equipment are now employing this method of stirring the public to remedial action, according to the Alexander Film Company, of Colorado Springs, Colorado, which makes the films for general distribution among more than 5,500 contracted theaters.

While the dramatically-staged crashes hold the eye of the audience, a "ghost voice" announcer gives a ringing safety message in the newsreel style.

Expert stunt drivers are employed by the Alexander Company to wreck several cars in depicting the dangers of threadbare tires, faulty brakes and failure to check up periodically on other vital features of the automobile.

The value of the films is accentuated by the fact that the theater draws a great deal of its patronage from the young people who are more prone than their elders to drive with unsafe equipment.

Mine Two Million Tons Coal, No Fatal Accidents

THE Northern Coal Mines of the Republic Steel Corporation, comprising an operation of six coal mines in the vicinity of Uniontown, Pa., produced more than 1,939,461 tons of coal during 1935 without a fatal accident. This is an outstanding performance, if not a world record, for the industry.

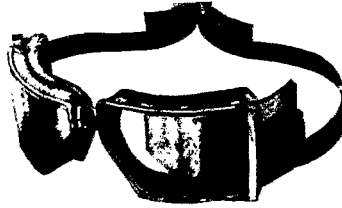
In recognition of this splendid achievement the operating staff of the mines were entertained at a Safety and Operating dinner on Saturday evening, January 18, at the Uniontown Country Club, Uniontown, Pa. Seventy-five persons were present. The speakers included J. A. Voss, director of Industrial Relations, and R. H. Ferguson, manager of Safety, Republic Steel Corporation, Cleveland; J. J. Forbes, supervising engineer, Safety Division, U. S. Bureau of Mines, Pittsburgh; Mine Inspectors G. S. McCaa, Richard Maize and F. W. Howarth of the Pennsylvania Department of Mines, and J. L. Hamilton, safety engineer for the Northern Coal Mines for Republic Steel. E. B. Winning, manager of the Uniontown operations for Republic acted as toastmaster.

Employing approximately 1500 men the Republic Mines not only eliminated fatal injuries to men during 1935 but also reduced the total number of lost time accidents 68 per cent. The operations completed the year with an accident frequency of 31.84 and an accident severity of 2.58 representing an outstanding experience in the Pennsylvania bituminous coal mining operations. The Republic Steel mining operations also heads the Pennsylvania Department of Mines, Bituminous Division, in the number of tons of coal mined per fatal accident.

Russellton Mine experienced the best record of the mines in the Republic group with accident severity of .88. Superintendent Robert McVicker and his men were awarded a trophy in recognition of the work accomplished.

MARCH, 1936

WHAT SAFETY EQUIPMENT DO YOU NEED?



GOGGLES—Over 75 types of welding goggles, chipping goggles, spectacles, smelters' glasses and other eye protective devices are found in the CESCO CATALOG. No file of industrial equipment is complete without this guide!



SANDBLAST MASKS AND HELMETS

Cesco's HEALTHGUARD SANDBLAST MASK is rated as being plus 99% efficient as a barrier to dust entry. Best equipment made for combating silicosis and other "dust" infections. Has also been used for repairing gas filled furnaces.



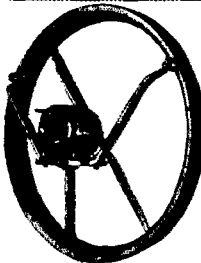
DUST MASKS

Cesco DUST MASKS and RESPIRATORS have a reputation for wearing comfort and efficiency. They are so designed that all exhaled air is released without building up resistance inside of face piece.

Write for CESCO Catalog of Industrial Head and Eye Protective Equipment

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Save 3 WAYS WITH



PROPELLAIR
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Propellair Exhaust Fans pull out dust, fumes, vapors, smoke, heat, dead air—faster and at less cost. Propellair Ventilating Fans assure healthful, comfortable and productive working conditions.

For full description of all PROPELLAIR FANS write today for our 40-page CATALOG

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Fully Guaranteed. All PROPELLAIR Ratings Are Certified Ratings

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SAFETY Guard Economy means providing good guards for all your machine hazards with a minimum of expense. This you can do by using H&K Guard Accessories. With this material you can assemble your own guards to your own specifications with your own employees.

Further, you will be sure your machine hazards are protected as you want them protected. This means fewer accidental injuries and saves compensation and medical costs and reduces insurance premiums. It also means increased production because your workers will not be slowed down by needless accidents. Write for H&K Guard information.

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Safeguard Your Light Bulbs Against Theft



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Insures lifelong maintenance of lamps. Stops lamp theft.

Prevents loosening of light bulbs from vibration.

Costs less than 2c per lamp by continuous use on lamp replacements.

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NEW MODEL L-35



Patented

Try
100 \$15.00
Lamploks
including fibre
shields and tool.

Satisfaction Guaranteed
or Money Refunded

The Safety Library

(Continued from page 32)

ards that are encountered by workers in the printing trades, the results of these hazards and suggestions for their prevention."

PERIODICAL REFERENCES

Dusts

THE EFFECT OF VARIOUS PHYSICAL FACTORS ON THE COUNTING OF SILICA DUST SUSPENDED IN WATER. By May Annetts and John D. Leitch. In *Journal of Industrial Hygiene and Toxicology*, February, 1936, p. 98-105.

THE MINERALOGICAL COMPOSITION OF AIR-BORNE FOUNDRY DUST. By Theodore Hatch and Charles B. Moke. In *Journal of Industrial Hygiene and Toxicology*, February, 1936, p. 91-97.

Of great importance is the unavoidable conclusion that the determination of chemical and mineralogical composition of industrial dust without reference to particle size may lead to quite erroneous results.

SILICOSIS AS AFFECTING MINING WORKMEN AND OPERATIONS. By D. Harrington. (U. S. Bureau of Mines I. C. 6867) Free.

Industrial Medicine

HOW INDUSTRIAL MEDICINE AIDS IN MANAGEMENT. By A. W. Schoenleber. In *Personnel Journal*, January-February, 1936, p. 297-302.

The prevalence of medical departments, how they aid workers and save money, their relation to operating departments, and exactly what they do is set forth by a leading authority.

Industrial Poisons

ON THE RELATION BETWEEN THE CHEMICAL CONSTITUTION AND PHARMACOLOGICAL ACTION OF PHENYLHYDRAZINE DERIVATIVES. By W. F. Von Oettingen and W. Deichmann-Gruebler. In *Journal of Industrial Hygiene and Toxicology*, January, 1936, p. 1-16.

Eleven phenylhydrazine compounds have been studied in regard to their toxicity on subcutaneous injection, their irritant effect on the skin, their anemiamic action and their effect on blood pressure, respiration and blood at elevated temperatures. The relation between those actions and the chemical constitution of the compound is discussed.

PATHOLOGICAL STUDIES ON THE ORGANIC EFFECTS OF VARIOUS HYDRAZINE

NATIONAL SAFETY NEWS

DERIVATIVES. By W. C. Hueper. In *Journal of Industrial Hygiene and Toxicology*, January, 1936, p. 17-36.

Rats injected with lethal or slightly sublethal doses of several hydrazine derivatives, develop more or less severe degenerative lesions in various organs in addition to manifestations of vascular and circulating disturbances.

THE RELATIVE TOXICITY OF ACETONE, METHYLALCOHOL AND THEIR MIXTURES. By R. M. Sklianskaya, F. E. Urieva and L. M. Mashbitz. In *Journal of Industrial Hygiene and Toxicology*, February, 1936, p. 106-122.

THE TOXICITY AND POTENTIAL DANGERS OF ETHYLENE GLYCOL. By F. H. Wiley, W. C. Hueper and W. F. Von Oettingen. In *Journal of Industrial Hygiene and Toxicology*, February, 1936, p. 123-126.

Traffic

PROMOTING SAFE HIGHWAY TRAFFIC. By E. J. Reeder. In *Better Roads*, January, 1936, p. 33-35.

"Adequate design and proper safeguarding of the road must be supplemented by education of the public and enforcement of regulations."

Asked and Answered

RUBBER CEMENTS

QUESTION: Our purchasing agent has asked me about the relative safety of rubber cements. Have you information on this subject?

ANSWER: One of the foremost rubber chemists in the United States says that the percentage of benzol used in rubber cements varies from a few per cent to 100 per cent of the solvent used. He also says that when benzol is used, it usually comprises the entire quantity of the solvent. He adds that many types of rubber cements are still made with benzol as the principal solvent, although naphthas are being substituted more and more as people realize that benzol is poisonous. With the exception of a few kinds of special cement, it is not necessary to use benzol; and where necessary, danger can be eliminated by proper handling and sufficient ventilation.

A few years ago practically all rubber cements were made with benzol or coal tar naphtha. Today naphtha or gasolines are the usual solvents.

SOCKETING WIRE ROPE

NEW ORLEANS, LA.—On page 60 of the January, 1936, issue of *NATIONAL SAFETY NEWS*, under the caption "Asked and Answered," I note a question concerning cable fastenings in which information is requested as to

MARCH, 1936



PREVENT Slipping Accidents

SHOES EQUIPPED WITH RAW-CORD Soles AND Heels Provide Safe Footing



Accident prevention is possible to a very large extent in all lines of industry, if the workers shoes have RAW-CORD or GRO-CORD Soles and Heels on them. Recent statistics disclose the fact that one accident out of every five is caused by slipping. Therefore it is very obvious that if slipping is prevented, accidents can be reduced in proportion. The CORD-ON-END construction of RAW-CORD and GRO-CORD Soles and Heels produces the Greatest NON-SLIP Wear. To prevent accidents among your employees see to it that they wear shoes equipped with NON-SLIP Soles and Heels. Shoes equipped with RAW-CORDS or GRO-CORDS can be secured without additional cost from local shoe dealers. Ask for them by name RAW-CORD or GRO-CORD.

GRO-CORD and RAW-CORD soles and heels are used extensively in dairies, on farms, 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, also street and office.

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

Fully Protected by Patents—Any Infringements Will Be Prosecuted



NON-SLIP SOLES AND HEELS

KEEP machinery CLEAN

—and you keep it SAFE—in better running order. THIS Blower drives dry air, free from oil, at terrific velocity but low pressure. Convertible to suction cleaner. 4 models.

CLEMENTS—CADILLAC

PORTABLE ELECTRIC BLOWER

●BLOW, SPRAY,

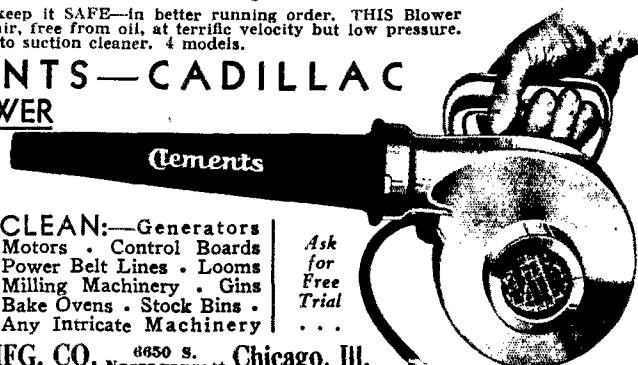
SUCTION CLEAN:—Generators

The Most Useful Tool in Any Shop

- Motors • Control Boards
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- Milling Machinery • Gins
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- Any Intricate Machinery

Ask for Free Trial . . .

CLEMENTS MFG. CO. 6850 S. Chicago, Ill.



Don't Forget the New Man



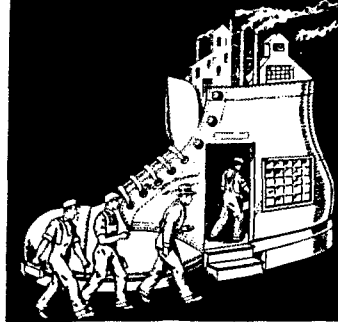
X800—This is an ideal general purpose low priced work shoe. It is a black Retan Blucher, with Army Grid Sole, Oak Middle Sole, and Rubber Heel. Sizes 5-13 EE width.

The new man on the job is anxious to make good. Sometimes he is over zealous and may encounter unfamiliar hazards. Help him be safe by giving him good equipment and good advice. Tell him about Lehigh Safety Shoes and how they will protect his feet. He will like to wear them, too, because they are comfortable, good-looking, durable and are equipped with the Improved Steel Box Safety Toe.

If you aren't fully acquainted with the complete line of Lehigh Safety Shoes send for details and prices. There is a stock pattern to meet practically any need.

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

Industry Works in Lehigh Safety Shoes



Registered U. S. Patent Office

the proper material to be used in socketing steel wire rope or cables. Because of my experience in applying all types of sockets to wire rope of various sizes, the following may be of interest.

First, it must be admitted that absolute security up to and beyond the breaking strain of the rope may be obtained by splicing in which not less than three tucks are to be made over a heart-shaped thimble. The next means is through socketing the wire, which is applied in many cases where an eye splice is not desirable. Several years ago when the writer was employed in the Construction Department of the United States Navy at Mare Island, Calif., the question arose as to the proper terminals for wire rope in the cargo handling apparatus of U. S. Navy colliers. It was decided to socket the wire ropes, which were in all sizes from 1/2 inch to two inches in diameter. Prior to proceeding with the work, tests were made by taking a six foot sample of each size wire rope and socketing. Babbitt metal, pure zinc, and combinations of these materials were used. The samples were then tested both by hoisting weights equal to the breaking strain of the wire for the smaller diameters and by use of an anchor chain testing machine for the larger diameters. In each case the wire either pulled out of the socket or strands of the wire parted immediately above the neck of the socket. It was noted that pure zinc held under greater stress than the other metals. Further investigation indicated that the reason for the failure of some of the strands of wire was due to the fact that the center axis of the wire did not exactly conform to the center axis of the taper opening in the socket, thus placing undue strain on one or more of the wire strands.

We then tried the experiment of back splicing the wire rope on the smaller sizes, using but one tuck in the splice, and on the larger sizes the strands were halved and finished with two tucks. The socket was then drawn up over the back splice and pure zinc poured in to fill the voids. In testing all sizes of wire rope where the back splice was used, it was found that the wire ultimately carried away above the socket, leaving that portion within the socket intact. In other words, the wire was stressed to destruction without disturbing the terminal.

Consequently, this method was adopted in rigging the cargo-handling gear on the colliers in question, and to the best of my knowledge the scheme has been followed since that time on both standing and running rigging.

On account of the large number of cuts and scratches sustained by both seamen and longshoremen in handling the cargo whips on the ships of the Lykes Bros.-Ripley fleet where all whips were eye spliced at the cargo end, we adopted closed sockets as a means of preventing injury. Where the 5/8-inch wire rope was secured to sockets by means of zinc, the strands of wire invariably carried away immediately above the neck of sockets, thereby rendering the cargo whip very unsafe. We then adopted the scheme of back splicing the rope, drawing into the tapered opening of the sockets and then filling the voids with pure zinc. Since that time they have worked very satisfactorily, hand injuries have been eliminated and we have no record of any failure insofar as wire and sockets are concerned.

F. E. AMES, Manager
Safety Department, Lykes Bros.-
Ripley Steamship Co., Inc.

NATIONAL SAFETY NEWS

BUHRKE Linemen's Safety Belts

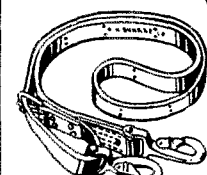
When a lineman is on the pole he shouldn't have to worry whether or not his "safety" is safe.

Use Buhrke Belts for Satisfaction and Safety

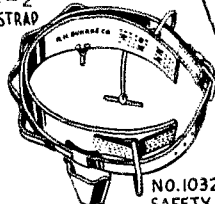
The R. H. Buhrke Company pioneered in the development of safety belts and straps over 40 years ago, with the help of public utility engineers. The result was equipment that was designed right, built right and provided maximum safety. Improvements in design have been made from time to time but the same exacting specifications of material, hardware, inspection and workmanship have always been maintained.

Write for catalogue

R. H. BUHRKE CO.
4538 Fullerton Ave., Chicago, Ill.
SAFETY EQUIPMENT FOR CONSTRUCTION AND MAINTENANCE



NO. 1016-2
SAFETY STRAP



NO. 1032-4
SAFETY BELT



More Hours Worked

(Continued from page 16)

nine manufacturing units and 12 assembly units, last year had a composite improvement of 47 per cent in their reduction of accidents compared to 1934. So successful were results, that M. E. Coyle, president and general manager of Chevrolet, has ordered the same efforts continued in 1936.

Chevrolet officials based their contest on the grouping of two teams—manufacturing and assembly operations—competing over six months' periods, and gave dinners to the supervisory force of the plant of each team having the best safety records in the half year intervals. Dinners were held at Norwood, Ohio, Detroit, and Bloomfield, New Jersey, at which time silver plaques were presented to the management by Chevrolet executives.

The 22 Fisher Body plants approached safety from a slightly different angle, operating the "E. F. Fisher No-Accident Campaign" from May to October inclusive in 1935. At the conclusion of this contest, banners were awarded to the winning Fisher plants. These awards were made personally at the plants by E. F. Fisher, general manager of Fisher Body, following dinners for the supervisory force.

How well the Fisher Body division succeeded is shown by its record in 1935, a frequency rate of 5.30 and a severity rate of .674, both below the General Motors average.

All other plants of General Motors, including Pontiac, Oldsmobile, Buick LaSalle, Cadillac, Frigidaire, accessory units and foundries were enlisted in the "Wilson No-Accident Campaign" during April, May and June of 1935, with banners going to every department in each plant that finished the contest without an accident.

At the conclusion of the campaign, 181 or 74 per cent of the departments created for the contest had perfect records and won flags. Nine of the 26 plants enrolled had no accidents, representing 3,350,914 hours of work. Accidents were reduced from 398 to 119, an improvement of 70 per cent, compared to 1934.

To show his appreciation of this record, Mr. Wilson personally visited every plant, made the awards to winning departments at a dinner, and impressed the supervisory force with the necessity for safe plant operations. Prior to the contest, he had enlisted the aid of supervisors in the campaign by asking them to sign pledge cards that they would reduce

MARCH, 1936

Do as Your Doctor Does TO PREVENT INFECTION in Cuts and Wounds—

USE A SWAB



Applying a Davis Swab—like the doctor's and always ready, easy to use.

THE Davis Swab prevents infection—and minimizes your compensation—by utilizing the doctor's method of forcing the antiseptic into actual contact with all the exposed tissue. Merely crush one end and the antiseptic quickly saturates the cotton end, giving you a swab just like a doctor's. Use this swab end as a brush and you insure positive contact of the antiseptic with the entire cut or wound.

Davis Swabs are filled with Iodine—the improved Iodine solution—and are available with other antiseptics too.

A doctor uses a swab—cotton wound wooden applicator saturated with antiseptic.

Use coupon to send for a free copy of "Bulletin on First Aid"

DAVIS EMERGENCY EQUIPMENT CO., INC.
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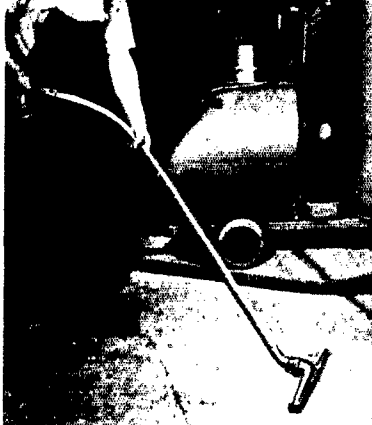
Please send my copy of your Bulletin on First Aid to

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Vacuum is being used to handle all kinds of waste raw materials and dusts. Spencer Central Systems are moving thousands of pounds of soap dust, soap stone dust and tons of sand, every day

With a single installation you can accomplish the following economies.

1. Reduce the health and fire hazards.
2. Remove waste materials of all kinds.
3. Save on ordinary floor cleaning costs.
4. Reclaim valuable waste materials.
5. Clean finished product and containers before shipment.
6. Find a dozen ways to apply vacuum to special manufacturing operations in your plant.

Let our engineers study your plant layout and your manufacturing processes. A single installation can often save its cost the first year.

SPENCER
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**CENTRAL AND PORTABLE
VACUUM CLEANING SYSTEMS**

THE SPENCER TURBINE COMPANY, HARTFORD, CONN.

STOP THIS INVASION OF DUST



Even if dust is a necessary evil in many operations it can be definitely controlled.

Blaw-Knox Dust Control is an immediate and permanent remedy for dust troubles in your industry. Each problem is met with individually designed equipment manufactured under strict technical control. Blaw-Knox Dust Control has the individualism necessary for the many and changing needs of American industry.

If your dust problem is large or small—hot or cold—dry or wet—consult Blaw-Knox for prompt and economical solution.

BLAW-KNOX COMPANY
2030 Farmers Bank Building, Pittsburgh, Pa.

BLAW-KNOX

DUST CONTROL SYSTEMS FOR INDUSTRY

FERALUN

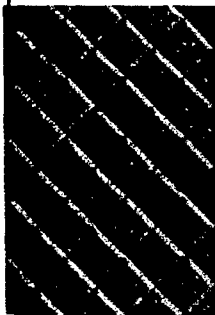
Anti-Slip Treads (Also Bronzalun, Alumalun and Nicalun)

**PREVENT ACCIDENTS
ON STAIRS and FLOORS**

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

Specify Feralun and Be Sure

AMERICAN ABRASIVE METALS CO.
Irvington, New Jersey



accidents in their departments and co-operate wholeheartedly in the drive. The entire contest shows the success possible when an executive takes the time to conduct a safety campaign and follows its progress closely.

No analysis of the General Motors safety program is possible without a mention of the work of the General Motors Institute in Flint, the corporation's training center, where safety is a vital part of the foremen training courses originating there, and in turn reaching into practically all of the plants. Nor would the story be complete without tribute to local plant management, which, regardless of contests, continually makes the prevention of accidents the responsibility of everyone, and which constantly sees that hazards causing accidents are eliminated.

Safety Lesson Salvaged from Wreck

EARLY in last December an automobile, stalled on a grade crossing of the Union Pacific Railroad, caused a costly wreck. The railroad's far-sighted safety department, however, salvaged something very much worth while—a safety lesson which has been passed on to all public school superintendents in the territory served by the railroad between the Missouri River and the Pacific Coast, in the hope that the cause of safety education will be advanced.

The railroad printed and distributed a special bulletin describing the accident in brief, telling how the automobile was driven off the planked crossing and became stalled between the tracks in front of an approaching freight train. Although no lives were lost, substantial damage and serious delays resulted.

Since the crossing was guarded with standard signals, the accident could have been avoided with a modicum of care on the part of the driver, a woman of mature years, and a school teacher in the vicinity. Adding to the seriousness of the driver's offense was the fact that two children were passengers in the car.

The bulletin pointed out that the teaching profession should be the nucleus of current public safety efforts, and that "the first essential in the success of a program of education designed to make a nation safety conscious is a constant observance of its lessons in practice as well as in precept by the teacher."

Requests for additional copies of the bulletin indicate that the lesson is being taken to heart by the educators contacted.

Safe till Tomorrow?

(Continued from page 15)

the chamber of commerce, luncheon clubs, and other civic groups in promoting traffic safety, home safety and fire prevention. They should familiarize themselves with local and state laws and ordinances and set a standard for other citizens to follow by good example.

Home Safety. The home, long considered a safe place, is now known to rank second only to the automobile in the number of fatalities reported each year. Therefore, employees should be encouraged to make home inspections for both accident and fire hazards. Where local organizations, such as the safety council and fire department, provide home inspection blanks, employees should cooperate by giving the requested information and by correcting unsafe conditions and unsafe practices.

Contests for Employees' Children. It is often advisable to interest employees' families in the accident prevention program. This can be accomplished by inaugurating an essay contest on various phases of safety such as "How I got hurt and what I learned from the experience," or "How we prevent accidents in our home." Some organizations have offered prizes for the best essays or best safety posters prepared by children. The awards are publicized in the local newspapers and company publications.

First Aid Contests. First aid contests have long been considered an important adjunct to industrial accident prevention. They should be applied to home life as well. These competitions have a more far-reaching effect when all employees have an opportunity to participate. Each employee will then be familiar with the important things to do when someone is injured at home or outside the plant. These contests also encourage the keeping of adequate first aid supplies in the home.

Worth Repeating

THE Baltimore Safety Council is conducting its eleventh standard first aid training course with 130 persons representing 22 companies enrolled. This is the largest enrollment for this course in several years.

The Council is also conducting its seventh series of Safety in Foremanship classes, with 155 foremen and others in supervisory positions enrolled.

MARCH, 1936

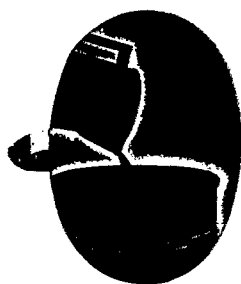
DERMA-SAN

DISINFECTANT

THESE HANDS
ARE IN DANGER



**Yet Oil Dermatitis
is Easily Preventable**



WHEREVER cutting oils or cutting compounds are used, there you will find Oil Dermatitis. The germ of this skin disease infects lubricants during use. When carried into abrasions of the worker's skin, it causes serious infections...lowers plant efficiency. Prevent Oil Dermatitis with Derma-San. Add 1 pint of Derma-San to 35 gallons of cutting lubricant, and kill pus-forming germs before they attack your workers.

Derma-San is ideal for all general plant sanitation.



Protect Your Worker's Feet

With

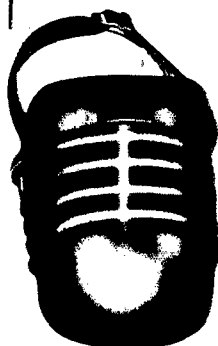
SANKEY FOOT GUARDS

Smashed toes are costly. Avoid them.

Sankey Foot Guards are made of 16-gauge steel, or Rigidlum, an aluminum alloy. Light in weight, comfortable to wear and permit free and easy movement of the feet. Built for strength—will withstand an impact of 300 foot pounds. Designed so floor or ground takes the force of the impact of falling objects.

Write for Your Sample Today.

ELLWOOD SAFETY APPLIANCE CO.
ELLWOOD CITY, PENNSYLVANIA





The Improved Lincoln Twin Disc Combination Scrubbing and Polishing Machine

Modern plants use modern equipment for cleaning purposes as well as for production work. Further, clean floors help you meet production schedules. Lincoln Twin Disc Floor Cleaning Machines have been constantly in use in some of the largest factories in the country for years. They cut cleaning time to a minimum and do a better job. A trial will convince and a trial can be arranged without any obligation. For safe, clean and healthy floors use a Lincoln. Write for complete information today.

LINCOLN-SCHLUETER
Floor Machinery Co., Inc.
237 W. Grand Ave. Chicago, Ill.

The Lincoln Industrial Special for Dry Cleaning Factory Floors

The LINCOLN Twin Disc
SCRUBS - WAXES - POLISHES



THE HANDIEST AND BEST AMPOULE ON THE MARKET

With handy rubber screw cap, which prevents evaporation, leakage and deterioration.

Mult-Aply AMPOULE
MULTIPLE APPLICATION

FILLED
With your choice of any of the following—
OIL of SALT

Iodine
Mercurochrome (H.W.D.)
Methaphen
Ferric Chloride
Merthiolate
Packed

2 cc in wood container
10 cc in cardboard sleeves

Write for Samples and Quotations

ECONOMICAL
SAFE—CONVENIENT

These applicators are not only convenient and safe but are also economical. The solution feeds direct to the wound through the smooth glass tip, thus avoiding the usual use of cotton that absorbs the solution causing considerable waste.

A profitable item for Jobbers and First Aid Supply Houses.

C. A. MOSSO Laboratories, 215 So. Leavitt St., Chicago, Ill.

Tragic Facts

(Continued from page 13)

from 1934 to 1935, while non-license states had an increase of over two per cent. Had all states shown the reduction experienced by the license law states about 1,000 lives would have been saved in 1935.

This relatively favorable showing of the license law states, it should be pointed out, is due partially to their more highly urban character, and to the effective safety influences, in addition to license laws, which are now operating in cities.

Occupational Accidents

OCCUPATIONAL accidents in 1935 resulted in approximately 16,500 deaths, 63,000 permanent disabilities, and 1,340,000 temporary injuries. These are increases of about 3 per cent over the comparable figures for 1934. Wage losses, medical expense, and the overhead costs of insurance are estimated to be in the neighborhood of \$620,000,000.

Less than half as many persons are killed in occupational accidents today as was the case 25 years ago before the possibilities of accident prevention were recognized. The National Safety Council recently estimated that during the years of organized industrial safety work, from 1913 to 1935, the lives of about 250,000 workers have been saved. This also represents a money saving of about \$3,500,000,000 to these workers, the families dependent on them, and the general public.

In plants reporting to the National Safety Council the industrial accident rate per million man-hours decreased about 10 per cent from 1934 to 1935. This is at least a tentative indication that the 3 per cent increase in the national accident total came from an increase in employment rather than from a fundamentally worse accident experience.

Home Accidents

DEATHS from home accidents occurring in 1935 numbered about 31,500. Permanent disabilities totaled approximately 140,000, and temporary disabilities about 4,600,000. The wage losses, medical expense, and overhead costs of insurance were estimated at \$580,000,000.

Home fatalities in 1935 represent a reduction of nearly 9 per cent from the total of 34,500 in 1934. The decrease comes largely from the fact that in 1935 the summer temperature was more near-

NATIONAL SAFETY NEWS

ly normal than in 1934, and that consequently deaths from excessive heat—the majority of which are classified as home accidents—were relatively few.

This also means that the reduction in 1935 fatal home accidents is principally in the age group 65 and over, where most of the excessive heat deaths occurred in the previous year. In 1934 the most important class of child deaths was conflagrations, burns and explosions, and there is no evidence that the number of these fatalities decreased appreciably in 1935.

Public Accidents (Not Motor Vehicle)

DEATHS during 1935 resulting from accidents occurring in public places, but not involving motor vehicles, are estimated at 17,500, the same as in 1934. The number of injuries terminating in permanent disability is placed at 60,000, and those involving temporary disability only at 2,040,000. The wage losses, medical expense, and overhead costs of insurance are believed to be about the same as in 1934, namely, \$440,000,000.

Fatal accidents in this classification were lessened by the general reduction in excessive heat deaths in 1935 as compared with 1934. This decrease—amounting to about 300 fatalities—was more than offset, however, by the Florida hurricane disaster which killed more than 400. Railroad deaths were about the same as in 1934, and there was only a small decrease in airplane deaths.

Steam Railroad Accidents

INFORMATION on steam railroad accidents is available only for the first eight months of 1935. During that period the total number of deaths recorded by the Interstate Commerce Commission was 3,302, as compared with 3,272 in the same months of 1934. The increase shown is 0.9 per cent. Deaths of trespassers rose 1.0 per cent, while those of employees on duty decreased 1.1 per cent and fatalities to passengers on trains and travelers not on trains dropped 26.9 per cent. Other non-trespasser deaths increased 2.1 per cent.

The only classification where an increase occurred in non-fatal injuries during 1935 was that of passengers and travelers not on trains. The advance amounted to 5 per cent. Non-fatal injuries to trespassers decreased 3.7 per cent and those among employees on duty 7.5 per cent. Other non-trespasser injuries numbered the same in each eight-month period.

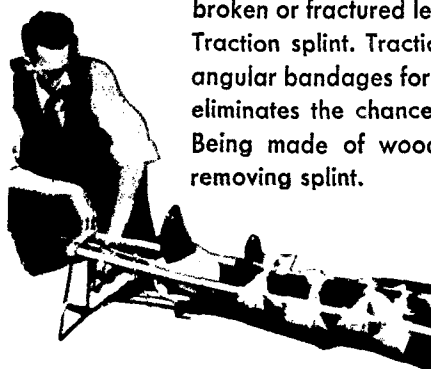
At highway grade crossings, eight

MARCH, 1936

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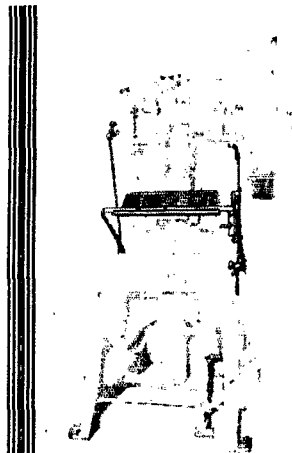
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Give that Snake Bite Victim a Better Chance to Live!

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months' deaths increased from 951 in 1934 to 983 in 1935, and injuries rose from 2,611 to 2,695.

Aviation Accidents

U. S. CENSUS BUREAU records for 1934 show 428 deaths in air transportation, both civil and military. This was a slight decrease from the 1933 total of 434 but does not measure fully the improvement in accident experience because the amount of flying increased in 1934.

The only complete 1935 information is for scheduled flying in civil operations. The total number of fatalities was 29, compared with 38 in 1934. There were 15 passengers killed, which, with an estimated total of 328,000,000 passenger-miles flown, indicates a death rate of 4.6 per 100,000,000 passenger miles. This was only half the 1934 rate of 9.3. For all occupants—employees as well as passengers—the death rate was 6.4 per 100,000,000 occupant miles, compared with 11.8 for 1934.

During the first half of 1935 the occupant death rate for miscellaneous flying operations was 150.4. This is a reduction of nearly 30 per cent from the comparable 1934 rate of 213.4.

Fire Losses

PROPERTY damage from fire in 1935 totaled approximately \$259,000,000, according to information supplied by the National Board of Fire Underwriters. This is a drop of 4.8 per cent from the comparable figure for 1934, and is the lowest annual total since 1916.

The latest figure on deaths from burns and conflagrations, covering 1934, is 8,261. This total includes deaths from chemical burns and boiling water, but excludes deaths due to suffocation by smoke. The 1934 total exceeds those of the previous three years but is below the annual figures prior to 1931.

Safety Record Measured in Years

A whole decade without one lost-time accident—that is the exceptional record made by the pipefitting department of the Wheeling Steel Corporation, Portsmouth, Ohio.

The 35 men in this department completed their tenth consecutive no-accident year on November 1, 1935. Some members of the department have worked many more than ten years without an accident, and one man is rounding out 25 years of safe service.

NATIONAL SAFETY NEWS

How Radio Protects the Air Traveler

(Continued from page 26)

equipment is good for any distance during the day, but at night it is not reliable over 30 miles. Work is under way at present to eliminate the night effect, which profoundly affects radio reception in many ways.

About the airport the radio fulfills an important function in the proper dispatching of airplanes and the maintenance of schedule flying. The large transport airplanes are in communication with the dispatcher by radio, and are kept informed of the arrival of other airplanes, either for clearing the field or awaiting the arrival of transfer passengers. Especially in very foggy weather must radio communication be relied upon to land the incoming airplane safely. From a vantage point upon the ground, the dispatcher can guide the airplane to the landing field by advising the pilot of his position, judging from the drone of the engines. Another more recent development is the partial blind landing system, good for a ceiling as low as fifty feet, and developed by the Bureau of Air Commerce. It is characterized

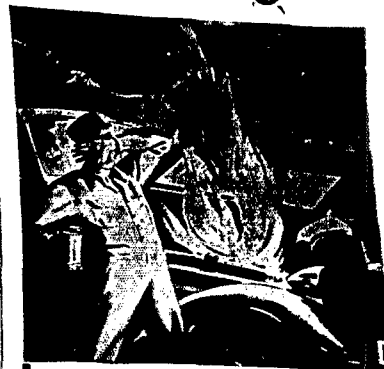
by the following radio signals: (1) Localizing signals on the runway, (2) a landing beam, and (3) marker beacons to indicate the approach of the landing area.

The two-way communication between the airplane in flight and the ground stations is an invaluable asset to safe flying and is responsible for the close adherence to the modern schedule flying of transport planes. The aeronautical radio installations of this nature include a transmitter in addition to the receiver. Two-way communication is usually conducted upon the short waves, which are radio signals of ultra-high frequency. At scheduled times the airplanes of the large airway systems report their positions and altitudes, maintaining contact with their base. The value of this precaution is obvious, for in the event of a forced landing, the base has some information as to the approximate location of the airplane. For a striking example, one can not easily forget an account of a thrilling rescue in upper New York State. An airplane had been forced down in a locality far from any habitation. The heavy snow and blizzard precluded the possibility of the passengers and the pilot traveling from their mountain fastness. Fortunately the radio was working and communication with the rescuing authorities was established. This tale has been repeated under a variety of circumstances during the history of aviation.

The distances available for two-way communication with radio short waves are unlimited. This means protection for exploration flights over vast uncharted wildernesses. During their flight over the Atlantic two years ago by way of Greenland, Colonel and Mrs. Lindbergh maintained a two-way conversation with Long Island, New York. At one time they communicated with Long Island from the Cape Verde Islands, a distance of 3,800 miles. The regular Pan-American Airway Service is an example of a commercial organization holding two-way communication with its airplanes, for distances up to 3,000 miles. The airplanes flying up the Amazon River to Manaus keep in touch with the base in Miami, Florida, a distance of 2,100 miles. Equipped with radio, the airplane can extend its cruising range to almost any limit.

The radio on the airplane has another mission, and that is to rescue those who are remote from aid in the event of an exigency. One will remember the thrilling rescue of a burning freighter off the Atlantic Coast not so long ago, when

Flames shot up to the ceiling...



BUT NOT A MAN IN THE SHOP STOPPED WORKING!

(an actual incident)

A BLOW-TORCH started it. A spark ignited an oil-soaked engine and the flames roared up in the crowded and busy garage. One of our installation men, working in the shop, jumped back in horror.

... Then his fear changed to amazement. Not a man in the shop had stopped work! No one seemed to notice the fire, except the fellow who started it. He calmly lifted a LUX extinguisher from the wall, turned the valve. LUX snow-and-gas snuffed the fire out instantly... and he resumed his welding.

Our man, dumbfounded at all this nonchalance, commented on it to the shop foreman, who explained it easily. "These men have seen our LUX extinguishers handle any gasoline or oil fire in a few seconds. So they quit worrying about it."

With LUX extinguishers you can "quit worrying" about oil and gasoline fires. LUX will protect, not only garages, and trucks on the road, but the most vulnerable hazards in your plant.

LUX carbon-dioxide snow-and-gas is the fastest known extinguishing agent... an effective safeguard to life and property. For specifications and prices write



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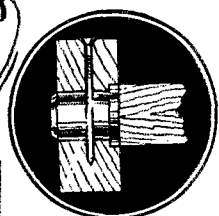


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**BAUER
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**30%
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WITH COUNTERSUNK RUNGS



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SAFER STRONGER LAST
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and Replace Less Often. Exclusive Bauer Features—Counter sunk Rungs and Double-Dipped Tenons make Bauer Ladders for Every Purpose—30% STRONGER

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THE BAUER MFG. CO.
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Steam Cured



Either Straight or curved Fingers in all sizes and for all standard voltages. The **REINFORCEMENT** is one third heavier than the hands and fingers.

The records of large utilities show that from 47% to 75% of the gloves that are rejected on Retest are on account of mechanical injuries, namely: **TEARS, SCRATCHES, ABRASIONS** and **SNAGS** on the glove cuff.

The Reinforcement of the Cuff:

increases the factor of safety—longer service and greater economy—increases the efficiency and morale of the linemen.

Why the YELLOW with BLACK CENTER Glove?

The laminated construction gives added dielectric and tensile strength. Positive inspection in field and laboratory. Seriousness of all defects, snags, scratches, abrasions and imperfections are easily seen as black will show through the yellow.

Try a few dozen and be convinced of the economy and added safety factor, efficiency and high morale of your linemen. Price only 75 cents more per pair than regular gloves for all voltages.

Originated and patented by

FRANK E. BARN'S

130 North Wells Street
Chicago, Illinois

with the radio disabled, it floundered helplessly in the high seas. A newspaper airplane located the burning ship and directed rescue boats by radio.

In short, radio gives that valued protection to aircraft, which makes it imperative that the airplane leave the ground with properly functioning radio apparatus. To quote the first line of a featured article in a recent aeronautical magazine; "It is no exaggeration at all to say that the success of commercial aviation depends *entirely* on the efficacy and thoroughness of radio communication."

Soybean Processing

(Continued from page 21)

evident that hexane vapors were escaping from the extraction unit which apparently were not detected by the operators. The heavy vapors settling in the extraction room apparently were carried over through the open door to the fire in the boiler room and ignited in the fire box. This first ignition of hexane gas spread into the extraction room, causing what witnesses called the second explosion, which blew the operators through the door at the opposite end of the building.

Recommendations

The investigation of the explosion has developed the following recommendations which it is believed will be helpful in the further development of plants for soybean utilization.

1. Attention should be directed to the possibility of developing a non-flammable solvent for soybean extraction units for farm and rural community use.
2. If non-flammable solvents are not practical and efficient for operating reasons, the use of flammable solvents must be surrounded with effective practical safety measures.
3. In any rural community installations involving flammable solvents, provision should be made for underground storage of the solvents outside of building walls.
4. All electrical apparatus and equipment should be of the approved type, installed in accordance with requirements of the National Electrical Code.
5. Provision should be made for ventilation in units of this kind, so that any escaping gases or vapors can be carried outside the building.
6. The boiler room and any other sources of open flames should be safely separated from the main extraction unit.
7. The building in which the extraction unit is installed should be so constructed as to provide adequate venting area to relieve any pressures from explosions or fires.
8. Provision should be made by local authorities for adequate inspection of units of this kind before operations are undertaken.

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Waste Can!

JUSTRITE'S Automatic oily Waste Cans give you safety, economy, efficiency. Opens with foot, closes automatically. Leaves both hands free—a great feature! Reduces insurance rate. Capacity: 5, 10, 14 gallons.

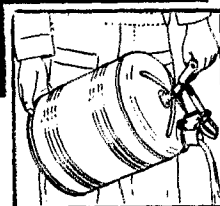
Opens with Foot
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JUSTRITE presents a New Improvement in the 2, 3 and 5 gallon Safety Cans. The carrying handle has been redesigned. This permits "Easier Carrying" and "More Accurate Pouring." Large Spout—easily filled direct from filling station hose—no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

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Protect your plant—your employees—lower your insurance rate premiums—by installing the latest improved and approved JUSTRITE Safety Devices TODAY. See your dealers or write us for interesting prices and literature.



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NATIONAL SAFETY NEWS

HONOR ROLL

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

Buckeye Cotton Oil Co.

The Little Rock, Ark., mill of the Buckeye Cotton Oil Company, a cotton-seed pressing plant employing 119 men, has more than 653,948 safe man-hours to its credit. The record, started on August 1, 1932, remained unbroken on December 31, 1935.

A parallel record is being made by the Selma mills of the Buckeye Cotton Oil Company, which, on December 31, had an unbroken no-injury record of 445,791 man-hours.

Erie County Electric Company

The Erie County Electric Company, Erie, Pennsylvania, reports a record of 666,184 injury-free man-hours—the record still intact when reported December 23, 1935. The date of starting is January 10, 1934. The company employs an average of 175 persons.

General Cigar Company, Inc.

What is believed to be the best all-time record for the tobacco industry was begun on

January 22, 1932, by the Steelton, Pa., plant of the General Cigar Company, Inc., and is still unbroken. On February 4 the record had reached 3,617,718 man-hours. The plant has 534 employees. An inter-factory contest provides the incentive for keeping the record alive.

General Electric Co.

Two unusual records were attained by the General Electric Company in 1935. This is believed to be the first year in the history of the company without a single fatality. It is definitely known that there has not been a fatality-free year at least since 1901.

While the entire organization kept its slate free of fatalities, the pattern shop of the River Works, Lynn, Mass., brought its no-lost-time-accident record up to 969,695 man-hours. The record was still unbroken on December 31. The last lost-time accident in the shop occurred on July 18, 1927.

North American Cement Corp.

A perfect year for safety was realized during 1935 by the four plants of the North American Cement Corporation. The three cement plants, located at Howes Cave, N. Y., Alsen, N. Y., and Security, Md., worked 1,157,571 man-hours during the year without a single lost-time accident. The Berkeley, W. Va., lime plant of the company has gone 2,382 consecutive days, 1,256,959 man-hours, without a lost-time mishap.

This record is an unusual one. Hitherto, as far as can be ascertained, no company in the cement industry with three or more plants has had a perfect safety record in any calendar year; and in the lime industry it is believed that few companies, if any, have equalled the record of the Berkeley plant.

Of the three cement plants, one had been accident-free for 1,379 days, as of January 1. The two remaining plants are well on the way to a record of 1,000 consecutive safe working days.

Philadelphia Co.

Nearly two million safe man-hours were accomplished by the sub-station and shops department of the Duquesne Light Company between March 25, 1934, and November 23, 1935. The 552 employees of that department worked 1,914,499 man-hours without a single disabling injury during that period.

The Meter Division of the Duquesne Light Co., with 124 employees, operated 1,417,589 man-hours without a disabling injury. The record began January 6, 1930, and was still unbroken on December 31, 1935.

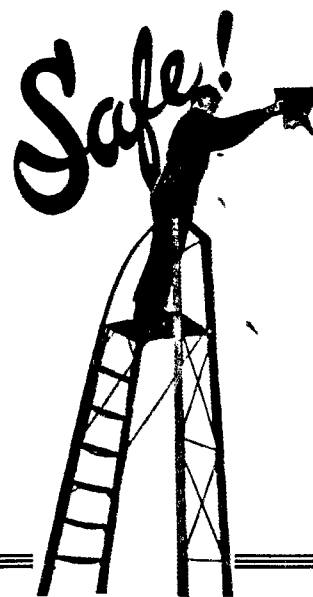
An unbroken record which, on January 20, had reached 1,023,364 safe man-hours, has been accomplished by Division F, of the Equitable Gas Company. The division has 115 employees. The record began October 17, 1930.

Pittsburgh Plate Glass Co.

The Columbia Cement Division of the Pittsburgh Plate Glass Co., East Fultontham, Ohio, employing 285 men, has operated more than 645,129½ man-hours without a disabling injury. The figures quoted are those of December 31, 1935. The record was started October 6, 1934. It was still unbroken on January 20, 1936.

Revere Copper & Brass, Inc.

The Dallas Division of Revere Copper & Brass, Inc., has completed a total of 677,969 man-hours without a lost-time accident. The



The Dayton Safety Ladder is a quality ladder, sold at a moderate price. Durably built of airplane spruce; strongly braced. Does not wobble or tip. Roomy platform; straight back for close work. Sizes 3 to 16 feet.

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record, which began July 8, 1935, was still intact on February 15.

Standard Lime & Stone Co.

On January 23, 1936, the safety record of the Millville, W. Va., plant of the Standard Lime & Stone Co. was still unbroken and had run 583,422 man-hours. This plant employs an average of about 340 men.

United States Rubber Products, Inc.

The Winnsboro, S. C., Mills of the U. S. Rubber Products, Inc., a textile plant, operated from October 30, 1934, to October 21, 1935, without a lost-time accident—a total of 335 days and approximately 2,791,206 man-hours. The record was broken by a mechanic who tried to put a belt on a pulley with a hammer handle. The hammer, caught between the belt and the base of the pulley, was whirled around the pulley, and struck the man on the head, knocking him unconscious and causing him to lose several days of work.

