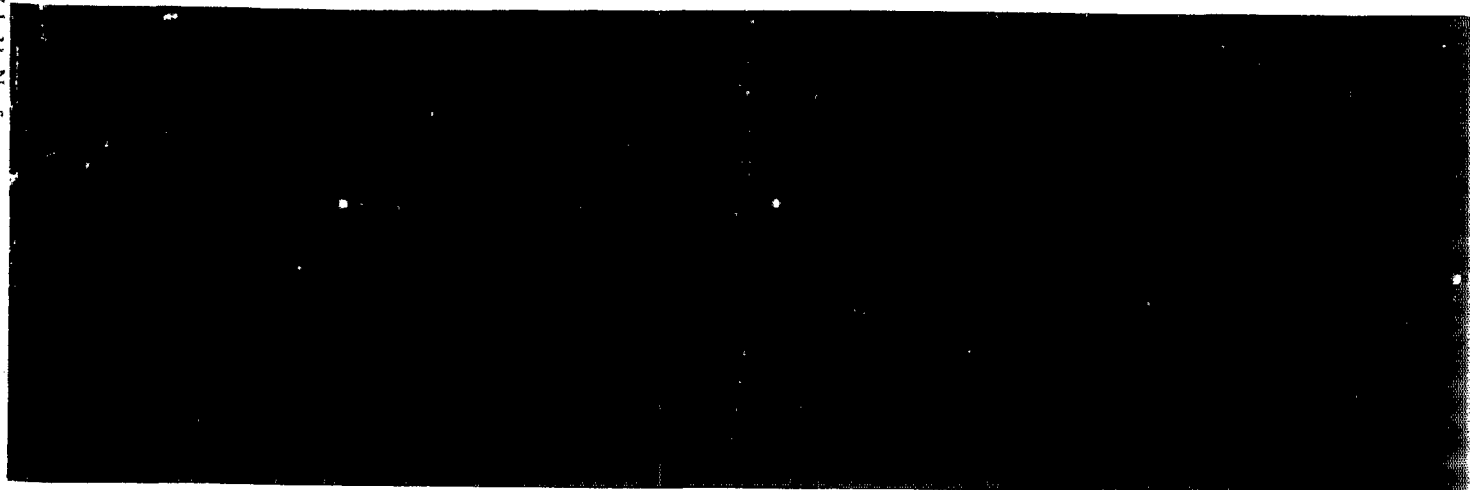


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Vol. 33, No. 3

NATIONAL SAFETY NEWS

MAY, 1936

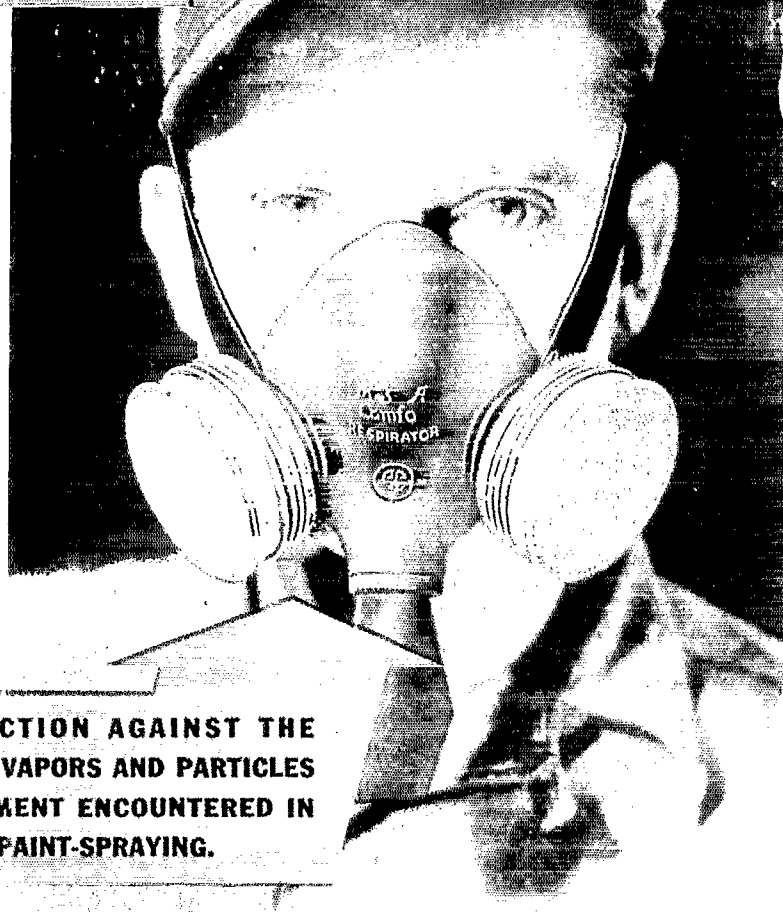
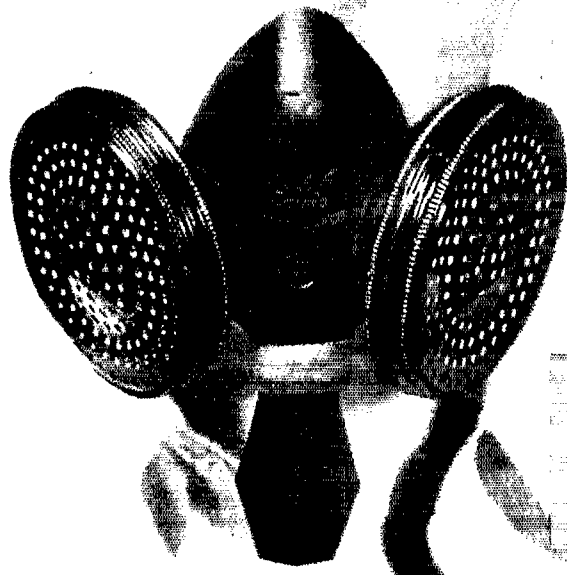


**MEN
against
the
FLOODS**

INTERNATIONAL NEWS PHOTO

130.123

PROTECTION AGAINST PNEUMO-
CONIOSIS-PRODUCING OR NUI-
SANCE DUSTS, CHROMIC ACID
MIST AND LEAD DUST.



PROTECTION AGAINST THE
FUMES, VAPORS AND PARTICLES
OF PIGMENT ENCOUNTERED IN
PAINT-SPRAYING.

The M·S·A Comfo RESPIRATORS

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U.S. PAT. No. 2019918

ABATING THE DUST MENACE—The tremendous popularity of M.S.A. Comfo Dust Respirators continues! *Two types* now are available, differing only in the nature of the filtering medium: the Comfo Dust and Mist Respirator (U. S. Bureau of Mines Approval No. 2101AC) for protection against pneumoconiosis-producing or nuisance dusts and chromic acid mists; the Comfo Lead Dust Respirator (U. S. Bureau of Mines Approval No. 2107) for protection against mechanically-generated lead dust. Each combines unusual protective ability with extremely low breathing resistance, light-weight comfort and long filter life.

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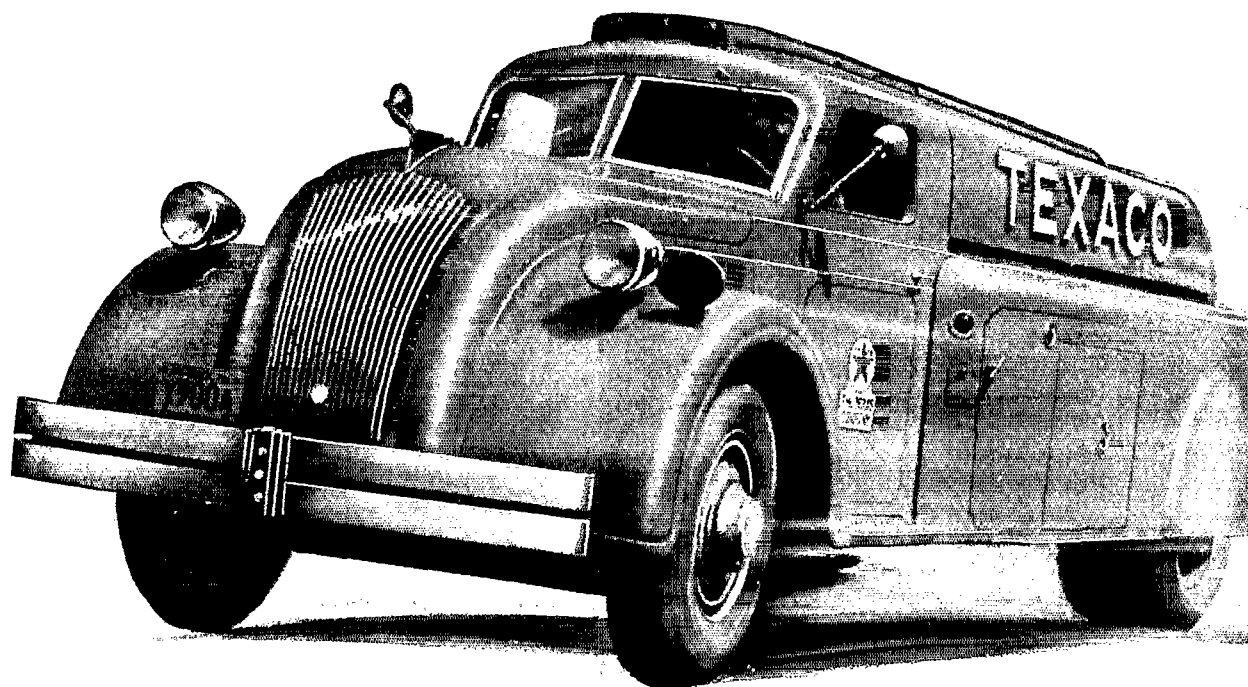
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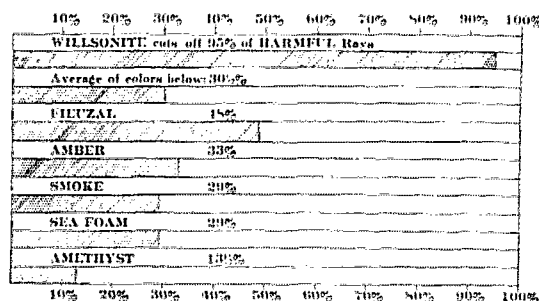


Let Us Take a Lesson in Safety from the Driver of this Fast Truck

IN the cause of accident prevention, owners of fleets of fast trucks and buses must take every precaution. Many companies operating hundreds of units, have established nearly perfect safety records over long periods. Almost without exception fleet managers recognize the importance of providing protection from glare. Drivers must face hundreds of glaring headlights at night for hours on end and during the day, direct and reflected sunlight. A major portion of our energy is spent through the eyes. Tired eyes cause complete physical fatigue. The tired driver is not a safe driver. If you are not familiar with the unusual powers of Willsonite, write for information to Willson Products, Inc., Reading, Pa.

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The above figures were obtained in actual tests using a standard make thermopile with a screen which transmits nothing but infra-red light.

WILLSON PRODUCTS

The NATIONAL SAFETY NEWS is published monthly by the National Safety Council, 20 North Wacker Drive, Chicago, Ill. Yearly Subscription Price \$4.00. Volume 33, Number 5. Entered as second class matter June 1, 1921, at the Postoffice at Chicago, Illinois, under the Act of March 3, 1879. Additional entry at St. Joseph, Michigan.

MAY, 1936



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NATIONAL SAFETY NEWS

Here is a **REAL SAFETY SHOE** that is also **Stylish, Comfortable** and **COOL**



THE "VENTILATOR"

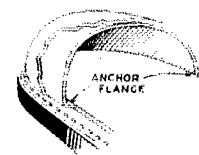
No. H-708 — HY-TEST Ventilator Type
Black Glove Blucher Oxford, ISCO
Steel Safety Box, Weatherwear Leather
Sole, ½ Rubber Heel. C, 6-12; D&E,
5-12. In stock for immediate delivery.