On December 31, 1935, the Providence, R. I., plant of the U. S. Rubber Products, Inc., had operated 316 days, approximately 2,631,268 man-hours, without a lost-time accident. The last lost-time accident at this plant occurred on February 18, 1935.

The Shoe Hardware Division of U. S. Rubber Products, Inc., Waterbury, Conn., in which a foundry is maintained, operated from May 15, 1934, to October 3, 1935, a total of 505 days, or approximately 1,052,954 man-hours, without a lost-time accident.

Youngstown Sheet and Tube Co.

A current safety record worthy of a niche in industry's all-time Honor Roll has been made by the South Chicago Works of the Youngstown Sheet and Tube Company, which, on January 1, 1936, completed three years without a lost-time accident. The record, representing a total of 2,663,509 man-hours, was made by a working force averaging 466 men. On February 12 the record was still unbroken.

Washington Building Lime Co.

The Woodville, Ohio, plant of the Washington Building Lime Co., an associate of the Standard Lime & Stone Co., has a record of more than half a million safe man-hours to its credit. The plant, employing 83 persons, operated without a single accident between February 13, 1931, and July 2, 1935, a total of 555,349 man-hours.

Four Universal Atlas Plants Win Trophies

CELEBRATING the Mark Twain centennial at Hannibal, Missouri, with a perfect safety record in 1935, the Hannibal plant of the Universal Atlas Cement company was one of the company's four plants to win the Portland Cement association safety trophy last year. Independence, Kansas; Leeds (Birmingham), Alabama; and Universal (Pittsburgh), Pennsylvania were the company's other plants to win the trophy in 1935. Figures of the Portland Cement association show that the Hannibal plant was the only cement plant in the country to win the trophy for the first time last year, according to an announcement made by the company's safety director, Gordon C. Huth.

NATIONAL SAFETY NEWS

Maine Strengthens Organization for Highway Safety

THE state of Maine is determined to keep pace with the "seven per cent a year" accident reduction goal set by the National Safety Council in its five-year highway safety drive. As the new year opened, Governor Louis J. Brann, of that state, inaugurated the "1936 Maine Highway Safety Campaign" with the appointment of a state safety engineer and the selection of a committee to finance the greatest humanitarian move in the state's history.

The organized war on highway deaths is an outgrowth of a detailed survey of traffic conditions in the state.

During the latter part of October, 1935, Governor Brann named a committee of 50 citizens to study the highway fatality problem and make recommendations to beat back the rising death curve. To expedite the formulation of a complete, well balanced program, a "Committee of Ten" was selected from this group to serve as a working sub-committee. The Committee of Ten studied all phases of the highway traffic safety problem in Maine, investigated successful procedures elsewhere, considered suggestions offered by interested citizens and recommended a plan of attack to the parent committee.

Outlining a campaign along the four basic fronts of education, engineering, enforcement and enthusiasm, the Committee of Ten recommended that the Committee of Fifty be retained intact as an advisory group to the officials who would be charged with the safety problem of the state in the final analysis.

The necessity of a full time safety director, to be named by the Governor, was pointed out, since the nominal heads of the safety movement—the Governor himself, as honorary chairman, and the Secretary of State, Lewis O. Barrows, as general chairman—could not supply all the time and attention required by a movement of such magnitude.

Among the high lights of the committee's recommendations were the following:

Adoption of an official observer system; possible employment of auxiliary police forces; physical examination of drivers; a survey of existing traffic signs and signals; elimination of obsolete speed limits; attention to the carbon monoxide hazard; adoption of a standard code of hand signals; inauguration of traffic studies; a study of hazards created by detours, road construction,

and disabled vehicles along the highway.

The employment of "flying squadrons" of state police; the encouragement of walking on left side of rural highways; the drawing of spot maps for state, city and town; radio equipment for state police; requirement of spare headlamps; standardization of construction markings, marking of vehicle breakdowns, etc.; study of the practice of "fixing" police tickets.

The study of more and severe punishment for "repeaters"; greater publicity for convictions of motor vehicle law violators; the award of merit stickers to signers of safety pledges; utilization of an outdoor advertising program; a study of the pedestrian problem; the development of a safe driving program designed particularly for summer visitors.

All of these are self explanatory with perhaps the exception of the "official observer system."

In brief, the program consists of the appointment of a group of men and women possessed of clear judgment, a sense of fairness, and sincerity of purpose, to serve without pay, observing the movement of traffic at hazardous points or at hazardous times of the day. These individuals have no police power whatever. They observe conditions which may pave the way for accidents if left uncorrected. They note the registration numbers on automobiles which figure in particularly flagrant violations of the traffic laws. This information is turned over to the police and highway authorities for action.

Generally physical hazards are removed, on the basis of these recommendations, by state or community engineering departments. Careless motorists are summoned to police headquarters, where they are warned in a firm but courteous fashion and given an explanation of the tragic consequences which might result from their failure to exercise driving caution. If three or four complaints of a similar nature regarding the same motorist are received from different observers, the motorist may be called upon to prove to the satisfaction of the Secretary of State his fitness to hold an operator's license.

Governor Brann not only accepted the full report of the Committee of Ten, but immediately began to act upon it, naming Walter J. Brennan as state safety engineer and making provisions for the filing of monthly progress reports.



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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

Featherweight Dowmetal Goggle

A new goggle is announced by the C. H. Dockson Company, 2885 East Grand Avenue, Detroit, Mich. The use of dowmetal it is claimed, permits a thin section construction of ample strength and results in an enlarged cup interior. Fine mesh screen side shields allows unrestricted side vision as well as increased ventilation. The



nosebridge is adjustable, consisting of a ball chain, fibre covered, sliding into a slot in the eye cup and held in place by the lens bezel. This enables an accurate fitting of the anatomical shaped eye cups to each individual face.

Secure lens mounting is provided by an adequate surface upon which the lens rests, accurate die cut threads and a strong dowmetal bezel. A complete selection of lenses for various hazards is available in the standard 50MM diameter. The headband slot is located so that the eye cups remain in the proper position without excessive tension.

It is further claimed these goggles pass all salt and corrosion tests as required by Federal Specifications. Any accepted method of sterilization may be used.

New Safety Products for Mines

The Portable Lamp and Equipment Company, 405 Penn Avenue, Pittsburgh, Pa., announce three new products designed to reduce haulage accidents in coal and metal mines.

The Mine Car Stop was developed to protect against the menace of standing cars starting to roll causing serious injuries and property damage. This stop



is quickly locked to the rail at any point by driving a wooden wedge against the heel of the rail. The manufacturer states a flip of the hand puts the stop in position on the rail where it automatically locks

into position. Another movement of the operator's hand unlocks the stop from the rail and swings it clear to permit the passage of any mine car, motor or cutting machine without removing the stop from the rail. The stop is 7 inches high above the rail and is designed to act against the wheels of high cars and against the end or bumpers of low cars.

Another of the new products is the Mine Car Skid. This device when attached to the rail acts as an automatic external brake. When the car wheel hits the bumper block of the skid, the skid member assumes the same motion and speed as the car itself, withdrawing from the skid holder, and starting to travel down the track, held fast under the car wheel. The skid holder automatically falls in the clear. The friction of the skid member, being pushed



along the rail under the weight of the car, overcomes the velocity and the car is brought to a standstill or is greatly slowed down.

The Mine Car Derail has been developed as a companion device to the above products. It is a two-way unit, made of high tensile strength malleable iron and de-

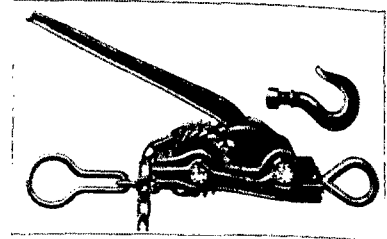


signed to derail a runaway coming from either direction. It consists of two parts, the top or derail member, and a hinged base for wedging against the heel of the rail. The under side of the derail member has a flange paralleling the base for wedging against the heel of the rail. The derail member may be thrown off the rail, to pass cars, and then thrown back on the rail as easily as throwing a switch.

ACCO Utility Jack No. 35

A utility tool suitable for a host of applications involving stretching, pulling, binding or lifting is announced by the Welded Chain Division of American Chain Company, Inc., Bridgeport, Conn. They state this device is of simple and sturdy construction and is suitable for working loads up to 4,000 pounds. The complete unit includes the frame with operating parts, a ten foot stretcher chain and five foot anchor chain.

When in use the stretcher chain fits over the teeth in the sprocket wheel and the



power is supplied by raising and lowering the handle. Axle of the handle being eccentric transmits power through two pawls engaged in the wheel. One pawl is always in position, therefore, the wheel cannot slip. This tool without chains weighs 34 pounds.

Electrician's Gloves

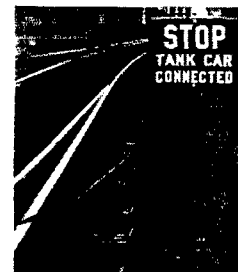
One of the latest special type electrician's gloves is the reinforced model with

laminated cuff. These gloves come in yellow with black center layer or in all black (both steam cured), with either straight or curved fingers in all standard voltages and sizes. The laminated construction gives added dielectric and tensile strength, and the black center layer shows at a glance how deep a tear, scratch, abrasion, or snag may be, so that accurate inspection can be made at once. This permits determination of how serious any abrasion may be. These gloves are patented and sold by The Frank E. Barnes Company, 130 North Wells Street, Chicago.



Tank Car Connected Sign

Industrial Products Company, 800 West Somerset Street, Philadelphia, announces a new tank car connected sign which clamps automatically to any size rail, stays firmly in position and can be instantly released. It is fitted with porcelain enamel sign plate, size 12 inches by 15 inches, blue background with white letters. The manufacturer states it is built to comply



with Dunn's Freight Tariff No. 2, Paragraph 697(B) and A.R.A. regulations concerning the loading or unloading of tank cars containing flammable liquids.

Enameled Pressed Iron Washfountains

The Bradley Washfountain Company, 2237 Michigan Street, Milwaukee, Wis., announce an extension of its line of enameled pressed iron washfountains to include 36-inch diameter circular and 54-inch diameter semi-circular units. Originally only 54-inch circular fountains were available in enameled iron. Subject to the limitations of their smaller size and



capacity the new fixtures incorporate all the advantages of the larger models. They accommodate six users at one time and may be had with either hand or foot control of water flow.

Bowls are solid one-piece pressings, finished in acid-resisting vitreous enamel with either roll rim or deep apron. Pedestals consist of pressed iron base members with electrically welded cylindrical superstructures finished in acid-resisting high-bake (350 degrees) synthetic enamel. These units are fabricated from deep drawing annealed stock, No. 10 gage for the semi-circular units, No. 11 gage for the 36-inch circular units, and are reinforced with special annular and semi-annular discs. The fountains are built for heavy duty in industrial plants, institutions and public buildings.

NEWS ITEMS

The Elliott Service Company announces a change of address from 242 West 55th Street, New York, to 219 East 44th Street, New York.

David S. Wright will be associated with the sales department of the Inland Steel Company, in their St. Paul, Minnesota office, according to a recent announcement. Mr. Wright has been with the company for a number of years in the Department of Inspection and Metallurgy at its Indiana Harbor Works.

The Pyrene Manufacturing Company, Newark, N. J., announces the appointment of George H. Boucher, formerly assistant general sales manager, to the position of general sales manager. Charles G. Durfee, who has been manager, Systems Department, becomes assistant to the vice-president in charge of sales. J. P. Maloney, formerly assistant general sales manager, has been named general field sales manager.

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.

MARCH, 1936

Trade Publications

for your

SAFETY EQUIPMENT LIBRARY

Information You Should Have

All of these booklets contain many valuable facts on controlling accidents and promoting efficiency. Industrial executives should avail themselves of this fund of information—because along with "safe operation" goes its close friend "profitable operation." Check those you would like and mail the coupon right now!

1. Kiddefoam Protection Against Fire.

An interesting bulletin illustrating and describing Kidde Foam systems that may be either portable throughout, centrally operated only, or centrally operated with provision made for quick detachment so that the ejector may be used as portable unit if necessary. Walter Kidde and Company.

2. Mine Car Skid. This folder describes a new device that when attached to the rail acts as an automatic, external brake. Six sizes listed for rails from 20 to 60 pounds. May also be used as a motor brake. Portable Lamp and Equipment Corp.

3. Kinnear Rolling Grilles. This folder illustrates and describes grille that provides protection of any opening against trespassing, burglary or intrusion. Adaptable to many industrial uses. Kinnear Manufacturing Company.

4. Mercurochrome Facts. An interesting little booklet dealing with the origin and use of this product. Contains many excerpts of writings and tests that have been made on the germicidal activity of mercurochrome. Hynson, Westcott and Dunning, Inc.

5. Safety Guard Protection. This interesting folder illustrates and describes a multiple controlled triple interlock non-repeat safety guard for punch presses. Designed to protect the operator but not to interfere with production. Junkin Safety Appliance Company.

6. Davis Air Line Outfit. Bulletin gives complete information on this new outfit equipped with double outlet tangent take-off blower. Readily portable. Approved by the U. S. Bureau of Mines. Davis Emergency Equipment Company, Inc.

7. The Scope of Sanitation. An interesting booklet containing many products of value for industrial sanitation purposes. Covers products such as germicides, liquid soap dispensing systems, paper towels, disinfectants, deodorants, rat exterminator, etc. West Disinfecting Company.

8. Blaw-Knox Floorguard. Bulletin No. 1524. All the matter in this bulletin, text and illustrations have been revised to give the most information possible to those interested in the subject of factory floors. Blaw-Knox Company.

9. Never Slip Safety Clamps. Information on these clamps designed to prevent accidents in handling boiler plate and such material where overhead handling operations are necessary. Never Slip Safety Clamp Company.

10. Accident Prevention Equipment. Catalog No. 10. A new catalog covering the many safety products for industry this company can furnish. A worthwhile addition to the reference library of all concerned with safety. Safety Equipment Service Company.

11. Accident Prevention Signs. Catalog No. 4. There is hardly a sign for use in preventing industrial accidents that isn't illustrated in this complete catalog. Nicely arranged so signs relating to a particular purpose can be easily picked out. Stonehouse Signs, Inc.

12. Armstrong Wrench Catalog W.-35. This splendid catalog contains over 50 types of wrenches for various uses. Includes drop forged wrenches, high carbon steel wrenches, chrome vanadium socket wrenches with detachable heads with safe drivetlock feature, etc. Armstrong Brothers Tool Company.

NATIONAL SAFETY NEWS

20 North Wacker Drive

Chicago, Ill.

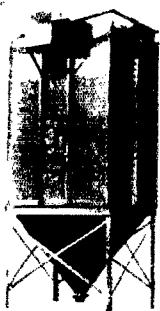
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March, 1936

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We have NEVER known Dust to contribute to efficient operation—it always has been and is today a very DESTRUCTIVE factor. DRACCO Dust Control will soon pay for itself in ANY Plant where there is Dust. Dust is destructive in several ways—(1) health of employees; (2) ruins equipment; (3) decreases efficiency of plant; (4) lawsuits.



The New DRACCO
Multi-Bag Filter

DRACCO Dust Control

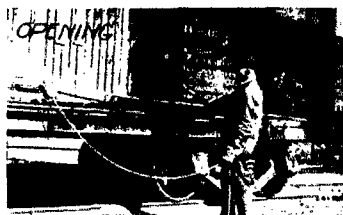
In many of America's most prominent plants, both large and small, DRACCO Dust Control is in daily use protecting equipment and workers from the ravages of uncontrolled Dust. If you have DUST in your plant, it will be far cheaper to CONTROL it than to fight it. DRACCO Engineers with years of Dust Control experience can help solve your Dust problems economically and efficiently.

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*Name on request—also names of scores of other concerns standardizing on this device.



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COMING EVENTS

Of Interest to Safety Men

March 3-5, New York

Seventh Annual Greater New York Safety Conference. (Hotel Astor.) Julien H. Harvey, Manager, New York Office, National Safety Council, 9 East 41st Street, New York City.

April 16-17, Pittsburgh, Pa.

Thirteenth Annual Safety Engineering Conference. G. E. Clarkson, manager, Western Pennsylvania Safety Council, 2409 First National Bank Building, Pittsburgh, Pa.

April 23-24, Boston

Fifteenth Annual Massachusetts Safety Conference. (Hotel Statler.) Lewis E. MacBrayne, manager, Massachusetts Safety Council, 80 Federal Street, Boston, Mass.

May 5-7, Chicago

Fourteenth Annual Midwest Safety Conference. (Stevens Hotel.) George G. Traver, manager, Chicago Safety Council, 222 North Bank Drive, Chicago.

May 8, Allentown, Pa.

Eastern Pennsylvania Safety Conference. (Americus Hotel.) Secretary, M. E. Rice, c/o Bethlehem Steel Company, Bethlehem, Pa.

May 14-15, Charlotte, N. C.

Seventh Annual North Carolina Industrial Safety Conference. T. A. Wilson, Commissioner, North Carolina Industrial Commission, Raleigh, N. C.

May 16-23, Tulsa, Okla.

International Petroleum Exposition. The International Petroleum Exposition Safety Conference will be held May 21 and a first aid meet May 22.

May 20-21, Asbury Park, N. J.

Twelfth Annual Eastern Safety Conference. Fred M. Rosseland, secretary-manager, Newark Safety Council, 34 Brantford Place, Newark, N. J.

May 21, Erie, Pa.

Eleventh Annual Northwestern Pennsylvania Safety Conference. W. E. Dean, secretary, Erie Safety Council, Commerce Bldg., Erie, Pa.

May 21, Manitowoc, Wis.

Ninth Annual Fox River Valley and Lake Shore Safety Conference. A. L. Nimitz, secretary, c/o Manitowoc Vocational School, Manitowoc, Wis.

May 21-22, Richmond, Va.

Virginia State-Wide Safety Conference. (Jefferson Hotel.) William M. Myers, managing director, Richmond Safety Council, 30 Allison Bldg., Richmond, Va.

October 26-30, Atlantic City, N. J.

American Gas Association, Annual Convention. Alexander Forward, managing director, American Gas Association, 420 Lexington Ave., New York City.

Two dear old ladies, evidently strange to traffic regulations, were obeying the instructions: "Cross on the white lines."

"They might have made these lines a little wider, mightn't they, dear?" one remarked to the other.



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THIS EASY WAY**

You can't put warning signs all over your slippery floors, stairs and ramps. You CAN cover them easily and economically with **PLASTIC FUT-SURE**. Guarantees sure footing on any surface. Oil and grease proof. A permanent investment against accidents and injuries. Write for folder.

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NATIONAL SAFETY NEWS

Fluted Diamond Hatched Plain



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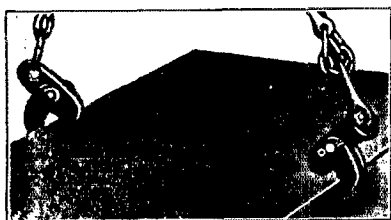
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Boiler Plate Can Be Handled Safely

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.

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Grand Central Annex, New York, N.Y.

MARCH, 1936

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Adhesive Tape and Plaster Remover

Adhesol Company, Inc.

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Mine Safety Appliances Co.

Ampoules, First Aid

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Moss Laboratories, L. A.

Anemometers

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Mine Safety Appliances Co.

Aprons

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Safety Equipment Service Co., The
Safety First Supply Co.
Standard Safety Equipment Co.
Strauss Company, The
Wheeler Mfg. Co., F. H.

Arresters, Dust

Blaw-Knox Co.
Bullard Company, E. D.
Dracoo Corporation
Pamphorn Corporation
Surtz Mfg. Co., The

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B

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Salisbury & Co., W. H.
Strauss Company, The

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Sanitary Institute of America

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Safety Clothing Co., The

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Protectoseal Company
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Safety Equipment Service Co., The
Strauss Company, The

D

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Detectors, Pyrotechnic

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Dust Camera

Dusters, Rock

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E

Emblems, Safety

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You Need Good Safety Equipment To Make Good Safety Records

No one should expect a workman to turn out the best work if he doesn't have good tools. This holds true of safety, too. No safety program can be expected to produce the best results unless adequate and proper safeguards for all industrial hazards are provided.

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Accident Prevention Equipment Manufacturers Section of the National Safety Council

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Blockers, Mine Car

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C

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Cans, Waste

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Chairs, Safety, Bontawain

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Strauss Company, The

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Pulmonan Safety Equipment
Corp.
Perrone Mfg. Company

F

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Propellair, Inc.
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Pulmonan Safety Equipment
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Safety Clothing Co., The
Safety Equipment Service
Co., The
Safety First Supply Co.
Standard Safety Equipment Co.

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I

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Co., The

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Patent Scaffolding Co., The
Pulmonan Safety Equipment
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Safety First Supply Co.
Surtz Mfg. Co., The

L

Why Take Needless Chances When Adequate Safeguards Can Be Provided

A pattern maker was ripping a large piece of fibre wall board on a circular rip saw. The board was kicked back and the piece went through the operator's stomach. He died almost instantly.

This deplorable accident should have been and could have been prevented. It is possible to obtain guards equipped with anti-kickback dogs which would have prevented this accidental injury.

On all operations where there is a human factor, be sure to provide adequate, dependable safeguards.

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Guards, Grinding Wheel
Surtz Mfg. Co., The

Guards, Jointer

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Standard Safety Equipment Co.
Surtz Mfg. Co., The

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Safety Clothing Co., The
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Co., The
Surtz Mfg. Co., The

Guards, Saw

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Safety Equipment Service
Co., The
Standard Safety Equipment Co.
Surtz Mfg. Co., The

Guards, Shaper

Industrial Products Co.
Standard Safety Equipment Co.
Surtz Mfg. Co., The

Guards, Treadle
Surtz Mfg. Co., The

H

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Mine Safety Appliances Co.
Safety Clothing Co.

Hats, Safety
Bullard Company, E. D.
Industrial Products Co.

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See Advertisers' Index, Page 75—When writing, please mention National Safety News

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Mine Safety Appliances Co.
Patent Scaffolding Co., The
Pulmonan Safety Equipment Corp.
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Davis Emergency Equipment Co., Inc.
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Lanterns, Electric

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S

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Sury Mfg. Co., The

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Sury Mfg. Co., The
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T

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Bishinger-Koehler Mfg. Co., Inc.
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Tenters, Fuse

Tools, Linemen

Bullard Company, E. D.
Davis Emergency Equipment Co., Inc.
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Klein & Sons, Mathias

The Story of a Face Mask That Paid For Itself a Hundred Fold

An accident report tells about a millwright who poured babbitt into a bearing not entirely free from moisture. He was wearing a face mask equipped with heavy lenses. The mask and lenses were splattered with hot babbitt when it blew out of the bearing. Without the mask he would have received the full force of the explosion in his face and eyes.

This man was saved from serious burns, probably also from total blindness. Just one of the many instances where safety equipment proved its value.

Accident Prevention Equipment Manufacturers Section of the National Safety Council

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Industrial Products Co.
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O

Oxygen Breathing Apparatus

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P

Pads, Miners'

Lehigh Safety Shoe Co.
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Pads, Knee

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R

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Here Are the Winners in January Calendar Contest

"VALETUDINARIANISM" is one of those terms classified by after-dinner speakers as "dollar-and-a-quarter words." But it was little words that enabled 18 winners to share in the prize money distributed in the first of the 1936 Safety Calendar contests sponsored by the National Safety Council.

More than 6,000 entries from all parts of the United States and Canada and from several foreign countries were sorted out and carefully checked by the contest judges before these three major prize winners were selected in the January word-building contest:



Mr. and Mrs. C. H. Slenker, 1st prize winners.

First prize, \$20.00—Mr. and Mrs. Charles H. Slenker, 131 West Jackson Street, York, Pa. (Calendar received from York Railways Company and Subsidiaries.)

Second prize, \$10.00—Louis Rich, 819 North 15th Street, Milwaukee, Wis. (Calendar received from Midland Improvement Company.)

Third prize, \$5.00—Mrs. Ida J. Mason, 3940 Brooklyn Street, Kansas City, Mo. (Calendar received from A.P.W. Paper Company.)

Winners of 15 one-dollar prizes were:

Kay Peck, 4575 Guilford Avenue, Indianapolis, Indiana. (Calendar from Osborn Manufacturing Company.)

Charles L. McKain, 318 West Robinson Avenue, San Diego, Calif. (Calendar from Toledo, Peoria and Western Railroad.)

Helen Todd, 218 Eighth Avenue, Ashland, Wis. (Calendar from Lake Superior District Power Company.)

Allan Hopkins, 63 Walnut Street, Rutherford, N. J. (Calendar from Koppers Gas and Coke Company.)

Joseph Wampol, 713 Seventeenth Street, Great Falls, Mont. (Calendar from Anaconda Copper Mining Company.)

Mrs. Jean Johnston, Box 632, Cody, Wyo. (Calendar from The Texas Company.)

Joseph Sandler, 204 South Ninth Street, Reading, Pa.

William R. Haney, 929 Cedar Street, Camden, N. J. (Calendar from Kieckhefer Container Company.)

J. S. Swan, 8232 Lou Dillon Avenue, Los Angeles, Calif. (Calendar from The Texas Company.)

Leo Brendlinger, c/o Yocum Brothers, Reading, Pa. (Calendar from Pennsylvania Manufacturers Association.)

Hazel J. Beall, 216 Wilson Building, Clinton, Ia. (Calendar from Clinton Corn Syrup Company.)

Ruth Lindstrom, 608 Fourth Avenue West, Ashland, Wis. (Calendar from Lake Superior District Power Company.)

Lawrence L. Ameter, 1606 South Fifteenth Street, Lawrenceville, Ill. (Calendar from Indian Refining Company.)

Henry Van Noy, Post Office, Terraville, S. D. (Calendar from Homestake Mining Company.)

Mrs. Helen E. Kaack, 716 Terrace Drive, Clinton, Ia. (Calendar from The Clinton Company.)

The first prize winner, Mrs. Slenker, attributes the winning list to the thoroughness she acquired during 11 years as a primary school teacher.

"I listed alphabetically all the possible three-letter combinations," she writes, "and then hunted for them in three unabridged dictionaries. I've enjoyed doing puzzles all my life. I've won a few small prizes, but mostly I do them for the fun of it. When my husband came home and handed me this calendar, I read the whole twelve pages before I started the first contest, and I found that it was not only a contest calendar, but a whole encyclopedia on safety."

Louis Rich, winner of second prize, is 30 years old and married. He is employed as a clerk for Milwaukee county. This is the twelfth word-building contest in which he has won top prizes. He is a memory expert as well as a puzzle fan, giving demonstrations and courses in memory training. His versatility also runs to music, and he has written more than 200 songs, some of which have been



Louis Rich, 2nd prize winner.



Mrs. Ida J. Mason, 3rd prize winner.

published. He applied his memory-training principles, he writes, in compiling his contest entry.

Mrs. Mason, third prize winner, a widow, has found time to work as a stenographer, take care of two children and send them through school, and take up puzzles and contests as a hobby.

"Nothing exciting or important to tell you about myself and my age," she writes. "Oh, well, my daughter is 22 years old; you can do the figuring."

She adds that she has won a number of small prizes and that this is her third prize within a year. She will keep trying, she says, until the prizes are large enough to permit her to retire.

It was no trivial task to determine which of the many entries were the best. First a master list was drafted, containing all legitimate three-letter word combinations possible to derive from the letters in "Universal Safety." Next the entries were checked against this list. If an entry contained words not found in the master list, these words were rechecked with an 11-volume unabridged dictionary. Then all words which could not be allowed under the contest rules were stricken, and the remaining words were totalled to determine the final count.

Many elaborate lists were eliminated from the contest when numerous duplicates of words were stricken, as in the case of "eve" and "Eve." Other lists were pared down by the disqualification of abbreviations. Some contestants made the error of using letters more often than they appeared in the slogan "Universal Safety." Some used letters which did not appear in the slogan at all.

Before it was all over, the judges felt that they had been obliged to do more work than the contestants. But the response to the contest was gratifying to the National Safety Council as an indication of the interest commanded by the current Safety Calendar.

As this issue goes to press, entries are pouring in for the February contest, which places more emphasis on skill in maneuvering words, and less on hard digging in dictionaries. The February competition is a word-unscrambling contest in connection with which a brief safety essay must be written. Winners will be announced in the April issue of the NATIONAL SAFETY NEWS.

Professor: "What's the common impediment in the speech of American people?"

Freshman: "Chewing-gum."

NATIONAL SAFETY NEWS

WHERE CAN I BUY IT?



HERE'S THE ANSWER

TO *All* YOUR

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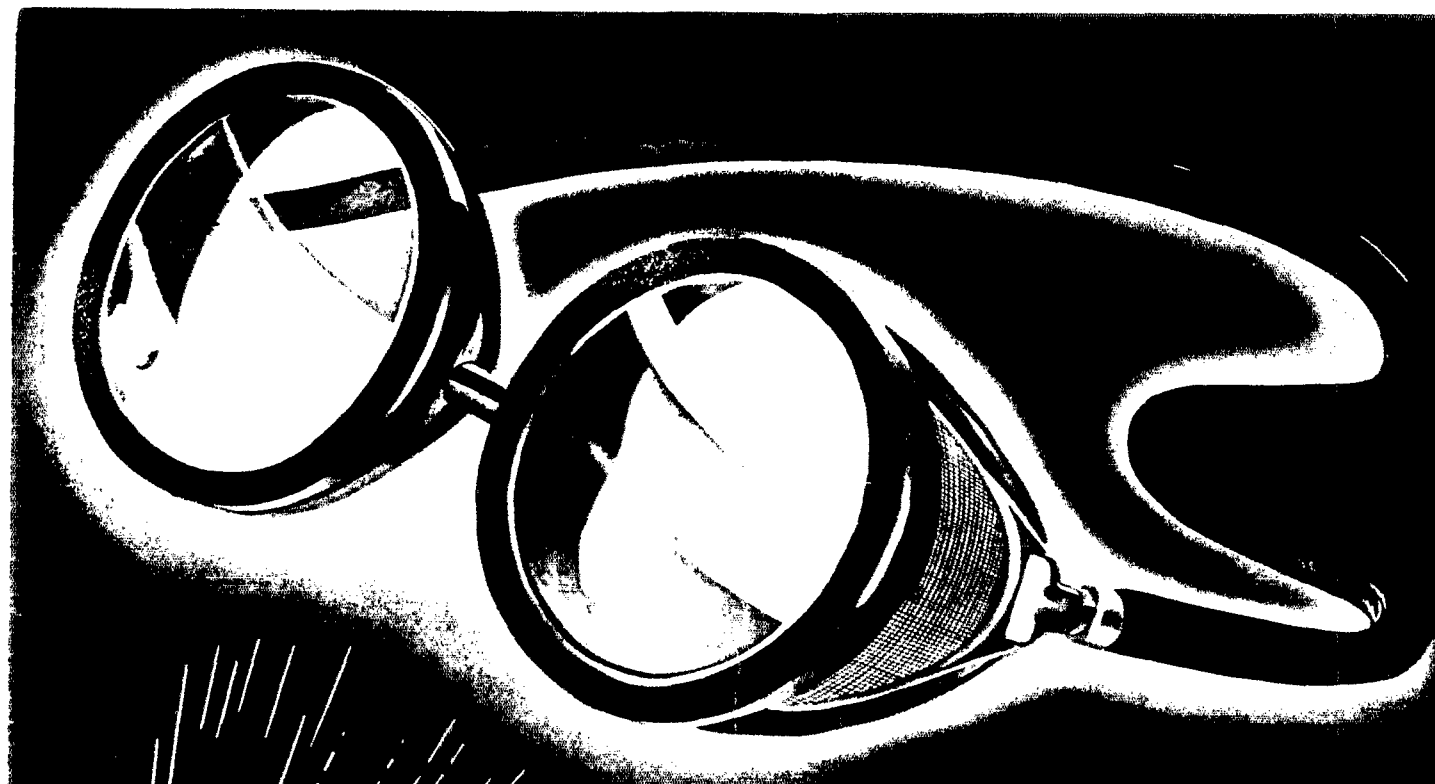
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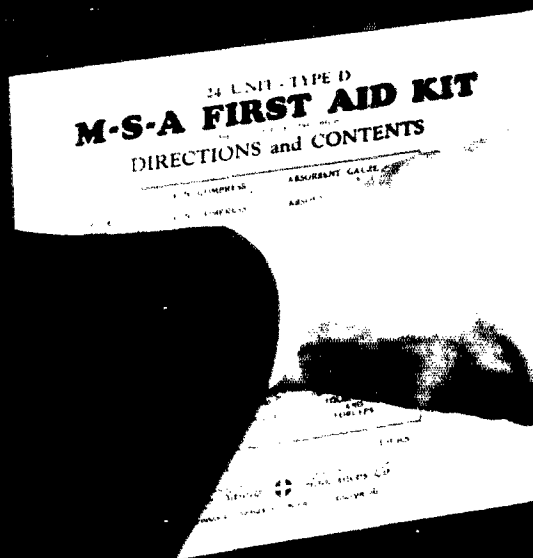
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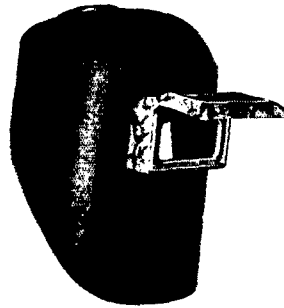
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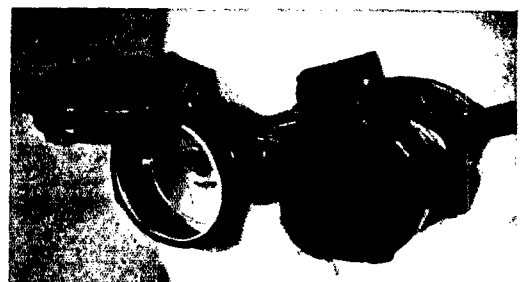
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APRIL, 1936



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NATIONAL SAFETY NEWS

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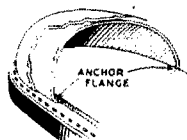
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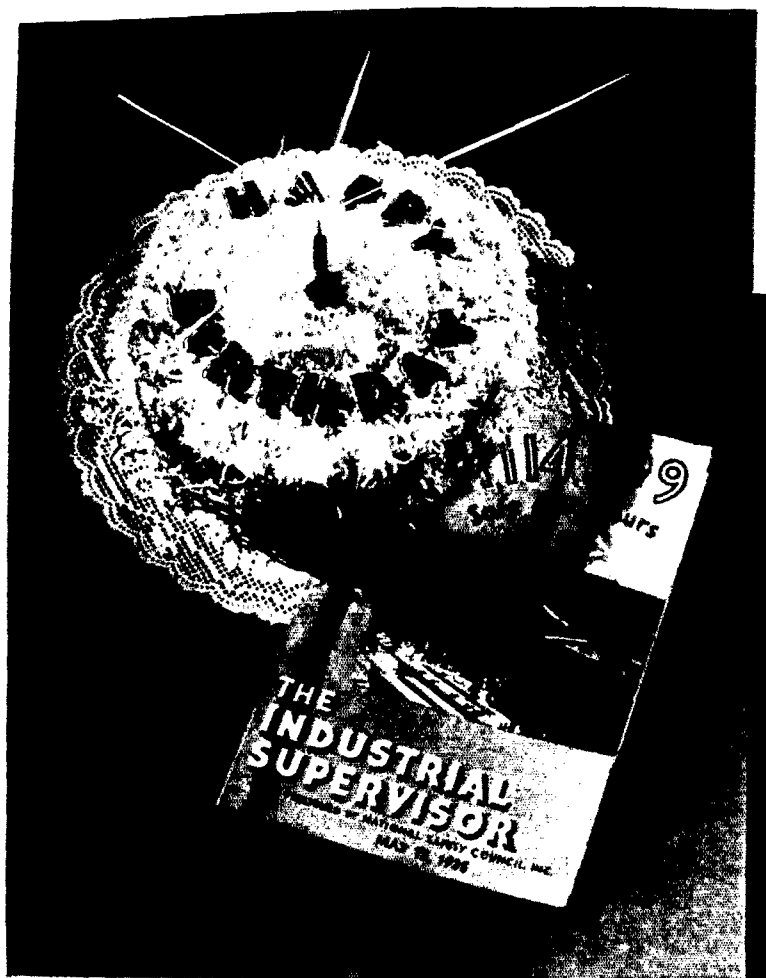
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NATIONAL SAFETY NEWS

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NATIONAL SAFETY NEWS

Published monthly in the interest of accident prevention and industrial health

Volume 33

APRIL, 1936

Number 4

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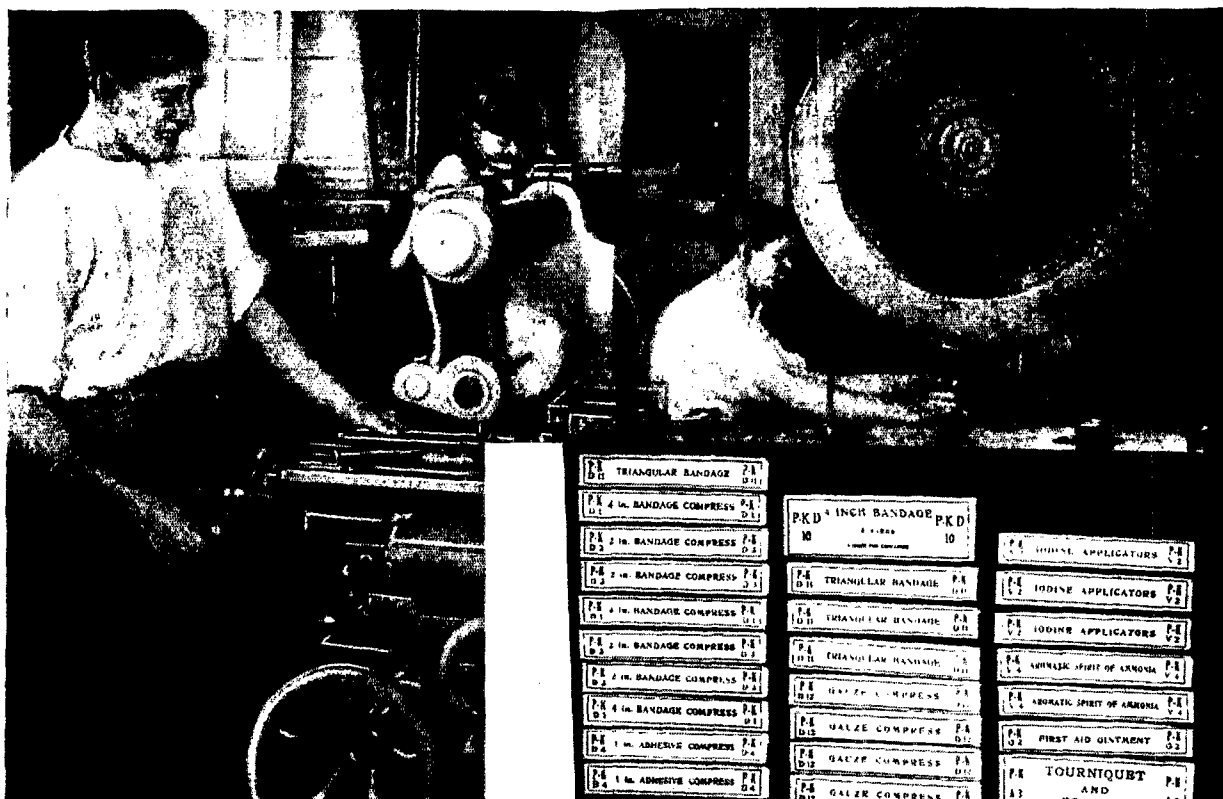
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EIGHT months ago a revolutionary new goggle was introduced—the F-3100 Ful-Vue goggle—patterned and designed after the famous Ful-Vue Glasses. Its comfort and appearance won the preference of workers right from the start.

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NATIONAL SAFETY NEWS

APRIL, 1936

NATIONAL SAFETY NEWS

Published by National Safety Council, Inc.

Before Good Housekeeping

BACK in the days when the front office was replete with frock coats, side whiskers and dignity, cleanliness in the shop was an unappreciated virtue: it was even considered effeminate.

Men carried the grime of the foundry to their homes. Shower baths at the plant were unknown. Too often a crusted basin of cold water and a bar of yellow laundry soap comprised the shop's wash-up facilities. If the shop was really progressive, a roller towel as dingy as its surroundings was added to the equipment. Tobacco juice and cobwebs were approved first aid remedies. Dark, dirty factory buildings were reflected in unkept homes. The Saturday night bath and the Sunday morning shave were traditions.

If this picture seems overdrawn, let us quote from "Engineering Achievements," the yearbook of the Westinghouse Electric and Manufacturing Company, a description of a typical plant of 1881:

"Our shops were dark and dingy, poorly ventilated, poorly heated, and generally unsanitary. Heating was accomplished through the medium of egg stoves, coal or coke fired, and not too liberally distributed through the shops. In the shop, light was furnished by tallow candles and coal oil lamps; in the offices, the only illumination was by kerosene wick-fed lamps with glass chimneys—hot, smelly and poorly adapted for lighting purposes. The incandescent carbon filament lamp was not yet in use."

For the improvement in industrial housekeeping we must not overlook the credit due to better illumination. The carbon arc lamp, the carbon filament incandescent lamp and the modern mazda have all made their contributions to progress. Conditions which were tolerated under the dim kerosene lamps showed up in all their repulsiveness when the electric lights were turned on.

Advertising has played its part also. Manufacturers of plumbing, paint, dust collecting equipment, soap and cleaning compounds have helped to raise the hygienic and esthetic standards for both factory and home. The advertising man, the printer, the engraver and the photographer have all improved their technique since the days of the brown derby and the handlebar mustache.

Nor is it inappropriate to add that the vehicles carrying the advertising have increased their appeal. Trade and technical publications are serving their fields much more effectively, and they have played an important part in raising standards of taste, comfort and hygiene.

Many states have outlawed the roller towel and the communal drinking cup, but high standards are still far from universal. Clean factories, clean homes and clean communities have a measurable value in improving the health and increasing the productiveness of the workers, and there are other values that cannot be estimated in dollars alone.

Modern Times

IT IS called "Modern Times", but the only modern thing about Charlie Chaplin's latest picture is its setting. It has an underlying theme as old as humanity itself—

the struggle of men to earn a living in a fiercely competitive society. The men who riot at the factory gates are moved by the same impulses as the medieval peasants who burned the chateaux of the lords, and the embattled artisans who stormed the Bastille. The same drama has been reenacted in different settings throughout the ages.

"Modern Times" is as starkly grim as any communist propaganda. Without the rough house comedy it would be too strong for popular consumption.

There is a wistfulness about Charlie in his struggle with machinery and regimentation. His part is that of a dreamer unable to adapt himself to a practical world. His antics amid a fantastic mass of gears and flywheels, which is supposed to represent modern industry, draw many a laugh, but the picture is likely to prove depressing. Underneath the slapstick pantomime is a rather biting insight.

The indictment of modern times is not that they are worse than previous ages. Even a superficial reading of history will dispel that idea. But it is disappointing to observe the slowness of our progress in the social sciences in contrast to our advances in the mechanical arts. A too intensive worship of efficiency sometimes blinds us to essential human values.

The Twenty-fifth Congress

THE Twenty-fifth Annual Safety Congress will go to Atlantic City at the invitation of the leaders of New Jersey's public and business life. The cordiality of the invitation and the local preparations that have been under way for several years indicate that this year's Congress will be a memorable event in Safety history.

Not since 1928 has a Congress been held on the Atlantic Coast where a large proportion of the Council's membership is located. Atlantic City has been the scene of many of the country's largest conventions and its hotels offer exceptional accommodations for both guests and meetings.

While the hotels offer several thousand rooms at a wide variety of prices, the selection will become more limited as the Congress week approaches. A list of conveniently located hotels and their rates will be found on page 29 of this issue.

The date: October 5 to 9, 1936.

In This Issue

"CAPABLE supervisors and loyal, able men are the sparks which keep a business alive," says C. H. Murray. Training develops these men and their leaders, and the American Rolling Mill Company's methods of training go far beyond mere technical job requirements. (Page 10).

The negative appeal has its place in safety work and here is quite a convincing case for its judicious use. Dr. Alvhh R. Lauer, who makes psychology understandable and palatable for the layman, gives a few sound "don'ts" for fleet superintendents. Any safety man may adopt them. (Page 12).

Standards of housekeeping must be high in a chemical plant, both for safety of workers and to maintain the quality of the product. (Page 15).

APRIL, 1936

A parade used to be one of the favorite methods of arousing interest in a no-accident campaign.

The most scientific

Employee Training

EMployee training may be described as the most scientific kind of accident prevention work. It supplies the all-important element that was lacking in the safety programs of previous years.

Let us glance quickly at the history of modern accident prevention work. Many older men will remember that industrial plants were not always as safe and well maintained as they are today, though they are still far from being safe enough.

With the opening of the present century, the small workshops began to disappear. In their place rose great factories. Our present age of mass production came on us quickly with many perplexing problems. One of these was the prevention of injuries to human beings. So serious did it become that it actually threatened the progress of industrial America.

In 1912 certain forward looking leaders of industry decided to organize a council for the exchange of accident prevention experience. The influence of that organization, the National Safety Council, is felt not only in industry but in the streets and in the homes. It is a splendid organization doing a splendid work.

Thus far there have been three distinct periods in the development of accident prevention work.

The first of these might well be called the "mechanical safety era." Accident prevention consisted mainly of designing and installing guards for machinery. It was largely a child of the drafting room. Guards helped a lot, but they could not prevent all accidents.

Then came the realization that accident prevention had a human side, as well as a mechanical side. In this second period, we tried to appeal to men's emotions. We held old-fashioned camp meetings, and the "demon accident" was hauled over the coals in Carrie Nation style. The plight of the injured and

their dependents was vividly pictured to the workers as we pleaded with them to avoid getting hurt.

Next we attempted to prevent accidents with signs and slogans. Plants were gaily decorated with colorful signs, and while the varnish was fresh, their action was positive. But when novelty dulled, they were just another crop of safety signs. "Watch Your Step", "Safety First", "Don't Get Hurt", became familiar expressions in every plant.

Then came the safety campaign—the no accident month. Parades were held, headed by goats purporting to belong to Old Man Accident. Workers carried amusing signs threatening bodily injury to this fictitious character. More camp meetings were held. What was the result? An accident early in the month was bound to be attended by a breakdown in morale, and anything might happen. We were not upon sound footing. We did a splendid job of advertising the virtues of accident prevention but we neglected to train men in *how* to prevent accidents.

It is not my intention to speak slightly of what was accomplished in these earlier periods. In the steel industry, accident severity was reduced considerably. We had to crawl before we could walk, and the experience we gained in our first efforts has been the foundation of this present chapter in accident pre-



By
C. H. MURRAY

*Assistant to the President, The American
Rolling Mill Co., Middletown, Ohio*

NATIONAL SAFETY NEWS

kind of safety work

THOUGHTS ON TRAINING

Capable supervisors and loyal, able men are the sparks which keep a business alive.

There never was a system or a machine which could think.

An accident really is a mistake coming to light.

In the long run every foreman is an assistant to the president.

Do we fully realize how important this thing called "the job" is to the average man?

The supervisor is the only person who can maintain a steady flow of ideas from the men. To do so he must receive those ideas with enthusiasm; he must investigate them with care, and always give full credit to the maker.

One of the finest things you can do for a man is to help him help himself.

vention work. This is the day of employee-training—of training men to do their jobs right and encouraging them to think. There is no better or more permanent safeguard than a thinking man.

I am not speaking of employee training in relation to accident prevention alone. Its influence is even greater than that. I am referring to the economic benefits which industry needs so badly as companies grow larger and competition keener.

The 1936 model of a business is a very complicated thing. Inventive genius has created marvelous machinery and smooth-running conveyors which obey the touch of a push button. Management has delegated responsibilities, created countless departments, and established wonderful systems of business control which reveal at a glance the day's sales, the day's production, the number of accidents, the costs, and all the other important factors which enter into the conduct of a business.

On the face of it, the successful management of a modern business seems as simple as consulting a railroad timetable. But it isn't at all. Business needs both

organization and management. The control of the system lies in the brains of men. There never was a system or a machine which could think. You can't wind up a business as you do an alarm clock. Capable supervisors and loyal, able men are the sparks that keep the business alive. Remove these, and you soon have a broken-down structure—just another rusting, crumbling monument to an industrial failure. By increasing individual skill, by winning the interest and cooperation of men, by building teamwork between individuals, employee training prevents accidents to costs, to quality of product, and to service, as well as to human beings.

After all, just what is an accident? Something that happened when you didn't think it was going to happen. Really it is a mistake coming to light. An injury is the result of an accident. Accidents reveal the foreman's shortcomings as a manager.

Accidents do not always injure people. There are probably thirty accidents to equipment or to material for every one which even slightly injures a human being. Statistics will show in our industry that there are on the average 300 minor injuries to one lost time injury. You may wonder, "Well, what about that?" The facts are that any of those 30 accidents which didn't scratch a man, or any of those 300 minor injuries might have taken a human life. Strange things happen every day. One man may fall 30 feet and escape with a few bruises; another may slip on a grease spot on the floor and break a leg; still another man may fall six feet and break his neck. After the accident happens, you can't control the severity of an injury. To prevent injuries we must prevent accidents.

If industry expects to continue to improve its safety record on a broad scale—and it must continue to improve because accidents of all kinds represent a major source of useless costs—it must become still more active and more practical in training employees.

In speaking of employee training there is sometimes a tendency to think in



Learning the details of their jobs in an Armco training class.

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A Plea for the NEGATIVE

And a few "don'ts" for the traffic
superintendent and safety director

By ALVHH R. LAUER, Ph.D.

Associate Professor of Psychology, Iowa State College

WHEN is it necessary to say *don't*? Negative training, long continued, is supposed to be undesirable, but under certain conditions it may be more effective than positive instruction. You can't warn a man to lay off liquor without putting a "don't" in somewhere. Sometimes safety programs are not scientifically sound, and in such cases the razing of existing methods is as important as the development of new ones. This is the excuse for a negative approach in this article.

Often you have heard the remark, "But it worked, and that is proof enough for me." Grandmother's asafetida bag was supposed to have protected some of us from chickenpox, mumps and other contagious diseases, but doctors no longer believe in charms and magic. They resort to vaccines.

An alleged way to remove warts is to rub a bean on the wart, then throw the bean over one's right shoulder into a well. When the bean decays, the wart will supposedly disappear. Another method is to use an electric needle. Snake oil may go through sole leather but it is doubtful whether it penetrates the human tissue and effects the cures that the producers claim. Similarly, certain items in a safety program may appear to achieve the desired results, when in actuality they merely salve the surface of the trouble.

Now let us look at a few *don'ts* which a traffic superintendent would do well to study carefully:

1. Don't try to scare your men into safe driving practices.
2. Don't treat accidents as a pestilence.
3. Don't expect your driving accidents to clear up without a careful diagnosis.
4. Don't use methods of diagnosis which are not recognized and well standardized.
5. Don't stop with a diagnosis.
6. Don't expect one simple measurement to give you the picture of a driver's potentialities.

7. Don't consider any driver so nearly perfect that he will not have an accident.

8. Don't preach safety and practice recklessness.

9. Don't expect results without a continued scientific and systematic effort to analyze causes of accidents, and inaugurate remedial measures.

Men who have accidents are "safety sick". They may be chronically afflicted, or they may be only acutely ill. You would not expect a man on sick leave to regain his health more rapidly by a bawling out. This would only make him more nervous and retard his recovery. There is no reason to believe that men can be scared into safety habits.

Articles like "And Sudden Death," by J. C. Furnas, which appeared in the August, 1935 *Reader's Digest* may have a place in creating a safety conscious public, but a relatively small one. If continued for any length of time this type of treatment would tend to callous the group mind. The latter, of course, is merely the sum-total of individual minds making up that group. The gross effect of such articles continued over a long period would be the same as the effect that war has upon the attitudes toward horrors which accompany it.

"Our army advanced 10 kilometers with a loss of but 500 men." So runs the bulletin. It might have been 5,000. Yes, only 500 men!



Alvhh R. Lauer

Think of but one! Mangled, torn to shreds, buried in pieces—not all his own! Letters from little sister requesting a German shoulder strap and prattling on about the folks at home. A souvenir for his mother bought at the little



Don't expect one simple measurement to give you the picture of the driver's potentialities.

French shop but not sent. Pocket paraphernalia, photograph of his sweetheart—all scattered on the hillside. Yet the bulletin from headquarters comments glibly on the mere sum of 500 men killed in action.

Why? Largely because of being calloused by repeated experiences of such horrors. One experience might have a desired effect as a shock stimulus. If repeated, a reaction might set in and bring about a hardened attitude. Newspaper articles depicting accident horrors, or posters designed to evoke fear, should be used sparingly.

Conversely, however, there are those who may think that calling a man's weaknesses to his attention may predispose him to accidents by auto-suggestion. There may be isolated cases where some such effect would take place. This hardly can be classified as "scaring" the driver. If such scientific advice is bad then most medical practice would be open to question. According to this line of reasoning, a man suffering from a serious disease had better risk dying of his malady than be frightened to the point of committing suicide by obtaining medical attention and being apprised of his condition. It suffices to say that in medicine the good effects so far outnumber the bad that the latter, if they exist,

NATIONAL SAFETY NEWS

must be tolerated. Medical advice need not be of "scare-head" variety. Psychological advice is much less so.

Don't treat accidents as a pestilence. Too often safety education is handled as the health officer treats the measles—by simply placing up a sign, "Measles, Stay Out." How often have you read the warnings, "Dangerous Curve", "Danger, Stay Out", "Poison"? The railroads have most successfully met the danger of low bridges or underpasses by suspending rope guards on either side of the bridge. The trainman on top of the box-car gets a forewarning in the way of a mild rap from the ropes as he passes.

Warnings of this specific, timely type will get the idea across in a concrete way. They are more effective than general warning signs, which are too much in evidence. It is not to be inferred that general warning signs are without value; merely that they should be supplemented by specific, terse, and pointed markers which cannot be misconstrued or overlooked.

This is only half the argument. A man should not be told merely to avoid something he does not understand well, but he should be trained to follow a course of action which will lead to safety in the performance of duties. Let us illustrate:

Prof. R. A. Moyer of our Engineering School has shown by road tests that tire side-slip is at a minimum when the coefficient of friction is at the maximum. The average driver, on taking a corner, will most likely use his brakes when he feels the back wheels slipping sidewise. Actually he should accelerate slightly to keep his wheels rolling with no retardation or acceleration. This will greatly reduce skid. The practice is followed by most expert drivers. Ignorance of the principle or failure to allow for it is known to be the cause of many skidding accidents of ordinary drivers. It illustrates the idea that teaching men to get out of dangerous places is at least as important as keeping them from getting in.

Don't expect your driving accidents to clear up without a careful diagnosis. "Trouble-shooters" must know where the trouble is located before they can fix it. Linemen must have more training than merely, "Keep the line from being grounded." This is too general. Yet the same men read posters every morning which warn them to "Drive Safely", and "Save a Life".

A diagnosis of traffic accidents requires a careful study. The following

outline indicates a partial list of factors to be studied:

1. How many accidents do we have per 1,000 miles driven?
2. How do these accidents take place?
3. When do they take place?
4. Which types of vehicles are most frequently involved in accidents?
5. Who was driving these vehicles at the time of the accident?
6. What are the relative hazards of our driving territory as compared to other companies, or the general public?
7. What type of accidents do "repeaters" have?
8. Why do these men have accidents? (You will find a few of your drivers having most of the accidents.)

Now you are ready for a more detailed diagnosis. A psychophysical examination of the drivers who have accidents will answer most of the points related to the eighth question.

Don't use methods of diagnosis which are not recognized and well standardized.

Safety engineers are rapidly coming to realize the need for other measures of accident-proneness than the crude observational methods used in the past. The demand cannot be adequately filled. Enthusiastic organizations are selecting spectacular devices designed to measure certain "so-called" defects responsible for accidents. A word of warning should be interjected here. *There is no one cause of accidents.* There are no two, three, or four causes. *There are numerous causes.* A test of reaction time used alone is about as indicative of accident-proneness as pulse rate is diagnostic of one's

need of medical attention; or as the number of turns of the engine before starting is an index to the value of an automobile. Any single item, though it may be very important, is only one of numerous factors involved and must be interpreted in light of other conditions in force at the moment.

Another source of danger is the adoption of some makeshift device which has not been standardized. A measurement is only valuable when it can be repeated with very similar results and when it is known to measure what it purports to measure. Many times common-sense theory is wrong. Diseases were formerly held to be due to humors in the blood. By bleeding a man such humors could be reduced and health restored. So reasoned the medical profession of two centuries ago. It looked like the thing to do; a dictate of common-sense. Now we do the opposite. Science has shown that man needs more blood in emergencies rather than less blood. The amateur mechanic overgreases your car wheels. His theory is that, 'if one dose is good, two doses are better'. Sounds reasonable, but ruins your brakes.

The most reasonable way to learn a driver's traits, it would seem, would be to ride with him and observe his driving. Experimental studies have shown, however, that the "watched driver becomes the careful driver". Unless the driver is so obviously inexperienced as to be

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You can't persuade a man to lay off liquor without using a few "don'ts."



The Managing Director's Page

After 25 Years

FREDERICK A. KEPPEL, president of the Carnegie Foundation in New York, recently said that "I could have told you a great deal better, or at any rate a great deal more confidently, twenty-five years ago that I can tonight. I won't even ask what is science, or what is research; I shall merely point out that we are faced by an endless series of problems arising from the application to human welfare."

Dr. Keppel was speaking of education but his remarks apply with equal force to any phase of human activity. At the end of any quarter century of his experience, any human being would like to withdraw his early opinions and revise his recommendations.

Nothing could be more evident than the oft-repeated experience that safety is a live and growing thing. We never reach the end of its implications, nor do we yet know about the precise methods of teaching it and following through on the one best method.

A week or two ago I was startled when the manager of a large industrial plant told me that he had learned a new and startling fact about safety in his plant. And this after twenty-five years of really marvelous application of the best known safety principles. This company had been winning national and local awards for superlative safety records for years. It was at the top of its class.

"Here is the perfect safety plant," was the onlooker's impression. "It has done a consistently good job; its records prove it. Others should follow in its footsteps."

But as the manager started his new year and talked about the record of the Smith Manufacturing Company, he suddenly came to realize that none of his foremen was definitely interested in a whole plant. Their jobs depended on the individual performance of their own departments. They lived and fought for their own departments. This revelation led to a new statement of the plant's safety problem. The manager said to each one of his foremen: "Don't think of the Smith Manufacturing plant's total record; think and work for your own department's safety. If you will make a perfect record in your foreman's department, as the other foremen will do likewise, we can assure and continue our plant record on a scale that has never been achieved before."

How natural and consistent with human living was this change in responsibility. Accomplishment of any kind is by units of service. It is all very well to talk about community safety, or a certain corporation's annual record, but after all the community will have a good safety record just insofar as each household, and each individual in the household, can be persuaded to look after its own backyard. The time may come when the local governmental authorities will inspect homes and demand protection for children and parents but,

as in the case of the foreman, there will never be genuine safety until the individual looks after his own bailiwick.

Emphasis must be placed more directly on the units. Foremen must be told that the success of the entire plant will mean their success, and they must have an interest in the total plant's performance; but, after all, there are few foremen who can greatly affect the plant policies. Too many factors beyond their understanding or influence are involved. The average foreman must be made to understand that the plant's total safety record depends on his individual performance in his own department.

M. J. Amers.

INTERESTING ITEMS

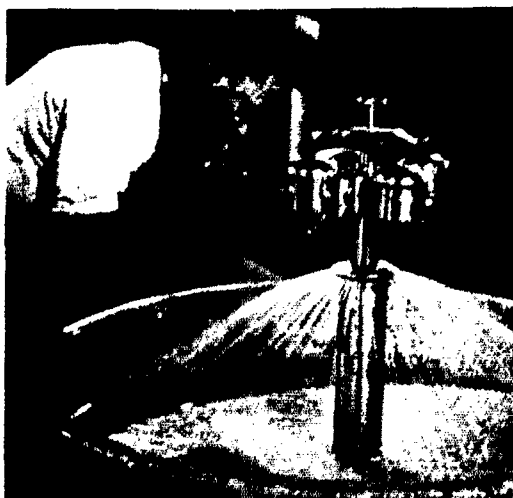
During March the National Safety Council employed eight new field representatives and conducted an intensive training course in its headquarters. Twelve out-of-town speakers contributed to this program. These highly capable representatives have been assigned to eight territorial districts and will work with public officials, civic groups and business leaders in organizing and promoting local and national interests in traffic safety problems. From time to time information will be given to the members of the Council on activities in the field.

* * *

Probably every member and cooperator has read the story in the March issue NATIONAL SAFETY NEWS—"Safe till Tomorrow?"—which provided an outline of a program to organize automobile owners and users among industrial employees for the promotion of safer driving. This plan ties up with our challenge to all citizens to bring about a reduction in traffic accidents of 35 per cent by the end of 1940. The article referred to will be reprinted in pamphlet form and made available to members in the hope that they can carry out the automobile club plan recommended.

* * *

"The early bird gets the best hotel accommodations." Don't fail to watch for announcements in this and other issues of the NATIONAL SAFETY NEWS on the 25th Annual Safety Congress and Exposition—Atlantic City, October 5-9. There are dozens of hotels at Atlantic City and a list of some of them is presented in this issue of the NATIONAL SAFETY NEWS.



Modern facilities encourage a thorough job of washing up.

Good Housekeeping in a Chemical Plant

By CARMAN T. FISH

TWO items which are indispensable in the safety program of a chemical company are good housekeeping and protective clothing. While the chemical industry does not stand alone in its need for high standards of housekeeping, the precautions which are desirable in other establishments become vital when the materials to be processed are toxic or combustible.

So we find plant and personal cleanliness occupying a prominent place in the safety activities of the Monsanto Chemical Company. This company, with headquarters in St. Louis, Mo., operates a large number of plants located at many points in the United States and in England. The products of these plants range from food preservatives to commercial acids and other heavy industrial chemicals. A complete list would be almost as extensive as the U. S. Pharmacopoeia. Some of the products are toxic

and some are harmless, but cleanliness of both plant and product is essential in maintaining the quality of the product, as well as the health and safety of the worker.

At the entrance to the employment department of the St. Louis plant is a sign which notifies prospective employees that this is a chemical plant and that conditions of employment specify observance of all safety rules, including the wearing of any protective clothing required for the job. In selecting a sign for this purpose the company found that none of the ten thousand stock messages available carried the exact meaning, so a sign was made to order.

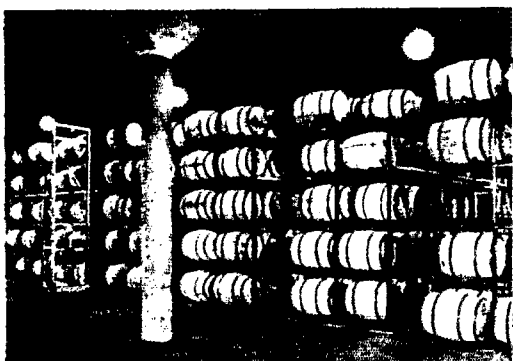
Methods of maintaining good housekeeping vary with Monsanto plants due to differences in operations, equipment and physical arrangements. The plants at St. Louis and at Monsanto, Illinois, use no porters or janitors in operating departments. These departments depend upon their own employees to maintain the high standards of cleanliness and order. Other plants in the United States and abroad employ modifications of this system which seem best adapted to their individual requirements.

The system employed at Monsanto, Illinois, has attracted considerable attention. The entire plant, which totals 35 acres, is divided into five housekeeping areas. These five areas are subdivided into smaller areas including buildings or manufacturing departments. These latter subdivisions are still further subdivided and assigned to individual workmen. Someone is responsible for the housekeeping in every square foot of ground and floor space. There isn't any "no man's land."

Each of the five major areas has a supervisor. His duties are primarily to observe housekeeping conditions in the area assigned to him and to call the attention of the subdivision supervisors to any shortcomings in housekeeping. So far as order and cleanliness in their respective areas are concerned, the five area supervisors represent the management.

The area supervisor has the authority and responsibility for ordering corrective work done in the area under his own

Racks aid housekeeping and provide safe storage for barrels.



Flowers and paint add a touch of freshness and color to the plant.





Wholesome meals amid cheerful surroundings in the plant cafeteria.

direct operating supervision. Outside his own area, his duty is to point out defects and suggest improvements. It is also his duty to report to the plant management any cases of lack of cooperation or failure to carry out instructions in the matter of general housekeeping.

In operating departments and elsewhere throughout the plant are posted charts which show the major areas and subdivision and the men to whom supervision is assigned. In the departments are charts showing the area assigned to each worker. Thus every man in the plant knows his responsibilities. No inspections are held, as the system operates on the theory that inspection is constant. The system can best be judged by the results, and it has maintained high standards of housekeeping under difficult conditions.

At the Everett, Massachusetts, works of the Merrimac subsidiary a modification of this plan is used. The yard is divided into sections and a man assigned to each section with the responsibility of maintaining order at all times. Department superintendents, foremen and men are responsible for housekeeping in their respective departments. Periodic inspections are made by a committee of three, the safety engineer acting as chairman. The other members are taken from disinterested departments in the office. This gives some of the office personnel an opportunity to become better acquainted with the plant and assures a variety of viewpoints as to what conditions should be. Following the inspection the departments are rated as "Excellent," "Good," "Fair," or "Poor,"

according to the committee's findings. These ratings are posted on the plant bulletin boards.

Ally No. 1 in the campaign to keep the chemical plant clean is the hose. Floors of the various departments are flushed several times a day. To avoid any serious slipping hazard, some floors are made of rather coarse concrete; others are of finer grain with carborundum imbedded in the finishing coat. This provides a floor which is easy to keep clean but will not become slippery because of dampness. As additional protection against slipping, the use of safety shoes with non-slip soles and heels is encouraged. These, incidentally, are supplied to employees at cost.

During the past winter, snow and ice caused considerable difficulty in the passageways between plants. During several weeks of the most severe weather the St.



Protection for the eyes is stressed in all departments.

Louis plant used a ton of salt a day to keep the pavements between buildings free from ice.

Another aid to cleanliness and appearance, as well as protection for wood and metal surfaces, is the liberal use of paint. As with the porter and janitor service, the painting is done by the employees of each department.

In a chemical plant each color has a definite meaning, indicating the nature of the material carried in pipes or stored in tanks. A color code for piping is used, and the decorative effect is reminiscent of Chicago's vivid Century of Progress.

Any employee around the St. Louis plant who is wearing a suit of tan coveralls is at once recognized as a worker in a department where toxic materials are handled. The men in this group have special locker and shower rooms. They receive a complete change of clothing every day, provided by the company and laundered without charge to the employee. Their street clothes are kept in separate locker compartments. Workers in these departments receive milk twice a day.

In non-toxic departments men wear working clothes of the same color but with separate coats and trousers. These are provided and laundered by the company at a nominal weekly charge. In the finishing departments where the utmost refinements of cleanliness are desirable, white uniforms are provided. Men in the mechanical departments wear the traditional blue overalls.

In the washrooms, newer types of equipment have been added as the plant grew. Included among the up to date facilities for personal cleanliness are circular wash fountains with dispensers for powdered soap. Some of the newer lockers have slanting tops which cannot be used as storage space and which do not collect dust.

To overcome the hazard of slipping in the showers, mats of rubber with interwoven cord have been provided. Antiseptic solutions for the prevention of ringworm of the feet (athlete's foot) have not been used because of the difficulty of getting the men to use the treatment regularly. Shower compartments are disinfected twice a day with steam and this method has been quite effective in preventing parasitic infections.

All employees are given medical examination on employment and periodical examinations are given at intervals, ranging from monthly in the toxic departments to annually in departments

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The use of gloves and other suitable clothing should be required of any operator doing heavy cutting work.

and using oxygen follow naturally from a few familiar facts regarding oxygen supplied for welding and cutting:

1. Pressure in a full cylinder of oxygen is 2,000 lb. per sq. in. at 70 deg. F.
2. Pressure within the cylinder increases as the temperature rises, and decreases as the temperature falls.
3. Oxygen will not burn, but it supports and accelerates combustion.

Because of the fact that oxygen under pressure may react violently with oil or grease, particular care should be exercised to see that oxygen cylinders and valves are kept from contact with oil at all times.

Never use an oxygen cylinder as a roller or support for work even though it may be considered empty.

When oxygen cylinders are in actual use, the opportunities for contact with oil and grease are multiplied and special care must be taken to avoid such contact. Do not handle cylinders or operate valves or touch any oxygen equipment with oily hands or gloves. Do not place cylinders where oil or grease may drop on them.

It is always good practice to mount cylinders on a truck or support them in some way so that they cannot be accidentally knocked over. They should be kept well away from the actual welding or cutting operation.

Never use oxygen from a cylinder without first attaching a regulator to the cylinder valve. The cylinder valve should be closed when work is finished and when the cylinder is empty.

Because oil or grease in the presence of oxygen under pressure may ignite violently, oxygen must never be confused with compressed air or used as a pressure imposing medium. A serious accident may easily result if oxygen is used as a substitute for compressed air. Never use oxygen in pneumatic tools, to start internal combustion engines, to blow out pipe lines, to "dust" clothing or work, or for head pressure in a tank of any kind.

Acetylene

Acetylene will burn, and will, like all other combustible gases, when mixed with air in certain proportions, explode if ignited.

At pressures over 15 lb. per sq. in., acetylene may decompose violently if subjected to heat or shock. This action

Welding Wisdom

Precautions that mean Safety in Oxy-Acetylene Welding and Cutting

By JAMES I. BANASH

*Consulting Engineer, The Linde Air Products Company;
Past President, National Safety Council*

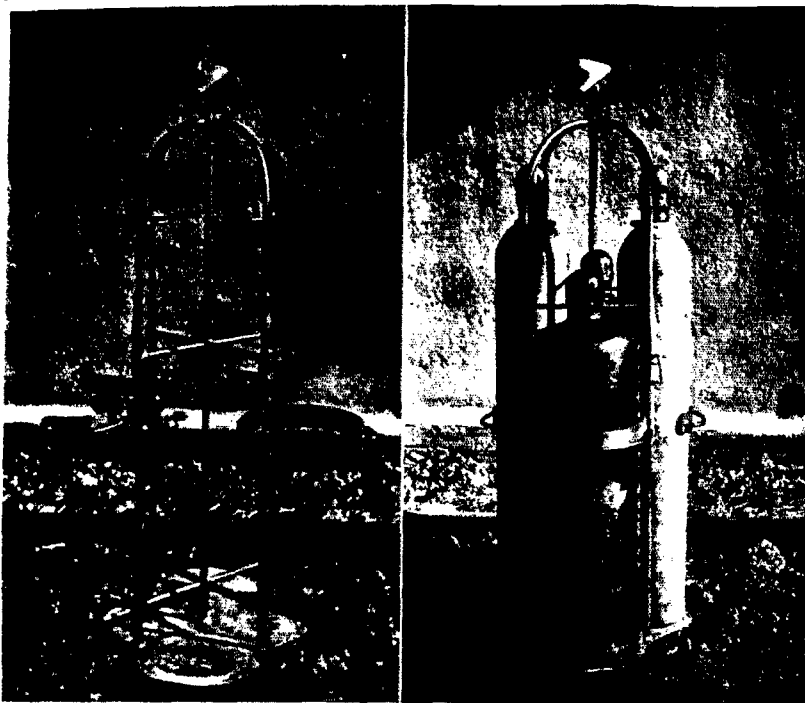
OX-Y-ACETYLENE welding and cutting equipment is designed for safe use under the wide variety of operating conditions that exist in modern plant and field work. Manufacturers have provided all parts of the equipment with adequate safety devices. They have constantly emphasized the precautions and safe practices that must be observed by all operators of welding and cutting equipment. Intelligent use of the equipment follows naturally from an understanding of the properties of

the materials used and the function of the various parts.

Although the information necessary to a thorough understanding is not difficult to acquire, it is important that all oxy-acetylene operations should be under the supervision of trained and qualified men.

It is the purpose of this article to review some of the fundamental principles that govern the proper handling of oxy-acetylene welding and cutting equipment.

Precautions to be observed in handling



This device was developed by the Bath Iron Works Corporation to facilitate the handling of oxygen and acetylene cylinders.

is an inherent property of acetylene itself, and is quite distinct from the formation of explosive mixtures of acetylene and air.

It is obvious that acetylene cylinders should be carefully handled, as knocks or falls may damage valves or fuse plugs or possibly the cylinder itself. Cylinders should be placed in properly designed cradles or platform carriers whenever moved by crane or derrick.

Never use acetylene from a cylinder for welding and cutting without first attaching a pressure reducing regulator to the cylinder valve. Acetylene regulators should never be adjusted to deliver gas at a pressure greater than 15 lb. per square inch.

With acetylene cylinders always use the special T-wrench for opening the cylinder valve. Open the valve slowly $1\frac{1}{2}$ turns only, and leave the wrench in position while the cylinder is in use, so that the valve may be closed quickly if necessary.

After the regulator is attached to the valve of an acetylene cylinder and the cylinder valve is opened, it is advisable to test for leaks at all connections by applying soapy water. In case of a leak around the valve stem, close the valve and tighten the gland nut.

Never under any circumstances attempt to transfer acetylene from one cylinder to another.

Wherever it seems necessary to couple acetylene cylinders in order to supply sufficient acetylene for a very heavy job or for a system of shop piping, always consult the acetylene manufacturer. Such coupling devices must be of a type listed as Standard by Underwriters' Laboratories Inc. and installed in accordance with the rules of the National Board of Fire Underwriters.

Hose

Always use high grade hose made especially for welding and cutting. Ordinary



When cutting, it is advisable to have the work done over floors of dirt, concrete or steel.

nary pneumatic hose and metal covered hose should not be used.

As a general rule, unnecessarily long lengths of hose are to be avoided. Where they must be used, extra precautions should be taken to keep the hose from becoming kinked or tangled. Hose should be placed so that it will not be trampled on, run over, or exposed to flying sparks, hot slag and hot objects. Contact with oil or grease is also to be avoided, as these materials will deteriorate rubber and constitute a hazard with oxygen.

Goggles

One of the most important general safety rules is that properly designed goggles should be worn at all times while welding or cutting is being done. Eye protection is essential for several reasons. The bright flame and particularly the strong glare from the molten metal are sufficient to cause serious injury. Flying sparks or bits of hot metal that may be spattered about may cause serious trouble if they should happen to strike unprotected eyes.

Blowpipes

Welding and cutting blowpipes are sturdy pieces of equipment. With reasonable care in handling they will give years of continuous service.

Proper results can be obtained only by using the proper sized head, tip or nozzle, and the gas pressures as recommended in the manufacturer's chart for the work at hand. Always follow the manufacturer's directions for lighting the blowpipe, and make sure that the regulators are adjusted to the proper pressure. When a new cylinder has been connected to the equipment, the blowpipe valve should be left open long enough to expel air before lighting. For lighting oxy-acetylene blowpipes, always use a friction lighter.

Tips or welding heads should always be tight, and the welding heads should seat properly.

Blowpipes should be inspected at frequent intervals by a competent operator. Replacements should be made only with standard parts; major repairs should be made by the manufacturer.

Regulators

In using oxygen and acetylene from cylinders, each cylinder must always be equipped with a suitable regulator. Regulators are necessary for two reasons:

First, to reduce the cylinder pressure down to the relatively lower working pressure.

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No Motors Menace Their Play

Back yard playgrounds in Flint have been highly successful in keeping children off the streets

"SAY, Al, haven't you noticed something lately?" a bus driver queried as his companion pulled alongside.

"Why, no," Al replied. "What is it?"

"There don't seem to be hardly any kids playing in the streets any more. What's happened to 'em?"

"Now that you mention it, it's certainly a fact. I guess it's this safety play yard movement. . . Swell idea, too," said Al.

Al was right. A safety play yard movement in Flint was keeping the children off the streets in that city of 165,000 population.

Flint is the world's second city in the production of automobiles. Ninety-five per cent of its industry is devoted to the manufacture of motor vehicles and automotive parts. It is strictly an automobile community. Therefore the traffic problems are manifold, because there is almost one automobile to every family in Flint. To be exact, the ratio of families

a car is .81. Total car registration is 35,250.

Everywhere, accidents to children reach their highest toll during the summer, when schools are closed and youngsters play in the streets. Realizing that the total would be reduced if children could be kept off thoroughfares during the long vacation period, public-spirited citizens of Flint started a movement in 1934 to create and encourage establishment of back-yard playgrounds. There were only forty such yards established that year, but the accident toll dropped 50 per cent below the 1933 figure, and the number of child deaths was reduced to 66 per cent.

Encouraged by the success of the initial activity, Flint conducted in the summer of this year probably the greatest child safety playground movement yet launched in the United States. Now it promises to be a permanent safety program in that city.

A total of 1,234 registered back-yard

safety playgrounds was established, exclusive of the regular civic playgrounds. Accidents to children were fewer by an estimated 25 per cent than in 1934. The average attendance of small children at the back-yard play lots was 6,500 daily, and the weekly attendance at the larger supervised civic playgrounds jumped from 23,700 in 1934 to 54,152 in 1935.

The back-yard playground idea is only comparatively new. While Seattle adopted it before Flint, the latter city perhaps was the first community to forward the plan in an elaborate way, and sustain it in a highly organized manner.



The insignia used in Flint while promoting the safety play yard movement.



One of the backyard playgrounds where children can enjoy their games free from the menace of motor vehicle traffic.

The safety play yard movement in Flint was organized and actively managed by Wilson S. Isherwood. Mr. Isherwood, who is the general sales manager of the AC Spark Plug division of General Motors, is also president of the Flint Automobile Club, and a leading advocate of safety measures.

"As a rule, the success of a safety plan lies in appointing one institution to assume all responsibility to carry out an objective. This responsibility was given to the local automobile club," said Mr. Isherwood in describing the safety playground movement.

"Upon assuming this responsibility, we enlisted as cooperating agencies the Parent - Teacher Association, the Flint Police Department, *The Daily Journal*, the Junior League, the Junior Chamber of Commerce, the Boy Scouts and other members of the Flint Council of Recreational Agencies."

The name "Safety Play Movement" was selected and an emblem was adopted. This emblem consisted of a shield with the words "Safety Play Yard for Every Child."

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Safety Takes the Field

Council representatives to assist states and cities in campaign to reduce traffic accidents

BELIEVING that there is a definite formula for preventing traffic accidents, and that the solution of the problem lies in the proper application of tried and proved methods, rather than in a search for a panacea, the National Safety Council has dispatched eight specially trained field representatives into various parts of the United States to work directly with officials and civic bodies in carrying out the Council's campaign to reduce automobile accidents 35 per cent or more by the end of 1940.

The "formula" is based on the successful experience of several cities and states which have realized sizable reductions in their traffic death rates through planned prevention programs.

The field men will work directly with organizations already engaged in safety work or, if no such organization is now functioning, with the body or group best fitted to do the work.

Expansion of the Council's public safety program to permit the use of field men was made possible through a generous grant from the automobile industry. No dues from industrial members are being used to finance this work.

Paul F. Stricker, of Chicago, a graduate of Cornell and a veteran in the safety field, has been made director of field service, which forms a part of the Council's public safety program. From 1923 to 1925 Mr. Stricker was manager of the Baltimore Safety Council, the first person to hold that office; from 1925 to

1928 he was a field representative of the National Safety Council and from 1928 to 1929 was director of the Territorial Councils Division of the National Safety Council. He became director of the Safety Department of the Nashville Chamber of Commerce in 1932, and in 1934 he was made safety director for the CWA in Tennessee, and later director of safety for the TVA. Prior to joining the National Safety Council staff in March he was safety engineer in the U. S. Department of Labor.

The country has been divided into eight districts.

District No. 1, embracing New York, Massachusetts, Connecticut, Rhode Island, Maine, New Hampshire and Vermont, has been assigned to James Stannard Baker, Chicago, who has been prominent in safety work for many years. A graduate of the University of Wisconsin, he has been with the National Safety Council since 1928, as assistant traffic engineer, fleet engineer and Secretary of the Committee on the Driver. He has conducted surveys of traffic courts, administration of drivers' license laws, driver education and driver fatigue.

The field secretary for District No. 2, comprising New Jersey, Pennsylvania, Delaware, Maryland and Virginia, is Adam H. Lintz, of Lakewood, Ohio. Mr. Lintz is a graduate of the Case School of Applied Science. He has been active in safety work since 1914, when he was named safety engineer for the Pittsburgh

Field representatives of the National Safety Council and others who are taking an active part in the drive against traffic accidents. Rear row, left to right: Lloyd A. Blanchard; Norman Damon, Automobile Manufacturers Assn.; W. H. Cameron; Mrs. Edward Hammett, General Federation of Women's Clubs; Lew Wallace, Motor Vehicle Commissioner, Iowa; J. B. Gibson, vice-president, NSC; Sidney J. Williams; Ben R. Stroup.

At left of table: A. H. Lintz; Gordon C. Graham; Ralph W. Robinson; Charles E. Babcock. At right: Albert W. Whitney, vice-president, NSC; Paul F. Stricker; H. C. Seehausen; J. S. Baker.

District of the American Steel & Wire Co. During most of the war period he served as a government safety engineer at the Norfolk Navy Yard, and in 1918 he became Assistant Chief Safety Engineer to the U. S. Shipping Board in Philadelphia. From 1919 to 1926 he was Secretary-Manager of the Cleveland Safety Council. In January, 1934, he became one of three CWA Regional Safety Directors for the state of Ohio, holding this position until July, 1935, when he was named assistant to the National Director of Safety for the WPA.

In charge of District No. 3 will be Ben R. Stroup, of South Carolina. The district embraces North Carolina, South Carolina, Georgia, Florida, Tennessee, Alabama, Mississippi and Louisiana. Mr. Stroup is a graduate of Citadel. He has been engaged in traffic work since October, 1921, when he joined the South Carolina Highway Department, working through nearly every branch of this work and finally becoming director of the Motor Vehicle Division of that state.

District No. 4, including Michigan, Indiana, Ohio, Kentucky and West Virginia, has been assigned to Gordon C.

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Gasoline Fires in Garages

By J. T. O'BRIEN

Assistant Safety Director, Jersey Central Power & Light Co.,
Asbury Park, N. J.

Experience shows the need for effective fire protection
and greater care in handling flammable liquids

R E P O R T S on 673 garage fires occurring during the eight-year period from 1921 to 1928 indicate the seriousness of the fire hazard and the need for more careful application of well-known precautions. While these reports do not include many of the small fires which are occurring daily in garage property, the record includes a sufficiently broad selection of serious garage fires to indicate the more important causes.

In the 673 fires recorded there were 32 fatalities, and of these 25 were caused by the ignition of gasoline or gasoline vapor, classified as follows:

	No. of Deaths
Gasoline vapor in contact with open flame	13
Explosion—exact cause unknown	4
Gasoline ignited by carelessly thrown match	3
Explosion caused by welding unvented tank	2
Gasoline spilled on clothing ignited by cigaret	1
Nozzle of sprayer struck ignition wire, causing spark which ignited gasoline vapor	1

Gasoline tank overflowed and gasoline ignited from ash-pit, flashing back and cutting off escape	1
Total	25

Analysis of the same 673 fires shows that in 151 cases gasoline was a contributory cause. Of these, three involved the servicing of automobiles, 47 resulted from cleaning with gasoline, 30 involved gasoline storage and filling, six resulted from unsafe practices in welding, 46 were due to ignition of flammable liquids or vapors from other causes, and 19 were attributed to mechanics' torches.

These records indicate that more fires and explosions in garages have resulted from cleaning with gasoline than from any other one cause. There are a number of cleaning materials which are much safer than gasoline and which give satisfactory results for all ordinary requirements.

There are also many cleaning powders sold under trade names, and the use of any of these will do away entirely with the fire and explosion hazard in cleaning



Small hand extinguishers are indispensable in small garages and useful in larger garages to supplement the protection afforded by the larger units. (Illustrations courtesy Walter Kidde & Co., Inc.)

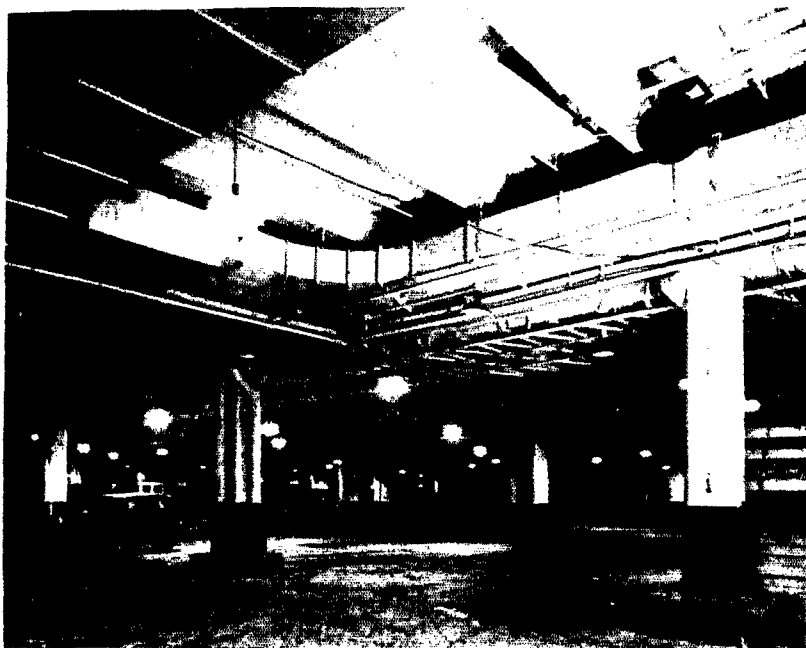
operations. The active substance of most of these powders is tri-sodium phosphate, which can be purchased in quantities at moderate cost. For use it is mixed with water in the proportion of about one handful of phosphate to a pail of water. It is most effective when the water is hot. A washing solution of this kind does not always remove bad spots, but in such cases use of kerosene or other safe cleaning liquids in small quantities is recommended.

Kerosene is much less volatile than gasoline and, therefore, preferable for cleaning. There are also numerous special cleaning liquids approved by Underwriters' Laboratories and most of these fall in three classes. The first of these, which includes liquids containing a large proportion of carbon tetrachloride, is the safest, being classed as noncombustible and nonflammable. The second, which includes Stoddard solvent and similar cleaners, is in a class with kerosene. The third is classed between ethyl alcohol and kerosene. Most of these are more expensive than kerosene, but they cut grease more rapidly. It is recommended that only cleaning liquids approved by Underwriters' Laboratories be used.

A noncombustible agent which is sometimes used is a mixture of gasoline and carbon tetrachloride by volume, the proportions varying with the flash points of the various grades of gasoline or naphtha. This mixture, however, is relatively high in cost and there is the danger of toxic effect when it is used indoors. Care must also be taken to make sure that evaporation does not leave a flammable compound, as carbon tetrachloride



The wheeled type of carbon dioxide extinguisher is used extensively in the larger garages.



Interior view of the loading ramp for Radio City, New York. Carbon dioxide is piped from a remote cylinder bank and discharged through hose reel stations, one of which is shown at the upper right of the above picture. Note also the ventilation equipment.

evaporates at a lower temperature than gasoline.

The analysis shows that other frequent causes of gasoline fires and explosions are short circuits in electric extension cords, static electricity, lanterns, smoking, and sparks from electric drills. All sources of ignition should either be eliminated so far as practicable by installing approved vapor-proof electrical devices and proper maintenance of equipment or they should be kept at a safe distance from locations where gasoline vapors may exist. Where it is necessary to keep a small supply of gasoline outside of the regular storage, it should always be in approved safety cans.

The recommendations listed in this article are summarized from the N.F.P.A. standards of good practice.

Repair Pits and Trestles

Elevated trestles or hoists are preferable for this service. If pits are used, they should be continuously ventilated by a system independent of the main garage ventilating system. Such pits should be cleaned at least daily and no accumulation of oil and grease permitted. Permanent illumination should be provided but supplementary lighting is permissible if properly guarded portable lamps attached to approved extension cords are used.

When pits are constructed with one end open to an outside wall, either di-

rectly or through a transverse pit, at the same or lower level, natural ventilation may be permitted, provided the floor level of the pit is above the natural outside grade, with air inlets at the pit floor level opposite each pit. There should also be a ventilating duct at the closed end of each pit. These ducts should extend to the outside air and be equipped with an approved suction creating device.

In addition, vapor-proof globes should be installed over all lights and the use of electrically-driven tools and grease guns should be avoided in the pit.

It has been common practice in many garages to use gasoline or other flammable liquids for cleaning floors, machinery and auto parts. It is hardly necessary to add that this is extremely hazardous practice. Preference should be given to systems for cleaning and washing which utilize compressed air, steam, water pressure or nonflammable cleaning compounds.

Cleaning vats or systems utilizing nonflammable liquids which must be heated for effective removal of grease and oil from automobile parts, are permissible only within the storage section if specifically approved for use where flammable vapors may be present.

Washing operations involving the use of flammable liquids should be carried on in a separate room or section cut off from the storage section of the

garage by two-hour fire partitions. Such rooms shall be adequately ventilated. The floor of such room or compartment should be fixed to an oil separator or trap discharging to the sewer.

In most cities the storage of flammable liquids is governed by state or municipal ordinances, most of which are based on the suggested ordinance of the N.F.P.A. Lubricating oils, grease and waste shall be stored in a well-ventilated oil room separated from the garage operating section by fire partitions.

Reservoirs of motor vehicles should be filled outside the garage. Where this is not feasible, inside filling operations may be permitted, provided only approved portable buggies and approved inside discharge systems are used. In all cases, filling should be by hose.

When insurance features are involved, reference should be made to the regulations of the National Board of Fire Underwriters for the installation of containers for storing and handling flammable liquids.

Where underground tanks containing different flammable liquids are located close to each other (for example, gasoline and fuel oil) the fill pipe from each tank should be painted a distinctive color or otherwise marked conspicuously to indicate the contents of the tank to which it connects.

Typical Fires

A few fires typical of those which have occurred in garages will illustrate the hazards involved.

1. One of these fires involved the death of two men, both experienced employees, although the property damage was negligible. The accident occurred in a bus storage and repair garage.

Witnesses reported having heard a muffled explosion and noticed a sheet of flame which apparently originated under an automobile that was being greased. After the explosion the man who had been greasing the car was found dead with the clothing practically all burned from his body. The other employee who had been cleaning the runway died the following day.

The automobile, which was apparently directly over the source of the explosion, was undamaged, and its gasoline supply system remained intact. The only property damage was slight damage to the grease gun.

An examination of the fluid used for cleaning the pit showed it to be Oakite solution.

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NATIONAL SAFETY NEWS

Is Safety Profitable?

- - Ask Milwaukee

One thousand dollars spent for the safety of municipal employees saves the city \$30,000 in accident costs

By C. F. SCHEER



Members of the Milwaukee Safety Commission's sub-committee take off their coats and dig into the work at hand. They are, left to right, Paul Johanning, Lester Lee, William Franklin, George Haislmaier, Joseph Malloy, Edward Gerlach, Edison Kleinstein, Alvin J. Horn and Alfred R. Gandrey.

“WANTED—An American city to invest \$1,000 a year, with a guaranteed annual return of \$30,000.”

How many municipalities would turn down an offer that promised a return of 3,000 per cent, and actually carried out this promise in hard cash? Not many, if the proposition were stated in such explicit terms. Yet thousands of communities are overlooking just such a profitable arrangement, simply because it bears the name “safety” rather than “investment.”

In the city of Milwaukee, a community of about three-quarters of a million, the methodical, analytically-minded city fathers saw long ago what most communities to this day have failed to see — that money invested in safety brings an immense return, not only in human lives preserved, but also in dollars and cents. First the theory was applied to public safety.

Mayor Dan W. Hoan, now rounding out his 25th year as chief executive of Wisconsin's leading city, organized the Milwaukee Safety Commission twenty years ago — the first municipal public safety body in the United States. Since that time untold human misery and countless thousands in property losses have been spared through the public safety program which has made Milwaukee the safest of America's larger cities.

In the fall of 1932 the Milwaukee
APRIL, 1936

Board of Estimates met to draft a budget for the following year. That, if one cares to remember, was about the time that the “outgo” of most cities was so far in advance of the income that no one ever expected the latter to catch up. Milwaukee was not without its problems, and when the customary budget was being drafted, the Board of Estimates picked every item to pieces to see whether it could be scaled down or eliminated.

Indicts Costly Mishaps

City Attorney Max Raskin pointed to an outlay of \$90,000 for compensation payments and medical expenses in city employees' injury cases, an expenditure which had been taken as a matter of course in years past.

“Here's where we can cut!” he exclaimed. “We've got to reduce our compensation costs.”

“How?” the board echoed.

“Well,” said Mr. Raskin, “we know accidents can be prevented. We've proved it through the work of the Safety Commission in public safety. Why not apply the same idea to city employees on an industrial basis?”

It had the ring of a sound idea, and before the Board adjourned, it had appropriated \$1,000 for the experiment. And for the first time in American history a municipality started to adapt safety measures to public employees.

The proposition was laid before the Safety Commission, and, with Assistant City Attorney Alfred R. Gandrey taking a leading part, an investigation into city employee accidents was begun. To the astonishment of those concerned, the departmental data on these accidents were so meager as to be valueless. Very often, in the case of a minor accident where the employee lost little or no time from his job, a departmental head knew absolutely nothing of the injury. Nor did anyone know how many accidents occurred in each department throughout a given year, or what the average cost of an accident was.