Perforated for coolness, stylish in appearance, the "Ventilator" is comfortable to an unusual degree because of the Hy-Test safety last that allows complete freedom of the foot. And yet this *Hy-Test Safety Shoe* retains all the famous Hy-Test safety features that have made the name *Hy-Test* so highly regarded throughout the industrial world.

Notable among these is the *Isco* steel box toe and its *anchor flange* that

actually *anchors* the steel protective unit under the insole. This anchor-age prevents the danger of the steel box shifting or tipping back upon the toes, in the event of an accident involving tremendous pressure.

Our In-stock department will readily supply you with detailed information of the entire Hy-Test line, including the conventional heavy work types. Send for a catalogue.



The famous *anchor flange*, which hooks under the insole. Safe, secure, preventing tipping or shifting in the event of an accident. Were it not for this flange, an excessively heavy weight might cause a slip or tip-back, crushing the foot between the insole and the steel toe.



ST. LOUIS

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DESIGNED AND MANUFACTURED EXCLUSIVELY BY

INTERNATIONAL SHOE COMPANY, ST. LOUIS, MO.

THE WORLD'S LARGEST SHOE MANUFACTURER



Let's Use Our Heads
To Save Our Feet

Prove THAT YOU STILL CARE

REPLACE WITH *Safety Plate Glass*

added protection against glass injuries that they enjoyed originally. Go immediately to an authorized L. O. F. auto glass replacement dealer and have him replace the cracked or broken light with L. O. F. Safety Plate Glass.

WARNING

When you bought your car, you were sufficiently concerned about the greater protection of your family to make sure you got Safety Plate Glass All-Around.

If this glass should break or crack, don't let your good resolutions crack with it. You have the same responsibility all over again—the same obligation to your family. Prove that you still care by providing the same degree of

product, but none of them offer anywhere near the value for your money.

ATTENTION

And as for the quality of the Safety Glass made by Libbey-Owens-Ford, just consider this: it is used as original equipment by a majority of the automotive industry. Such significant recognition is so many manufacturers of fine cars is conclusive evidence of outstanding merit. Whether it be in a new car or as a new window, windshield or wing in the car you now drive, make sure you get L. O. F. Safety Plate Glass. Libbey-Owens-Ford Glass Company, Toledo, O.

LIBBEY-OWENS-FORD
Safety
PLATE

Look in your car for the L. O. F. SAFETY GLASS logo.

● NATIONAL ADVERTISING *like this*

in The Saturday Evening Post and Collier's is keeping the importance of Safety Glass All-Around alive in the public mind and emphasizing the responsibility of car owners to insist on genuine Safety Glass when they replace broken lights. Everything done to extend the use and appreciation of Safety Glass All-Around in buses, taxicabs and other public carriers, as well as in privately owned passenger cars, is surely in the best interests of greater public protection. LIBBEY-OWENS-FORD GLASS COMPANY...TOLEDO, OHIO

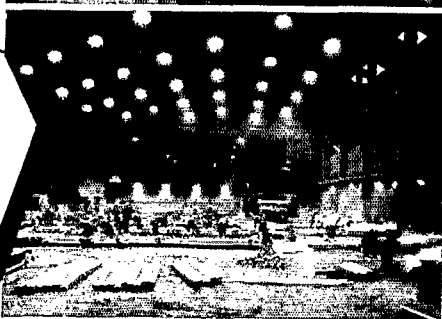
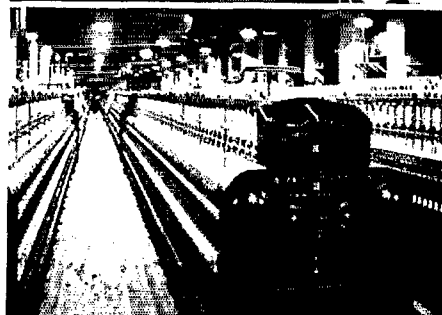
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*Now you can have Better Lighting
for less cost in your plant . . . factory . . . office*

● General Electric's announcement of substantial price reductions in the higher wattage types of MAZDA lamps (effective May 1st) now makes it possible for every plant, factory, and office to enjoy the advantages of better lighting at lower cost than ever before. This is the eighteenth major reduction in MAZDA lamp prices in fifteen years.