Apparently it was a fertile field for safety education and safety work, and the Safety Commission lost no time. Immediately a sub-committee was organized to plan and direct a safety program for municipal employees. Every city department was represented on the sub-committee, though not by department chiefs. The original personnel, still in

office, includes Paul Johanning, Department of Public Works; Lester Lee, City FERA Projects; William Franklin, Bridges and Buildings Bureau; George Haislmaier, Bureau of Sewers; Joseph Malloy, City Service Commission; Edward Gerlach, Garbage Collection Department; Edison Kleinstuber, Fire and Police Alarm System; Alvin J. Horn, School Administration; and Alfred Gandrey, Assistant City Attorney.

A lecture course to promote safety consciousness on the job was the first step. Eight speakers addressed meetings of department heads on such subjects as the use of hand tools, piling stock, carbon dioxide, and the use of machinery. An industrial poster service was started, and the posters were put to work on 90 boards. Periodic special bulletins, explaining hazards peculiar to certain departments, supplemented the posters. Personal interviews were held with accident victims or with accident-prone employees.

Positive Records

But most important of all, a simple, effective system of recording accidents was instituted.

Now every accident, regardless of how minor, is reported to the office of the City Attorney on a detailed form. Monthly records are maintained, listing first the number of the injury case, then the name of the employee involved, the city department to be charged with the accident, the nature of the injury, how it occurred, and the cost of compensation, cost of medical treatment, and wages paid during the time lost from the job.

At the end of the month these entries are transferred, in somewhat less detailed form, to large annual record sheets, the size of newspaper pages. Thus a complete picture of the municipal accident situation is always available.

Each month reports are sent to all department heads, city officials, and aldermen. These reports list each department and bureau, together with the number of injuries charged to that department for the month, and the comparative figure for the same month of the previous year. This phase of the reporting system strikes close to home. Department heads are able to compare their statistics with those of another department employing the same number of persons and doing somewhat similar work. Thus safety competition arises, and department heads make it a point to keep posted on all accidents which occur and all bulletins issued by the Safety Commission's sub-committee.

Aldermen, too, take a personal interest in the accident figures and thus exert a valuable force in the program.

With this program established, the sub-committee did not consider its work completed. Instead, it found that it could fulfill a very important function by perpetuating itself.

At the end of each month the sub-committee analyzes the current accident reports. In some cases little or nothing can be done to correct the accident cause. For example, as long as persons continue to violate city ordinances, police officers are likely to incur scratches or contusions in making arrests. And as long as fires continue to break out, a certain number of firemen will be injured by falling debris or overcome by fumes. But there are many cases about which the committee can and does do something.

An outstanding example is the poison ivy trouble experienced at one time by park workers. In addition to putting poison ivy warning posters on display where all park workers might see them, the committee arranged meetings in the parks, where the employees were shown actual samples of the noxious plant and told how to distinguish it from harmless weeds.

In another type of accident several teamsters in the waste collection service had been injured. Because of the frequent stops necessary in this work, it was illogical for the teamsters to keep climbing from the ground to the wagon seat and back again. They had, instead, walked beside the wagon, grasping the reins to guide the horses. The trouble occurred when the horses became frightened, dashing away and jerking the teamster against the wagon or beneath the wheels. The sub-committee puzzled over this for a long time. Then the solution occurred. The reins could be lengthened. This would enable the driver to remain on the ground, but walk *behind* the wagon, thus avoiding any possibility of injury beneath the wheels.

Under this diagnostic method of attack, accidents have been dropping off rapidly.

Recently the sub-committee sent "Safety Suggestion Cards" to every city employee. These contained spaces in which hazards peculiar to the individual departments might be listed, together with the employee's suggestion for a remedy. Many worth-while ideas have been received in this manner. As an outgrowth of the "Safety Suggestion Card," the city building inspector is working on a plan to standardize the location of water meters in every new home built,

and to make these locations easily accessible to the meter reader. Gradually it is planned also to re-locate the meters in the older homes, so that fewer city employees will be injured by having to venture into unlighted, dangerous corners.

Another example is the effort to standardize waste containers to eliminate hazards in the waste collection service. Under this program all make-shift receptacles and all battered, leaky containers will be condemned.

Some of the safety suggestions are used as a basis for appropriation requests to the Board of Estimates.

First aid work is in progress, and the sub-committee intends that every city employee be instructed in the fundamentals of this procedure. In 1935 ten men qualified as instructors in the standard Red Cross first aid course. These instructors will disseminate first aid knowledge throughout the staff of city employees.

While this is a comprehensive program, it is still far from ideal, in the eyes of B. L. Corbett, executive secretary of the Milwaukee Safety Commission, through whose hands most of the detailed administrative work passes. Now emphasis is placed on establishing safety consciousness. Eventually it is hoped to broaden the work, incorporating periodic physical examinations and other factors which have proved valuable in an industrial safety program.

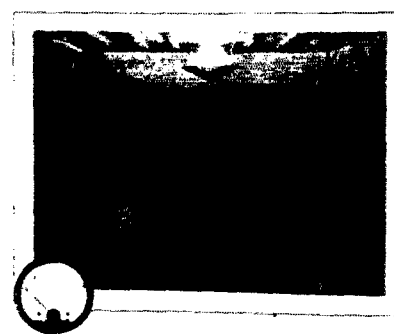
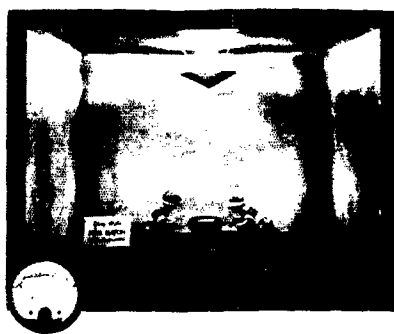
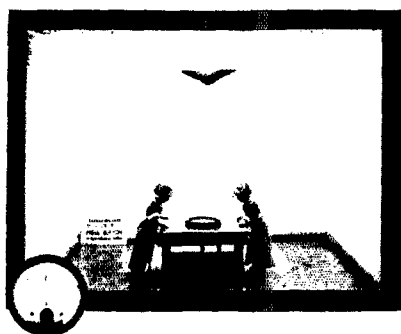
Proves Its Worth

But even if it has not been perfected, Milwaukee's safety program for city employees has accomplished a worth-while task during the three years of its existence. First of all, it has reduced human suffering in great part. Secondly, where the municipal budget for employee accidents formerly mounted to \$90,000 a year in round numbers, it now rests at about \$60,000—a return of \$30,000 on an investment of \$1,000.

When it is considered that some 10,000 employees, ranging from police officers and pick-and-shovel workers, to school teachers and librarians, are affected, it may readily be seen that Milwaukee has accomplished a great deal with a nominal sum of money. Furthermore, the city has pioneered the way to a sound method of budget cutting.

"Doc" Corbett agrees that the faith placed in the program by the city fathers has been vindicated.

"Any city could use a safety engineer to advantage," he says, "and he would save the city time and again the amount of his salary."



The Sight-Meter Tells the Story

Tests Show Paint's Value as an Aid to Lighting

INCREASING the amount of illumination does not necessarily insure good lighting in factory, office or home. Illumination engineers have pointed out that strong light in a dark, dingy shop does not produce good seeing conditions. Light, to meet the fundamentals of good seeing must comprise (1) an adequate source; (2) a suitable reflecting surface, and (3) sufficient diffusion to avoid glare. In industry, walls and ceilings constitute the principal reflecting surfaces. They must also contribute in diffusing or spreading light.

The familiar automobile headlight at night as opposed to that same headlight seen in the daytime will probably remain a classical illustration of the relationship of light to its background. Against a bright and diffused daylight it presents no discomfort, but at night it is a source of severe glare. This condition is to a degree duplicated in many industries. Where it exists, operators' movements are always slower and less sure. Ample illumination has the effect of magnifying an object, and moving parts appear to be moving more slowly where light is good. Note also how much more confidently you drive at night on the white concrete highway where the flood of light is reflected and distributed by the white surface.

In tests conducted in the Sherwin-Williams Laboratories, the camera has caught a most interesting story showing the values of light reflection. The sight meter confirms what the camera recorded.

With the same amount of illumination, the intensity of light recorded by the sight meter ranged from one to 22½ foot candles.

In the unpainted room, due to the low reflection value of the walls and ceiling, the sight meter registered only one foot candle.

In the dirty room, which had been painted at one time, the surfaces had become so soiled that they reflected but little light. The reading was only four foot candles.

In the room painted white for maximum light reflection, the meter jumped to 22½ foot candles.

Translated to the industrial plant, these pictures emphasize the value of the proper use of white paint and its relation to reducing eye strain with its attendant ill health and lowered output. They also point out how shadows, glare and too low light levels may be avoided by adequate light reflection.

Paint has other definite functions in industry besides illumination in the promotion of safety. Severe moisture conditions and wet, slippery floors present definite hazards to employees moving about. These hazards are greatly reduced in a clean, sanitary plant where paint is utilized to control moisture, dirt, darkness and disorder. Employees in a well painted plant keep it clean and keep it in order.

Feeding of calenders in paper mills, and passing paper over the driers have been the cause of frequent accidents. So much so that progressive mills have tackled these and other hazardous operations from two angles. They have increased the level of illumination, and also adopted color effects. The moving parts are given a color contrasting with the pastel shades used on the machines.

In many plants, red is applied to all dangerous moving parts, and operating levers are given an identifying color to promote sure and safe movements of machine operators. Huge power presses in automobile and other plants use red on the bottom of press rams and red on belt guards. Many plants use red on conveyor trucks, dangerous chemical containers, crane lifts and other dangerous and moving items. High visibility for crane hooks and plant trucks leads many wide-awake operating divisions to use a bright orange on these surfaces.

Another outstanding function of paint is the promotion of safety in marking aisles, storage zones and passageways where overhead cranes might cause accidents. Orange is used where overhead cranes present a hazard. White is used for other safety aisles. It is interesting to observe the respect workers have for

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REFLECTION VALUES OF PAINT COLORS

	Per Cent
White	89
Ivory	82
Canary Yellow	77
Cream	77
Caen Stone	76
Orchid	67
Cream Gray	66
Ivory Tan	66
Sky Blue	65
Buff	63
Pale Green	59
Shell Pink	55
Bright Sage	52
Silver Gray	46
Olive Tan	43
Forest Green	22
Cocoanut Brown	16
Black	2

Safety Council Launched at New York Conference

By ROGER WILLIAMS

Chairman, General Conference Committee, Seventh Annual Greater New York Safety Conference

ONE of the most gratifying reports of the Seventh Annual Greater New York Safety Conference was that of the attendance committee. More than 6,000 representatives of industry and institutions in and around New York were present—the largest attendance yet recorded. The first of the conferences had an attendance of only 700.

Another forward-looking step was taken at the Conference this year when the Greater New York Safety Council, Inc., was presented to the public. This Council will be able to coordinate, develop and finance a broader program, to reach more individuals in the area, continuing the campaign of education and prevention. Campaigns such as that of the New York Police Department will be able to accomplish even more when supported by such a Council. The public will have an opportunity to enlist in this organization, attend future Conferences organized and managed by it, and receive the services it will be prepared to render.

The major theme of the Conference this year was expressed in the title of the first session, "Safety Marches On."

Our slogan, "It's Intelligent to Be Safe," was launched in our pre-conference publicity, and it caught the public fancy immediately. The second day after its release the New York Sun ran an editorial entitled, "Popular Game," in which it described the antics of the "gutter-stander," a person who, oblivious of danger, disregards traffic lights, moves into the gutter and stands poised for an opportunity to dart out. He causes cars to stop suddenly to keep from running him down, thereby causing rear-end collisions. Within a few days after the publication of the Sun's editorial a number of letters appeared in the columns of this newspaper, praising the Sun for calling attention to traffic disrupters of this nature. Each writer announced that he or she would take care not to be a gutter-stander. It was interesting to note that every writer in some way used our slogan, "It's Intelligent to Be Safe."

As in past years, the Conference this year was conducted under the sponsorship of the Metropolitan Chapter of the American Society of Safety Engineers, Engineering Section, N. S. C., and more than 80 other cooperating organizations, such as the American Red Cross, Automobile Club, the Board of Education of the City of New York, the Boy and Girl Scouts, nurses associations, Camp Fire Girls, Boys' Club, welfare bodies, police departments, industrial and engineering associations, and parent-teacher associations.

Characterizing the motorist as a modern Dr. Jekyll and Mr. Hyde, Dr. Ralph W. Sockman, minister of Christ Church in New York, who delivered the keynote address of the Conference, said, "The motor car and improved roads give human beings a chance to escape from daily routine, and the quiet gentleman of the office becomes the speed maniac of the highway. An auto-intoxication prevails which often plays havoc with sound judgment and consideration for others.

"We have made better progress in perfecting the horsepower of our machines than in developing the manpower for their control. As a result we have silent motors and lawless mobs, smoothly running cars and accident-marked roads. It is time that we began applying the genius of America to the development and safeguarding of the human factors of work and travel."

Shock Psychology

Counseling against the shock psychology which has marked accident stories of recent months, Dr. Sockman pointed out that people can be awakened by fright, but that they cannot be kept in a healthy state of wakefulness by that method.

"A frightened driver," he said, "is almost as dangerous as a reckless one. We must develop carefulness without timidity, and confidence without rashness. This requires a program of safety education—sane, persistent and universal.

"It requires intelligence. The leaders of this Conference were wise in choosing for their slogan, 'It's Intelligent to Be Safe.' The one thing that the modern young person dislikes above all others is to be thought 'dumb.' It is excellent strategy to picture safety as a matter of intelligence rather than of morals or policy. We must keep Dr. Jekyll in control and Mr. Hyde under control."

Dr. Miller McClintock, director of the Bureau of Street Traffic Research at Harvard University, pointed out that streets not only govern the trade efficiency and the safety of individuals in a community, but that they also serve as the community's greatest recreational asset, opening the way to travel and excursions.

A Profitable Investment

Lew R. Palmer, conservation engineer for the Equitable Life Assurance Society, spoke on "Street and Highway Safety—A Community Problem," describing the work of the National Traffic Safety Contest.

"In 1934," he said, "the insurance companies paid out more than \$400,000,000 on 101,000 accidental deaths and the accompanying injuries (not including the millions paid for property damage). The figure would have exceeded \$600,000,000 had not more than 54,000 lives been saved during that year through the cumulative effect of organized accident prevention effort, largely brought about by the National Safety Council and our affiliated Councils. This annual saving of more than \$200,000,000 indicates that safety is one of the best investments that insurance companies can make."

Despite the publicity competition offered by one of the most distressing elevator strikes ever experienced in New York, the Conference won space on the front page when Captain William M. Kent, commanding officer of the Safety Bureau of the New York Police Department, made the statement that "an antiquated code of traffic regulations, designed for the horse-and-buggy days, is being revised in substantial harmony with recommended uniform standards to comply with modern conditions, and this should prove a valuable contribution to better conditions on streets and highways of New York City."

He explained that speed limits would be raised from fifteen miles an hour in congested areas to 25, and from 20 in outlying districts to 30 miles an hour. He added that "express" streets are being planned.

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NATIONAL SAFETY NEWS

Water and Fatigue

Provision for replenishing the body's water supply becomes increasingly important as summer approaches

THE importance of water can be better realized when it is recalled that water constitutes two-thirds of the weight of the human body. In view of this it is essential not only that sufficient water be absorbed, but also that this water be pure.

Impure water can cause many serious diseases such as dysentery, diarrhoea, typhoid and cholera. If the water supply is pure but the method of dispensing is not sanitary, diseases such as colds, influenza and diphtheria may be transmitted from one person to another.

In most industrial plants and offices the problem of purity is not particularly troublesome, since the sanitary quality of city water is generally reliable. In



General Electric Co.
Many offices, stores and factories are modernizing their drinking fountains.



Frigidaire Corp.
This fountain with a guarded jet which cannot be touched with the lips provides water at regulated temperature. Artificial cooling is usually more economical than leaving a tap running.

small towns, however, where there is no official water analysis, or where the plant has an independent water supply, it is advisable to analyze the water periodically. If the plant itself has not the means for such an analysis, samples may be sent to laboratories, to universities or to city or state health departments. These laboratories will give instructions as to the proper method of taking samples and the type of container to use.

In plants where the plumbing is old it is also advisable to provide for analysis of the drinking water.

While city water is generally free from contamination, it may contain sediment, and for this reason some plants have provided their cooling systems with filters. Where this practice is followed the filter should be cleaned frequently.

If the quality of the drinking water is questionable, provisions should be made for boiling or distilling it. The resultant flat taste can be offset by bubbling air through the water.

Since modern water-cooling equipment permits convenient use of bottled water, a ready solution to the purity problem is offered those whose drinking water requirements are not too great.

But assurance of the purity of the water is not enough. The temperature, too, must be right if the employee is expected to use the water provided. For example, a perspiring workman, offered his choice between a glass of luke-warm, sanitary bottled water and one of cool water of doubtful quality, would invariably choose the latter.

In the summer time the problem of temperature is particularly pressing. Water that is too cool may cause painful

cramps, while water that is insufficiently cool will fail to give the relief from fatigue that a worker desires. Generally speaking, water should not be cooler than 45 degrees F., and 50 degrees is the preferable temperature for both office and factory workers.

How may this ideal temperature be maintained? Some plants have attempted to cope with the problem by letting the water run at the bubblers, but this method is likely to prove far too costly in the long run, particularly where there are many outlets. The ideal arrangement is to have individual coolers at each outlet. This will assure proper temperature of the water upon delivery at the nozzle. A system found practical in large industrial plants where there are numerous outlets is a circulatory system operated from a central cooler. In a system of this sort it is important to make sure that fountains are not located on dead-end pipes, for such connections will permit water to collect near the fountain and become warm. It is well to remember also that ice should never come in direct contact with the supply of drinking water.

Equally important with purity and temperature is accessibility. Unless enough outlets are provided, one of two things will happen. Either the employees, will not drink enough water, or they will drink at the expense of time lost from their jobs. This is a matter of dollars and cents in plant efficiency, for unless water is accessible, there may be a loss either through fatigue or through wasted time.

(Please turn to page 53)

Evanston's Safety Record Wins Another Grand Prize

Milwaukee is again winner in Group I of National Traffic Safety Contest

FOR the second time since the National Traffic Safety Contest was launched four years ago the city of Evanston, Ill., a suburb of Chicago, has won a clear title to the grand prize.

The award was announced following a meeting in New York of a committee of judges composed of Thomas H. Mac Donald, chief of the U. S. Bureau of Public Roads, Washington, chairman; Harold S. Buttenheim, editor, *American City Magazine*, New York; Dr. Miller McClintock, director, Bureau of Street Traffic Research, Harvard University, Cambridge, Mass.; and Dr. C. H. Watson, president of the National Safety Council.

Working in close cooperation with the National Safety Council, Evanston has consistently remained near the top in the contest activities.

In 1932 Pittsburgh and Evanston were tied for the grand prize. The award was won by Evanston in 1933, by Milwaukee in 1934, and again by Evanston in the past year.

In addition to the grand prize, awards were made in six divisions of the contest.

Milwaukee won first place in the Group I classification, for cities of more than 500,000 population. New York placed second in this group and Chicago third. San Francisco and Detroit were given honorable mention.

Providence, R. I., was the winner in Group II, cities between 250,000 and 500,000 population. St. Paul, Minn., was second, and Seattle, Wash., third. Jersey City, Denver and Birmingham, Ala., won honorable mention.

Syracuse, N. Y., placed first in Group III, cities between 100,000 and 250,000 population. Lynn, Mass., won second place, and Spokane, Wash., third. Honorable mention was given Utica, N. Y.; Duluth, Minn.; Fall River, Mass.; Somerville, Mass.; and Wilmington, Del.

In Group IV, cities between 50,000 and 100,000 population, Evanston won first place. Allentown, Pa., was second, and Holyoke, Mass., was third. Cities winning honorable mention were Greensboro, N. C.; Oak Park, Ill.; Binghamton, N. Y.; Brockton, Mass.; and Atlantic City, N. J.

Superior, Wis., placed first in Group

V, cities between 25,000 and 50,000 population. Tucson, Ariz., placed second, and Central Falls, R. I., was third. Honorable mention cities were Oshkosh, Wis.; Everett, Mass.; Elgin, Ill.; Joliet, Ill.; Stamford, Conn.; Pensacola, Fla.; Hackensack, N. J.; Plainfield, N. J.; and Parkersburg, W. Va.

Swissvale, Pa., was first in Group VI, cities between 10,000 and 25,000 population. Second in this group was Roselle, N. J., and third, Pampa, Texas. Cities in this classification which received honorable mention included Massena, N. Y.; Grand Island, Nebr.; Brainerd, Minn.; La Grange, Ill.; Austin, Minn.; Fairmont, W. Va.; Mt. Lebanon, Pa.; Ossining, N. Y.; Ventura, Calif.; Fairhaven, Mass.; Rochester, Minn.; Hibbing, Minn.; Beatrice, Neb.; South Orange, N. J.; Astoria, Oregon; and Pekin, Ill.

STATES as well as municipalities were judged in the traffic contest, Illinois winning first place in the Class A group. New Jersey and Massachusetts were given honorable mention. In Group AA Minnesota placed first, honorable mention going to Georgia and West Virginia. Delaware was first in Group AAA, Arizona and Nebraska winning honorable mention.

A total of 801 municipalities and 33 states took part in the contest, the purpose of which was to bring suitable recognition to communities which made constructive strides in overcoming their traffic accident problems and to the states in which these cities were located.

In determining the winners the element of chance was largely removed by an unusually thorough system of grading. Many items were studied in determining the amount of work done by the participating communities. The motor vehicle death rate was considered, and also the reduction in this rate compared with the average of the three preceding years. A maximum of 50 points was allowed for this item.

Other factors involved in the judging of the contest were accident reporting, for which five points were the maximum allowed; traffic engineering, a maximum of ten points; traffic law enforcement,

fifteen points; child safety, ten points; and public education, ten points.

Thus two types of accomplishment in safety work were recognized in making the awards; first, a low death rate from motor vehicle accidents and a reduction in the death rate from the previous year's mark; and second, activities designed to place a further curb on the traffic mortality. The latter item included the enactment of regulations, the establishment of administrative machinery and the promotion of educational activities.

The bi-lateral nature of the contest not only places a premium on a splendid statistical record, but also offers recognition for activity which will affect the future safety standards of a community.

This Sign Promises Highway Courtesy



FOUR large display trucks recently purchased by the Caterpillar Tractor Company, Peoria, Illinois, to carry its exhibit material around the national circuit of distributor's schools carry reassuring messages to motorists on the highway. At the rear of each truck, in bold lettering, is the following:

"Caterpillar equipment builds and maintains roads. Sound horn—Half of this one is yours."

Members of the training department crews who man the bright yellow trucks have received detailed instructions relative to safe driving. Schedules have been arranged to cut night driving to a minimum. Fast driving is taboo.

In the accompanying picture, M. E. (Cap) Jenks, member of the training department, is pointing to the guarantee of highway hospitality on the truck.

NATIONAL SAFETY NEWS

On to Atlantic City

The Scene of the Twenty-fifth Annual
Safety Congress—October 5-9, 1936

ATLANTIC CITY has been chosen for the Congress city of 1936. Because of this famous resort's popularity as a convention city, a compromise on dates had to be arranged, and finally the week of October 5 to 9 was decided upon.

The Congress comes to Atlantic City at the whole-hearted invitation of the leading organizations and industries of New Jersey and many of the leaders in business and public life, including Governor Harold G. Hoffman.

* * *

Atlantic City's hotel facilities will be ample for all the needs of the Congress. Sessions will be held in the Convention Hall and the Ambassador, Chelsea and Ritz-Carlton Hotels.

* * *

One of the developments of the 1935 Congress was the unusual number of employee delegates in attendance. Unfortunately, employers did not let Council headquarters know in time how many

would be present, and the Congress committees were not able to arrange any special programs for the employee delegates. This year's plan will include them. After the Congress, a report will be made to member companies telling of the number of worker delegates in attendance, the interest shown, etc.

Even before the time and place of this year's Congress was announced, Philadelphia Works of the General Electric Company announced in the Philadelphia Works News that two employees would be sent as delegates.

Every employee in the plant has an opportunity to be selected for this honor. The conditions that will determine the eligibility of the candidates are: That the employee himself be free from accidents and by thought and action show his interest in the promotion of safety for the benefit of others.

To assist the employee in submitting safety ideas, a memo book is being placed at the foreman's desk in each department. Any suggestions which are to be offered may be written in these books

at any time during the day. These books have no connection with the regular suggestion system of the company but are designed exclusively for the expression of thoughts by employees. After the suggestion has been written in the book, the foreman will send one copy of the suggestion to the Personnel Department for record and follow-up purposes.

Safety Takes the Field

(Continued from page 20)

Graham, of Detroit, who attended the University of Michigan, and immediately afterward became engaged in personnel and industrial safety work for the Ryerson Steel Corporation, Chicago. From 1925 to 1926 he was safety engineer for the Packard Motor Car Company; from 1926 to 1928, safety engineer for the Detroit Industrial Safety Council; and since that time safety engineer for the Detroit Board of Education.

District No. 5, which includes Illinois, Iowa and Wisconsin, is under the supervision of Mr. Stricker who will make his headquarters at the office of the National Safety Council in Chicago.

Field secretary for District No. 6, Nebraska, Kansas, Missouri, Arkansas, Oklahoma and Texas, is Lloyd A. Blanchard, of Belmont, Mass. From 1919 to 1924 Mr. Blanchard was in charge of employment and safety at the National Equipment Co., Springfield, Mass.; from 1925 to 1929, manager of the Springfield Safety Council; and from 1929 to 1935 was head of the state-wide highway safety program as executive secretary of the Massachusetts Governor's Committee on Street and Highway Safety.

Charles E. Babcock, of Minnesota, is in charge of District No. 7, embracing Minnesota, South Dakota, North Dakota, Montana, Wyoming, Utah, Colorado, Arizona and New Mexico. Mr. Babcock was formerly highway commissioner of Minnesota and past-president of the American Road Builders' Assn.

Included in District No. 8 are Washington, Oregon, Idaho, Nevada and California. This area has been assigned to Ralph W. Robinson, of San Francisco, who served as executive secretary of the San Francisco Traffic Survey Committee from 1926 to 1931. This organization brought about many major improvements in San Francisco's system of traffic control. During this period, Mr. Robinson was also identified with various state-wide programs to reduce traffic accidents. More recently he served as western field auditor of the Traffic Audit Bureau, Inc., of New York.

HOTELS AND RATES*

Hotel	Single	Double	
AMBASSADOR	\$3.00 to \$6.00	\$6.00 to \$10.00	All double rooms with twin beds. 2 Room Suite—\$12.00 and up.
CHELSEA	3.00 to 6.00	5.00 to 5.00	2 Room Suite—\$6.00 and up. \$2.50 single and \$4.00 double rooms without bath.
RITZ-CARLTON	3.00 to 5.00	6.00 to 10.00	2 Room Suite—\$10.00 and up. 1 to 4 persons.
Traymore	4.00 to 10.00	6.00 to 12.00	3rd person in double room, \$2.00 daily.
Shelburne	4.00 to 6.00	6.00 to 8.00	2 Room Suite—\$8.00 and up. 1 to 4 persons.
Dennis	4.00 to 6.00	6.00 to 10.00	
Brighton	4.00 to 5.00	6.00 to 8.00	Adjoining parlor, same rate as "single" room.
Chalfonte- Haddon Hall	3.00 to 8.00	5.00 to 10.00	All double rooms with twin beds. Two rooms with connecting bath. \$8.00 for 3 persons; \$10.00 for 4 persons.
Claridge	4.00 to 6.00	6.00 to 8.00	10 large rooms—3 or 4 persons— \$2.00 per person.
Knickerbocker	3.00 to 4.00	5.00 to 7.00	
New Belmont	2.50 to 3.00	4.00 to 6.00	Practically all rooms with twin beds.
Seaside	3.00 to 4.00	5.00 to 6.00	2 Room Suite—4 persons—\$2.00 per person.
Jefferson	3.00 to 3.50	5.00 to 6.00	2 Room Suite—4 persons—\$3.00 per person.
Madison	3.50 to 4.00	5.00 to 7.00	2 Room Suite—2 persons @ \$3.00 per person; 4 persons @ \$2.00 per person
Monticello		5.00	
Colton Manor	3.00 to 5.00	5.00 to 8.00	
Morton	3.00 to 4.00	5.00 to 6.00	
Franklin Inn	2.50 to 3.00	4.00 to 5.00	
Richfield	2.00 to 3.00	4.00 to 6.00	
Ludy	3.00 to 4.00	5.00 to 7.00	
Grossman's	2.50 to 3.50	4.00 to 6.00	
Lafayette	3.00 to 4.00	5.00 to 7.00	

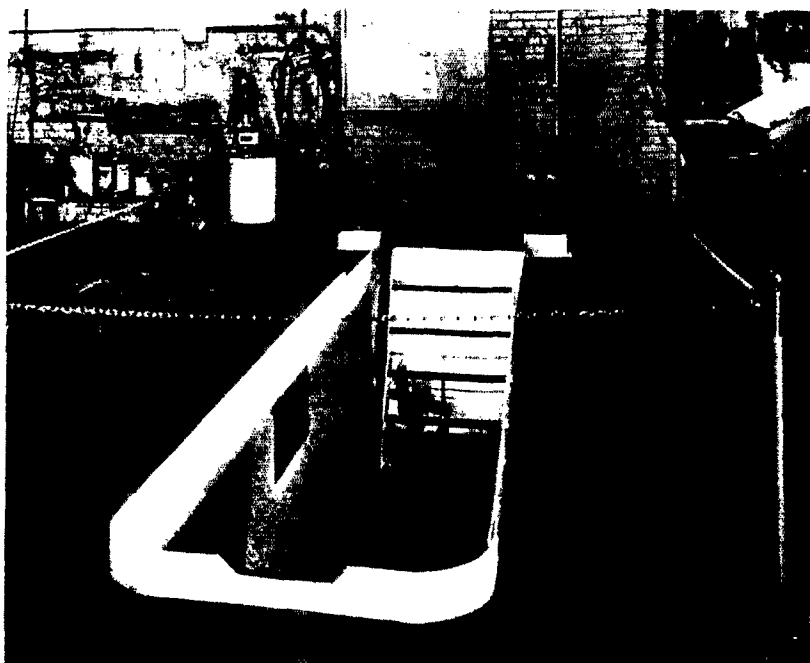
*All rooms with bath unless otherwise specified. Listed hotels located on the Boardwalk or within the adjoining city blocks.

Rooms at lower rates, and at other than listed hotels, may be obtained by writing directly to F. M. AMSTUTZ, Secretary, Atlantic City Safety Council, Board of Education Bldg., Atlantic City, N. J.

APRIL, 1936

THE SAFETY EXCHANGE

"A ROUND TABLE IN PRINT"



Drain Pit Thoroughly Guarded

Thoroughly protected by mechanical safeguards is this automobile drain pit. Chains attached to stalwart iron posts prevent persons from falling into the open pit.

Beyond the steps, at the bottom of the pit, is an electric fan which draws fresh air into the pit whenever the latter is in

use. It circulates the air constantly, displacing carbon monoxide gas which may settle to the bottom of the pit.

Note the metal toeboards around the pit to prevent objects from falling into it while men are at work. The article and photograph were received from Clay Bartlett, transportation superintendent, Appalachian Electric Power Company, Charleston, W. Va.

Fireproof Container for Oil Filters and Blotter Presses

To avoid the fire hazard caused by keeping blotters in cardboard cartons, a container with a separate compartment for rags has been developed. It is divided into two compartments, the top for oily rags, and the bottom, which has a door similar to a range oven, for a stock of blotter paper. This compartment assists the operator as he has one place for both rags and blotter paper. This device was developed by J. G. Wilson, of the West

Penn Power Company, Pittsburgh, who will be glad to furnish details to anyone interested.

Safety Light for Crane Repairmen

To indicate that the main switch on the crane is out, a switch is located in the switchbox to control an indicating light. When the main switch is thrown, a lever automatically makes contact to throw on this light and warn repairmen.

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

Serviceable Tool Rack from Scrap Lumber

This portable tool rack was made from scrap lumber. It holds the tools firmly, and permits the easy selection of the right tools.



Beg Pardon

Through an oversight the Consolidated Gas Company of New York was credited with devising a man-hole cover lifting hook illustrated in the Safety Exchange of the March issue of the NATIONAL SAFETY NEWS. The New York Edison Company perfected the device and should have been so credited.

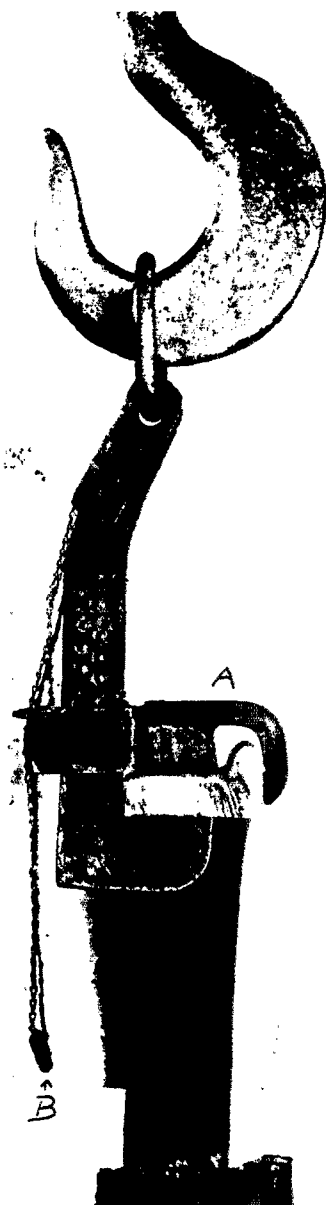
NATIONAL SAFETY NEWS

Life of Hose Lines Easily Prolonged

Here is a simple method of prolonging the life of hoses and feed lines. Pieces of old hose, of slightly larger dimensions than the one being protected, are cut off in widths of $\frac{1}{2}$ inch or more. These pieces are placed over the hose at points where the hose might come in contact with the ground or some other object and be subject to wear. The protecting pieces may be either slipped over the end or cut lengthwise and placed around the hose in the desired position.

Special Crane Hook for Locomotive Tires

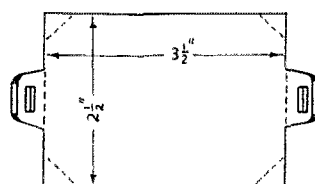
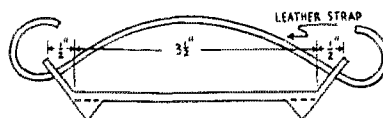
This ingenious device for handling train wheel tires safely is used by the



Chicago and North Western Railway. It operates as follows: When the crank hook is lowered, the latch "A" fits over the flange of the tire, while the rest of the tire fits into the slot. When the crane is lifted, pressure exerted by the tire against the device holds the tire in place. A pull on handle "B" will release the latch; however, when tires are stacked close together it may be necessary to lift latch by hand.

Safety Cleats of Simple Construction

This cleat is made of one piece of metal $3\frac{1}{2}$ inches wide and $2\frac{1}{2}$ inches long. The corners are bent down about



$\frac{1}{4}$ inch below the sole and heel of the footwear, and the strap lugs turned up about $\frac{1}{2}$ inch.

The cleat is strapped onto the foot with a strip of lace leather passed through the lug to loop over the instep, cross over the instep, and tie around the ankle. The cleat gives good protection against slipping and is inexpensive and simple to make. The Pittsburgh Coal Company developed this device.

Equipment Safeguards Street Workers at Night

To protect workers and to prevent automobiles backing into excavations or uncovered man-holes, Hamlin & Company, of New York City, calls attention to this equipment. It consists of four single standards of $1\frac{1}{4}$ inch pipe, each welded to a base composed of pieces of pipe welded in the shape of a cross. A small fork is welded at the top to hold a lamp. Lamps are used in groups of four to outline the job. To provide illumination as well as warning signals, three of the lamps are red and one is white. Drop lights are provided on separate extension cords, so they can be taken into any opening.

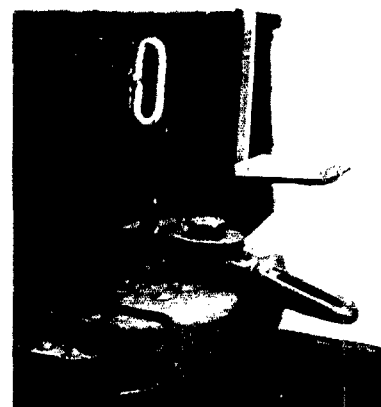
All the equipment is weatherproof, and where gases are likely to be encountered the lights are equipped with



vapor-proof fixtures. The standards shown are about six feet, six inches high, and the lamp when hanging from the fork is about six feet above the ground. This takes the glare out of the worker's eyes, and is at a good height to be observed by traffic.

Hand Hold and Portable Seat for Mine Car

To lessen the hazard of riding the rear car of a mine train is the purpose of the iron hand hold and portable brakeman's seat shown in the accompanying illustration. The hand hold is stationary while the seat, which hooks over the top, can be easily removed. The photograph was furnished by the United States Bureau of Mines.



THE SAFETY LIBRARY

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

Silicosis

ANTHRACO-SILICOSIS AMONG HARD COAL MINERS. By J. J. Bloomfield and others. Published by the U. S. Public Health Service, 1936. For sale by the Superintendent of Documents, Washington, D. C. Price 25c. Pamphlet. (Public Health Bulletin No. 221)

Mortality from respiratory diseases was found to be much greater among anthracite workers than among the general adult male population of the country. The data indicated that underground work in the absence of dust did not predispose to fatal attacks of respiratory disease.

SILICOSIS AS AFFECTING MINING WORKMEN AND OPERATIONS. By D. Harrington. Published by the U. S. Bureau of Mines, Washington, D. C., 1936. Free. (I.C. 6867)

The author says " 'Stop the Dust' should be not only the slogan but also one of the major health and safety efforts of mining employers and employees, including those working in all kinds of dry mines. Ventilation is one of the most effective alleviating agencies, and the use of water is a close second."

Mines and Mining

COAL MINE EXPLOSIONS AND FIRES IN THE U. S. DURING THE FISCAL YEAR ENDED JUNE 30, 1935. By D. Harrington and W. J. Fene. Published by U. S. Bureau of Mines, Washington, D. C., 1936. Free. (I.C. 6870)

In the 20-year period preceding 1929, mine explosions and fires took an average toll of about 285 lives annually in the U. S. Since then the number of fatalities from these causes has been reduced to an average of 128. The fiscal year 1934 established an all-time low record—only 34 fatalities from explosions and fires compared with 65 in 1935.

Explosives

HOW TO USE PERMISSIBLE EXPLOSIVES PROPERLY. By D. Harrington and S. P. Howell. Published by U. S. Bureau of Mines, Washington, D. C., 1936. Free. (I.C. 6871)

Ethyl Gasoline

AN APPRAISAL OF THE LEAD HAZARDS ASSOCIATED WITH THE DISTRIBUTION AND USE OF GASOLINE CONTAINING TETRAETHYL LEAD. II: THE OCCUPATIONAL LEAD EXPOSURE OF FILLING STATION ATTENDANTS AND GARAGE MECHANICS. By Robert A. Kehoe, Frederick Thammann, and Jacob Cholak. In *Journal of Industrial Hygiene and Toxicology*, January, 1936, p. 42-68.

Among the conclusions reached in the present study is that the lead exposure associated with the handling and dispensing of gasoline containing tetraethyl lead at service stations of the prevailing type in the U. S. is negligible.

AN INVESTIGATION OF THE MORBID PROPERTIES OF ETHYL GASOLINE. By Dr. Gerhard Lind. In *Journal of Industrial Hygiene and Toxicology*, January, 1936, p. 37-41.

The result reported may be considered as an expression that the use of tetraethyl lead as an admixture with motor gasoline in quantities hitherto used presents no danger of lead poisoning.

Foremen

BIBLIOGRAPHY ON FOREMAN IMPROVEMENT. Revised, 1935. *Vocational Education Bulletin No. 128 of the Office of Education.* For sale by the Superintendent of Documents, Washington, D. C. Price 5c. (Pamphlet)

A selected and annotated list of references, including books, pamphlets, and magazine articles.

PERIODICAL REFERENCES

Accident Statistics

TREND IN FREQUENCY AND SEVERITY OF COMPENSATED INJURIES TO LEGS AND FEET. In *New York State Department of Labor, Industrial Bulletin*, February, 1936, p. 43-45.

Compensated injuries to legs and feet are discussed in this study, which is the fourth in a series of studies of trends in frequency and severity of different kinds of injuries. Eye injuries; injuries to head, neck and face with the exclusion of eyes; and injuries to arms, hands and

fingers were treated in preceding issues of the *Industrial Bulletin*.

Dusts

AN ELECTROSTATIC DUST COUNT SAMPLER. By E. C. Barnes and G. W. Penney. In *Journal of Industrial Hygiene and Toxicology*, March, 1936, p. 167-172.

An electrostatic dust count sampler and its portable power supply are described in detail.

Fire Protection

CROSBY-FISKE-FOSTER HANDBOOK OF FIRE PROTECTION. EIGHTH ED., 1935. Robert S. Moulton, general editor. Published by the National Fire Protection Association, 60 Batterymarch St., Boston, Mass., 1936. Price \$4.50. (Book)

This is a complete revision of the seventh edition, published in 1924, with detailed treatment of the numerous new developments in the fire protection field during the past eleven years. Like the preceding editions, beginning with the first book published in 1896, the present edition aims to provide in compact form the essential information on fire prevention and fire protection that time has crystallized into good practice.

Welding

THE TOXICOLOGY OF OXY-ACETYLENE WELDING. By Z. T. Wirtschafter and E. D. Schwartz. In *Journal of Industrial Hygiene and Toxicology*, March, 1936, p. 158-162.

Asked and Answered

SAFE SOLVENTS

QUESTION: We use benzol or trichlorethylene as solvents to dissolve tar, paint and grease in felt, the method being a spotting process. Both of the above solvents involve a fire and health hazard. Can you advise us of any absolutely safe solvent for the above purposes that we can use instead of the solvents we are now using?

ANSWER: Some dry cleaning establishments use carbon tetrachloride for spotting operations similar to those you mention. Others use a

(Please turn to page 66)

NATIONAL SAFETY NEWS

INDUSTRIAL HEALTH

A Non-Technical Symposium for Physicians and Laymen

What's in Your First Aid Kits?

By MURRAY D. SMITH

Davis Emergency Equipment Company

FIRST aid is the immediate temporary treatment given in case of accident or sudden illness *before* the services of a physician can be secured. It has definite limitations which the trained first aider always respects.

There is obviously a difference between first aid as administered in a dispensary by a trained attendant, such as a nurse, and that administered on the job by a fellow worker or foreman with a limited practical knowledge of the subject. Contrast the requirements of a public utility truck crew or the few men in a petroleum company's retail service station with those of the nurse working with tables, chairs, hot and cold running water available, and you will realize that an entirely different type of first-aid dressing and container is necessary for the plant dispensary than for men in the field.

Curiously enough, the industry in which the idea of the unit system of individual dressings originated has not made extensive use of it. It is interesting to recall how and why the unit system was devised.

In the early 1920's a young engineer just out of school was employed as an erection engineer by a construction company. He worked on several of the steel buildings which were the beginning of New York's present uptown skyline. Twenty years ago safety work had not reached its present state of development and the accident rate among steel workers was high. Not only were fatalities numerous, but also, judging by today's standards, the number of non-fatal injuries was excessive. Fractures, burns, deep wounds and other serious injuries

required treatment on the spot.

The engineer of this story was always the first aid man wherever he was employed. After countless rolls of gauze had unrolled and become contaminated before they could be applied as compresses, and numerous bottles of iodine had been dropped on the floor and broken, he became more and more impressed with the inadequacy of the surgical dressing type of first aid kit for first aid under conditions found on the job.

So he devoted a great deal of thought to the subject and his wife used up a great deal of cotton and spent much time at the sewing machine in developing a system patterned after the army first-aid kit. It consisted of individual dressings prepared for use in such a way that there would be no contamination, no waste and no half-used materials to be returned to the box in a condition which would invite infection if they were used again. When this type of dressing was placed on the market some fifteen years ago it was not the building industry but the public utility companies which gave it an enthusiastic welcome.

Studying Industry's Needs

In its original form the unit system was adequate to take care of most of the injuries usually encountered. Manufacturers of first aid supplies have since studied the needs of the various industries and have developed products especially designed for those operations where the facilities of a well equipped first aid room are not always available immediately.

The exhibits which have been held at the annual safety congresses and at regional conferences have shown the great

variety of first-aid equipment now on the market. Kits range from the pocket variety with a few simple supplies to the larger boxes to be carried on trucks. Their contents can be planned to suit the requirements of the job and the preferences of the company in selecting a first aid antiseptic or a burn dressing.

Many companies call for special items, such as washes for creosote burns and effervescent phosphate of soda. In some parts of the country men working in isolated locations carry the facilities for treating snake bite. In fact, any recognized first aid remedy which can be entrusted to the layman is now obtainable from the manufacturers and distributors of first aid equipment. Any assortment of dressings and remedies can be secured in a container designed to meet the purchaser's requirements. Heavy duty, weatherproof and waterproof boxes are supplied where the conditions on the job demand them. Many companies order kits in large quantities with their own name and emblem lithographed on the boxes. Instruction sheets are furnished with many kits.

The unit system is now practically the only type used by the public utility industry. The petroleum industry, a leader in both safety and first aid work, has found it ideal for use on trucks, barges, service stations, bulk plants, compressor stations, and even at terminals and refineries.

Among the most important purposes of first aid are the reduction of suffering and lost time to the victim and the reduction of compensation and medical costs to the company. The unit system of individual dressings aids in this objective by providing equipment that can be handled easily and effectively by even untrained personnel.

First Aid Stirs Plant-Wide Interest

Sixty-two employees of the American Rolling Mill Company, Middletown, Ohio, completed a first aid training course given by the Bureau of Mines last fall, and in turn they have given first aid training to 3,176 employees of the company since October 7, 1935.

Abstract of a paper read at the Seventh Annual Greater New York Safety Conference.

APRIL, 1936

PHENOL (Carbolic Acid)

Industrial Data Sheet D-Chem. 3

A. Problem

1. What are the hazards of phenol and what precautions are necessary in its use?

B. Hazards

2. The principal hazards are the possibilities of burns and of poisoning by contact with or by swallowing the chemical in solid or liquid form.

C. Discussion

3. Phenol when pure is a white crystalline mass with a creosote odor. It is also known as carbolic acid, phenyl hydrate and hydroxy-benzene. It is a product of coal tar distillation and is also produced synthetically by fusing sodium benzene sulphonate with caustic soda and then neutralizing with hydrochloric acid. It is soluble in all proportions in alcohol, ether, glacial acetic acid and glycerine. It liquefies on the addition of 14 to 15 per cent of water and thus becomes the No. 4 carbolic acid of commerce. Phenol in a solid state burns with difficulty, giving off a heavy smoke. In water solution it involves no fire hazard. It melts at about 40 degrees Centigrade (104 degrees Fahrenheit). Phenol is used in medicine and surgery as an antiseptic and disinfectant; in the manufacture of picric acid, dyes and other pharmaceutical products; and with formaldehyde in many condensation products such as bakelite, condensite and neradol. Mixed with other materials, it is sometimes used for paint and varnish removers. Many cases of accidental poisoning occur annually through the swallowing by mistake of phenol for other drugs or alcoholic fluids, and its improper use by uninformed persons as an antiseptic for cuts and other wounds.

Symptoms

4. Phenol is readily absorbed by the body through the mucous membranes, abraded skin, wounds, or even through the intact skin. When absorbed through the skin, the symptoms appear rapidly. In severe cases there is great muscular weakness, then loss of consciousness and death from respiratory failure, sometimes preceded by muscular twitchings or convulsions. Less severe poisoning causes headache, dizziness, some excitement and mild delirium, clammy sweat, irregular respiration and weak pulse.

5. Phenol in contact with the skin causes local tingling and numbness or even complete loss of feeling. The skin becomes wrinkled and soft with the color changing from a white stain to brown. The effect is not a direct corrosive action but rather a local gangrene. Bodily contact with a dilute solution may result in severe eczema.

6. When phenol is taken by the mouth in a more or less concentrated form, it causes severe burns of the mouth, throat and stomach. Vomiting may or may not occur afterward, but the victim may become pale, covered with a cold sweat and may collapse with fatal results unless medical treatment is administered at once.

First Aid

7. When phenol comes in contact with the skin, it should at once be washed off with grain alcohol, oil dressings should be applied to prevent penetration of the phenol into the tissues, and a physician should be secured without delay.

8. If phenol solution should be splashed into the eye, the eye should be flushed immediately with plenty of clean fresh

water and the services of a physician secured without delay.

9. If phenol has been swallowed, a diluted solution of mustard water should be given as an emetic, and the services of a physician promptly obtained. Pending arrival of the physician, milk, flaxseed tea or white of egg may be given to allay inflammation, and the patient should be kept warm. No oils or alcohol should be given internally except under the physician's direction.

Precautions

10. In processes where the hands or other parts of the body may be exposed to splashes and spills of phenol, employees should be provided with and required to wear rubber frame goggles, rubber aprons, boots and gloves. (See Note X)

11. As a precaution against possible absorption through the skin, clothes which have been wet with liquid phenol should be changed for dry garments at once.

12. All jugs, bottles, carboys or other receptacles in which phenol is stored or kept should be kept tightly closed and labelled "PHENOL (CARBOLIC ACID) — POISON", with skull and cross-bones.

13. Food should not be kept nor eaten near phenol nor in the workroom where it is used.

14. A supply of grain alcohol should be kept near at hand in the workroom so that in case phenol is splashed or spilled on a worker, it may be washed off immediately.

NOTE X: For detailed information on goggles, aprons, boots and gloves, see Safe Practices Pamphlet No. 14, "Goggles," and No. 16, "Protective Clothing."

National Safety Council, Inc.

20 North Wacker Drive

Chicago, Illinois

After a thorough investigation of the evidence for and against at the close of the last period of acceptance, the Council on Pharmacy and Chemistry of the American Medical Association has again reaccepted (1935)

MERCUROCHROME, H. W. & D.

(Dibrom-oxymercuri-fluorescein-sodium)



PROMPT care is important in preventing infected wounds. Even minor wounds may become infected when antiseptic treatment is delayed.

Mercurochrome, H. W. & D.
(Dibrom-oxymercuri-fluorescein-sodium)

is non-irritating and exerts bactericidal and bacteriostatic action in wounds. Industrial injuries are reported more promptly when Mercurochrome is the clinic antiseptic, because treatment is not painful. Be prepared with Mercurochrome for the first aid care of all minor wounds. In more serious cases, a physician should be consulted.

HYNSON, WESTCOTT & DUNNING, INC.

THE ACCIDENT BAROMETER

Prepared by the Statistical Bureau, National Safety Council

ACCIDENTAL DEATHS totaled approximately 7,750 in January, or 0.7 per cent more than occurred in January 1935. The advance may be wholly attributed to the increase of 6.7 per cent in motor vehicle fatalities, for home deaths showed practically no change and the other public fatalities decreased sharply. The increase in occupational deaths did not exceed 100, according to present reports, or only half as much as the decrease in other public fatalities. From December to January the accident death total took a seasonal drop of approximately 1,350, due largely to fewer motor vehicle fatalities.

OCCUPATIONAL ACCIDENTAL DEATHS for January are estimated at 1,300, an increase of 100 over January 1935. There was some increase in employment during the year, but at present no definite statement can be made as to how much this increase offsets the advance in fatalities. Inter-plant contests of community safety councils show an unusual drop in accidents during January, compared with the same month last year. The frequency rate per million man-hours fell from 15.40 to 9.76, or nearly 37 per cent, while the severity rate per thousand man-hours decreased from 1.16 to 0.39, or 66 per cent. There was also a decline in the frequency rate recorded for the six sectional contests conducted by the National Safety Council, from 11.01 to 10.14, or 8 per cent. Deaths reported during February to Industrial Commissions in 20 states totaled 550. This is an advance of 9 per cent over the number reported in February, 1935.

COAL MINE ACCIDENTS occurring in January resulted in 109 deaths, according to reports received by the U. S. Bureau of Mines. Accident reports for January, 1935, covered 122 deaths. However, part of this improvement will be absorbed by fatalities from January accidents occurring subsequent to receipt

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

All Accidental Deaths

January

1936	7,750
1935	7,700
1934	7,866

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

of the reports, according to the Bureau. Deaths from falls of roof and coal declined from 63 to 47, while haulage accident fatalities increased from 11 to 31.

STEAM RAILROAD ACCIDENT fatalities in the first eleven months of 1935 numbered 4,668, compared with 4,491 for the same period of 1934, an increase of 3.9 per cent. Non-fatal injuries, on the other hand, decreased from 26,024 to 25,360, or 2.6 per cent. During the same months traffic, as measured by locomotive miles, increased 1.4 per cent. The largest advance in deaths, amounting to 6.0 per cent, was for highway grade crossing accidents. These fatalities numbered 1,460 in the eleven months. Deaths of employees on duty totaled 386, compared with 370 in the same period of 1934. Deaths of passengers on trains decreased from 27 to 18, and of travelers not on trains from 8 to 7.

MOTOR VEHICLE DEATHS for January are estimated at 2,630, an increase over January 1935 of 6.7 per cent. This advance appears to be confined to rural areas, for city reports now available (covering more than 41,000,000 population) show a decrease in deaths of 6.3 per cent. There is no information at present on the amount of gasoline consumed in January, but in December consumption was 7.2 per cent above December, 1934. If January had the same increase in consumption as December, the death rate based on gasoline consumed would show practically no change from January, 1935. It is interesting to note that although the January death total is high, it still represents a drop of about 1,000 deaths from December. This reduction is seasonal in nature.

COMMERCIAL VEHICLE FLEETS participating in the National Fleet Safety Contest had an average of 3.37 accidents per 100,000 vehicle miles during Janu-

ary, a slight increase over the January 1935 average of 3.32. This advance was due to a rise in the truck fleet rate from 4.71 to 4.91. Both passenger cars and buses recorded small decreases. However, a comparison of January rates with the averages from July to January shows increases in the rates for each type of fleet. The bus rate went up from 1.15 to 1.90; the passenger car rate, from 1.49 to 2.45; and the truck rate, from 3.24 to 4.91. According to records of past years, these advances were largely due to more hazardous driving conditions which the drivers were compelled to meet. When the July-January rates are compared with those of a year ago, it is noted that this year's rates are still 6 per cent lower than last year's despite the January increase.

PUBLIC (NOT MOTOR VEHICLE) deaths occurring in January are estimated at 900 compared with 1,100 for January 1935, a drop of 18 per cent. According to available information, there were considerable decreases in deaths from railroad accidents, not involving motor vehicles, and from miscellaneous other public accidents. On the other hand, deaths from falls occurred with about the same frequency as in January, 1935. The decrease appears to be shared by all age groups.

HOME ACCIDENT FATALITIES in January totaled approximately 3,100, or the same number as estimated for January, 1935. There were small decreases in deaths from falls and from burns, scalds and explosions. These were balanced by increases in asphyxiations and in miscellaneous unclassified home deaths. Decreases were recorded for persons in the age groups 25 to 64 and 65 and over, which were offset by small increases in the younger age groups.

Looking Ahead . . .

The total number of accidental deaths in April will probably be about the same as in March, but there will be changes for certain classes of accidents. Motor vehicle fatalities may increase by as much as 5 per cent. Drownings will increase nearly 200, in the absence of any unusual factors. Fatal burns usually show a drop of about the same amount at this time of year. Falls may decrease slightly if the month follows the normal trend, although the records of some earlier years show minor increases.

NATIONAL SAFETY NEWS

HEALING

that **CUTS THROUGH**
—THE LINE—
OF PRODUCTION

Rapid drops in accident curves of American Mutual workmen's compensation policyholders—such as the combined experience of a group-sample of 500 firms graphed next to this column—never result from chance. Four features of our safety engineering can benefit even such plants as yours, already geared to safety.

"PRODUCTION-SAFETY." Studying your plant, we see more than the high-spots of hazards and safeguards—our engineers trace the continuous red wound of danger all down the line of production. Then they work with you to replace it, as far as possible, with the green thread of safety.

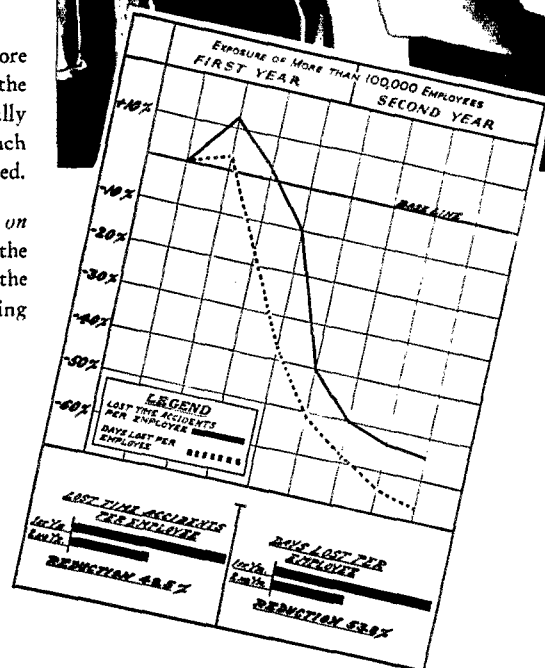
PLOTTING THE CURVE OF THE FUTURE. We are concerned more with your safety *future* than your accident *past*. But tracing back the *causes* of accidents is one way to find the clue to the future. Equally revealing are the habits and attitudes of workers themselves. From such evidence, the future can be predicted—an unhealthy trend can be changed.

SAFE MEN AT SAFE MACHINES. Full effectiveness of guards on machines depends on the understanding and cooperation of the men at the machines. Our engineers work with this in view, not by laying down the law from outside, but by sharing their diversified experience and helping from within.

COOPERATION DIVORCED FROM THE TIME CLOCK. Bound by no routine schedule fixed at the start of the year—our engineers give the amount of service that will be really effective in your particular situation.

"WE WORK TO MAKE ALL WORK SAFE"

The chart shows the accident frequency and severity experience of 500 firms (widely varied in industry and location) during two years' safety work with American Mutual. The two graphs below show number of accidents and days lost contrast to the first.



AMERICAN MUTUAL

Assets: \$23,809,545.32; Liabilities: \$19,424,978.69; Surplus to policyholders: \$4,384,566.63. As of December 31, 1935

NATIONAL SAFETY NEWS

ACCO

**THERE IS NO SAFER
"BY-WORD" WHEN
BUYING CHAIN**

Chain may look alike but there is a difference—a difference in link design, materials, method of manufacture and testing. All these affect the safety factor.

Acco is safe, honest, dependable chain. It is used throughout industry. It is made in all sizes, in a wide variety of patterns for practically every conceivable purpose for which chain is or can be used.

For instance, the H B Dredge Chain illustrated can be had from as small as $\frac{3}{8}$ inches up to a size that will withstand a breaking test of 348,000 pounds.

The double sling chain, also illustrated, is made in sizes to safely handle working loads of from 3,800 pounds to 94,000 at 45 degrees.

These are typical of the wide range in sizes and safe load working characteristics of all Acco Chain. When you buy, use the "by-word"—Acco.

AMERICAN CHAIN COMPANY, Inc.

Bridgeport, Connecticut

*World's Largest Manufacturer of
Welded and Weldless Chain*

**IN BUSINESS
FOR YOUR SAFETY**



**H. B.
DREDGE
CHAIN**

**TYPE D
SLING CHAIN**

AMERICAN *Welded* **CHAIN**



Round ANGER

Three Kinds of Profits Open to You

From American Mutual safety work, come marked lowerings of accident rates and insurance costs. Also, the prevention of uninsurable indirect accident costs (time lost, spoiled work, poor morale, etc.) means as you well know still greater savings to your firm.

From claim work, using modern medical science to restore injured men to their former usefulness, comes the saving of valued employees and the shortening of benefit payment periods.

Third is the opportunity to our policyholders to share in our savings. Twenty per cent or more of their insurance costs have been returned each year since 1887. Oldest of American casualty companies, our dividend record is sustained by highly selective underwriting and conservative New England management.



Workmen's Compensation, Automobile, Fidelity Bonds, Elevator, Burglary and other forms of Casualty Insurance written by American Mutual . . . Fire Insurance written by our associate, Allied American Mutual Fire Insurance Company.

AMERICAN MUTUAL
MAGAZINE



American Mutual Liability Insurance Co.,
Dept. 29, 142 Berkeley St., Boston, Mass.

Please send me the next 4 issues of the *American Mutual Magazine*, a mine of valuable information on how industrial accidents are prevented.

Name _____ Title _____
Company _____ St. and No. _____
City _____ State _____
Expiration date of your present policy, if you recall it: _____

LIABILITY INSURANCE COMPANY

BRANCHES IN 53 OF THE COUNTRY'S PRINCIPAL CITIES

APRIL, 1936

THE BULLETIN BOARD

A page for those who maintain the Show Windows of Safety

Conducted by STAN KERSHAW

A New Approach

BY POPULAR demand the National Safety Council now offers fleet members a new and unusual type of poster. This poster, No. 5747, is shown in miniature on page 43.

Heretofore many posters prepared for vehicle drivers have been urgent reminders of things familiar to most of them. Such posters will always be a necessity, because violations of well-known and understood safe practices cause many serious accidents. By sheer force of repetition these warnings and admonitions can give drivers that safety consciousness that will cause them automatically to make the right decision in emergencies, just as a person at a cigar counter invariably asks for a particularly well advertised brand of cigarette if there is any doubt in his mind as to which to buy.

But there are other effective ways of

QUALITY VS. QUANTITY

THE results obtained by safety posters depend not so much on how MANY are used, but on how WELL they are used.

Even though five million or more safety posters are used in the United States each year, it is safe to say that in the great war on accidents the poster is one of the most neglected weapons.

Safety posters of good design, prepared to meet practically every requirement, are available. But many a good poster, poorly used, is like a fine weapon poorly aimed. Neither fulfills its purpose.

A poster plastered on a wall with no thought as to advantageous location or accessibility for reading is at once handicapped.

People naturally want to be safe, but it is not natural for them to go out of their way to learn how.

Get full value out of your posters by placing them where they cannot escape attention. Emphasize them with good lighting. Set a good example for your employees and prove the old axiom that "Any job worth doing at all is worth doing well."

awakening safety consciousness and giving instruction with posters. This new one does it by describing an interesting highway accident problem and telling how it can be handled with safety when confronted under actual driving conditions.

Here is a poster that is suited to many different uses. It is excellent for bulletin board use if the boards are located where drivers will have the time to study the details of the problem. However, the most effective way of making it work is to make copies available on request, to distribute folded copies to individual drivers when they report for duty, or to mail them to the drivers' homes.

Some companies have inserted specially selected posters in loose-leaf binders and have placed several volumes thus prepared in waiting rooms where drivers can examine them at their leisure. Poster No. 5747 is particularly well adapted to this use.

Still another important use may be found in driver training schools. Here again copies distributed to individual drivers will facilitate study and discussion.

Be sure you make the most of this new kind of poster.

Try This on Your Men

HENRY J. ROESCH, Briggs Manufacturing Company, Detroit, tried this scheme to see whether men were reading safety posters, and how well they could remember the current posters.

As the men were standing in line at noon to buy sandwiches and coffee, he buttonholed a number of them at random and asked them this question:

"Can you tell me, without turning around to look, what picture the safety bulletin board has on it, what it is about, and what slogan appears with it?"

Only a few could recall the picture, and no one could recall the slogan.

See what reaction your men have when you try this on them. Perhaps your board needs dressing up. Perhaps you need added interest to draw the men's attention to the posters.

If your men from time to time, as you make this test, do not know what posters are on the board, you may take it as a signal to pep up the displays.

(Condensed from "Factory Management and Maintenance," Nov., 1935.)

Safety Sweepstakes Promote Caution

A safety campaign, based on the competition of a horse race, was used by the Briggs Manufacturing Company to create interest in safety. Miniature race tracks were placed in each of the five plants. Each plant was represented by a brilliantly colored horse.

A study was made of each division, and a fair handicap given for the type of work and working conditions.

The horses were lined up at the starting post the first day of the contest and moved forward one space every no-accident day in the division. (Five lost-time accidents in a single plant in one day would mean that the horse representing that plant had to stand still for five days.)

The boards used as race tracks were made of 18-gage steel and framed in wood. Nine hundred and sixty holes were drilled around the race track and behind them a sheet of $\frac{1}{4}$ inch cork was fastened. The horses were die-stamped, painted in three colors, and mounted on hinged back pins stuck through the holes into the cork background. The overall size of the boards was approximately 5 by 8 feet.

(Condensed from "Factory Management and Maintenance," Nov., 1935.)

If a home-made poster gives an accurate account of an accident, either by pictures or by words, most of the workmen will absorb the lesson, and one or more of them will be likely to discover a method by which the accident could have been avoided, and will point it out to his companions.

Safety work is more than advertising, but advertising and publicity is essential to the success of any campaign to reduce accidents.

NATIONAL SAFETY NEWS



SPRINGTIME
IS CLEAN UP TIME

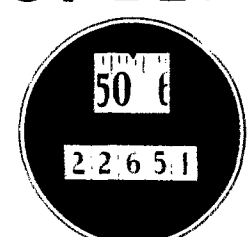
Congratulations
to the man who
always keeps his
workplace clean
and orderly

NATIONAL SAFETY COUNCIL

**LITTLE
MISTAKES
CAN
MAKE
BIG
ACCIDENTS**

NATIONAL SAFETY COUNCIL

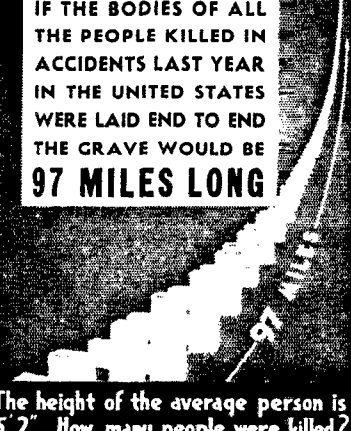
The **HIGHER** *The*
SPEED



The **WORSE** *The*
ACCIDENT

NATIONAL SAFETY COUNCIL

IF THE BODIES OF ALL
THE PEOPLE KILLED IN
ACCIDENTS LAST YEAR
IN THE UNITED STATES
WERE LAID END TO END
THE GRAVE WOULD BE
97 MILES LONG



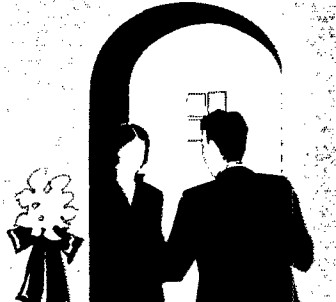
The height of the average person is
5' 2". How many people were killed?

NATIONAL SAFETY COUNCIL

every time you
take the wheel
of your car give
a thought to
your part in the
great campaign
to
stop accidents

**LET'S REDUCE TRAFFIC
ACCIDENTS 35% by the
end of 1940 THEREBY
SAVING 38,000 LIVES**

NATIONAL SAFETY COUNCIL



I'M SORRY
will never restore
the victim of
reckless driving

NATIONAL SAFETY COUNCIL

**BE
ALERT!**

**DON'T
GET HURT**

NATIONAL SAFETY COUNCIL

a
MAN
is no
SAFER
than his most
CARELESS
ACT

NATIONAL SAFETY COUNCIL

*Don't,
Run.*



WALK
It's Safer

NATIONAL SAFETY COUNCIL

YOUR SAFETY

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

NATIONAL SAFETY COUNCIL

"and please keep our daddy safe"



NATIONAL SAFETY COUNCIL

**A WOUND
NEGLECTED
MAY BE
A WOUND
INFECTED**



NATIONAL SAFETY COUNCIL

Don't JUMP ON A
MOVING ELEVATOR!



Ring The Bell And
Wait Until It Stops
At Your Floor !!

NATIONAL SAFETY COUNCIL

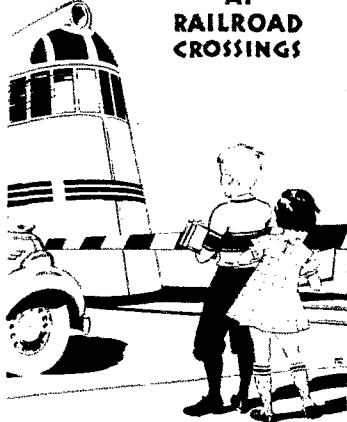
*The GOLDEN RULE
of Traffic*

**DRIVE AS
YOU WOULD
HAVE OTHERS
DRIVE**



NATIONAL SAFETY COUNCIL

**BE CAREFUL
AT
RAILROAD
CROSSINGS**



NATIONAL SAFETY COUNCIL

DEATH



THIS MAN

**NEVER UNDERCUT
THE BANK**

NATIONAL SAFETY COUNCIL

Know the location of
the Fire
Extinguishers
in your department

and

find
out
how
to
use
them



NATIONAL SAFETY COUNCIL

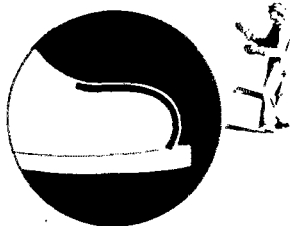
**APRIL SHOWERS
MAY Bring Flowers**



Take Extra Care
of Your Health
in WET WEATHER

NATIONAL SAFETY COUNCIL

WHAT IS A SAFETY SHOE ?



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

IT PAYS TO WEAR THEM

NATIONAL SAFETY COUNCIL

IF YOU SUFFER FROM SICKNESS AND OTHER AILMENTS GET GOOD MEDICAL ADVICE

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

NATIONAL SAFETY COUNCIL



DO YOU WEAR The **SAFE** CLOTHING your job DEMANDS?

CONSIDER THESE

- Work shirt - long sleeves - buttoned collar
- Work trousers
- Goggles - asbestos hood or face mask
- Leather or asbestos gloves
- Broad brimmed hat
- Asbestos or leather leggings and foot protectors
- Foundry shoes

NATIONAL SAFETY COUNCIL

GLOVES

ARE FINE PROTECTION for YOUR HANDS EXCEPT WHEN WORKING AT MACHINES

This one caught in a machine



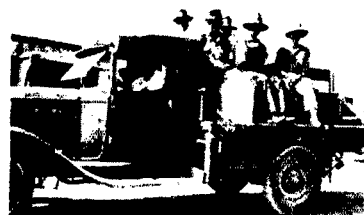
NATIONAL SAFETY COUNCIL



How Much Would You Take For Your **RIGHT HAND**

NATIONAL SAFETY COUNCIL

THE SAFE WAY



EVERY MAN SEATED NO LEGS HANGING OVER EDGE OF TRUCK TO BE CRUSHED

NATIONAL SAFETY COUNCIL

In the Hospital

ARE YOU GOING TO WONDER

Why DID I TAKE THAT CHANCE?

NATIONAL SAFETY COUNCIL

Applying STOPPERS



WELL MADE DOUBLE STOPPERS SELDOM SLIP

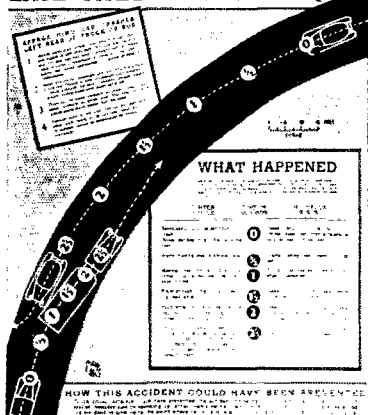
- STRADDLING A LINE WHILE APPLYING STOPPER

NATIONAL SAFETY COUNCIL



WELL MADE SINGLE STOPPER RARELY SLIPS

WOULD YOU BE TRAPPED LIKE THESE DRIVERS ?



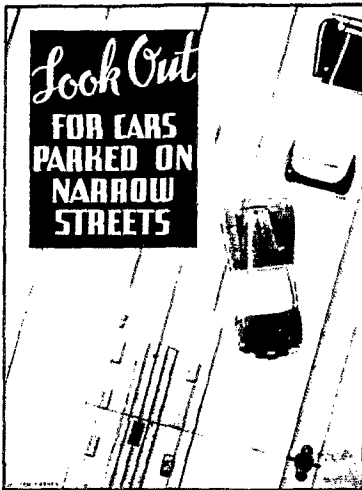
NATIONAL SAFETY COUNCIL

The best immediate
treatment for—
CHEMICAL
Wash **BURNS**
away the chemical
with lots of—
Water



NATIONAL SAFETY COUNCIL

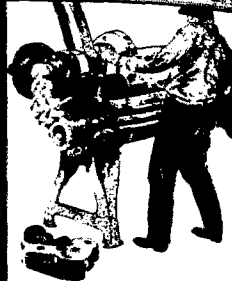
**Look Out
FOR CARS
PARKED ON
NARROW
STREETS**



NATIONAL SAFETY COUNCIL

Procrastinator

One who
puts off
until
~~tomorrow~~
the things
he should
do
now



for example:

- **PUTTING GUARDS BACK in PLACE**

NATIONAL SAFETY COUNCIL

**The BIGGER you are
the HARDER YOU
FALL**



WATCH OUT FOR TRIPPERS!

NATIONAL SAFETY COUNCIL



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

NATIONAL SAFETY COUNCIL

WE ARE INTERESTED IN YOUR SAFETY AFTER THE WHISTLE BLOWS

Because —

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

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

86% of all disabling accidents occur outside of industry.



NATIONAL AGENCY COUNCIL

I - ANYONE WHO'S EVER BEEN BORN
FROM A WOMAN IS A WOMAN

K - E - EVERYONE WHO'S EVER BEEN BORN
FROM A WOMAN IS A WOMAN

W - H - EVERYONE WHO'S EVER BEEN BORN
FROM A WOMAN IS A WOMAN

S - E - EVERYONE WHO'S EVER BEEN BORN
FROM A WOMAN IS A WOMAN

NATIONAL SAFETY COUNCIL

The collage features several newspaper snippets:

- Top Left:** "Killed of 4 Hours", "Frosted Dying from", "Injuries in Crash"
- Top Center:** "Falls in One Fall", "Down of Interstate", "Street Kill"
- Top Right:** "Woman Falls", "From New York"
- Middle Left:** "Woman of Death", "In Car Crash", "Fall to Death in Home"
- Middle Right:** "Woman Killed", "Fall to Death"
- Bottom Left:** "Girl Killed While", "in Car Crash"
- Bottom Center:** "Girl Killed in", "Triple Crash"
- Bottom Right:** "Girl Killed in", "Triple Crash"

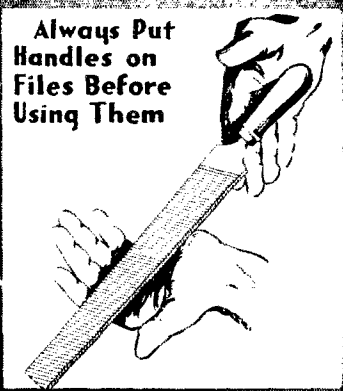
Overlaid Text:

AFTER ALL!
Who Pays for ACCIDENTS?

NATIONAL SAFETY COUNCIL

ONE OF THE THINGS
GOOD NIGHTS DO

Always Put Handles on Files Before Using Them



NATIONAL SAFETY COUNCIL

ONE FELLOW
WE COULD DO
WITHOUT



The
PRACTICAL JOKER

He gets a great kick out of the tricks he pulls on the other fellow. His pranks often result in serious injury. - A rattlesnake gives you a warning - but not this fellow..... Stay clear of him.

NATIONAL SAFETY COUNCIL

TEST for GAS

before
firing
shot



NATIONAL SAFETY COUNCIL



**NEVER ROLL
PIPE TOWARD
YOUR FEET**

NATIONAL SAFETY COUNCIL

**EVERY DAY BEFORE
STARTING OUT**

CHECK
these safety items

- . Stop light
- . Windshield Wipers
- . Horn
- . Lights
- . Equipment
- . Brakes
- . Tires



NATIONAL SAFETY COUNCIL

WOULD YOU

*trade one of
your good
eyes for*

ONE of THESE



NATIONAL SAFETY COUNCIL

It MAY INTEREST
YOU TO KNOW

that most of the injuries in
machine shops result from-

- MISHANDLING MATERIALS
- FLYING OBJECTS
- MISUSE OF HAND TOOLS
- STRIKING AGAINST OBJECTS
- FALLS
- FALLING OBJECTS

**Let this list remind you
when to be extra cautious**

NATIONAL SAFETY COUNCIL

*As inch away from
An Accident*



*Then an
Accident*

NATIONAL SAFETY COUNCIL

WHEN PRIZE-FIGHTERS
LOWER THEIR GUARDS

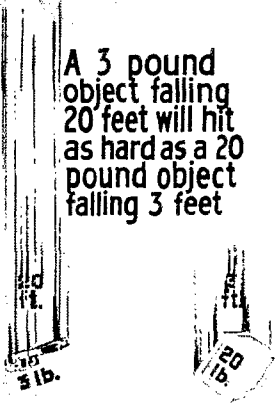
THEY USUALLY GET SOCKED



WHEN YOU FAIL
TO USE GUARDS ON
MACHINES YOU'RE
LIABLE TO GO OUT
FOR A LONG COUNT

NATIONAL SAFETY COUNCIL

A 3 pound
object falling
20 feet will hit
as hard as a 20
pound object
falling 3 feet

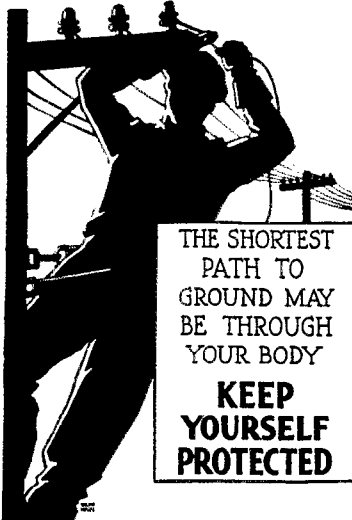


**DON'T LEAVE OBJECTS WHERE THEY
CAN FALL AND INJURE SOMEONE**

NATIONAL SAFETY COUNCIL

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

NATIONAL SAFETY COUNCIL



**THE SHORTEST
PATH TO
GROUND MAY
BE THROUGH
YOUR BODY
KEEP
YOURSELF
PROTECTED**

NATIONAL SAFETY COUNCIL

Every Good

**SAFETY
RECORD**

is a

CHALLENGE

**FOR A
BETTER ONE**

NATIONAL SAFETY COUNCIL



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

NATIONAL SAFETY COUNCIL

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

Gatemore Bill

NATIONAL SAFETY COUNCIL

**Some Occupational
Accident Facts**



OCCUPATIONAL ACCIDENTS COST \$620,000,000 LAST YEAR/



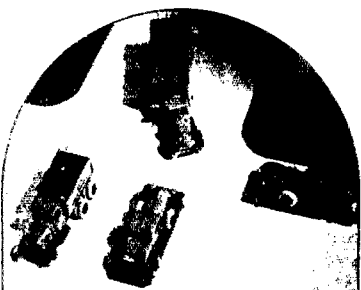
ONE OUT OF
EVERY 6 CUTS
AND LACERATIONS
BECAME INFECTED/

IF YOU SUFFER A DISABLING
(lost time) INJURY IN AN OCCUPATIONAL ACCIDENT

THERE'S ONE CHANCE IN 88 YOU'LL BE KILLED
ONE CHANCE IN 1800 YOU'LL BE COMPLETELY DISABLED
THE REST OF YOUR LIFE
ONE CHANCE IN 23 YOU'LL BE PARTIALLY DISABLED THE
REST OF YOUR LIFE

WHY TAKE A CHANCE?

NATIONAL SAFETY COUNCIL



*When you
cut corners
you're in the
other fellows
right-o-way!*

HE MAY TAKE IT!

NATIONAL SAFETY COUNCIL

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

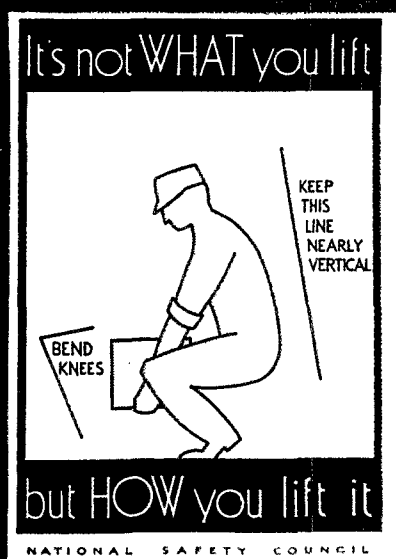
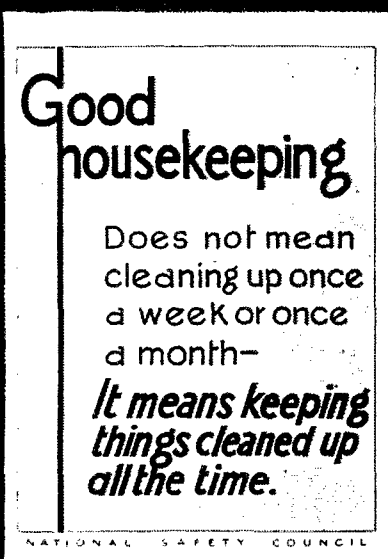
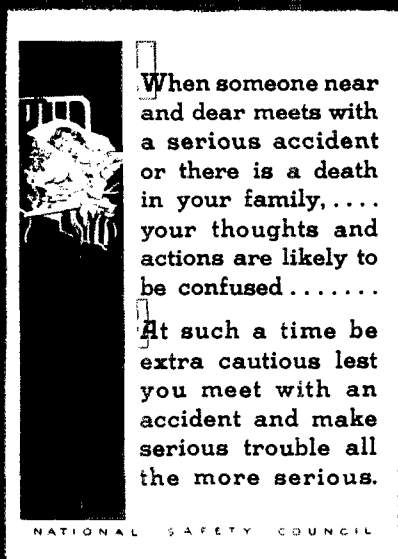
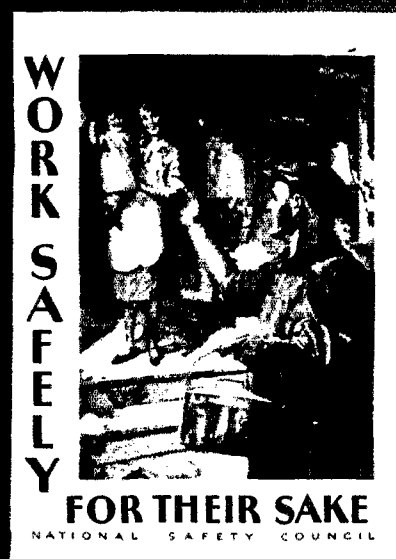
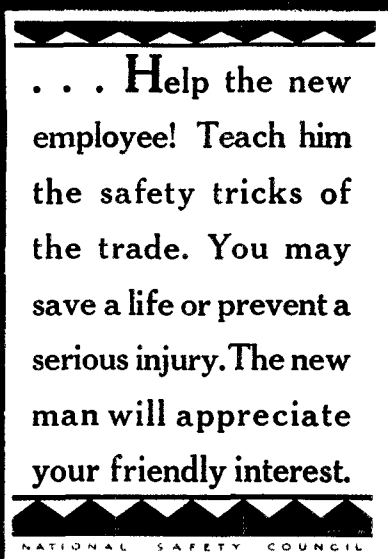
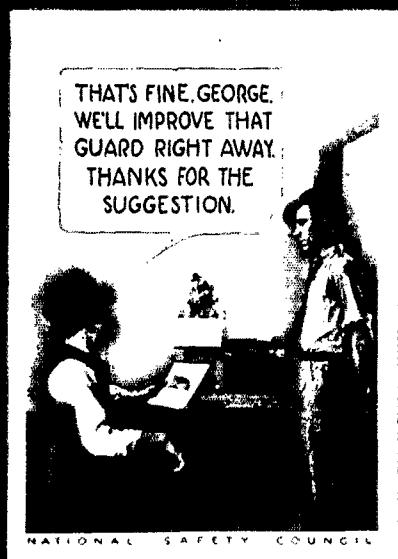
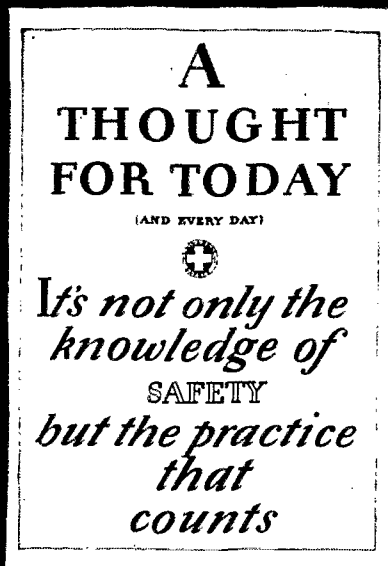
**REMEMBER
SAFETY**

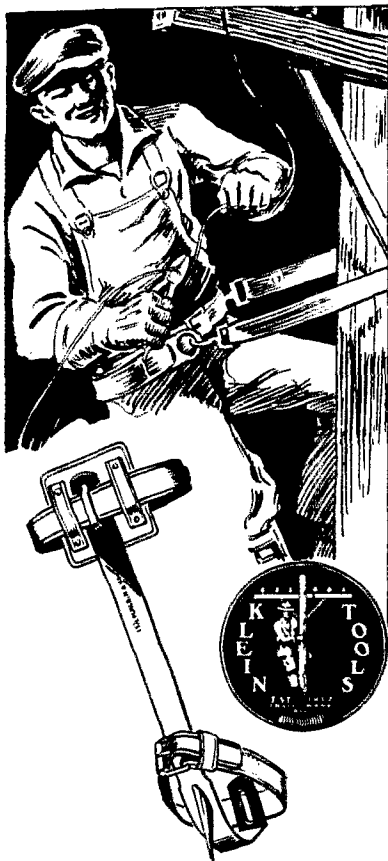
NATIONAL SAFETY COUNCIL

**LOOK OVER THE GROUND
BEFORE ALIGHTING**



NATIONAL SAFETY COUNCIL





SAFETY

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.

Distributed through jobbers

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
Established 1857 Chicago, Ill. USA
3200 Belmont Avenue, Chicago, Illinois

Welding Wisdom

(Continued from page 18)

pressure required at the blowpipe; and second, to maintain the working pressure constant during operation of the equipment. By means of an adjusting screw, this working pressure may be set at any desired value within the range of the regulator capacity. Once set, the regulating mechanism will maintain this pressure automatically.

It should be remembered that regulators must be handled with a reasonable amount of care if they are to operate continuously without trouble. Regulators should be disconnected from the cylinder valves when moving cylinders that are not mounted on portable trucks.

Do not use regulators that are not in proper operating condition. If a regulator creeps, that is, if the pressure builds up on the working pressure gauge after the blow pipe valves are closed, the regulator should be repaired at once. It is a good plan to have the regulators inspected at regular intervals by a competent operator. In making replacements, use only standard parts supplied by the manufacturer. Major repairs should be made by the manufacturer.

Connecting Apparatus

Be sure there is no oil or grease on hands or gloves. Before attaching a regulator to the cylinder, the cylinder valve should be opened slightly for an instant and then closed. This will blow out any dust and dirt that may have accumulated and that might otherwise enter the regulator. Do not crack acetylene valves in the presence of a flame or other source of ignition. After tightening the regulator union nut, make certain that the pressure-adjusting screw is released before opening the cylinder valve. The pressure-adjusting screw is released by turning it counter-clockwise (to the left) until it is loose. The cylinder valve should be opened only slightly at first, so that the high-pressure gauge hand moves up slowly. If opened quickly, the sudden rush of high-pressure gas might strain the high-pressure gauge mechanism. After the high-pressure gauge hand has stopped moving, open the oxygen cylinder valve as far as it will go; open acetylene cylinder valves one and one-half turns only.

Connect standard oxygen and acetylene hose to the connections on the respective regulators and to the corresponding connections on the blowpipe. Select the proper welding head or cutting nozzle (according to the chart furnished by the apparatus manufacturer) and

screw it *carefully and tightly* into the blowpipe.

Open the blowpipe oxygen valve only. Adjust the oxygen regulator until the low-pressure gauge indicates the proper pressure passing through the head or nozzle. Then close the blowpipe oxygen valve.

The exact procedure for adjusting the acetylene pressure for lighting the blowpipe and adjusting the flame varies with the type of blowpipe and the source of acetylene. For this reason, the blowpipe manufacturer's directions should always be followed.

To light the welding blowpipe, open the blowpipe oxygen valve one-half turn, open the acetylene valve wide and light the mixture at the tip with a lighter.

To extinguish the blowpipe flame when the job is completed, first close the blowpipe acetylene valve and then the oxygen valve. Remember, acetylene will burn, oxygen does not. If work is stopped for a long period (overnight or during lunch hour), close the cylinder valves and then release all gas pressure from the regulators by opening the blowpipe valves momentarily. Close the blowpipe valves and release the pressure-adjusting screws on the regulators.

General Working Conditions

So far as the relation of the welding and cutting process to its surroundings is concerned, the principal facts to remember are that blowpipes give open flames and that in use sparks may be scattered about unnoticed by the operator.

This means that wherever possible, welding and cutting should be done in fireproof quarters. Floors should be of concrete or some fire-resisting material. Many foundries and shops have simply a dirt floor.

Where welding or cutting has to be performed in establishments having wooden floors, it is advisable to see that no unprotected combustible material is stored on the floor below, directly under the place where the work is being done. Better still, the floor should be covered with metal or other suitable non-combustible material wherever sparks or hot metal are likely to fall. In any case, all readily combustible materials should be removed from the vicinity. If the building is equipped with automatic sprinklers, the person in authority should not permit any work to be done until he has made certain that the sprinklers have not been disconnected for repair or alteration.

Because of the possible presence of flammable gases, vapor or dust, rigid restrictions are enforced against the use of any open flame in certain parts of some plants, such as gas plants, petroleum refineries and plants spraying lacquers or similar materials, and in mines known to be gaseous. Welding or cutting blowpipes should never be used in these locations unless the responsible official in charge has personally inspected the conditions and has issued instructions to proceed with the work.

Commercial Drivers' School Thrives

WHY is Milwaukee, Wisconsin's chief city, consistently bettering its already enviable record in public safety?

Part of the answer is that Milwaukee is applying the three "E's" of traffic accident prevention — Engineering, Enforcement and Education. The rest of the answer is that the work is being done with exceptional thoroughness, determination and continuity.

One example of the success won by this continuity or "follow through" is the annual motor drivers' school sponsored by the Milwaukee Safety Commission. The school is now in its tenth year. Each year, under the vigorous care of the Commission, the attendance has grown, and last year it reached a figure of 3,700. This year, on the basis of advance registration, the average attendance will be in excess of 4,500.

The school is chiefly for commercial drivers, although the public may attend. About a month in advance of the opening date announcements were sent to industrial enterprises throughout Milwaukee, and within three days a flood of entries was received, indicating a capacity audience.

The motor drivers' school opened in the auditorium of the Milwaukee Vocational School March 19, with Chauncey Yockey, of the Milwaukee Fire and Police Commission, speaking on "Cooperation." At the second conference, March 26, George Opp, of the Detroit Edison Company, addressed the group on "Accidents—Causes and Remedies." A. W. Koehler, of the National Conference on Street and Highway Safety, Washington, D. C., will address the third conference, April 2, on "Motor Driver vs. Pedestrian." The school will come to a close on the evening of April 9, when Clifford Davis, Vice-Mayor of Memphis, Tenn., speaks on "Speed—A Menace to Safety."

Persons attending three or more sessions will be awarded diplomas.

APRIL, 1936

HERC-ALLOY

Revolutionizes

OLD IDEAS ABOUT

STRENGTH

IN

SLING CHAINS

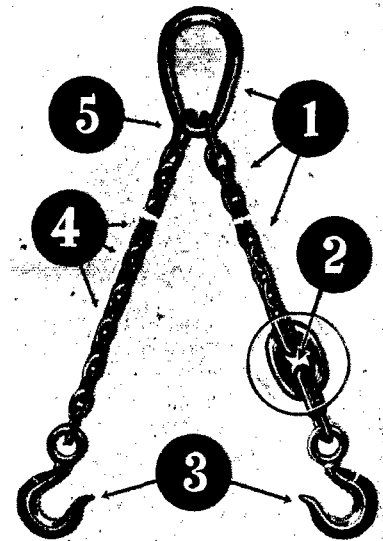
One of the most important chain achievements in industrial history! Tested under severe conditions for over 3 years, the new **HERC-ALLOY Heat Treated Steel Sling Chain** has proved itself a "double duty" chain in both strength and endurance. And, best of all, it cuts sling chain maintenance to a *new low*. Check through these **HERC-ALLOY** superiorities:

- 1 Heat Treated **HERC-ALLOY** throughout the entire chain to give maximum uniform strength.
- 2 Links are **INSWELL** Electric Welded by a new process fully covered by patents.
- 3 **HERC-ALLOY** Heat Treated Hooks give maximum strength at these vital points.
- 4 Short, narrow links reduce to a minimum the danger of bending or gouging when used around sharp corners.
- 5 All Joiner Links are of Heat Treated **HERC-ALLOY**.

Write for descriptive folder on this new extra-strength, low cost chain.

COLUMBUS McKINNON
CHAIN CORPORATION

General Sales Office:
TONAWANDA, N. Y.



HERC-ALLOY Heat Treated Steel Chain is manufactured from a high grade alloy steel containing nickel and molybdenum. Heat Treated under the most modern pyrometer control by an exclusive process. The result: an alloy combining in the highest degree these requisites: ductility, extreme strength and resistance to wear.