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NEW LOW PRICES			
Watts	Type	Was	Now
150	Clear	35c	25c
200	Clear	55c	45c
400	Clear	90c	75c
600	Clear	\$1.55	\$1.40
150	Clear Daylight	65c	50c
200	Clear Daylight	90c	80c
300	Clear Daylight	\$1.35	\$1.20
500	Clear Daylight	\$2.30	\$2.15

● The price of MAZDA lamps has gone steadily down while lamp efficiency, the amount of light produced per unit of current, has gone up and up . . . The (GE) trade-mark on each lamp means they Stay Brighter Longer!

GENERAL ELECTRIC
They stay brighter longer.

NATIONAL SAFETY NEWS

Published monthly in the interest of accident prevention and industrial health

Volume 33

MAY, 1936

Number 5

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

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...This water is always cool now!



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WATER COOLING EQUIPMENT

● Bring your plant up-to-date. Give it the stamp of progress and success—modernize with Frigidaire Water Cooling Equipment.

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*... from a
Branch Office Near-By*

An American Optical Company industrial representative stationed in a branch office near you — one of the 180 branch offices located in principal industrial centers — is ready to work with you to save workers' eyes and company dollars. He is prepared:

To go over your operations with the executive responsi-

ble for safety, help locate the danger spots and determine which of the many types of American Optical Company eye-protection equipment each man needs . . .

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To offer a regular and detailed check-up, safety posters, a personal service that includes every cooperation in *keeping* your eye-safety program efficient and profitable.

Call your American Optical Company branch office . . . have an industrial representative call.

American Optical Company



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MAY, 1936

NATIONAL SAFETY NEWS

Published by National Safety Council, Inc.

Public Service

HALF a century ago the shutdown of a power plant created very little disturbance in the daily routine of a city. Modern homes were lighted by gas; others by kerosene lamps. Stores and offices which had installed electric lights still had gas to fall back on. Most of the early chandeliers were combination gas and electric fixtures. People traveled to work on the slow-moving horse cars. As a source of power, the steam engine had no serious competitor.

In 1886 the Edison Illuminating Company of Detroit had 89 customers of all classes; today the Detroit Edison Company, its successor, has nearly 600,000.

This generation takes for granted the conveniences of modern life. People seldom think of the public utility companies except when the monthly bill is received. Only when service is interrupted by a general disaster, such as a storm or flood, does the public realize its dependence upon developments of the past fifty years.

Within the past few weeks hundreds of communities in flooded areas have been reminded of the importance of electricity in their daily lives. When the huge generators stopped, normal life became impossible. Light and transportation were cut off suddenly; hunger and disease threatened, but prompt organization of all available forces prevented these additional horrors.

Among the many agencies rendering essential services to their communities, none faced greater responsibilities than the public utility companies. How they met these problems and restored service with incredible speed is one of the bright chapters in the history of American industry.

There was splendid cooperation between companies. Companies whose power plants were down tied in with plants in unaffected areas. Men and equipment were rushed to the aid of the stricken systems. Companies furnishing equipment and supplies spared no effort in serving their customers.

The heroism of employees is still another story. Extraordinary public service is all in the day's work to these men but never had they faced situations requiring more courage and endurance. Crews stuck by their plants till the waters crept up to their boilers. Many of them worked until they were "out on their feet." Hundreds risked their lives to protect the company's property and keep the public from suffering unnecessary hardship.

Their courage was not the reckless, impulsive type; they knew the risks and faced them calmly and deliberately, with every precaution possible under the circumstances. Job training, which included training in safety, never showed its value more conclusively than in this ordeal of high water.

Public service, as well as war, can boast of its heroes.

Investigate First

THE National Safety Council has no monopoly in safety work. The job is large enough for every legitimate organization that offers any constructive service.

Unfortunately, however, reports have reached the Council headquarters that certain individuals are taking advantage

of the growing interest in safety to promote their own profit. They may be selling an imaginary service or merely soliciting contributions.