Designed and built by **COLUMBUS-McKINNON**

*No need
to work
in dust*

*If you have dust
problems like —*

Abrasives
Alkali
Carbon
Cement
Chemicals
Coal
Fertilizer
Gypsum
Industrial
Lime
Paint
Plastics
Pulp
Rubber
Silica
Starch
Tobacco
Zinc Oxides

**PUT YOUR DUST
SUPPRESSION
UP TO US**

**THE AMERICAN FOUNDRY
EQUIPMENT COMPANY**

637 BYRKIT ST.
MISHAWAKA, INDIANA

Investigate
**DUSTUBE
COLLECTORS**

Employee Training

(Continued from page 11)

terms of text books and school rooms. That is the symbol of education—not training. Industrial training is merely the acquiring of practical information about the job and the practical application of that information to the job, with the result that the skill of the individual is increased and the number of his mistakes is decreased.

Though American industry has become remarkably efficient with its mass production methods, we have never paid enough attention to the mass training of men. It is true that we have long had vocational training courses for electricians, welders, molders, machinists, and other tradesmen; it is true that we have conducted courses in fundamental education such as mathematics, practical metallurgy, and the like. But participation in such educational programs has been voluntary and has benefited only small groups. What industry needs today is employee training which reaches out to the average man on the average job, and as a condition of employment requires that he regularly and systematically devote a part of his time to improving his skill.

This is a responsibility which is delegated to supervisors by the president of the company, just as production and quality responsibilities are delegated to them. Naturally, the president is responsible to the owners of the business to manage their property as efficiently as possible. He cannot do all of the work himself, and so he trains and selects assistants. These assistants train and select other assistants, and so on. In the long run, every foreman is an assistant to the president. Selection and training of men is the most important single job the president has before him. It is also the supervisor's biggest and most important job.

Consciously or not, each supervisor does some training in the course of each day's work. Every time he issues instructions, every time he expresses criticism, he is adding to some man's store of knowledge. But the important questions are this: "Is he doing enough training? Is he doing it in a systematic and effective way?"

Whether his company conducts an organized training program or not, every supervisor can be his own training department if he honestly feels it is worth the time and effort. I have seen some

splendid results from job training programs which foremen have worked out on their own initiative.

Let me describe how one of these job training groups was organized and conducted in our own plant. Over a period of time there had been a number of lost-time accidents on a comparatively simple operation. The foreman in charge was at a loss to know how to prevent these accidents. Finally he decided to hold a job training class. He sought the aid of the plant safety adviser and the maintenance foreman in that section.

One evening all the men performing that kind of work were called together in the plant. There, alongside the machine, the foreman explained how the machine should be operated, how the product should be inserted, what the machine did to the product, the quality of product expected, the output, and all the other factors dealing specifically with production. All the while he encouraged the men to ask questions.

Next, the mechanical maintenance foreman took the floor. He described how the machine was built, what it cost, why it should be kept clean and well lubricated, and who was responsible for these duties. Next he explained the purpose of the safeguards and their proper position to prevent accidents.

He was followed by the electrical foreman who gave a detailed description of the electrical features, the location of the control switches, and so on.

Then the safety advisor took the stand. He pointed out the natural hazards of the job. He concluded by showing how they could be avoided.

After all this explaining, one of the least efficient operators was asked to step up to the machine and demonstrate his understanding of the discussion. This was repeated again and again.

The result of this job training class was the complete elimination of lost time accidents on this operation for several years. Not all of our job training groups worked out so well. However, taking the company as a whole, there was a very pleasing decrease in the number of lost time accidents as well as a corresponding decrease in severity.

In my opinion the chief reason for the effectiveness of job training in accident prevention is that it is simple and easily understandable. It deals specifically with the job, and the workman receives

it is something conducted mainly for his benefit. Therefore he responds. I have heard it frequently said today that the average industrial worker isn't interested in his job, but I cannot agree with the statement. I believe that down underneath he really wants to be interested, and I believe that interest can be won.

I wonder if we fully appreciate how important this thing called "the job" really is to the average man. He has few outside interests competing for his time. He spends a large part of every day on that job. When there is no work to do he is like a fish out of water. I have known plenty of men whose idea of a pleasant Sunday afternoon after a hard week's work was a trip to the plant. In the days before prohibition, when the old corner saloon flourished, there was many a ton of steel rolled conversationally in Middletown before the bar.

It has always seemed to me that the foreman who cannot capture this natural interest of men in their job is missing something that can be mighty helpful. The men in your department can be of great assistance if you can find work for their brains as well as their hands. Most men are square. They want to do the right thing. They want to improve themselves, just as you do, so they may go on to a better job and a larger pay check. They will follow the leader who wins their interest through thick and thin.

Progress in industry is the sum of many ideas and many contributions from supervisors and men. Practical ideas and suggestions are valuable. Industry today operates on small margins of profit, and a good idea may mean the difference between profit and loss; it may mean—if the idea benefits your company—the difference between steady work and part-time work, for your company can book the orders your competitor can't afford to take. Employee training stimulates ideas because it encourages men to think. However, the supervisor is the only person who can maintain a steady flow of ideas. To do so, he must receive those ideas with enthusiasm; he must investigate them with care; he must always give full credit to the maker, or these ideas will not always be forthcoming.

About a year ago, while visiting a certain company, I became acquainted with a young department superintendent. He was aggressive and apparently quite brilliant. The works manager confidentially told me that Ed was slated for greater responsibilities.

Not long ago, I visited that plant again. Another man held Ed's job. I remembered what had been said on my

previous visit, so I asked the works manager what had become of Ed.

"We were wrong about Ed," he explained. "Ed ran out of ideas. He had 400 men working for him, but he was trying to do all the thinking for the entire 400. It didn't work."

An interesting incident occurred a few years ago in another steel plant. They were having a series of accidents on one of their picklers, but fortunately, these were accidents to the product rather than to the men. A brown stain was appearing on the sheets as they went through the operation. The plant man-

ager couldn't put his finger on the cause, so he called in an expert from New York, who spent several weeks at the plant. One day a veteran pickler approached him.

"I think this creek water we are using in the pickler is causing that stain," he said. That sounded reasonable, so they tried using city water. The stains disappeared. However, the plant paid the bill for high priced consulting service, when the man who had the solution of the problem was right there on the job all the time.

Though most of my remarks have been directed at what job training means

NOW is the time to Equip your Men FOR THE UNEXPECTED DEADLY BITE OF A SNAKE

THE Davis Snake Bite Kit contains an unbreakable syringe which is always "on the job" to suck the venom from the fang holes. An ordinary syringe of fragile material which broke when dropped on a rock might be the indirect cause of the loss of life.

For men who work independently along pipe lines, etc., you will find a first aid kit combined with the Snake Bite Kit a valuable addition. The Davis Combination Kit contains in one convenient carrying case a complete Pocket First Aid Kit as well as the Snake Bite Kit. Have your men fully protected and you will be more sure of their health

and work. Give them a Davis Combination Kit. The low cost, adaptability and convenience will please you.



DAVIS EMERGENCY EQUIPMENT **CO., INC.**

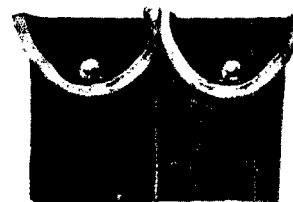
Chicago, Ill. • New York City • Houston, Tex.
San Francisco and Los Angeles, Cal.



Contains:—Tourniquet, Scalpel, Unbreakable syringe, Iodine swab, Ammonia inhalants, Drybak adhesive compresses.



Contains:—Bandage Compresses, Drybak adhesive compresses, Ammonia inhalants, Iodine swabs, Tubes of Tannoid burn treatment.



The Davis Combination Kit—Snake Bite and First Aid Kit in one convenient carrying case.

Use coupon now to send without obligation for a complete description of the self-contained Davis Combination Kit for men who work outdoors.

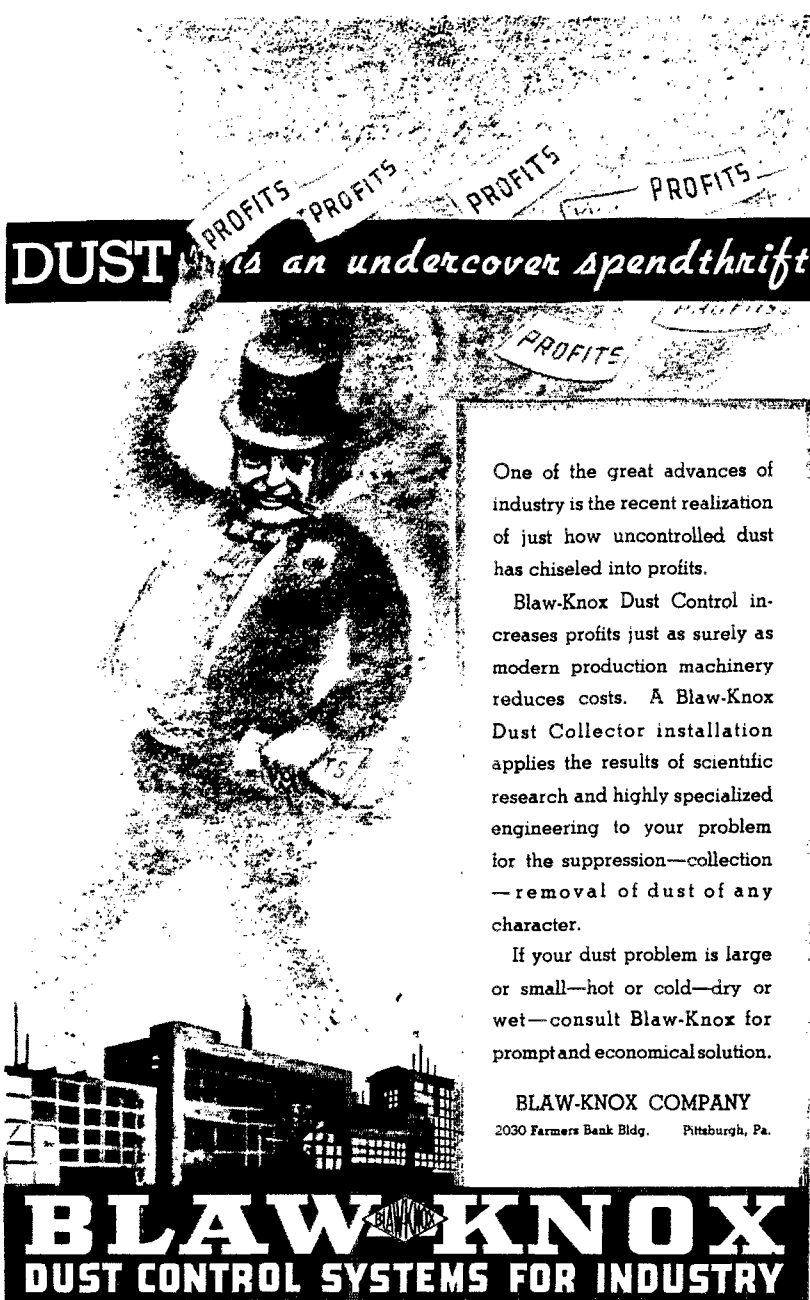
Davis Emergency Equipment Co., Inc.
55 Van Dam Street, New York City
Please send my copy of your Bulletin on Snake Bites to

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DUST is an undercover spendthrift



One of the great advances of industry is the recent realization of just how uncontrolled dust has chiseled into profits.

Blaw-Knox Dust Control increases profits just as surely as modern production machinery reduces costs. A Blaw-Knox Dust Collector installation applies the results of scientific research and highly specialized engineering to your problem for the suppression—collection—removal of dust of any character.

If your dust problem is large or small—hot or cold—dry or wet—consult Blaw-Knox for prompt and economical solution.

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DUST CONTROL SYSTEMS FOR INDUSTRY



*Spray
your burns*

Vio Gen
New Instant Treatment
for Burns and Surface
Injuries

VioGen is more than a complete burn treatment of top efficiency. It is also a first class general antiseptic for surface injuries and diseases of the skin such as impetigo, erysipelas and varicose ulcers. Recommended by a Boston specialist for painting sore throats. You need VioGen. We provide free trial and guarantee satisfaction. MAIL COUPON TODAY!

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Gentlemen: Send Free Trial Size of VioGen to:

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to the employee, I can say without reservation that it is even more valuable to the supervisor. As an illustration I might cite the case of a foreman who had been on the same job with a steel company for many years. He was not an outstanding man in any way. He saw many department superintendents come and go. One day the present superintendent was moved to another plant, and as a last resort Harry was given an opportunity to act as superintendent. He took the same men and the same equipment, and worked wonders with the safety, cost, and quality records. There was no magic in his methods. He recognized his own limitations, so he used every available aid in order to master that job. His first act was to initiate a thorough job training program. Then he began to discuss the facts about the business in which the men would have a natural interest. He kept them informed. If a crew made a new cost production record, he made sure that their good work was recognized, and he also saw to it that the other crews knew what they had done. Pretty soon a spirit of friendly rivalry took form, which has made Harry one of the most valuable superintendents in the plant.

It has always seemed to me that one of the finest things you can do for a man is to help him help himself. Most of us can look backward, and we will regard with affection some man who has influenced our lives by helping us to become better men. Perhaps he was a stern disciplinarian; perhaps he had few of the appealing human virtues which make men popular. But he imparted to us something which helped us on the upward climb. He made us do only what common sense required, and we respected him for it.

A few weeks ago the works managers of two steel plants were in conference. George has a splendid record. He is a vigorous individual, a strong believer in training and an outstanding leader. He expects results from his organization, and he gets results. He has developed a large number of high grade men, and seldom does he have to apologize for his safety record.

Bill has no such record to his credit. His plant is frequently in trouble, and on several occasions he has had to discharge men who had come to him after having made good records in other steel plants.

After transacting their business, Bill confidentially remarked to George that he (George) was too hard on his men. "Hard—hell!" George replied. "If I'm hard with my men, you're cruel with

NATIONAL SAFETY NEWS

yours. I train 'em. Then I insist that they do what they know how to do. But you—you let 'em drift and do as they please. Then you fire 'em."

At the beginning of the year the auditors are checking the company's books to determine what the organization accomplished during 1935 and what its assets are. Though the chief executive of every important industry will tell you that well-trained, loyal men are the most valuable assets of any company, few attempts are made to audit the human element. Yet you can "audit" your men even more readily than your company audits its physical assets.

A personnel audit will show you that all men may be classified in three general groups. First, there is that small group of outstanding men who are ready for greater responsibilities. Next, there is a large group, composed of average to good men. Finally, there is another small group of men who have never secured the right toe-hold in industry. If history repeats itself, and you care to carry the investigation further, you will probably find that not only is the five per cent of the force composed of the least capable workmen, but that it also accounts for the larger share of accidents.

Why are these men inefficient workers? Why haven't they developed along with others who had the same opportunities? There is usually a reason, and it is important that the supervisor find it.

I am well aware that the industrial supervisor is a busy man. He cannot spread his efforts too thinly, and he should not attempt more than he can carry through to a successful conclusion. It is therefore perfectly plain that his first efforts should be spent with this group of incompetents.

If, when the audit is repeated next year, the top and middle groups are larger and the incompetent group is smaller, you will have reason to feel gratified. Such a readjustment could not have occurred without painstaking and constructive work throughout the year.

Water and Fatigue

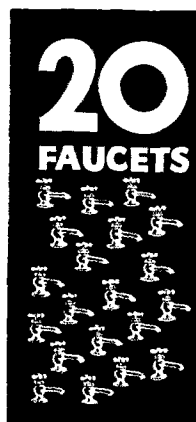
(Continued from page 27)

In the event that a circulating system is used bubblers should be spaced 50 to 75 feet apart to provide the ideal condition. If sanitary fountains and individual drinking cups are in use, the cups should be provided free, they should be kept protected from dust and dirt, the supply should never be permitted to run out, and adequate provision should be made for disposal of the used cups.

Fountains should be in open areas.

APRIL, 1936

Which Would You Rather Maintain?



20 Wash Basin
Faucets . . . or

One Bradley spray-head serves the same number of people as 20 ordinary faucets—and each user washes in clean, running water.

ONE
SPRAY-
HEAD?



10 wash basins with 20 hot and cold water faucets provide no more washing facilities than—one Bradley Washfountain.

This means 10 times as many drains to maintain—20 times as many chances for leaking faucets . . . practically 10 times as much water for washing 10 men.

The Bradley is the choice of today's industrial plants—because it is more sanitary—saves its cost in lower water consumption and maintenance—provides speedier washing facilities—and is simpler and less costly to install.

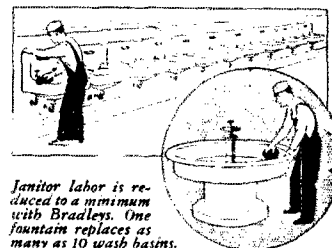
New Catalog

Let us mail our recently published catalog—and give you the names of some of the users of

the thousands of Bradley Washfountains. **BRADLEY WASHFOUNTAIN CO.,**
2237 W. Michigan St.,
Milwaukee, Wis.



BRADLEY
WASHFOUNTAINS and SHOWERS



Janitor labor is reduced to a minimum with Bradleys. One fountain replaces as many as 10 wash basins.

No More Accidents in This Shop!



—or in any other where **WIESMAN SAFETY PRESS GUARDS** are installed on the power presses. The cam action operating principle assures maximum safety and in no way interferes with rapid production. Simple in construction, automatic in action, and easy to attach. Made for right or left hand stroke. Write for details.

Wiesman Mfg. Co.

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

SYNONYMOUS *with* SAFETY



**WILLIAMS'
"NON-SPARKING"
SAFETY
WRENCHES**

WILLIAMS'
"Non-Sparking" Safety Wrenches are designed for use wherever a spark may produce disastrous results. Drop-forged from beryllium-copper and accurately heat-treated, they are unequalled in strength, toughness and hardness. Non-rusting, non-corroding, non-magnetic—practically as strong as steel wrenches of similar size and design. Single and double head patterns in a wide range of sizes.



**WILLIAMS'
"VULCAN"
SAFETY
LATHE
DOGS**
Bent and Straight
Tail Patterns
Single and Double
crew— $\frac{1}{8}$ " to 6"
Capacity

Safety and better balance on the lathe are distinct features of this Williams' "Vulcan" design. No projecting set screws to catch the operator's clothes. Screws of special steel hardened and tempered. Specify "Vulcan" Drop-forged Lathe Dogs for safety.

J. H. WILLIAMS & CO.

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Headquarters for: Drop-Forged Wrenches (Carbon and Alloy), Detachable Socket Wrenches, "C" Clamps, Lathe Dogs, Tool Holders, Eye Bolts, Hoist Hooks, Thumb Nuts and Screws, Chain Pipe Tongs and Vises, etc., etc.



Trucks, stock piles, or equipment should not be allowed to accumulate where they will make it difficult for employees to reach the bubblers.

There is still another side to the problem of drinking water. When the purity of the original water supply is assured, care must be taken to see that the water is kept pure until it is delivered to the employee.

Although most states now forbid the use of the common drinking cup, the "community" glass perched on top of the bottle of pure spring water is not yet unknown.

Workmen should be discouraged from drinking water from the end of a hose or from faucets and other outlets not designed for drinking purposes. The best way to do this is to provide a modern sanitary outlet system.

This implies construction of impervious material, such as vitreous china, porcelain, enameled cast iron or similar material; a jet which permits the water to issue at an angle, and a guard which prevents the lips from touching the end of the jet; the nozzle of the jet located at a level above the edge of the bowl, so that the nozzle will not be flooded in case the drain of the bowl is clogged; a bowl that is easy to clean and that will not cause splashing; a drain that does not have a direct physical connection to a waste pipe, unless the drain is trapped; a set valve or automatic valve to regulate the flow of water, so that the valve or lever manipulated by users of the fountain will merely turn the water on or off; a fountain tall enough so that it will be convenient for the majority of those using it; a waste opening and pipe of sufficient size to carry out water promptly.

Many old fountains can be modernized inexpensively to conform to these specifications.

Workmen should be encouraged to keep the fountains and surrounding areas clean. Fountains should be located in well-lighted, clean places, so that no employee will attempt to deposit chewing gum, cigaret stubs or other rubbish in the basin without feeling guilty. Plant regulations should insist emphatically that the fountain basin be not used for a cuspidor, and these regulations should be enforced.

Maintaining the purity of a water supply is particularly difficult in construction work, in out-of-the-way locations, and in mines. In these types of work, in many cases, a portable water supply is necessary. This may best be obtained by the use of a water bucket with a tight-fitting cover, equipped with

a spigot and a hand pump to give the necessary pressure. Equally convenient is a water jug from which water may be poured into the workman's receptacle. Where a portable water supply is used, care must be taken to rinse the container often with boiling water.

Even when every provision for an adequate drinking water supply is made by the management, some employees will not take advantage of the opportunity to provide the necessary irrigation for the body.

Through posters, articles in employee magazines and other literature the use of water may be encouraged. Physicians agree that at least six glasses of water a day are required by the average person in addition to the water assimilated in food. In hot weather even more may be required, particularly by employees engaged in strenuous occupations. To offset the loss of body salts through perspiration, sodium chloride tablets should be made available.

When these conditions are observed, it is relatively easy to ingrain in the employee the habit of drinking sufficient water. And when a regular schedule of "irrigation" is established, the way is paved toward greater efficiency and productivity.

Industrial Efforts Win Civic Awards

THE Safety Division of the Milwaukee Association of Commerce recently reported the largest registration in fifteen years in the Foremen's First Aid and Health, and Fire Prevention Schools. The registration totaled 11,700, representing 350 Milwaukee industries.

This group conducted three seasonal campaigns last year, reaching 110,000 homes in the fire prevention campaign; 1,500 mercantile establishments in the Christmas hazards campaign; and 600,000 citizens in the safe Fourth of July campaign.

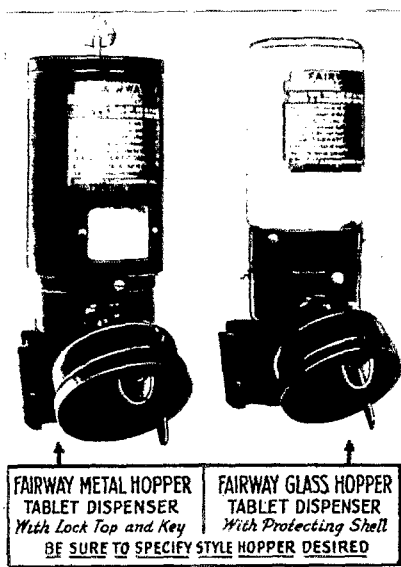
As a result of this work, Milwaukee enjoyed honor awards in the fire waste contest and the health conservation contest conducted by the United States Chamber of Commerce.

City Bars Sale of Gas or Oil to Drunks

A city ordinance prohibiting the sale of gasoline or oil to intoxicated motorists has been passed by the city of Canton, Ohio, according to an Associated Press dispatch. The ordinance provides penalties for attendants who violate it.

An Improved Unit for PREVENTION OF HEAT SICKNESS

The New Fairway Metal Hopper Salt Tablet Dispenser complete with lock top and key.



This new dispenser meets the problem where the glass hopper proves too fragile. for all the dispensing units your various departments will need.

The new all metal dispenser has a number of better features—new lock top permits much easier refills—holds larger supply of tablets.

Free from any chance of breakage, thus widening the number of places in which the dispenser can be installed.

Now is a good time to arrange

We continue the glass hopper and will supply this on all units except where metal hopper is specified. Meet hot weather with a full supply of Fairway Sodium Chloride Tablets and your choice of these perfected dispensers. Write for booklet "Prevention of Heat Sickness" and prices of tablets and dispensers.

Note:—Metal hopper fits all present installations of "Fairway" Junior Dispensers where it is desired to replace present glass hoppers.

FAIRWAY LABORATORIES, Inc.
Belleville, Illinois



Practice Good Housekeeping for SAFETY

Good safety records are usually closely associated with good housekeeping. Industrial workers will do better work and have more pride in their jobs if working conditions are clean and healthful. Cluttered, dirty aisles, stairways and floors invite accidents, decrease efficiency.

Back up your rules and safety program with Stonehouse Signs. They are permanent reminders of the value of good housekeeping.

Stonehouse Good Housekeeping Signs have been developed over years of experience and have proved most effective. Hundreds of stock signs to choose from. Standard accident prevention colors and designs. Complete information and prices gladly on request.

"Signs since 1863"

Stonehouse
SIGNS, INC.
MANUFACTURERS

9th at Larimer

Denver, Colorado

There's a Stonehouse Accident Prevention Sign for every industrial purpose.



ACCIDENT PREVENTION Steel • SIGNS IN STANDARD COLORS AND DESIGNS



Men, Women and Children all over the World wear RAW-CORD and GRO-CORD Soles and Heels because they provide NON-SLIP Safety and Long Wear.

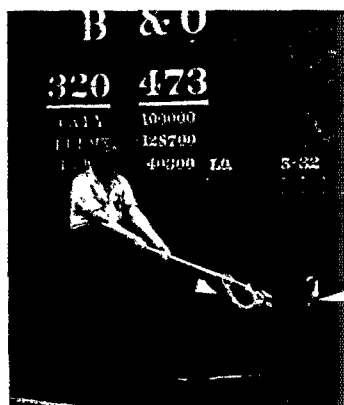
GRO-CORD and RAW-CORD Soles and Heels are used in dairies, on farms, iron and steel foundries, railroad shops, auto factories, gas and electric plants, ice and fuel stations, stone quarries, general warehouses—where Safety is an important factor, also street and office.

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

Fully Protected by Patents—Any Infringements Will Be Prosecuted



NON-SLIP SOLES AND HEELS



Close Hopper-Bottom Car Doors with EASE and SAFETY

with the
Prescott Safety Tool

This special tool will close hopper-bottom car doors. Prevent smashed fingers, strained backs, ruptures and other serious injuries. Saves time—Is inexpensive.

The Trumbull Mfg. Co.
Warren :: :: Ohio

PERSONALS

WALTER W. MATTHEWS, for fifteen years director of safety in the Bureau of Highway Patrol and Safety, Department of Revenue, Commonwealth of Pennsylvania, has been appointed manager of the Philadelphia Safety Council, a division of the Chamber of Commerce. The newly organized council is arranging a comprehensive program of highway, industrial, and home safety activities, with the backing of many local organizations.

S. WESTON SCOTT succeeds Mr. Matthews as director of safety in the state motor vehicle department.

MRS. FRANCIA BAIRD CROCKER, R. N., has been appointed associate for nursing activities by the National Society for the Prevention of Blindness. Mrs. Crocker succeeds Miss Mary Emma Smith, R. N., who resigned to accept the position of director of public health nursing in the New Mexico Bureau of Public Health.

Mrs. Crocker was formerly director of the Prevention of Blindness Department in the Missouri Commission for the Blind.

H. J. BRAMMEIER, formerly assistant secretary-manager of the St. Louis Safety Council, has been appointed eye protection service representative of the American Optical Company for the entire state of Ohio. During the past two years Mr. Brammeier directed the state safety program of the CWA and the FERA in Missouri and more recently organized and directed a state-wide safety program for the PWA in Illinois.

FLOYD F. KAY has resigned as manager of the Safety Bureau of the Memphis Chamber of Commerce to become secretary of the Spartansburg, S. C., Chamber of Commerce.

INSURANCE DEPARTMENT MANAGER

Will set up and operate insurance department for large manufacturer. Experienced on self insurance. Safety engineering work. I am a licensed insurance broker with 21 years insurance work; seven years with present employer whose annual saving on insurance is \$100,000. Married and under 40. Address Box 298, NATIONAL SAFETY NEWS.

NATIONAL SAFETY NEWS

JAMES D. HACKETT

JAMES D. HACKETT, director of the Division of Industrial Hygiene, New York State Department of Labor, died in New York City on February 13, after a short illness. Born in Kilkenny, Ireland, he was educated at Clongowes Wood College in Ireland. After coming to the United States in 1904 he was engaged as a labor consultant and lecturer on labor problems.

Mr. Hackett was primarily interested in promoting hygiene and safety among industrial workers. In 1925 he wrote, "Health Maintenance in Industry," and in 1929, "Labor Management." He was appointed to the Department of Labor in 1929. He had been a member of the Metropolitan Chapter, ASSE-Engineering Section, National Safety Council. His work did much to popularize the facilities developed by the New York Department of Labor to help employers promote health and safety.

CLYDE M. BRADING

CLYDE M. BRADING, formerly superintendent of safety and labor for the Wisconsin Steel Works of the International Harvester Company, Chicago, died March 16 in Florida where he had been spending the winter. He was 52 years old and is survived by his widow and one son.

Mr. Brading joined the International Harvester organization in 1908 and was appointed superintendent of safety and labor in March, 1912, holding this position until ill health made his retirement necessary in October 1934. He had been a regular attendant at the Annual Safety Congresses since 1913.

Council President Honored

JAMES K. MILLER, JR., president of the Grand Rapids Safety Council, has been selected for the National Junior Chamber of Commerce Service Award for Grand Rapids. The award is made annually by the Junior Association in each city in which it is organized and goes to the man between 25 and 35 years old who has been judged as having rendered outstanding service to his community during the preceding year.

Mr. Miller's principal civic service has been with the Grand Rapids Safety Council of which he is now serving his second term as president. He also has served on various committees and in many local undertakings. He is manager of the United Auto Insurance Co.

APRIL, 1936

DERMA-SAN

D I S I N F E C T A N T



*Prevent Oil Dermatitis
with **DERMA-SAN!***

YOUR MEN do better work when you sterilize cutting lubricants with Derma-San. For Derma-San keeps oil dermatitis out of your plant. By protecting your workers against this serious skin disease, it saves compensation and medical costs. By eliminating oil infections, it increases efficiency and production. Guard your men with Derma-San. Add 1 pint of Derma-San to 35 gallons of cutting lubricant, and kill pus-forming germs before they attack your workers.

Derma-San is ideal for all general plant sanitation.

The HUNTINGTON LABORATORIES Inc.

DENVER

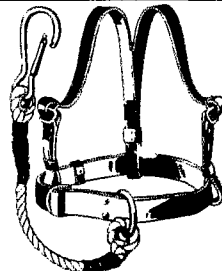
HUNTINGTON, INDIANA

TORONTO

BUHRKE Belts for Railroad Men.

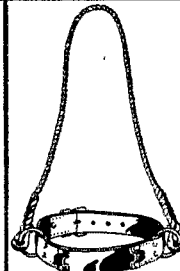
No. 1131
Car Runner's
Safety Belt

This special belt was designed for the protection of workmen in switching and dropping cars. Belt is made of leather or impregnated webbing. Worker prevented from falling to tracks.



No. 1130
Locomotive Safety
Belt and Safety
Sling

Designed to protect workman on any operation above the running board on a locomotive where it is required to put any stress on wrenches, bars or other equipment which might cause him to fall.



R. H. BUHRKE CO.

4538 Fullerton Ave.
CHICAGO, ILL.

STOP ACCIDENTS



At The Source!

EVERY industrial enterprise has its potential sources of danger. Some of them are quite apparent—others, apparent only to those skilled and trained in accident prevention engineering.

The INDUSTRIAL GLOVES CORPORATION has been engaged, for the past twenty-five years, in the manufacture of STEEL-GRIP personal safety equipment for the protection of industrial workers.

As specialists in this field we are called on regularly by our industrial customers to diagnose potential sources of danger and prescribe the remedies where properly designed safety clothing is the solution.

This service is offered without obligation. Call upon us to help you **stop accidents at the source!**

LET US SERVE YOU



INDUSTRIAL GLOVES CORPORATION

725 GARFIELD BLVD.
DANVILLE, ILL.

Chicago

Philadelphia

Detroit

A Plea for the Negative

(Continued from page 13)

clumsy at the controls, road tests are of doubtful value. On the other hand the mounting of a steering wheel and controls on a nicely finished stand does not constitute a test for automobile driving.

Don't stop with a diagnosis. When you have ascertained the condition of your drivers, the causes of your fleet accidents, or the most probable causes by acceptable methods, do not cease your efforts. Here is where your good work begins. Call the men in by groups—those who are careless about traffic regulations, those who are clumsy at performance, and those who are not as alert mentally as they should be. Plan your educational program around the defects of your men. Follow up men who have accidents. Try to find relationships to accidents. Start a scrap book of your own. When you have collected first hand evidence from 25 or 30 years' experience you will be in a favorable position to give sound advice on the causes of accidents you have observed. Supplement experience with scientific facts. Interpret the former in terms of the latter or vice versa.

Don't expect one simple measurement to give you the picture of a driver's potentialities. The intelligence testers a few years ago thought they had found the solution to most social and economic problems—the intelligence test. High intelligence—much success. Low intelligence—little success. Vocational guidance quacks flourished. It was too good to be true. Intelligence tests have a place in psychological measurements but are not to be considered the only indicator of success. At the extremes they are quite accurate but when used alone there is plenty of chance of error in the middle range.

Don't bank too heavily on any one measurement; reaction time, visual acuity, color vision, blood pressure, speed of movement, manipulative skill, or any other one test. It takes all the measurements possible and a great deal of experience with drivers to be reasonably certain of a man's qualifications as a driver.

Don't consider any driver so nearly perfect that he will not have an accident.

While 99 accidents out of 100 are traceable to some specific cause, the other one appears purely fortuitous. Barney Oldfield was sideswiped by a truck a short time ago. Human nature is not infallible. "Cockiness" is a common

cause of accidents. There is an old German adage that, "A jug will go to the well until it breaks."

A driver who has never had an accident would do well not to boast of the fact. Most superior drivers will not have accidents. Some ten to twenty per cent of them will, for one reason or another, have trouble. It will tend to wreck the morale if a shining example of safety does have an accident.

Don't preach safety and practice recklessness. The safety director himself must set an example.

Don't expect results without continuous systematic and scientific effort to get at the causes. Safety among employees, like advertising among consumers, requires constant effort. It is partly an educational program. The old method of making big claims for products, claims which can never be fulfilled, is being superseded by a modest scientific statement of facts. One mode of attack will not suffice. It takes constant and varied approaches to get the idea across.

In a similar manner the method of teaching safety by precept, posters and general slogans must be supplemented by scientific measurements and professional advice. Mose Brown may be interested in "Stop, Look and Listen"; he may take a second look at a "skull and crossbones"; but he will sit up and take notice when you show him he takes twice as long to react to a sudden stimulus as his driving partner. Prove to him that he is "cockeyed", and he will hound you for hours to find out what caused it, how he can correct it, or how it may cause him trouble when driving.

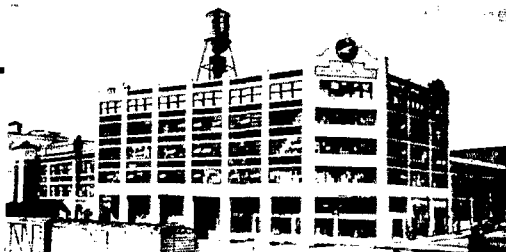
What can we do about it? A few of the remedial measures which might be suggested to overcome known difficulties are: (1) correction for defects whenever possible, (2) specific schools for drivers, teaching them the causes of accidents they have had or might have, and methods by which these accidents may be prevented, (3) test fields and driving courses for practice in actual performance, (4) interviews with both good and bad drivers, enlisting their cooperation in encouraging highway courtesy and good driving practices.

Have the drivers think through the possible accident situations in advance. This can be done in group discussions of accidents which have taken place within your company. Be alert constantly and infuse novelty and pep into your safety program.

NATIONAL SAFETY NEWS

**WEST
DISINFECTING
COMPANY**

42-16 Barn Street, Long Island City
New York City



**LARGEST ORGANIZATION
OF ITS KIND IN THE
WORLD**

Branches in 55 Principal Cities

**PROTECT YOUR WORKERS
from the Menace of Oil Dermatitis
with WESCOL**

WESCOL is a very powerful germicide, guaranteed to be 18.20 times as strong as carbolic acid. Because of its very high coefficient, WESCOL is an effective and economical disinfectant to use where a powerful germicide is required, and one that will not change the nature of the material in which it is used. WESCOL used in cutting oils and compounds keeps the material sterile and safeguards the workers against the menace of Oil Dermatitis.

OIL DERMATITIS is caused by pus germs carried

into the pores, hair follicles and abrasions of the workers' skins by cutting oils and cutting compounds. Even germ-free cutting oil becomes infected during use. Factories have had epidemics of Oil Dermatitis in which almost the entire force has become infected. The disease is a serious one, which may lead to blood poisoning and amputation. It is covered by compensation laws in many states.

One pint of WESCOL to 50 gallons of cutting oil or cutting compound will keep the material sterile without injuring its cooling properties.

Send for our Special Booklet on WESCOL

Safety First Shoes



One of 32 Styles

THE PIONEER LINE

Safety First Shoes are literally the first shoes for safety. Over 35 years of experience are reflected in their quality and protective features.

THE PROFITABLE LINE

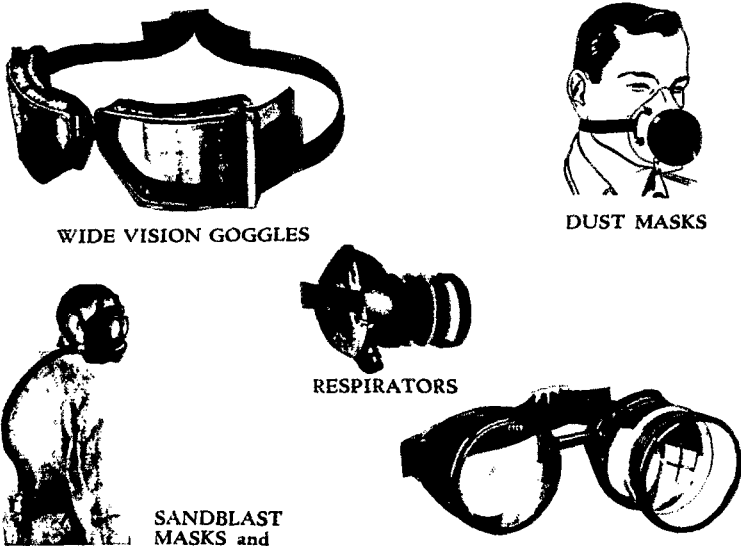
Profitable—for the plant owners (fewer accidents, less lost time, replacements, etc.). Profitable for the wearer . . . PROTECTION *plus* long wear.

THE SERVICE LINE

Orders are shipped promptly ("same day received" is the rule). Posters and other advertising assistance are furnished free.

Investigate the Safety First plan! Write for our new booklet "From Our Mail Bag"—actual stories of averted accidents. Let us send you our catalogue with a "Specific Use Sheet," describing shoes for every purpose. SALESMEN and AGENTS now being appointed for open territories.

SAFETY FIRST SHOE CO., Holliston, Massachusetts



WIDE VISION GOGGLES

DUST MASKS

RESPIRATORS

SANDBLAST MASKS and HELMETS

CHIPPING and WELDING GOGGLES

CORRECT SAFETY EQUIPMENT

When you need industrial head and eye protective equipment it is to your best interests to have a resourceful and responsive source for your requirements. The Cesco organization can supply your needs promptly and furnish rated and efficient equipment of the finest quality and usefulness.

For information and catalogs showing Goggles for welding and impact hazard work, Respirators, Dust Masks, Welding Helmets and Sandblast Masks, write



Chicago Eye Shield Co.

2323 Warren Blvd.

Chicago, Ill.



No. 438

IPCO SAFETY HAIR NET

- For all industrial operations where girls are employed around machinery and power driven equipment. Holds hair in place, out of the eyes and lessens the chance of accidents.
- Manufactured of heavy rayon silk with an elastic strand which entirely encircles the head. Will not shift or slip; stays firmly in place.
- Attractive in appearance and will give months of satisfactory service.
- Furnished in the following colors: Blue, red, black and light, medium and dark brown.

INDUSTRIAL PRODUCTS COMPANY
Accident Prevention Equipment
800 W. Somerset Street Philadelphia Pennsylvania

Garage Fires

(Continued from page 22)

An investigation of the possible source of ignition of the vapors tended to eliminate all theories but one. A test of the 110-volt, split-phase induction motor driving the grease gun showed that it sparked slightly when the starting brushes lifted. It is believed that these sparks ignited the explosive mixture.

To prevent a recurrence, the following steps were taken:

1. Enforcement of a company rule prohibiting the use of gasoline in the garage for any purpose other than fuel.
2. Replacement of the electrically-operated grease gun with one operated by compressed air.
3. Installation of a more adequate ventilating system in the pit.
4. Installation of vapor-proof light in the pit.
5. Installation of rotary pump on gasoline tank trucks to eliminate the necessity of handling gasoline in a bucket or other container.

2. In another case what might have been a disastrous fire was held in check by sprinklers and a foam extinguisher. An employee in the garage was cleaning a concrete repair pit with gasoline from a bucket, when the gasoline in the bucket was ignited in some unknown manner and fire spread quickly about the pit and up the wall to the ceiling. Five sprinkler heads opened and held the fire in check. The employee's clothing ignited and he received second degree burns. Other employees extinguished the fire with foam-type extinguishers.

3. In another case the breakage of an electric lamp started a fire which resulted in the death of three men and a property loss of \$10,996. Two employees were in a repair pit repairing an automobile and there were two other employees in the frame garage. One of the men in the pit dropped a portable extension lamp, which had a wire guard but no vapor-proof globe, and broke it. Instantly the interior of the garage was in flames. Three of the employees were fatally burned before they were carried from the building by firemen. A fourth employee who escaped from the building was severely burned. The fire department extinguished the fire with three hose streams but the building and its contents, including five automobiles, were badly damaged.

4. A cigaret thrown into the pit was blamed for this fire which was also extinguished by sprinklers with only slight damage. Fire had started in the concrete pit below the floor level which was used for draining off crankcases and also for greasing. Fire started in a pool

NATIONAL SAFETY NEWS

of oil in the corner of the pit, and as the floor of the pit was oily, flames spread quickly. Two sprinklers directly over the pit opened and extinguished the fire.

5. An employee was using an acetylene welding torch over an automobile repair pit. Boards covered the pit at the time the fire occurred. Flames appeared through the cracks in the boards and an employee used two foam extinguishers before removing the boards. When the covering was removed flames shot to the ceiling and opened a sprinkler head which extinguished the fire.

6. Using gasoline in a spray gun to clean the motor base of a bus led to this fire. The gasoline vapors ignited when a short circuit in the battery caused a spark. Fortunately, the employees suffered only slight burns and did not lose time from work. The property damage was less than \$2,000. Investigation committee recommended strict enforcement of the rule requiring employees to disconnect battery cables when working on motors and discontinuing the use of gasoline as a cleaning medium in locations other than the room designated for that purpose.

The Sight Meter Tells the Story

(Continued from page 25)

these lines and how they keep boxes, steel or other materials clear of these areas. Refuse cans, also conspicuously painted and conspicuously placed, keep lunch remains and oily rags off the floors.

One of the pioneers in recognizing the value of adequate illumination and the relationship of paint to light is the Ford Motor Company. The plants are painted white and the equipment in pastel shades, with bright contrasting colors to make moving parts stand out. The plants are as light as possible, equipment as visible as possible, and electrical equipment and moving parts are doubly visible. Aisle markings are always a conspicuous part of Ford plants and order is safety's first law.

As an example of what paint can do to reduce the number of accidents in a plant, none serves better than the experience of a shoe factory in Massachusetts. Machines were painted in light colors to provide better visibility and higher contrast with the work itself (the deep tans and black of men's shoes). Walls were lightened with ivory and white paint to increase the level of visibility. Within a six-months' period the accident rate had been more than cut in half, and the insurance premium rate was reduced.

APRIL, 1936



EAST

NEW YORK
W. S. Wilson Corp.
123 Varick St.
PITTSBURGH
Safety First Supply Co.
Brady Building
PHILADELPHIA
J. A. Hunt Co.
2036 Sansome St.
BRAINTREE, MASS.
Direct Sales Co.
108 President Road

SOUTH

CHATTANOOGA,
C. D. Genter Company
Chattanooga Bank Bldg.

MID-WEST

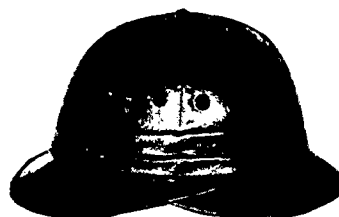
DETROIT
C. H. Dockson Company
2885 E. Grand Blvd.
CHICAGO
E. D. Bullard Company
215 South Leavitt St.
GREEN BAY, WIS.
Safety Service Company
108 No. Quincy St.
DULUTH
W. P. & R. S. Mars Co.
324 W. Michigan St.
HOUSTON
E. D. Bullard Company
1 Main Street

WEST

SAN FRANCISCO
E. D. Bullard Company
275 Eighth Street
LOS ANGELES
E. D. Bullard Company
1229 South Olive St.
SALT LAKE CITY
E. D. Bullard Company
1620 Yalecrest Avenue

Everything
BULLARD
in Safety

An unsolicited letter about a hat



JUST LIKE THIS!

E. D. Bullard Company
275 Eighth Street
San Francisco, California

Attention: Mr. Kenneth Butler

Dear Ken:

This letter should be regarded as an unsolicited testimonial of our satisfaction with Hard Boiled Hats.

We recently had the experience of having one of our laborers, who was wearing a Hard Boiled Hat (which has since been retired as a souvenir piece) struck on the head by a 2" x 4" block about 2' long that fell from the top of pylon S-2, at the San Francisco anchorage of the Golden Gate Bridge. This block fell a distance of 200' and struck the man just over the forehead. The Hard Boiled Hat absorbed the shock preventing a fractured skull and producing only a slight laceration of the scalp. The man returned to work after simple first aid treatment.

We believe this example is typical, but nevertheless intensely practical in showing the value of this type of protection on construction jobs.

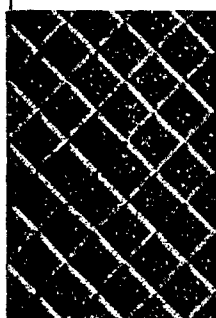
Yours very truly,

*Name of this large contractor will be given on request.

Hard Boiled Hats, in the model best suited for YOUR jobs may be examined at any office listed here.

Complete catalog will be sent on request.

BULLARD



FERALUN (Also Bronzalun, Alumalun and Nicalun) Anti-Slip Treads

PREVENT ACCIDENTS
ON STAIRS and FLOORS

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

Specify Feralun and Be Sure

AMERICAN ABRASIVE METALS CO.
Irvington, New Jersey

HALSEY TAYLOR

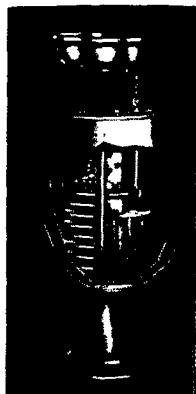
Cooler Fountains

No other has ALL these Features

• Practical automatic stream control, distinctive two-stream projector—water never too high, never too low and always SAFE to drink from! Heavy Cork-Insulated Walls, Bottom and Cover, giving maximum cooling capacity and minimum ice consumption. Drinking water does not come in contact with ice or melted water! The very best in cooler construction—and all these features at no extra cost. That is why year after year Industry chooses Halsey Taylor Coolers. Write for our latest folder describing ice coolers, pedestal and wall fountains and electric coolers for office or factory.