Since the Council was organized it has received hundreds of inquiries from members regarding new enterprises to reduce accidents. Some of these movements have been sincere but unsound; others have been fraudulent. Careful investigation is made of each report and encouragement given to every worthy enterprise, included in which are the many reliable commercial concerns marketing services and products at a legitimate profit. Their representatives, however, do not pose as philanthropists. They have something tangible to offer.

Community safety organizations are sponsored by men of standing in the community. There is nothing mysterious about their operations. A community organization may be independently operated, or it may be a division of some existing institution, such as the Chamber of Commerce or the Automobile Club. It does no pussyfooting; financial drives are always heralded by the widest possible publicity.

One safe plan is to ask the "salesman" for the endorsement of the Chamber of Commerce. If his proposition is fraudulent, he will terminate the interview as quickly as possible.

Investigate before you sign. And the Council will appreciate reports on any promotional activities that look suspicious.

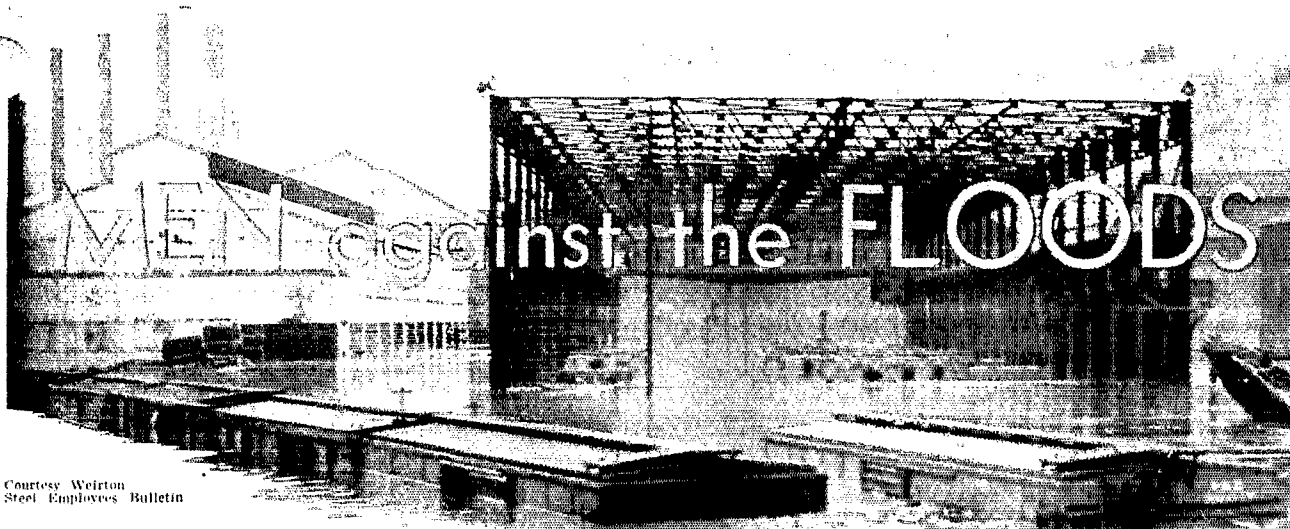
In This Issue

A COMPLETE story of "men against the floods" would cover too much territory and far too much detail for the limitations of a magazine article. This story, therefore, represents merely the observations of one writer in a limited section of widely scattered districts which felt the destruction of the flood waters. For the title the author acknowledges his indebtedness to the Associated Gas & Electric System, from whose advertising it was "borrowed." (Page 10).

Compared with the models of a few years ago, the current automobiles show remarkable development in safety and reliability. Whether or not the safety features have kept pace with the increase in highway speeds is a debatable question. But until we read Professor Fales' article we did not realize how many safety refinements are yet to be made. They will be incorporated in future models as the public demands them. In the meantime Mr. (and particularly Mrs.) Motorist will be won by chromium-plated splendor and luxurious upholstery in the showroom, regardless of where they place safety when filling out questionnaires. (Page 14).

There were 3,933 highway-grade crossing crashes in 1935 with a total of 1,680 fatalities. But from the point of view of the locomotive engineer these figures are only part of the story. There are no statistics regarding the number of narrow escapes at crossings but they outnumber the actual crashes many times and they also add to the wear and tear on the engineer's nervous system. A noted newspaper columnist tells how it looks from the locomotive cab. (Page 27).