THE HALSEY W. TAYLOR CO., Warren, Ohio
Largest Manufacturers of Drinking Fountains

Harris Calorific Co., Cleveland, Ohio, protects the health of workmen with Halsey Taylor Pedestal Fountains throughout their plant.



No. 2800 Ice Cooler

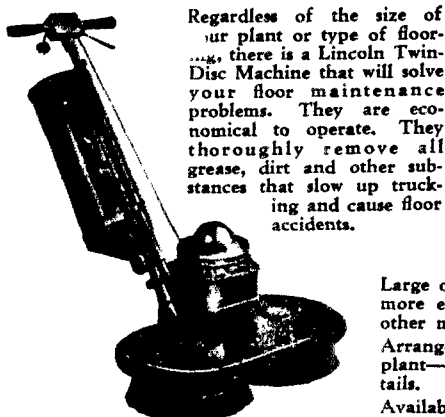


Reduce Accident Hazards

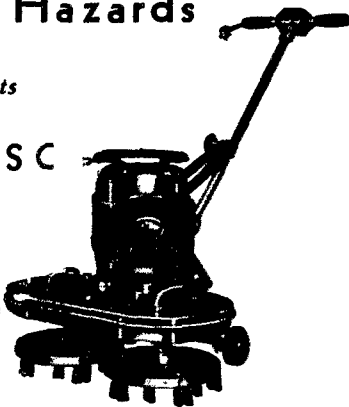
- Speed-Up Production
- Lower Floor Maintenance Costs

with a

LINCOLN TWIN-DISC FLOOR MACHINE



Regardless of the size of your plant or type of flooring, there is a Lincoln Twin-Disc Machine that will solve your floor maintenance problems. They are economical to operate. They thoroughly remove all grease, dirt and other substances that slow up trucking and cause floor accidents.



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.

Large or small areas are cleaned faster and more efficiently than can be done by any other method.

Arrange today for a demonstration in your plant—without obligation. Write for details.

Available in 12 different models and sizes.

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 "whip" or side pull.

The LINCOLN Twin Disc
SCRUBS - WAXES - POLISHES

New York Conference

(Continued from page 26)

Dr. John H. Finley, associate editor of the *New York Times* and former Commissioner of Education of New York State, addressed the Conference dinner.

The President's Medal of the National Safety Council was awarded at the dinner to 14 men who had saved life by the Schaefer prone-pressure method of resuscitation. Recipients of the award were Louis J. Beissel, Brooklyn Union Gas Company; Arthur J. Ayres, and Gustave Hambach, of the New York Edison Company; Norman Bergesen, Arthur Colonell, Joseph Pfrangle, Joseph Ballarin, Robert Downing, Robert H. Sisson and Frederick J. Spies, of the New York and Queens Electric Light & Power Company, and Matthew M. Di Pong, Preserved A. Leonard, Russell J. Sell, and Arthur H. Strunk, of the New York Telephone Company.

Following the presentation of awards the trophy winners in the Eleventh Annual State-Wide Accident Prevention Campaign of the Associated Industries of New York State, Inc., for the metropolitan area were announced.

On Thursday, the final day of the Conference, Commissioner Charles A. Harnett, of the New York State Motor Vehicle Department, proposed a strong program to promote motor vehicle accident prevention. Dean A. Fales, associate professor of automobile engineering at the Massachusetts Institute of Technology, criticized the style of the modern motor car, declaring that engineers could build a safer automobile than the stylists have thus far permitted them to do.

In the session on training the driver in high schools it was brought out that the educational directors of nine states are interested in a plan to teach high school students to drive a motor car. In New Jersey a high school course in this subject has been made compulsory.

The newest improvements in street and highway design were outlined in the session on "The Highway—The Pedestrian" by Wilbur L. Cross, Jr., chief engineer of the Department of Motor Vehicles of Connecticut.

Professor William Junkin Cox, of the Department of Engineering Mechanics of Yale University, proposed a system of control for the pedestrian.

More than 80 papers were delivered. Of these, many outstanding ones were given in the sessions on occupational diseases, the work of commercial vehicles, and "After the Whistle Blows."

NATIONAL SAFETY NEWS

More Firms Take Part in New Jersey Contest

A SAFETY awards dinner meeting attended by 800 persons was held recently to celebrate the successful conclusion of the Eighth Annual Statewide Inter-Plant Safety Contest conducted under the auspices of the New Jersey State Department of Labor. The contest ran from October 1, 1935, to December 31, 1935.

The final report of the contest, compared with the 1934 Contest report, indicates that important progress has been made.

Despite the increased hazards, due to an increased number of employees and a greater number of man-hours worked, the 1935 accident frequency rate was only a fraction higher than that of 1934, and this was more than offset by a slight drop in the severity rate.

An additional factor on which the conclusions of the report are based is the fact that a greater number of firms took part in the 1935 Contest and reported results than in the 1934 competition. This condition is credited with giving a broader and more accurate picture of the situation.

In 1935, 342,047 employees, hired by 2,138 firms, took part; in 1934 the employees numbered 268,567 and the reporting firms 1,545. During the 1935 Contest 166,149,815 man-hours were worked; the corresponding figure for the 1934 Contest was 120,795,097.

There were ten fatalities during 1935 as compared with nine for 1934. Non-fatal accidents numbered 1,942 in 1935 and 1,403 in 1934.

The frequency rate for the three months' period of the 1935 Contest was 11.74; the comparative figure for 1934 was 11.69. The 1935 severity rate was 1.72 and that of 1934 was 1.82.

The attendance at the safety awards dinner was indicative of the interest created by the contest.

James W. Burnison, vice-president in charge of manufacturing, RCA Company, Camden, N. J., acted as toastmaster. He had also served as chairman of the General Managing Committee in charge of the contest.

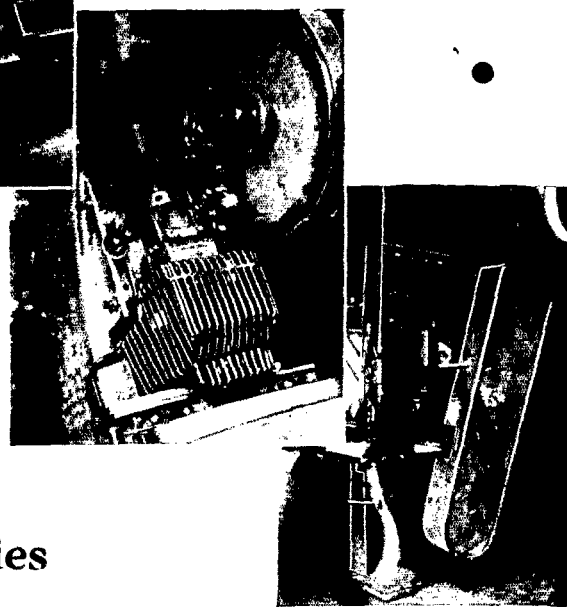
Addresses were given by Arnold Vey, traffic engineer and representative of Governor Harold G. Hoffman; W. S. Landes, president of the Celluloid Corporation; John J. Toohey, Jr., state commissioner of labor, and Edward J. Mulcahy, humorist.

The contest report was read by John Roach, deputy commissioner of labor, and director of the safety contest.

APRIL, 1936



Use H & K Guard Accessories



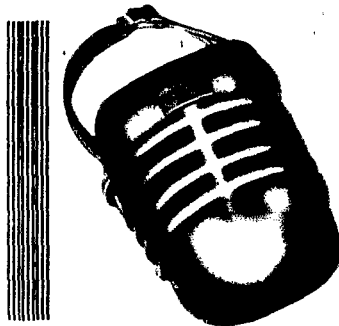
The hum of fly wheels, meshing of gears, whirl of speeding drive belts, stamp of punch presses, are all pleasant industrial sounds, meaning production is under way—and so easily halted by needless, costly accidental injuries. Danger lurks in all machine operations. But, durable, economical and dependable safeguards can be provided by using H & K Guard Accessories. Assembled in your own plant—to your own particular needs—no special tools required. Write for prices and details.

*All H & K Guard Accessories are under inspection
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Smashed, mangled and bruised toes slow down production and cost real money in compensation and medical costs. Protect your workers' feet against accidental injuries. Supply them with Sankey Foot Guards. They are light in weight, comfortable, strong and permit free and easy movement. A trial will convince, send for sample and details.

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ELLWOOD CITY, PENNSYLVANIA

SAFETY ENGINEERS— *Important*

SAFETOE SHOES are "ROCKWELL" TESTED

EVERY Safety Engineer knows and respects the severe and exacting routine represented by the Rockwell Impact and Compression Tests—knows that no steel toecap can pass such tests, made by impartial laboratories, without being "ace high" in safety.



"Safetoe"

Men's Black Elk Blucher Oxford, Leather Lined Vamp and Quarter, Steel Box Toe, Steel Shank, Heavy Single Oak Leather Sole, Whole Rubber Heel, Welt, Safetoe Last. C, 6-12; D, E, 5-12.

So we say—recommend SAFETOE, because Brownbilt SAFETOE Shoes have successfully passed these tests and, therefore, you can be sure that they provide the utmost in safety for your employees.

Write or wire for information about our special Industrial Plant Selling Plan... It will place you under no obligation whatsoever.

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MANUFACTURERS—ST. LOUIS

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BROWN *bilt* SAFETOE SHOES

PRESENTING *New* Justrite Safety Cans!



Waste! Can!

JUSTRITE'S Automatic oily Waste Cans give you safety, economy, efficiency. Opens with foot, closes automatically. Leaves both hands free—a great feature! Reduces insurance rate. Capacity 5, 8, 10, 14 gallons.

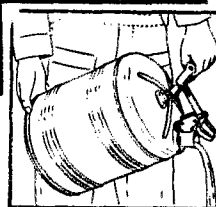
Opens with Foot
Closes automatically

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—lower your insurance rate premiums—by installing the latest improved and approved JUSTRITE Safety Devices TODAY. See your dealer or write us for interesting prices and literature.



Justrite
TRADE MARK

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CHICAGO, ILLINOIS

No Motors Menace Play

(Continued from page 19)

A prize contest was decided upon. This consisted of cash awards for the best play yards established, prizes to be awarded at the end of the vacation school period.

Play yards are divided into these classifications: Home yards on which not more than \$3 is spent, home yards on which not more than \$15 is spent, community or co-operative play yards, in backyards or vacant lots, which are made by the joint efforts of two or more families. No limit on amount spent in this latter class.

A four-page pamphlet telling of the entire plan was published. Copies were distributed by all the Flint school teachers to their pupils on the day schools closed for the summer vacation. A safety play yard contest entry blank was printed on the last page of the pamphlet.

A publicity program was drawn up. Window cards were designed for use in store windows throughout the city and for streetcars. Painted posters on billboards were put up rent free and at half the painting cost by a local sign company. A printing company, sympathetic to the movement and impressed with its great civic appeal, made up the pamphlets and posters at cost.

Follow-up work was conducted in a vigorous manner. Six women contacted all the homes in the city. Wherever children were found to be playing in the street parents of these children were immediately asked to join the contest. Those families who were unable to purchase necessary equipment and who could find no obsolete, cast-off material were furnished free iron pipe, rope, burlap and other material that local factories and stores gave to the club.

The Automobile Club made arrangements for this purpose, particularly with the various manufacturing establishments in Flint, whereby the factories donated usable salvage material to the club and which the club had stored in a central warehouse. While no publicity was given to this free material for play yards, it was sent to persons who otherwise would have been unable to get a yard started. Names and addresses of such persons were noted, their enrollment in the contest was established and the equipment forwarded to them in a city truck without cost. The city trucks, in some instances, also were employed without cost in clearing away rubbish for installing play yards.

A member of one of the cooperating

NATIONAL SAFETY NEWS

agencies, the Boy Scouts, donated their camp facilities for 90 boys, who are known as Safety Crusaders. These boys were picked the last week of school by the principal. They were required to furnish their own food and clothing and receive one week's training on organizing play, handicraft, games, storytelling, health, etc., and then were returned to Flint, sworn in by the Mayor, City Manager, as Safety Crusaders, given a card designating their authority and then sent out into various districts to work with the six contact women in charge of the district. These boys watch out for and report all hazards, lead children to safe places to play, obtain the permission from the owners for the use of vacant lots as play yards, work on the play-yard contest, lay out play yards, organize games, etc.

While the work of the Crusaders contributed in the reduction of accidents, it was decided that in order to make the boys more useful and to get better results it would be wise to organize a Crusader junior police force with definite assignments for every boy. Accordingly, these were elected.

The selected boys act as leaders in the backyard and play-yard work, as well as report all unsafe places and conditions existing within their territory. They are considered such a vital force in preventing accidents to school children that they may call the Police Department when any trouble arises with which they are unable to cope and the message will be broadcast to the radio cars and a cruiser will arrive on the scene.

The Girl Scouts contributed toward this program by training a group of some 65 girls to act as play leaders and organizers of cooperative lots and backyard playgrounds in their neighborhood. They are the natural leaders in their respective communities and have received instructions in the art of telling stories, simple handicraft and light dramatics, besides games for smaller children and athletics for girls of their own age.

The Junior Chamber of Commerce, the Civitan Club and other luncheon clubs were brought into the program in order to further enlarge the movement. The entire program was presented to these organizations at their weekly meeting. These organizations were given definite assignments—to contact with manufacturing plants in obtaining salvage, to sponsor neighborhood cooperative play-yards and to become active in obtaining enrollments in the contest.

The entire cost of the play-yard program amounted to \$402.93. This con-

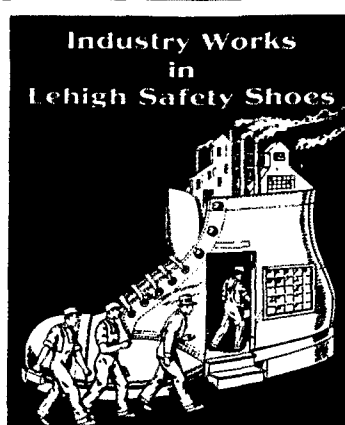
sisted of the 30,000 folders for school children, \$247.38; the 500 posters for shop windows, \$57.68; the 100 posters for street cars, \$15.45; the fifteen painted billboards at \$5 each, \$75, and \$7.42 to a lumber company for erecting a miniature billboard.

An important contributing factor in the success of the play-yard movement in Flint was the editorial support accorded the activity by the *Flint Journal*. Richard Roberts, city editor, gave special attention in the news column to the child safety work.

Messages of inquiry, congratulations and indorsement have marked the play-

yard campaign. These came from different parts of the United States, Canada and Europe. Governor Harold G. Hoffman of New Jersey, one of the nation's leading safety advocates, has declared that the Flint activity was an outstanding program.

"I believe the play-yard movement has been the means of saving child lives and curtailing accidents," Mr. Isherwood said. "I think it is educating a future generation in habits of safety. And I feel it has exerted a psychological influence upon parents and adults in general, beneficial to our present safety problems."



Registered U. S. Patent Office

Safety Shoe

Improvements



During the past decade there has been a vast improvement in the style, construction, comfort and appearance of Safety Shoes. Lehigh Safety Shoe Company has continually forged ahead, creating new patterns for proper foot protection and to make the wearing of safety shoes a pleasure.

Illustrated above is a recent improvement in a semi-dress, medium weight safety shoe with steel box toe. It is ideal for superintendents, formen and others, particularly where wet or damp conditions are encountered. Also a splendid shoe for policemen and motormen.

Specifications: X910—Mens' Black Calf Blucher, Improved Steel Box Toe, Goodyear welt. Two full top-grade Oak Soles special Linol finish. Drilled lined, full Grain Inner Sole, Leather Counters, Stock Gusset, Leather Storm welt, Steinbrecher, Steel Shank Arch Support. 3 Brass Rivets shank to sole, 4 Brass Nails reinforced shank and toe, Keystone Rubber Heel, Leather Base. Sizes 6-12, Widths, A-EEE.

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



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THAN EVER
IMPROVED
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DIFFERENT IN COLOR—GREATER
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—Yet essentially the same product used for many years throughout the field of industry, engineering and maintenance. Tested, proved and found to markedly increase power; reduce wear; cut friction; speed production; provide unusual protection against fire hazards and common damage dangers to frictional areas of equipment.

Pyroil is not just a "graphite oil" although it contains colloidal graphite. It is not just a "break-in" oil: it does not accelerate wear. Its new color is dark wine red.

FREE, INTERESTING AND IMPORTANT CHARTS, PHOTOMICROGRAPHS, REPORTS. WRITE FOR THESE. NO OBLIGATION. Manufactured and Guaranteed by Pyroil Company, W. V. Kidd, Founder, 959 LaFollette Ave., LaCrosse, Wis., U.S.A.

Every Container Bears this Signature

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ORDERS 35**

*Name on request—also names of scores of other concerns standardizing on this device.



because this **CAR DOOR
OPENER AND CLOSER**
is the **SAFEST**
and **QUICKEST** method

With this device, one man can do the work of a gang thereby completely eliminating the injury hazard. A one man pull exerts a force of over 2000 lbs.! Order one on 10 DAY TRIAL—Money Back Guarantee.

Post Paid **\$14.50**

Paslode COMPANY
223-A North Bank Drive, Chicago

Asked and Answered

(Continued from page 32)

mixture of 50 per cent oleic acid (red oil) and 50 per cent kerosene. When the latter is used, the article is first immersed in the mixture, then washed thoroughly in a boiling water bath containing some soda ash.

Although carbon tetrachloride is non-flammable and incombustible, we hesitate to recommend its use in operations such as yours because of possible toxic effects. Oleic acid has a relatively high flash point, but there may be some objection to it because of its odor and possible toxic effects.

However, a special safety solvent, known as Stoddard solvent, has been developed under the sponsorship of the U. S. Bureau of Standards. This is a petroleum distillate, and while it will burn at temperatures above 100 degrees F., it is considered safe when used with discretion. It can be obtained from most of the gasoline refineries and is much less expensive than mixtures which are now being used. While it is perhaps faintly toxic, as are all products of this kind, it is said to be the safest from this standpoint of all the dry solvents which might be used. Its only disadvantage is that it does not evaporate as quickly as the benzol-trichloroethylene mixtures.

TANK CLEANING

QUESTION: Can you give us information relative to the use of dry ice or solid carbon dioxide as an agent for reducing the hazard of working in an atmosphere of flammable or toxic gases when cleaning tank cars?

ANSWER: The inert gas method of lowering the explosibility of gases not thoroughly removed from tanks has proved satisfactory in many instances. When carbon dioxide is used, care should be taken that a sufficient amount be introduced to produce a concentration of not less than 50 per cent by volume. However, it must be realized that carbon dioxide methods supplement rather than supplant other methods of making tanks safe.

More detailed information may be found in two addresses delivered at the Twenty-Fourth Annual Congress at Louisville. These are "Welding and Cutting in Tanks and Other Small Unventilated Places," by H. F. Reinhard, chemical engineer, Carbide & Carbon Chemicals Corp., New York City, pages 198-203, Volume 1, 1935 Transactions; and "How to Detect and Protect against Combustible Gases," by P. S. Williams, chemical engineer, Standard Oil Company of Calif., San Francisco, pages 33-43, Volume 1, 1935 Transactions.

BAKER'S GLOVES

QUESTION: We are insuring a large bakery which has been having trouble with employees handling hot bread pans as they come out of the oven. They have found asbestos gloves impractical, for they do not last more than five or six hours. Is there not some sort of studded gloves or mitten manufactured that would not only withstand the heat, but also be serviceable for this type of operation?

ANSWER: Most large bakeries use asbestos gloves when handling hot bread pans. Some, however, prefer the mitten rather than the glove, and in addition re-enforce the palm and the surface of the thumb with leather. These re-enforced mittens, which naturally are a trifle more expensive than the ordinary asbestos glove or mitten, stand a great deal more abuse and are equally efficient.

Local manufacturers of asbestos clothing tell

Floor Appearance and SAFETY for All Types of Flooring

Keep your floors safe as well as attractive. When Legge products are used the appearance and safety of rigid or resilient floors can be maintained at a low cost.

Falls are responsible for 18 per cent of all occupational injuries. Slippery floors are often the direct cause of serious injuries. Reduce your falling accidents with our Non-Slip products for all types of floors. Approved by safety engineers and insurance companies.

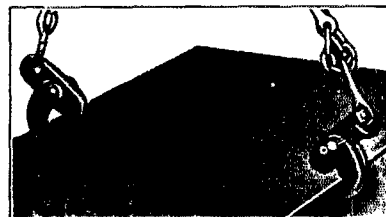
Floor Shine for rigid floors and Floor Shine AA for resilient floors are excellent for cleaning and polishing. Produce a Non-Slip luster.

Sure-Tred—a Non-Slip floor finish for all types of floors. May be buffed to a high luster.

Grip-Tred—an anti-slip treatment for stair treads, platforms, landings and various surfaces, whether wet or dry.

Many other products to choose from. For ECONOMY, SAFETY and FLOOR APPEARANCE we invite your inquiries.

WALTER G. LEGGE CO.
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THE 'SAFE WAY NEVER SLIP

Safety Clamps for use in handling boiler plate either vertical or horizontal constitute the safe sure way to perform this operation. They have many advantages over old-fashioned hooks and chains because they do not have a tendency to slip, as the weight of the piece pulls the clamp tighter.

Boiler plates are easily damaged—don't tolerate clamps that encourage bent, chipped work. The safe way is the only profitable way.

Write for complete details

Never Slip Safety Clamp Co.

P. O. Box 448

Grand Central Annex, New York, N.Y.

NATIONAL SAFETY NEWS

us that gloves and mittens are made in various weights for rough usage and extreme heat. Perhaps the make of gloves your assured is now using is too light for the operation. Or it may be that the pans are so constructed that the sharp edges soon destroy the gloves. In some bakeries the edges of the pans are relatively sharp, while in others the edges and corners are rounded, so as to reduce to a minimum the pulling action on the surface of the glove palm and fingers. Additional information which might be helpful may be found in the National Safety Council Industrial Safety Series Pamphlet No. F-3, "Safety in Bakery Operations."

Program Announced for Midwest Conference

THE Fourteenth Annual Midwest Safety Conference, sponsored by the Chicago Safety Council, the Illinois Industrial Commission, the "Keep Chicago Safe" Committee and a large group of cooperating agencies, will be held at the Stevens Hotel, Chicago, May 5, 6 and 7. Over 3,000 delegates from Illinois, Indiana, Iowa, Michigan, Missouri and Wisconsin are expected to attend. There will be 16 different sessions during the three-day period, which will be addressed by outstanding speakers from all parts of the country, on industrial, public and home safety subjects.

The high point of the conference will be a banquet on Wednesday evening, May 6, which will be addressed by Paul G. Hoffman, President of the Studebaker Corporation, South Bend, Indiana, and Chairman of the Safety Traffic Committee of the Automobile Manufacturers Association. The subject of his address will be—"Making Our Highways Safe For The Motorists."

At the banquet session plaques will be awarded to the winners in the 14th Semi-Annual Interplant Accident Prevention Contest. The following companies which won in their respective groups during the period July 1 to December 31, 1935, will be awarded plaques: Commonwealth Edison Company, James B. Clow & Sons, Armour and Company, Visking Corporation, Delta-Star Electric Company, Western Electric Company Inc., Teletype Corporation, Wallace Press, Van Cleef Brothers, American Brake Shoe & Foundry Company, General Outdoor Advertising Company, Youngstown Sheet and Tube Company, Great Atlantic and Pacific Tea Company, and Acme Steel Company. Plaques will also be presented to the winners in the Southurban Group and Greater Pullman Group Interplant Accident Prevention Contests which cover the period October 1, 1935, to March 30, 1936. The plaques will be presented by S. M. Havens, Vice-President of the Chicago Safety Council for Industrial Safety.

Plans for the Midwest Conference have been developed by a committee composed of representatives of various business, civic and service groups under the chairmanship of J. B. Gibson of the Hawthorne Works, Western Electric Company, and a member of the Board of Directors of the Chicago Safety Council. The Honorable Peter J. Angsten, Chairman of the Illinois Industrial Commission, and the Honorable Edward J. Kelly, Mayor of Chicago and Chairman of the Keep Chicago Safe Committee, are honorary chairmen of the conference.

APRIL, 1936

6 OUNCES OF BETTER HAND PROTECTION

TESTS under actual operating conditions prove: sturdy Davis Latex Gloves outwear ordinary gloves to a marked extent.

And these Davis Latex Gloves are lighter and more comfortable. Your men can feel the difference—do more work with less hand fatigue. Davis Latex Gloves are seamless, too, and have no cumbersome reinforcing strips to slow up the speed and accuracy of the hands of the wearer.

You will also be pleased with the slight cost.



USE COUPON now to send without obligation for further information on gloves to fit your type of industrial operation.

DAVIS EMERGENCY EQUIPMENT CO., INC.

Chicago, Ill. • New York City • Houston, Tex.
San Francisco and Los Angeles, Cal.

Davis Emergency Equipment Co., Inc.
55 Van Dam Street, New York City

Please send my copy of your Bulletin on Davis Latex Rubber Gloves to

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3.6% of your employees do



Cleaning Work

That's the average in industries according to a recent report.

Vacuum Cleaning with a Spencer System enables a few operators to do more work in less time and to perform cleaning work that should not be done by hand. Such as:

- Cleaning ceilings and walls.
- Reclaiming valuable materials.
- Removing dangerous dusts.
- Cleaning shipping boxes and the finished product.
- Cleaning machinery.

Spencer Vacuum Cleaning Systems have been developed in a wide range of types and sizes with a large variety of vacuum tools that effectively eliminate the most obstinate industrial dirt and dust conditions.

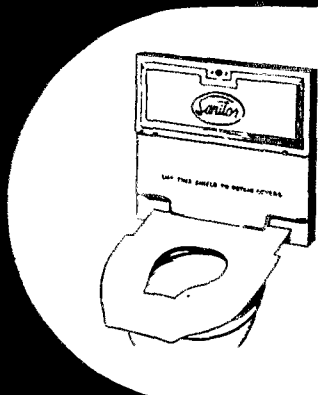
Our engineers will suggest methods and show you how little it would cost.

SPENCER CENTRAL AND PORTABLE
HARTFORD VACUUM CLEANING SYSTEMS

THE SPENCER TURBINE COMPANY, HARTFORD, CONN.

Infection LURKS

IN EVERY UNPROTECTED TOILET SEAT



BE SAFE USE SANITOR PAPER TOILET SEAT COVERS

YEAR after year, infection takes its toll. Loss of efficiency, fatigue, nervous breakdowns, lay-offs and even fatalities are traced directly to this deadly menace.

Millions have been spent in office and factory sanitation to thwart this enemy of public health and efficiency. Modern plumbing, individual towels, individual drinking cups, and more adequate ventilation have wisely been adopted. But, in the crusade to check infection, many Safety Engineers have overlooked the vital importance of Sanitor Toilet Seat Covers.

A major factor in spreading infection is the unprotected toilet seat. Doctors, nurses and public health officials are generally agreed that unprotected toilet seats afford alarming and serious possibilities for the transmission of deadly disease germs.

Protect yourself and your employees by installing APPROVED Sanitor Paper Toilet Seat Covers TODAY. Write for interesting prices and descriptive literature.

SANITOR MFG. CO.
508 S. Wabash Ave., Chicago

SANITOR

TOILET SEAT COVERS

COMING EVENTS Of Interest to Safety Men

April 23-24, Boston

Fifteenth Annual Massachusetts Safety Conference. (Hotel Statler.) Lewis E. MacBrayne, manager, Massachusetts Safety Council, 80 Federal Street, Boston, Mass.

April 28, Madison, Wis.

Ninth Annual Rock River Valley Safety Conference. Harvey G. Bergner, c/o Vocational School, Madison, Wis.

Apr. 30-May 1, Pittsburgh, Pa.

Thirteenth Annual Safety Engineering Conference. (William Penn Hotel.) G. E. Clarkson, manager, Western Pennsylvania Safety Council, 2409 First National Bank Building, Pittsburgh, Pa.

May 5-7, Chicago

Fourteenth Annual Midwest Safety Conference. (Stevens Hotel.) George G. Traver, manager, Chicago Safety Council, 222 North Bank Drive, Chicago.

May 8, Allentown, Pa.

Eastern Pennsylvania Safety Conference. (Americus Hotel.) Secretary, M. E. Rice, c/o Bethlehem Steel Company, Bethlehem, Pa.

May 11-14, Atlantic City, N. J.

National Fire Protection Association, Annual Meeting. Franklin H. Wentworth, managing director, 60 Batterymarch Street, Boston, Mass.

May 11-15, Cincinnati, O.

Thirteenth Annual Coal Mining Convention and Exposition. Julian D. Conover, secretary, American Mining Congress, Munsey Bldg., Washington, D. C.

May 14-15, Charlotte, N. C.

Seventh Annual North Carolina Industrial Safety Conference. T. A. Wilson, Commissioner, North Carolina Industrial Commission, Raleigh, N. C.

May 16-23, Tulsa, Okla

International Petroleum Exposition. The International Petroleum Exposition Safety Conference will be held May 21 and a first aid meet May 22.

May 20-21, Asbury Park, N. J.

Twelfth Annual Eastern Safety Conference. Fred M. Rosseland, secretary-manager, Newark Safety Council, 24 Branford Place, Newark, N. J.

May 20-22, London, Eng.

National "Safety First" Association, Annual Safety Congress. Lieut.-Col. J. A. A. Pickard, D.S.O., general secretary, 52 Grosvenor Gardens, London, S.W. 1, England.

May 21, Erie, Pa.

Eleventh Annual Northwestern Pennsylvania Safety Conference. W. E. Dean, secretary, Erie Safety Council, Commerce Bldg., Erie, Pa.

May 21, Manitowoc, Wis.

Ninth Annual Fox River Valley and Lake Shore Safety Conference. A. L. Nimitz, secretary, c/o Manitowoc Vocational School, Manitowoc, Wis.

May 21-22, Richmond, Va.

Virginia State-Wide Safety Conference. (Jefferson Hotel.) William M. Myers, managing

director, Richmond Safety Council, 30 Allison Bldg., Richmond, Va.

June 2-4, Columbus, O.

All-Ohio Safety Congress. (Deshler-Wallick Hotel.) Thomas P. Kearns, superintendent, Division of Safety and Hygiene, The Industrial Commission of Ohio, Columbus, O.

June 4, Nekoosa, Wis.

Wisconsin River Valley Safety Conference. F. H. Rosebush, c/o Nekoosa Edwards Paper Co., Port Edwards, Wis.

Oct. 5-9, Atlantic City, N. J.

National Safety Council, 25th Annual Safety Congress. W. H. Cameron, managing director, 20 North Wacker Drive, Chicago.

October 26-30, Atlantic City, N. J.

American Gas Association, Annual Convention. Alexander Forward, managing director, American Gas Association, 420 Lexington Ave., New York City.

The Primrose Path

A forceful warning accompanied a \$5.00 fine which a New York magistrate imposed upon a motorist who got in the way of a fire truck.

"Keep on frolicking this way and you won't live long," His Honor observed. "I hope I am saving your life by fining you."

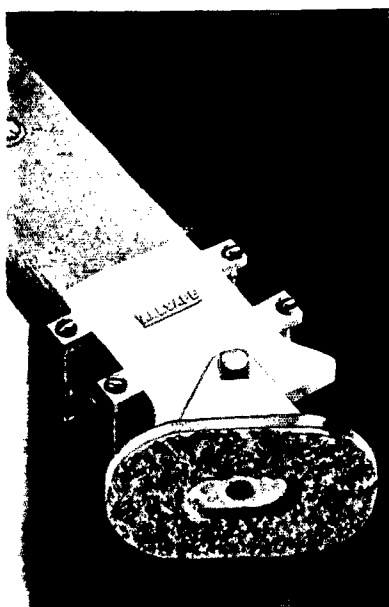


Safety directors and other practical executives will be interested in the low dust count, ease of maintenance and other evidences of efficiency which distinguish Parsons Dust Collecting Systems and are reflected in an enviable record of repeat orders. Write for Bulletin DA-5.



PARSONS

ENGINEERING CORPORATION
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Allsafe
NON SKID
Ladder Shoes
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Contact Plates
Defy Slipping
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1. Sharp carborundum grits cast integral with light weight aluminum alloy feet prevent slipping on any surface
2. Exclusive integral angle stop makes it impossible to incline ladder at unsafe angles
3. Attached with saddles, no holes drilled in ladder rails . . . no splitting . . . fits all ladders
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5. Carborundum contact plates easily replaced at low cost

Thousands of American Allsafe Ladder Shoes have met every test of time. Write for illustrated Bulletin.

AMERICAN
ALLSAFE CO.

210 Franklin St.

Buffalo, N. Y.

APRIL, 1936

HONOR ROLL

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

American Can Co. of Massachusetts

A record which had reached 416,197 man-hours without a disabling-injury accident and was still unbroken on December 31, 1935, has been accomplished by the American Can Company of Massachusetts, Boston. The record began January 1, 1935. The average number of employees is 200.

Brunswick Laundry Co.

A record of 4,083,100 man-hours without a disabling-injury accident has been accomplished by the Brunswick Laundry Company, Jersey City, N. J., a firm employing an average force of 687. The record began October 1, 1932, and was still unbroken December 31, 1935.

Louis DeJonge & Co.

Louis DeJonge and Co., paper importers and manufacturers, completed the past year without a single disabling-injury accident. The record, in which 188 employees participated, represents more than 359,000 man-hours.

Duplan Silk Corp.

Between December 21, 1934, and September 30, 1935, the Duplan Silk Corporation, Hazelton, Pa., operated 1,639,909 man-hours without a disabling injury. The average number of employees during this time was 1,190.

Emsco Derrick & Equipment Company

The D. & B. Pump and Supply Co., Los Angeles, Calif., a division of the Emsco Derrick & Equipment Co., has a record which reached 642,809 safe man-hours on December 31, 1935, at which time it was still unbroken. The record began May 13, 1931. The working force averages 61 employees.

General Cable Corp.

The Buffalo plant of the General Cable Corporation has more than 400,000 injury-free man-hours to its credit. The record, begun September 20, 1935, was still unbroken March 10, 1936. During this period more than 200 untrained persons were hired for temporary work lasting from two to 12 weeks.

Grasselli Chemical Co.

Two plants of the Grasselli Chemical Company, Inc., lay claim to unusual safety records. The acid and chemical works located at East Chicago, Indiana, operated 374 days—from January 7, 1935, to January 16, 1936—an exposure of 1,486,140 man-hours without a chargeable injury. The number of employees averages 775. The record is unbroken. The acid plant at Wurtland, Ky., has been running more than three years without a lost time accident. The record, started October 5, 1932, was still unbroken on December 23, 1935. At that time it had run three years, two months and nineteen days. The average number of em-



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They spread
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ALL paint processes are highly hazardous . . . difficult blazes for most extinguishers. Water or soda-and-acid units spread flames. Chemical extinguishers, including foam, act too slowly, damage paints and materials in process. However, the LUX Extinguisher adequately protects these hazards.

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Twelve great auto plants now protect dip-tanks with automatic LUX Systems. They extinguish fires with such speed that materials are not fire-damaged . . . and the production line is moving again—

Any paint process needs special protection . . . LUX protection. Prices on portable extinguishers start at \$14, on Systems at \$60. For complete information write today to



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 41 West Street, Bloomfield, N. J.



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New Reinforced Electrician Gloves

YELLOW with BLACK center or ALL BLACK

Both Steam Cured



Either Straight or curved Fingers in all sizes and for all standard voltages.

The records of large utilities show that from 47% to 75% of the gloves that are rejected on Retest are on account of mechanical injuries, namely: TEARS, SCRATCHES, ABRASIONS and SNAGS on the glove cuff.

The Reinforcement of the Cuff:

is one third heavier than the hands and fingers—increases the factor of safety—longer service and greater economy—increases the efficiency and morale of the linemen.

Why the YELLOW with BLACK CENTER Glove?

The laminated construction gives added dielectric and tensile strength. Positive inspection in field and laboratory. Seriousness of all defects, snags, scratches, abrasions and imperfections are easily seen as black will show through the yellow.

Try a few dozen and be convinced of the economy and added safety factor, efficiency and high morale of your linemen. Price only 75 cents more per pair than regular gloves for all voltages.

Originated and patented by

FRANK E. BARN'S

130 North Wells Street
Chicago, Illinois

ployees is sixteen and the exposure period at the last date of record had reached 111,307 man-hours.

C. Hager & Sons Hinge Mfg. Co.

The C. Hager & Sons Manufacturing Co., St. Louis, Mo., attained a safety record of 2,931,841 man-hours on December 31, 1935. The record began December 1, 1930, and is still unbroken. An average of 290 employees took part in building the record.

Halowax Corp.

A safety record of more than six years' duration has been made by the Halowax Corporation, manufacturer of wax products, Wyandotte, Michigan, which has worked 73 consecutive months without a disabling-injury accident, the equivalent of 252,223 man-hours. The last disabling-injury accident was December 31, 1929. The record was unbroken at the date of reporting, February 28, 1936.

International Business Machines Corp.

For the second time in two years the International Business Machines Corporation, Endicott, N. Y., bettered the two-million-hour mark in safe production. The latest record was 2,156,114 man-hours without a lost-time accident. The other no-accident period, which ended February 25, 1935, went 2,320,800 man-hours without a disabling-injury mishap.

Lehigh Structural Steel Co.

The Lehigh Structural Steel Co., Allentown, Pa., employing an average of 120 men, has a record which, on December 31, 1935, had reached 1,179,519 man-hours without a disabling-injury accident and was still unbroken. The record began April 16, 1931.

Pittsburgh District Locks

At the end of November, 1935, Lock No. 4, Ohio River, (Pittsburgh district) had gone 4,162 days, or more than 400,000 man-hours without a lost time accident. Lock No. 6, Ohio River, has worked 240,000 man-hours, and Lock No. 4, Monongahela River, 212,000 hours without a lost time accident. The total number of man-hours worked by all locks in this district since the last disabling accident is 3,881,600.

Union Carbide and Carbon Corp.

Plants and laboratories of the Union Carbide and Carbon Corporation which have worked twelve consecutive months or 1,500,000 man-hours without a disabling-injury accident are as follows:

American Carbolic Company, Duluth, Minn., 49 employees; 712,715 man-hours from September 23, 1928, to December 31, 1935.

Carbide and Carbon Chemicals Corp., Diamond, W. Va., 53 employees; 226,847 man-hours from November 16, 1933, to December 31, 1935.

Carbide and Carbon Chemicals Corp., Hastings, W. Va., 55 employees; 208,062 man-hours from March 22, 1934, to December 31, 1935.

Carbide and Carbon Chemicals Corp., Niagara Falls, N. Y., 134 employees; 391,688 man-hours from April 3, 1934, to May 23, 1935.

Dominion Mines & Quarries, Little Current, Ont., Canada, 52 employees; 90,900 man-hours from July 19, 1934, to December 31, 1935.

Electro Metallurgical Company, Holcomb, Rock, Va., 30 employees; 673,197 man-hours

from August 4, 1927, to May 13, 1935.

Haynes Stellite Company, Kokomo, Ind., 205 employees; 506,168 man-hours from October 23, 1934, to December 31, 1935.

Kemet Laboratories Company, Cleveland, Ohio, 41 employees; 215,174 man-hours from February 17, 1932, to December 31, 1935.

Linde Air Products Company, Chicago, Ill., 417 employees; 1,029,249 man-hours from August 26, 1934, to December 31, 1935.

Michigan Northern Power Company, Sault Ste. Marie, Mich., 50 employees; 1,048,244 man-hours from December 21, 1926, to December 31, 1935.

National Carbon Company, Clarksburg, W. Va., 68 employees; 1,648,072 man-hours from October 15, 1927, to April 16, 1935.

National Carbon Company, Cleveland, Ohio, 198 employees; 376,282 man-hours from June 5, 1934, to June 12, 1935.

National Carbon Company, Edgewater, Cleveland, Ohio, 1,536 employees; 1,606,328 man-hours from March 19, 1935, to October 17, 1935.

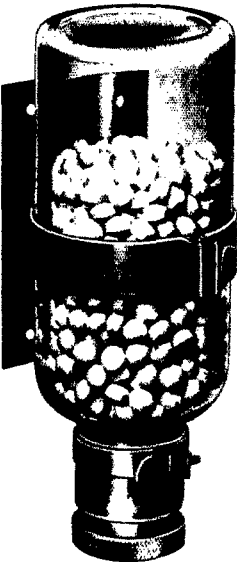
National Carbon Company Research Laboratories, Edgewater, Cleveland, Ohio, 52 employees; 1,280,701 man-hours from May 24, 1927, to December 31, 1935.

National Carbon Company, Fostoria, Ohio, 625 employees; 2,234,805 man-hours from February 27, 1934, to December 31, 1935.

National Carbon Company, Fremont, Ohio, 320 employees; 2,190,999 man-hours from November 1, 1930, to February 5, 1935.

National Carbon Company Warehouse, Jersey City, N. J., 35 employees; 693,769 man-hours from December 5, 1928, to December 31, 1935.

National Carbon Company, Niagara Falls,



HEAT CRAMPS

We are able to give you complete information on the effective treatment and prevention of Heat Cramps, through the use of C.P. Sodium Chloride.

The expense is small and results are convincingly satisfactory.

McKesson-Hall-Van Gorder
Division McKesson & Robbins, Incorporated
1382 West 9th Street
Cleveland, Ohio

Please send additional information on prevention of Heat Cramps.

Name _____

Street _____

City _____

State _____

N. Y., 366 employees; 1,045,828 man-hours from October 18, 1933, to February 12, 1935.

National Carbon Company, Port Richmond, Philadelphia, Pa., 15 employees; 178,893 man-hours from June 13, 1929, to December 17, 1935.

National Carbon Company Warehouse, San Francisco, Calif., 19 employees; 124,209 man-hours from August 26, 1932, to December 31, 1935.

Canadian National Carbon Co., Ltd., Toronto, Ont., Canada, 240 employees; 522,654 man-hours from March 9, 1934, to July 29, 1935.

N. C. - S. A., Mexico, 23 employees; 197,141 man-hours from September 3, 1931, to December 31, 1935.

Oxweld Acetylene Company, Newark, N. J., 448 employees; 2,105,719 man-hours from September 24, 1933, to December 31, 1935.

Oxweld Acetylene Company, Los Angeles, Calif. (Purox) 35 employees; 220,731 man-hours from November 19, 1931, to December 31, 1935.

Oxweld Acetylene Company Warehouse, Chicago, Ill., 38 employees; 582,965 man-hours from October 17, 1929, to December 31, 1935.

Oxweld Railroad Service Co., Chicago, Ill., 41 employees; 611,312 man-hours from November 8, 1928, to December 31, 1935.

Union Carbide Company, Niagara Falls, N. Y., 1,082 employees; 1,659,635 man-hours from July 17, 1934, to April 4, 1935.

Union Carbide & Carbon Research Laboratories, Inc., Niagara Falls, N. Y., 100 employees; 432,321 man-hours from August 29, 1933, to December 31, 1935.

U. S. Vanadium Corporation, Columbiana, Ohio, 13 employees; 82,513 man-hours from May 16, 1931, to December 31, 1935.

Union Electric Light & Power Co.

The County Electric group of the Union Electric Light & Power Co., St. Louis, Mo., worked from August 7, 1934, until February 7, 1936—978,690 man-hours—without a disabling-injury accident. The group comprises 335 employees.

Virginia Electric & Power Co.

The production department of the Virginia Electric & Power Co., Richmond, Va., on January 30, 1936, completed a three-year record without a single disabling-injury accident, working a total of 1,035,046 man-hours during that period. A previous record set by this department ran from January 11, 1930, to January 30, 1933, a total of 1,439,773 man-hours. Thus the department has a record of six years' continuous operation with only one disabling-injury accident, during which time it has worked nearly two and one-half million man-hours.

Westinghouse Lamp Co.

A safety record of 2,015,476 man-hours, still unbroken on December 31, 1935, has been accomplished by the miniature lamp department of the Westinghouse Lamp Co., Bloomfield, N. J. The record began February 1, 1934.

White, Corbin & Co.

Six full years without a lost-time accident have been completed by the White, Corbin & Company division of the U. S. Envelope Co. The plant is located at Rockville, Conn. The record, which began January 1, 1930, had been extended to 2,257,485 no-accident man-hours by December 31, 1935. At the latter date it was still unbroken. An average of about 185 employees is represented in the record.

APRIL, 1936

EFFICIENCY PLUS



Brac-Kit opened and ready for use.

SAFETY Directors tell us—"I use Davis Brac-Kits out of doors on tool houses because they are weather-proof. I use them also on all my trucks and cars for they occupy so little space. Davis Brac-Kits save me time in accident emergencies when speed of action is so valuable. Best of all, the contents don't get dirty even when the kit is placed on the ground. That is why I recommend the Davis Brac-Kit for Efficiency $\frac{1}{2}$."

YOU, TOO, WILL FIND THE DAVIS BRAC-KIT MOST CONVENIENT FOR YOUR USE

Davis Brac-Kits contain 10 D-carton units, each of which holds material for several first-aid treatments. The standard Brac-Kit assortment includes adhesive, gauze compresses, Isodine swabs, Tannoid, ammonia inhalant, eye-dressing and a tourniquet.

Use coupon now to send without obligation for complete details of the convenient DAVIS Brac-Kit.

Davis Emergency Equipment Co., Inc.
55 Van Dam Street, New York City

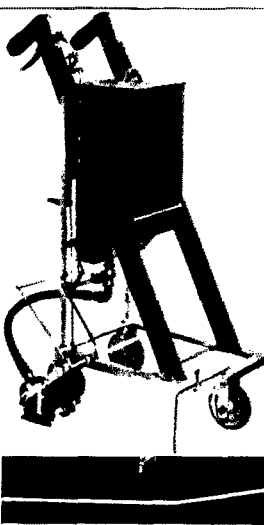
Please send my copy of your Bulletin on Davis Brac-Kit to

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



NISSLY FLOOR LINER



One of the most important phases of a good housekeeping program for an industrial plant is the maintaining of clear passageways. All aisles should be kept clear for the safety of pedestrian, hand truck and power truck traffic. Well defined avenues of safety can be easily maintained when you use the Nissly Floor Liner. This machine will paint a line as rapidly as one can walk. It is easy to operate and handle and can readily be used in restricted places. Low in first cost and economical to use.

Write for complete details.

WALTER S. NISSLY

43 N. Clinton Street

YORK, PA.

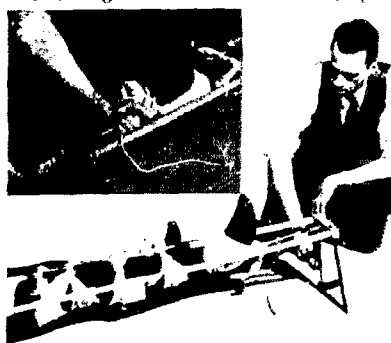
WITH THE MANUFACTURER

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

New Splint for Broken Legs

An improved type of leg splint, known as the Green Traction Splint, has been developed especially to enable industrial first aid workers to take care of such cases easily and effectively.

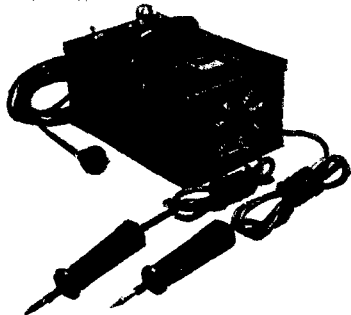
The longitudinal members of the splint



are made of wood. X-rays of the leg can be taken without removing the splint. The upper end of the splint is formed by a half ring of laminated wood, reversible for either leg, and the lower end by a cross-piece of metal in which is mounted a hook which can be drawn forward by turning a wing nut. The splint weighs only 7½ pounds complete and can be compactly packed in a flat case. It was developed by Harold Greene, of the Aetna Life Insurance Company, with the cooperation of Dr. Harry Archer, chief surgeon of the New York Fire Department, and Dr. Robert H. Kennedy, of the American College of Surgeons. The Davis Emergency Equipment Company, 55 Van Dam Street, New York City, are distributors.

Dielectric Tester

This new Dielectric or breakdown tester manufactured by The Acme Electric & Manufacturing Company, 1440 Hamilton Avenue, Cleveland, Ohio, indicates shorts, opens, or grounds and checks circuits at



approved standard testing voltages. The manufacturer states that this unit will permit actual application of the standard testing voltage of double the rated voltage plus 1,000 to the appliance device or equipment under test and thus prove the dielectric strength of the insulation to meet standard safety limits.

The transformer used in this device permits short circuits for a period of time without any damage. This current limitation also eliminates burning of materials at point of breakdown of apparatus

under test. Acme engineers point out particularly the use of a second secondary winding on the same common core, but shielded from the high voltage secondary. This secondary supplies 110 volts to a small indicating ruby lamp. The lamp is inset and shielded by metal mask. This lamp glows when the tester is turned on, warning the operator of live secondary leads. On partial breakdown the lamp dims and on complete breakdown it goes out.

Shockproof Screw Driver

Industrial Products Company, 800 W. Somerset Street, Philadelphia, Pa. announces a new shockproof, unbreakable, rubber insulated screw driver.

It is made with a live rubber handle and cabinet style blade which is moulded into the rubber so that it will not turn. It is designed for electricians, service maintenance and meter men and is also a practical tool for work on radios and automobile ignition. It is made in one size only, length overall 8 inches.



New Light Hoist

A new line of electric hoists, known as the "Zip-Lifts" with capacity ratings from 250 to 500 pounds, is announced by the Harnischfeger Corporation, Milwaukee, Wis. The manufacturers state they are primarily designed for "spot handling"

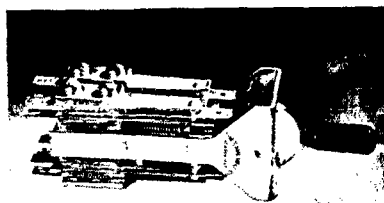
work in machine shops, welderies, storage booths, foundries, etc. These units are of all welded construction and are exceptionally light; the ¼-ton model weighing only 100 pounds. They have hoisting speeds up to 32 feet per minute and are controlled either by push button or pendant rope.



Safety is provided with a weight-type limit switch, solenoid dry disc motor brake and ratchet and roller type mechanical brake. Standard units are furnished with or without trolley.

Cam Lever Switch

The Gamewell Company, Newton, Mass., announce a new cam lever switch designed



for use where the break-down requirements do not exceed 2,500 volts. The contacts are rated at 1 ampere, 110 volts, DC, non-inductive load.

A positive stop is provided in the center position so that when the handle is returned to this position from an operated position the contacts on the opposite side of the switch are not affected. There is approximately 1/16 of an inch between the railers and the operating springs when the switch is on the center position.

Sight Light Indicator

This new photoelectric illumination meter of vest-pocket size checks the adequacy of lighting in homes, schools and factories for a wide range of seeing tasks. Illumination values as high as 250 foot-candles are read directly from the scale. The scale is so spaced that low illumination levels are fully and legibly indicated and it is divided into five "seeing task" zones, set off by colored divisions. The back of the indicator contains an embossed metal plate classifying specific seeing tasks.

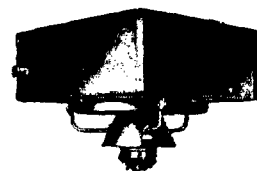
An improvement which reduces the size of the meter and simplifies its use is the location of the light-sensitive cell within the scale opening, as a part of the scale



itself. Thus, when the meter is placed so that the cell directly views the illumination to be measured, the scale is in the natural position for easy and instant observation. Manufactured by the Weston Electrical Instrument Corporation, Newark, N. J.

Heater for Large Openings

A heater to answer the problem of heating entrances to garages, bus terminals, freight houses, docks, shipping and receiving departments, etc., is announced by the L. J. Wing Manufacturing Company, 154 West 14th Street, New York. This heater is designed for ceiling suspension just inside of and directly over each door



opening. The unit itself consists of a combined electric and steam directional heater, compact in size and simple in construction. A powerful fan draws a large volume of air through a copper coil.

NATIONAL SAFETY NEWS

Heat Tablet Dispenser

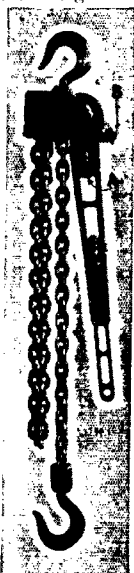
The Fairway Laboratories, Inc., Belleville, Ill., announce a new all metal dispenser with a lock top and key. This dispenser is unbreakable and was designed for installations where the glass hopper would not be practical. It holds a large supply of heat tablets and can be installed at any location where it is advantageous to have a supply of tablets available.

"CM" Puller

Chisholm-Moore Hoist Corporation, Tonawanda, N. Y., announces this general

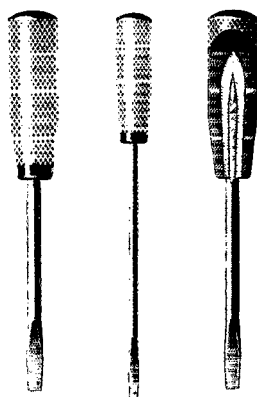
utility tool designed for lifting or pulling vertically, horizontally or at any angle. Capacities are $\frac{3}{4}$ ton and $1\frac{1}{2}$ ton. It is intended for numerous pulling jobs, such as tightening guy wires, stretching fence, pulling posts, trench work and also for general maintenance and construction service.

An efficient gear reduction in both capacities provides for a minimum amount of effort to operate the ratchet handle—43 pounds to pull $\frac{3}{4}$ ton. Light weight facilitates handling— $\frac{3}{4}$ ton weighs 17 pounds. Little space is required in service or storage. Double duty, alloy steel chain, is used with ultimate strength in excess of five times capacity load. Operation is controlled by two buttons which also permit quick adjustment of the chain. Mechanism and automatic friction brake are fully enclosed.



Screwdriver with Fibre Handle

The Worcester Fibre Products Company, Worcester, Mass., is offering a screwdriver provided with a handle which is insulated with fibre. They state the construction allows the setting of the blade without pin or ferrule, eliminating the danger of contact from this source. The blades are of special steel selected to



render hard service and can easily be insulated further with fibre tubing. The use of fibre also makes a strong handle that will not easily split open. This material provides a non-slipping grip that holds even with oily and perspiring hands.

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.

APRIL, 1936

Trade Publications

for your

SAFETY EQUIPMENT LIBRARY

Information You Should Have

A reference file of trade publications on safety equipment should be a part of every plant's ammunition for the battle of controlling accidents. A wealth of valuable data and information is yours at no charge and with no obligations. Every executive should avail himself of these publications—much help in the every day problems of efficiency, safety and profitable operation are found in them. Mail the coupon today!

- American Dustube Collector.** Bulletin No. 222. This bulletin illustrates and describes this dust collector and lists many of the dusts or materials which can be collected in this system. The American Foundry and Equipment Company.
- How Today's Planes Are Protected from Fire.** This folder illustrates and describes a special fire extinguishing system for combating airplane engine fires. Also shows an airplane hand extinguisher designed for use in the cabin. Walter Kidde and Company, Inc.
- Safety Wheel Wrench.** Bulletin No. 16-A. These wrenches are designed to permit a twisting of sucker rods or wire line without hazard to the men doing the job or damage to the equipment. Baird Manufacturing Company.
- Connector End Line Hose.** A 4-page folder covering this product designed to protect linemen where it is necessary to cover up longer spans of wire than can be accommodated with single pieces of standard line hose. W. H. Salisbury and Company, Inc.
- Nissly Floor Liner.** Bulletin No. 7 illustrates and describes machine especially designed for painting well defined traffic lanes in industrial plants. Walter S. Nissly.
- Expansion Bolts.** An interesting and comprehensive loose leaf book containing architectural and engineering data on expansion bolts and devices for holding to masonry. Shows various material in which anchors are used and the proper type anchors for each. The Rawlplug Company, Inc.
- Hydrogen Sulphide Detector.** Bulletin No. DY-1 describes this detector in detail. It is a hand operated instrument for quick, accurate detection and measurement of low but dangerous concentrations of hydrogen sulphide in air. Mine Safety Appliances Company.
- Marine Specialties.** Catalog No. 164. This catalog contains many modern life saving products. Included are a number of Kapok life saving vests. Also shown are blasting mats made from closely woven manila rope. Atlantic-Pacific Manufacturing Company.
- Protecting Costly Lamps Against Vibration.** Folder shows heavy duty lamp shock absorber or vibration arrestor designed to give longer life to lamp filament and to prevent lamp from falling. The Thompson Electric Company.
- Spencer Drill-Vac.** This interesting folder deals with portable and stationary units for the control of dust caused by the drilling of rock in mines and quarries or wherever rock drills are used. The Spencer Turbine Company.
- Propellair Fans.** This 40 page catalog contains a full description of all Propellair exhaust and ventilating fans for a variety of purposes. Propellair, Inc.
- Prevention of Heat Sickness.** This interesting booklet deals with the problems of heat sickness and the use of Sodium Chloride tablets. These tablets equalize physical resistance with heat hazards in all types of hot work conditions. Fairway Laboratories, Inc.

NATIONAL SAFETY NEWS

20 North Wacker Drive
Chicago, Ill.

April, 1936

Please have sent to me the publications I have checked:

Name.....
Title.....
Company.....
Address.....

LET DRACCO your DUST!

We know it's a good plan to CHECK UP on DUST because DRACCO Engineers have done it and discovered that DUST was taking an enormous toll each and every day. For twenty years, DRACCO Engineers have solved DUST problems, and you are invited to avail yourself of our vast experience. Information will be mailed upon request.

CONTROL DUST

A sound management knows that a Dust Condition is a serious hazard and a financial liability and consider it good business to control DUST. DRACCO Dust Control will give you, (1) increased efficiency of operation; (2) longer life and less maintenance of equipment; (3) improved health of workers; (4) fewer lawsuits. Have DRACCO check your Dust condition. Write for information today.



The New DRACCO
Multi-Bag Filter

Write for Bulletin No. 301

DRACCO CORPORATION
Successors to The Dust Recovering & Conveying Co.
4073 E. 116th St. Cleveland, Ohio

Whenever GOGGLES
are used...

PLAY SAFE WITH
HALCO
Sweat Bands

SNAP! IT'S ON!
SNAP! IT'S OFF!
NO FOGGY LENSES
For Me.

... prevent faulty vision,
annoyance, and danger
... keep goggles fog-clear,
haze-free, sweat-less ... fit
any head ... replaceable sterile
gauze bands ... can be washed
many times, yet inexpensive
enough to throw away after using
... increase safety, efficiency, com-
fort ... snap, it's on! ... snap, it's
off! For Safety Sake,

WRITE NOW for SAMPLES
and LOW PRICES!

A.E. HALPERIN CO. Inc.
Home of Halco Safety Products
257 ATLANTIC AVE. BOSTON, MASS.

Good Housekeeping

(Continued from page 16)

where conditions are less hazardous.

Much new construction work has been going on at all Monsanto plants in recent years to meet the increasing demands for chemical products in modern life. Each new building and its equipment are carefully planned for lighting, ventilation, sanitation and protection against mechanical hazards.

Experience has shown the company that there are two essentials to the success of any housekeeping plan. First, the realization that the company expects good housekeeping. Second, cooperation of employees all along the line. The spirit of cleanliness and order has proved to be contagious, and it has extended to the personal appearance of employees as well as plant appearance.

Health Pamphlets Now Available

BECAUSE back injuries comprise such a large percentage of industrial accidents, a new Health Practices Pamphlet issued by the National Safety Council is of particular importance to industrial executives and supervisors.

In addition to the "Back Injuries" pamphlet, No. 17, a pamphlet on "Lighting and Health," No. 18 has just been released. The two constitute a valuable addition to the Health Practices series. Both are written so that they may easily be understood by the layman.

Pamphlet No. 17, written by Dr. Sumner M. Roberts, includes a chart showing the cause, treatment and prevention of back injuries.

Pamphlet No. 18, written by Mrs. Janet H. Clark, of the Johns Hopkins University, explains the effect of lighting on the hygiene of the eyes. It is illustrated with charts which help the reader understand what type of lighting is needed in specific cases.

Single copies of the two pamphlets are available to Council members upon request. Quotations will be given on quantity prices.

According to Walter Winchell a Detroit cop held up his hand to halt a lady motorist, who ignored the uplifted hand, but was promptly whistled to a stop.

"Don't you know what I mean when I hold up my hand?" the cop sarcastically inquired of the lady.

"I ought to—I was a school teacher for twenty years," she replied.



Floors, glazed from age and wear, are a continual source of slips and falls. They slow up production—often lay up valuable workers. Overcome this hazard with **PLASTIC FUT-SURE**. Economical to buy—easy to apply—this slip-proof surfacing is durable, easily cleaned, resilient, oil and grease proof, unaffected by heat or cold. Folder on request.

GENERAL ABRASIVE CO., INC.
2068 College Ave.
Niagara Falls, N. Y.

**PLASTIC
FUT-SURE**
FOR SAFER WALKING SURFACES

ARMSTRONG



Safe because they are
ARMSTRONG

Day after day, year in and year out, **ARMSTRONG** Drop Forged "C" CLAMPS are safely depended upon to carry these great automobile body dies where the least spring, give, or slightest loosening of the screw would spell disaster. Embodied in all **ARMSTRONG** an extra strength—a dependable safety factor that can be counted on.



ARMSTRONG BROS. TOOL CO.
"The Tool Holder People"
339 N. Francisco Ave., Chicago, U.S.A.

NATIONAL SAFETY NEWS

Fluted Diamond Hatched Plain



MASON ABRASIVE IRON, BRONZE, ALUMINUM AND NICKEL SAFETY TREADS

A CAST safety stair tread in which aluminous abrasive is imbedded in the wearing surface effectively preventing slipping whether wet or dry. Treads are easily and quickly installed on new or old work. For use with concrete, wood, marble, slate and other types of stairs. Furnished in three surfaces, Fluted, Diamond Hatched and Plain.

Over 40 years' Experience is at your service for the asking.

**AMERICAN MASON
SAFETY TREAD CO.**
LOWELL, MASS.

IN STOCK AT TEN PLANTS
RYERSON STEEL-SERVICE

Chicago

Jersey City

**For SAFE
Climbing—**



—Use Johnson
Ladder Shoes **\$1.65**
Per pair

Johnson Ladder Shoe Co.
Eau Claire, Wisconsin

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A puncture is a small hole in a tire, usually found several miles from a garage.



Order Daytons BEFORE the Accident

Don't wait until after a costly accident to equip with Dayton Safety Ladders. Daytons pay for themselves not only in accident prevention, but in promoting faster and better work.

Made of durable airplane spruce—light, strong, easy to carry. Straight back permits close work. Sizes 3 to 16 feet.

Write Dept. NSN-4 for details

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

DAYTON
Safety Ladder
(Patented)

Stock carried on Pacific Coast by E. D. Bulard Co., Los Angeles and San Francisco, and by 160 other distributors from coast to coast. Made and distributed in Canada by Safety Supply Co., Toronto.

THE BUYERS' SERVICE

See Advertisers' Index, Page 75—When writing, please mention National Safety News

A
Accident Prevention Service
National Safety Council, Inc.

Abrasives
American Abrasive Metals Co.
American Foundry Equipment Co.
General Abrasive Co.

Adhesive Tape and Plaster Remover

Alarms, Fire
Mine Safety Appliances Co.

Ampoules, First Aid
Bernhard, Robert A.

Anemometers
Bullard Company, E. D.
Mine Safety Appliances Co.

Aprons
American Allsafe Co.
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.
Standard Safety Equipment Co.
Strauss Company, The

Arresters, Dust
American Foundry Equipment Co.
Blaw-Knox Co.
Bullard Company, E. D.
Dracoo 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
Bulhrke Company, R. H.
Bullard Company, E. D.
Davis Emergency Equipment Co., Inc.
Industrial Products Co.
Pulmonan Safety Equipment Corp.
Safety Equipment Service Co., The
Safety First Supply Co.
Standard Safety Equipment Co.
Strauss Company, The

Belts, Linemen
American Allsafe Co.
Bulhrke Company, R. H.
Bullard Company, E. D.
Davis Emergency Equipment Co., Inc.
Industrial Products Co.
Klein & Sons, Mathias
Mine Safety Appliances Co.
Pulmonan Safety Equipment Corp.
Safety Equipment Service Co., The
Safety First Supply Co.
Standard Safety Equipment Co.
Strauss Company, The

Belts, Safety
American Allsafe Co.
Bulhrke Company, R. H.
Bullard Company, E. D.
Davis Emergency Equipment Co., Inc.
Industrial Products Co.
Klein & Sons, Mathias
Mine Safety Appliances Co.
Pulmonan Safety Equipment Corp.
Safety Equipment Service Co., The
Safety First Supply Co.
Standard Safety Equipment Co.
Strauss Company, The

Belts, Tree Trimming
Bulhrke Company, R. H.
Bullard Company, E. D.
Industrial Products Co.
Mine Safety Appliances Co.
Pulmonan Safety Equipment Corp.
Strauss Company, The

Belts, Window Cleaning
Bulhrke Company, R. H.
Bullard Company, E. D.
Industrial Products Co.
Mine Safety Appliances Co.

Blowers, Hose Mask
Bullard Company, E. D.
Davis Emergency Equipment Co., Inc.

Blowers, Portable, Electric
Spencer Turbine Co.
Surtz Mfg. Co., The

Box Car Door Opener
Paslode Company

Justite Mfg. Co.
Mine Safety Appliances Co.
Protectoseal Company
Pulmonan Safety Equipment Corp.
Safety Equipment Service Co., The
Standard Safety Equipment Co.

Chain, Factory
American Chain Co., Inc.
Columbus-McKinnon Chain Corp.
McKay Company

Clothing, Fireproof
American Allsafe Co.
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.
Standard Safety Equipment Co.
Strauss Company, The

Clothing, Weatherproof
American Allsafe Co.
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.
Standard Safety Equipment Co.

Collectors, Dust
American Foundry Equipment Co.
Blaw-Knox Co.
Dracoo Corporation
Parsons Engineering Corp.
Surtz Mfg. Co., The

Compounds, Cleaning
Safety Clothing Co., The

Compounds, Floor and Stair, Non-slip
Legge Co., Walter G.

Containers, Explosive Liquid
Bullard Company, E. D.
Davis Emergency Equipment Co., Inc.
Industrial Products Co.
Justite Mfg. Co.
Mine Safety Appliances Co.
Protectoseal Company
Pulmonan Safety Equipment Corp.
Safety Equipment Service Co., The
Strauss Company, The

D
Detectors, Gas
Bullard Company, E. D.
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, Pyrotannic
Mine Safety Appliances Co.

Disinfectants and Deodorants
Abbott Laboratories
Huntington Laboratories, Inc.
West Disinfecting Co.

Dust Camera

Dusters, Rock
Mine Safety Appliances Co.
Portable Lamp & Equipment Co.

E
Emblems, Safety
Mine Safety Appliances Co.

Exhausts, Grinding Wheel
Surtz Mfg. Co., The

Gas and Electric Cutting and Welding Demand Many Safeguards

Accident Prevention Equipment Manufacturers Section of the National Safety Council

Many accidents have been caused in industry by lack of adequate precautions when using gas and electric welding equipment. Care must be taken to see that all such equipment is in good condition. Regular inspections are of great importance.

Personal protection for the operator has developed along with the growth of this type of work. It is now possible to obtain from a number of reliable sources, the proper safeguards. Such equipment includes goggles, helmets, masks, fire resisting suits, gloves, aprons, leggings, spats, etc. Check up and be sure your welders are adequately guarded.

Pulmonan Safety Equipment Corp.
Strauss Company, The

Blackboards

Blankets, Fireproof
Bullard Company, E. D.
Davis Emergency Equipment Co., Inc.
Industrial Products Co.
Mine Safety Appliances Co.
Pulmonan Safety Equipment Corp.
Safety Equipment Service Co., The
Safety First Supply Co.
Standard Safety Equipment Co.

Blockers, Mine Car

Industrial Products Co.
Mine Safety Appliances Co.
Pulmonan Safety Equipment Corp.

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

American Allsafe Co.
Bullard Company, E. D.
Davis Emergency Equipment Co., Inc.
Elliott Service Co.
Mine Safety Appliances Co.
Pulmonan Safety Equipment Corp.
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

Cans, Waste

Bullard Company, E. D.
Davis Emergency Equipment Co., Inc.
Industrial Products Co.

Chairs, Safety, Boatswain

Bullard Company, E. D.
Mine Safety Appliances Co.
Pulmonan Safety Equipment Corp.
Strauss Company, The

Clamps, Rail

Industrial Products Co.
Pulmonan Safety Equipment Corp.
Safety First Supply Co.

Clamps and Sockets

Armstrong Bros. Tool Co.
Newer Ship Safety Clamp Co.
Williams & Co., J. H.

Cleaning Equipment Abrasive

American Foundry Equipment Co.

Cleaning Systems, Vacuum

Spencer Turbine Co.
Surtz Mfg. Co., The

Clothing for Industrial Workers—See Aprons, Gloves, Hand Leathers, Leggings, Shoes

Clothing, Acid Proof

NATIONAL SAFETY NEWS

THE BUYERS' SERVICE

See Advertisers' Index, Page 75—When writing, please mention National Safety News

Exterminator, Rodent West Disinfecting Company

Extinguishers, Fire

American Allsafe Co.
Bullard Company, E. D.
Harker Mfg. Co.
Kiddie & Co., Inc., Walter
Mine Safety Appliances Co.
Pulmonan Safety Equipment
Corp.
Pyrene Mfg. Company

F

Fans, Exhaust

American Foundry Equipment
Co.
Blaw-Knox Co.
Dracoo Corporation
Surtz 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

American Allsafe Co.
Abbott Laboratories
Rauer & Black
Bernhard, Robert A.
Bishinger-Koehler Mfg. Co.,
Inc.
Bullard Company, E. D.
Burnham Laboratories
Burroughs-Welch Co.,
(U.S.A.) Inc.
Davis Emergency Equipment
Co., Inc.
Halperin Co., Inc., A. E.
Hynson, Westcott & Dunning,
Inc.
Industrial Products Co.
Johnson & Johnson
Merck & Company
Mine Safety Appliances Co.
Pulmonan Safety Equipment
Corp.
Safety Equipment Service
Co., The
Safety First Supply Co.
Standard Safety Equipment Co.

Fires, Danger

Bullard Company, E. D.
Industrial Products Co.
Safety Equipment Service
Co., The
Stonehouse Signs, Inc.

Flashlights, Permissible

Bullard Company, E. D.

Floor Cleaning Machines, Electric

Lincoln-Schulter Floor Machy.
Co.

Flooring Material, Safety

American Abrasive Metals Co.
American Mason Safety Tread
Co.
General Abrasive Co.
Industrial Products Co.
Inland Steel Co.
Safety First Supply Co.
Surtz Mfg. Co., The

Footwear, Rubber

Bullard Company, E. D.
Industrial Products Co.
Lehigh Safety Shoe Co.
Mine Safety Appliances Co.
Pulmonan Safety Equipment
Corp.

Fountains, Drinking, Factory

Bradley Washfountain Co.
Taylor Co., Halsey W.

Fumigants

Rauer & Black

G

Germicides

Abbott Laboratories

Germicides, Cutting Oil

Huntington Laboratories, Inc.
Merck & Company
West Disinfecting Company

Glass, 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.
Pulmonan Safety Equipment
Corp.
Safety Equipment Service
Co., The
Standard Safety Equipment Co.
Surtz Mfg. Co., The
Willson Products, Inc.

Gloves and Mittens

American Allsafe Co.
Barns, Frank E.
Bullard Company, E. D.
Chicago Eye Shield Co.
Davis Emergency Equipment
Co., Inc.

Industrial Products Co.
Mine Safety Appliances Co.

Gratings, Safety

Blaw-Knox Co.

Guards, Chip and Spark

Bullard Company, E. D.
Chicago Eye Shield Co.
Industrial Products Co.
Safety Equipment Service
Co., The
Standard Safety Equipment Co.

Guards, Flywheel

Harrington & King Perforating
Co.
Industrial Products Co.
Surtz Mfg. Co., The

Guards, Portable Lamp

Guards, Power Press

American Allsafe Co.
Chicago Eye Shield Co.
Industrial Products Co.
Standard Safety Equipment Co.
Surtz Mfg. Co., The
Wiesman Mfg. Co.

Guards, Safety

American Allsafe Co.
Bullard Company, E. D.
Davis Emergency Equipment
Co., Inc.
Harrington & King Perforating
Co.
Industrial Products Co.

Mine Safety Appliances Co.
Pulmonan Safety Equipment
Corp.
Safety First Supply Co.
Strauss Company, The

Heads Safety, Explosion

Heat Cramp Preventives
Fairway Laboratories, Inc.
McKesson-Hall-Van Gorder Co.

Helmets, Safety

American Allsafe Co.
American Optical Company
Bishinger-Koehler Mfg. Co.,
Inc.
Bullard Company, E. D.
Chicago Eye Shield Co.
Davis Emergency Equipment
Co., Inc.
Industrial Products Co.
Mine Safety Appliances Co.
Pulmonan Safety Equipment
Corp.
Safety Equipment Service
Co., The
Safety First Supply Co.
Standard Safety Equipment Co.
Strauss Company, Inc., The
Willson Products, Inc.

Hoists, Electric

Holders, Tool

American Bros. Tool Co.
Williams & Co., J. H.

Hooks, Safety Belt

Bullard Company, E. D.
Davis Emergency Equipment
Co., Inc.
Industrial Products Co.
Mine Safety Appliances Co.
Portable Lamp & Equipment
Co.
Pulmonan Safety Equipment
Corp.
Safety Equipment Service
Co., The
Strauss Company, The

Hooks, Safety, Hoisting

Industrial Products Co.
Williams & Co., J. H.

Hospital Equipment

Bullard Company, E. D.
Burroughs-Welch 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.

Inclinators, Carboy

Bullard Company, E. D.
Industrial Products Co.
Safety Equipment Service
Co., The

Indicators, Flammable Vapor

Bullard Company, E. D.
Davis Emergency Equipment
Co., Inc.
Mine Safety Appliances Co.

Inhalators

Bishinger-Koehler Mfg. Co.,
Inc.
Bullard Company, E. D.
Davis Emergency Equipment
Co., Inc.
Mine Safety Appliances Co.

Insurance

American Mutual Liability
Insurance Co.
Metropolitan Life Insurance
Co.

Interlock Systems

Union Switch & Signal Co.

J

L

Ladder Shoes or Feet

American Abrasive Metals Co.
American Allsafe Co.
American Mason Safety Tread
Co.
Bullard Company, E. D.
Davis Emergency Equipment
Co., Inc.
Dayton Safety Ladder Co.
Industrial Products Co.
Johnson Ladder Shoe Co.
Mine Safety Appliances Co.
Patent Scaffolding Co., The
Pulmonan Safety Equipment
Corp.
Safety First Supply Co.
Surtz Mfg. Co., The

An Incident That Clearly Shows the Value of Safety Belts and Lines

While three riggers were repairing a crane run-way about 35 feet above the ground, the coupling on the air hose they were using broke. The hose end struck all three men knocking two of them out and dazing the other. All men wore safety belts and lines properly tied, saving them from falling to the ground when they were knocked off the scaffold. Two of the men returned to work after proper treatment at the plant hospital and the third one returned the next morning. Had they not been wearing safety belts and lines the results may have proved fatal.

Accident Prevention Equipment Manufacturers Section of the National Safety Council

Industrial Gloves Corp.
Industrial Products Co.
Mine Safety Appliances Co.
Pulmonan Safety Equipment
Corp.
Safety Equipment Service
Co., The
Safety First Supply Co.
Salisbury & Co., W. H.
Standard Safety Equipment Co.

Goggles

American Allsafe Co.
American Optical Company
Bullard Company, E. D.
Chicago Eye Shield Co.
Cover, H. S.
Davis Emergency Equipment
Co., Inc.
Industrial Products Co.
Mine Safety Appliances Co.
Pulmonan Safety Equipment
Corp.
Safety Equipment Service
Co., The
Safety First Supply Co.
Standard Safety Equipment Co.
Willson Products, Inc.

Gongs, Sirens, Horns and other Signaling Devices

Bullard Company, E. D.

Guards, Foot and Toe
Bullard Company, E. D.
Ellwood Safety Appliance Co.
Industrial Products Co.
Mine Safety Appliances Co.
Pulmonan Safety Equipment
Corp.
Safety Equipment Service
Co., The
Safety First Supply Co.
Standard Safety Equipment Co.
Strauss Company, The

Guards, Gear

Surtz Mfg. Co., The

Guards, Grinding Wheel

Surtz Mfg. Co., The

Guards, Jointer

Industrial Products Co.
Safety Equipment Service
Co., The
Standard Safety Equipment Co.
Surtz Mfg. Co., The

Guards, Kick Press

Surtz Mfg. Co., The

Safety Equipment Service
Co., The
Strauss Company, Inc., The
Surtz Mfg. Co., The
Wiesman Mfg. Co.

Guards, Saw

Bullard Company, E. D.
Industrial Products Co.
Safety Equipment Service
Co., The
Standard Safety Equipment Co.
Surtz Mfg. Co., The

Guards, Shaper

Industrial Products Co.
Standard Safety Equipment Co.
Surtz Mfg. Co., The
Guards, Treadle
Surtz Mfg. Co., The

H

Hand Cream

Bullard Company, E. D.
Davis Emergency Equipment
Co., Inc.
Industrial Products Co.
Mine Safety Appliances Co.

Hats, Safety

Bullard Company, E. D.
Industrial Products Co.

THE BUYERS' SERVICE

See Advertisers' Index, Page 75—When writing, please mention National Safety News

Tools, Marking or Stamping	American Mason Safety Tread Co.	Inc. Mine Safety Appliances Co.	Standard Safety Equipment Co.	Wrenches, Non-sparking
Tools, Non-sparking	Industrial Products Co.	Lending Machines, Sanitary	Washroom Equipment, Industrial	Williams & Co., J. H.
Ameco Metal, Inc.	Surtz Mfg. Co., The	Ventilating Equipment	Bradley Washfountain Co.	Wrenches, Open End
Bullard Company, E. D.	Trestles, Safety, Extension	American Foundry Equipment Co.	Welding Equipment	Armstrong Bros. Tool Co.
Davis Emergency Equipment Co., Inc.	Industrial Products Co.	Brace-Knox Co.	Wrenches, Hopper Car	Trumont Mfg. Co.
Pulmosan Safety Equipment Corp.	Patent Scaffolding Co., The	Draco Corporation	Industrial Products Co.	Williams & Co., J. H.
Torches, Blow	Safety First Supply Co.	Trophies	Paylode Company	Wrenches, Pipe
Klein & Sons, Mathias	Valves, Oxygen	Washers, Safety for Grinding Wheels	Safety Equipment Service Co., The	Armstrong Bros. Tool Co.
Treads, Safety	Bishinger-Koehler Mfg. Co.,	Industrial Products Co.	Safety First Supply Co.	Trumont Mfg. Co.
American Abrasive Metals Co.			Trumbull Mfg. Co., The	Williams & Co., J. H.
American Allsafe Co.				

The following companies are those whose names appear under the various headings contained in this Buyers' Service

Abbott Laboratories	North Chicago, Ill.	Ellwood Safety Appliance Co.	Ellwood City, Pa.	Nisly, Walter S.	New York, Pa.
American Abrasive Metals Co.	Irvington, N. J.	Elliott Service Co.	New York, N. Y.	Parsons Engineering Corp.	Cleveland, Ohio
American Allsafe Co.	Buffalo, N. Y.	Fairway Laboratories, Inc.	Bellerive, Ill.	Paslode Company	Chicago, Ill.
American Chain Co., Inc.	New York, N. Y.	General Abrasive Co.	Niagara Falls, N. Y.	Patent Scaffolding Co., The	Chicago, Ill.
American Foundry Equipment Co.	Mishawaka, Ind.	Harper Co., Inc., A. E.	Cleveland, Ohio	Pittsburgh Plate Glass Co.	Pittsburgh, Pa.
American Mason Safety Tread Co.	Lowell, Mass.	Harker Mfg. Co.	Dayton, Ohio	Protectosol Co.	Chicago, Ill.
American Mutual Liability Insurance Co.	Boston, Mass.	Harrington & King Perforating Co.	Chicago, Ill.	Pulmosan Safety Equipment Corp.	Brooklyn, N. Y.
American Optical Co.	Southbridge, Mass.	Huntington Laboratories Co.	Huntington, Ind.	Pyrene Mfg. Co.	Newark, N. J.
American Tel. & Tel. Co.	New York, N. Y.	Hynson, Westcott & Dunning, Inc.	Baltimore, Md.	Pyroll Co.	La Crosse, Wis.
Ameco Metals Inc.	Milwaukee, Wis.	Industrial Gloves Corp.	Danville, Ill.	Safety Equipment Service Co., The	Cleveland, Ohio
Armstrong Bros. Tool Co.	Chicago, Ill.	Industrial Products Co.	Philadelphia, Pa.	Safety First Shoe Co.	Holliston, Mass.
Barns, Frank E.	Chicago, Ill.	Inland Steel Co.	Chicago, Ill.	Safety First Supply Co.	Pittsburgh, Pa.
Bauer & Black	Chicago, Ill.	International Shoe Co.	St. Louis, Mo.	Safety Magazine Publishing Corp.	New York, N. Y.
Benjamin Electric & Mfg. Co.	Des Plaines, Ill.	Johnson & Johnson	New Brunswick, N. J.	Sallabury & Co., Inc., W. H.	Chicago, Ill.
Bernhard, Robert A.	Rochester, N. Y.	Johnson Ladder Shoe Co.	Bau Chaire, Wis.	Sanitor Mfg. Company	Chicago, Ill.
Bishinger-Koehler Mfg. Co.	Pittsburgh, Pa.	Jortite Mfg. Co.	Chicago, Ill.	Spencer Turbine Co., The	Hartford, Conn.
Blaw-Knox Co.	Pittsburgh, Pa.	Kiddle & Co., Inc., Walter	New York, N. Y.	Standard Safety Equipment Co.	Chicago, Ill.
Bradley Washfountain Co.	Milwaukee, Wis.	Klein & Sons, Mathias	Chicago, Ill.	Stonehouse Signs, Inc.	Denver, Colo.
Brown Shoe Company	St. Louis, Mo.	Legge Co., Walter G.	New York, N. Y.	Strauss Co., Inc.	Pittsburgh, Pa.
Burke Co., R. H.	Chicago, Ill.	Lehigh Safety Shoe Co.	Albion, Pa.	Surtz Mfg. Co., The	Chicago, Ill.
Bullard Co., E. D.	San Francisco, Calif.	Libbey-Owens-Ford Glass Co.	Toledo, Ohio	Taylor Co., Halsey W.	Warren, Ohio
Burnham Laboratories	W. Medway, Mass.	Lima Cord Sole & Heel Co., The	Lima, Ohio	Trumont Mfg. Co.	Warren, Ohio
Burrhoughs-Wellcome & Co., U.S.A., Inc.	New York, N. Y.	Lincoln-Schlueter Floor Mch. Co.	Chicago, Ill.	Trumbull Mfg. Co., The	Warren, Ohio
Chicago Eye Shield Co.	Chicago, Ill.	McKesson-Hall-Vanderder Co.	Cleveland, Ohio	Union Switch & Signal Co.	Swissvale, Pa.
Clipper Belt Lacer Co.	Grand Rapids, Mich.	McKay Co., Inc.	Pittsburgh, Pa.	West Disinfecting Company	Long Island City, N. Y.
Columbus-McKinnon Chain Corp.	Ponawanda, N. Y.	Merek & Co., Inc.	New York, N. Y.	Westinghouse Electric & Mfg. Co.	East Pittsburgh, Pa.
Cover, H. S.	South Bend, Ind.	Metropolitan Life Insurance Co.	New York, N. Y.	Wiesman Mfg. Co.	Dayton, Ohio
Davis Emergency Equipment Co., Inc.	New York, N. Y.	Mine Safety Appliances Co.	Pittsburgh, Pa.	Williams & Co., J. H.	Buffalo, N. Y.
Dayton Safety Ladder Co., The	Cincinnati, Ohio	National Safety Council, Inc.	Chicago, Ill.	Williamsport Wire Rope Co.	Williamsport, Pa.
Draco Corp.	Cleveland, Ohio	Sever Slip Safety Clamp Co.	New York, N. Y.	Willson Products, Inc.	Reading, Pa.

INDUSTRIAL SAFETY MARKET

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If you do not find what you want in the advertising pages, send in the coupon below, and we will have forwarded to you without charge, or obligation, detailed information and catalogs on material to meet your requirements.

National Safety News
20 North Wacker Drive, Chicago

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Company

Address

Your Name

Contestants Show Skill in Unscrambling Words

THE scramble for prizes in the Scrambled Word Contest that marked the February activity in the Safety Calendar competition brought out a wealth of unusual material from some 3,000 entrants in all parts of the world.

Hundreds of essays in rhyme were received, but only one of these was judged worthy of a place among the major prize winners on the basis of thought, rhyme, and rhythm. This poem, incidentally, was the first prize winner.

The fortunate author was Lawrence W. Francisco, 2907 Ferris Road, Elsmere, Delaware.

An Alaskan nun, Sister Mary Rosalinda, of the Pius X Mission, Skagway, won second prize.



L. W. Francisco

Samuel E. Power, Jr., 6928 Greenwood Street, Pittsburgh, Pa., won third. Winners of the fifteen \$1.00 awards were as follows:

Mrs. M. J. Adams, 1705 Monroe Street, Wichita Falls, Texas.

Mrs. H. G. Kahl, 603 North Street, West Bend, Wis.

Mrs. W. S. Hutchinson, Koppers Store No. 22, Beards Fork, W. Va.

Carlos Gallardo Vega, P.O. Box 662, Ponce, Puerto Rico.

George C. Peters, 115 King Street, Aliquippa, Pa.

Miss Marie D. Haggerty, 204 Renova Street, Pittsburgh, Pa.

Julian F. Smith, duPont Experimental Station, Wilmington, Del.

R. E. Whalen, 2542 Graham Avenue, Akron, Ohio.

Ray Peterson, 110 W. New York Avenue, Oshkosh, Wis.

Charles V. Ortnier, Darien Center, N. Y.

Louis T. Valley, 35 Maple Street, Hudson Falls, N. Y.

J. Vincent Anderson, 4857 14th Ave., So., Minneapolis, Minn.

Thomas A. Smith, 131 N. Belvidere Ave., York, Pa.

William C. Musolf, 604 Illinois Avenue, Huron, S. D.

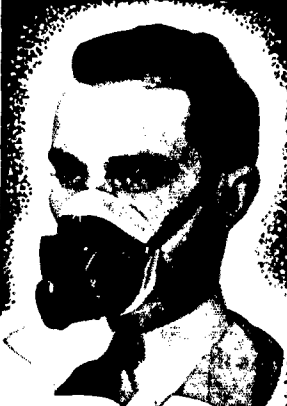
Harold Rogers, 417 S. 15th Street, Reading, Pa.

Fewer entries were received than in the first contest. This is believed due to the fact that many were unable to unscramble one or more of the six words offered as safety brain teasers. Some entries were submitted with only four or five words unscrambled, and naturally, these were ruled out in accordance with the contest regulations.

Some failed to arrange the scrambled letters in the right formations. For example, one contestant derived "nose guard" rather than "dangerous" from the letters "rudasogen." Another, by omitting an "e", transformed "rongacine" into "no racing" instead of "ignorance."

Most of the January prize winners were also entered in the February contest, but strangely, not a single one of them placed in the final list, and only one was grouped with the first 100 as the elimination progressed.

An unusual feature of the contest was the fact that several schools took part, sending mass entries in which entire grades were apparently represented.



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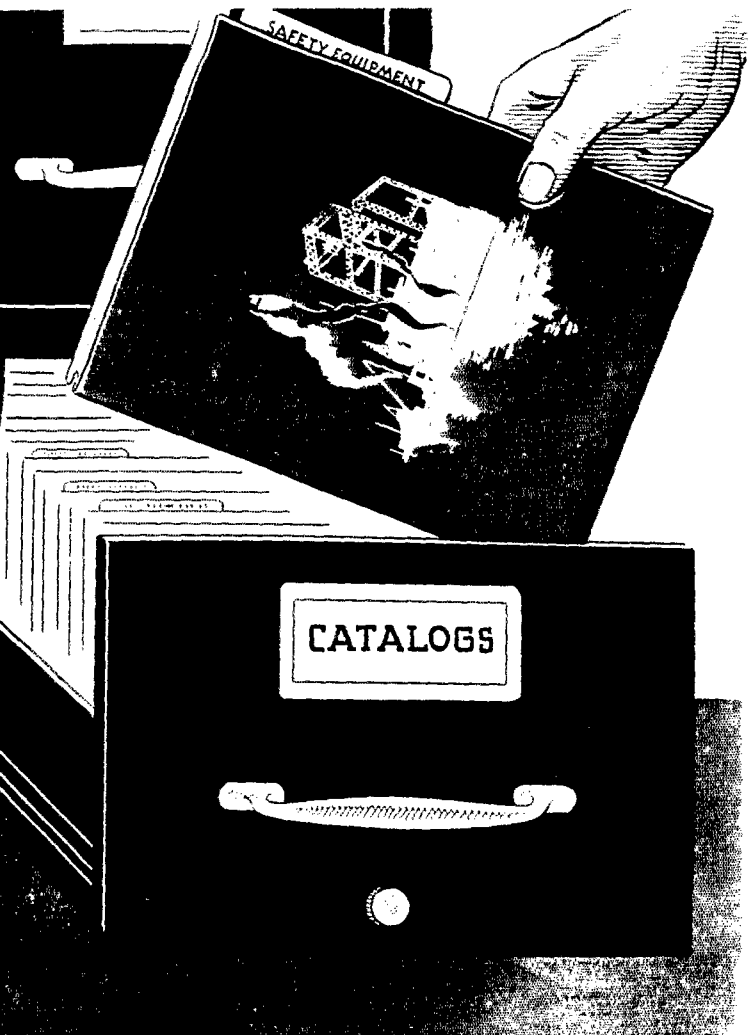
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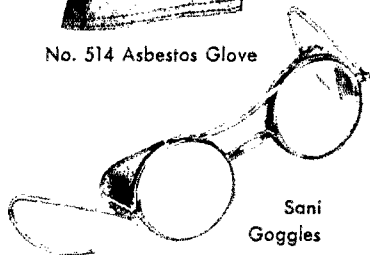
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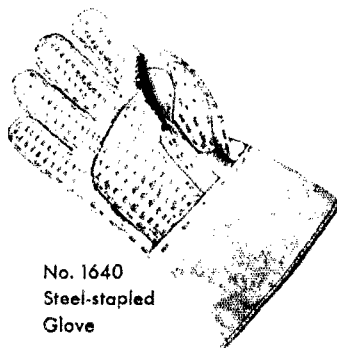
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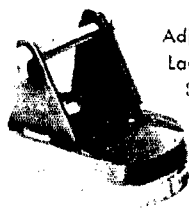
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Kleanair Respirator



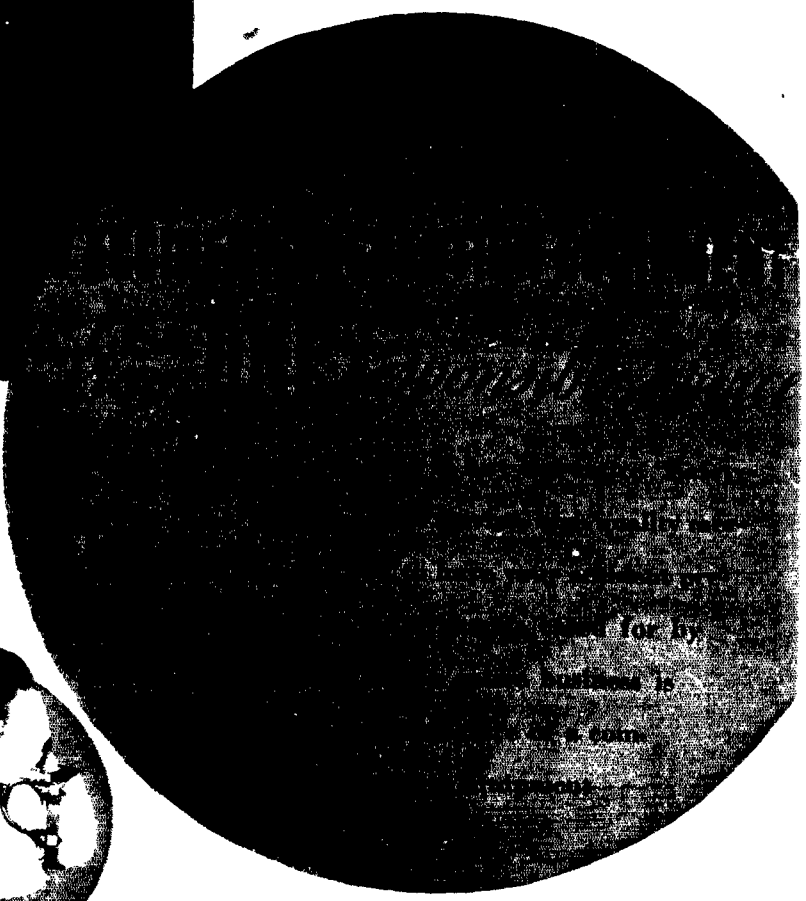
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