MAY, 1936



Courtesy Weirton
Steel Employees Bulletin

By CARMAN T. FISH

"BUSINESS AS USUAL" was the cheering headline of the Pittsburgh *Sun-Telegraph* on the evening of March 30. This statement was relative, of course. No community could be completely normal after the nightmare of the previous two weeks. But conditions throughout the city indicated that it was well on the road to recovery. The "Golden Triangle," which had felt the full force of flood waters of the Monongahela and Allegheny Rivers, had been opened to traffic that morning; electric light and power were again available; elevators were in operation, although on a reduced schedule; and the National Guard, which had rendered such helpful service in the emergency, had been demobilized. Throngs of shoppers congested the downtown area that day; street cars inched their way, and automobile traffic jammed the one-way streets.

The Gotham Limited of the Pennsylvania Railroad was arriving at Pittsburgh on time for the first time since the flood, the conductor informed me as we pulled into the station on the morning of March 30. All along the Ohio River were evidences of the flood which at its crest had covered the tracks and wrought havoc among the homes and mills on the lowlands between the railroad and the river.

In down-town Pittsburgh there were plenty of evidences of the flood's destruction. Men with hip boots and the electric cap lamps familiar to miners were carrying debris from cellars. Fire engines were still at work pumping out water.

Men labored everywhere repairing pavement where numerous craters had been left by the receding waters.

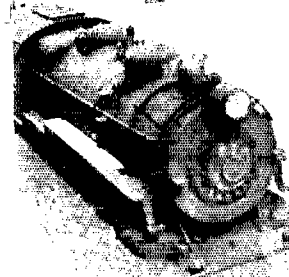
But when down-town workers entered the Triangle on Monday morning, March 30, the streets once more presented a fairly respectable appearance. The pavements had been flushed down with fire hose, and men with brooms followed,

mopping up. Then big green tank trucks flushed the remaining dirt into the gutter, and a warm sun aided the renovating process and raised everybody's spirit. Water which had been hoarded so carefully a week before, was being used lavishly.

An almost war-time atmosphere was provided by the big Red Cross flag which



Why transportation was crippled. Above: This scene on Pennsylvania Ave. shows how high the water rose in downtown Pittsburgh. (International). Right: A locomotive caught in the flood waters near New Kensington. (Courtesy West Penn News).



NATIONAL SAFETY NEWS



International News Photo

Workers under the direction of the U. S. Bureau of Mines inspecting manholes for gas leaks.

fluttered from the flagpole in front of the old City Hall Building on Smithfield Street.

A volume could be written on the splendid work of the Red Cross, WPA workers, police, firemen, National Guard, relief agencies, physicians and nurses, and many other groups and individuals. This story, however, must be limited to the work of industry, particularly of the public utilities, upon whom our modern communities depend for their very life.

On the night of Tuesday, March 17, the most memorable St. Patrick's Day in Pittsburgh's history, many citizens went to bed unaware of trouble. The water was high but disaster was not anticipated. By the next morning the water crept up over the tip of the Golden Triangle. By four o'clock Wednesday afternoon, the power stations supplying the city shut down. The water level reached a height of 46 feet—21 feet beyond the flood stage. The city spent the night in darkness relieved only by the dim lights of oil lamps and candles. Down-town hotels had a decidedly spooky atmosphere with only a few hoarded candles to light their lobbies.

A generator from one of the city's pumping stations being dismantled for drying at Homewood Works of the Westinghouse Electric & Manufacturing Company. Restoring service in the city's pumping stations was one of the first tasks attempted after the flood water receded.

Not an elevator moved in a hotel or office building. Guests and workers depended on leg power to reach upper floors. "My legs ache yet," said the bellboy who escorted me to my room on the tenth floor of the William Penn Hotel on the first normal Monday morning after the flood.

Those who had never given the electric company a thought except to complain about the bills realized that electricity is the life blood of a modern community when the flood waters stopped the huge generators supplying factories and homes and shut down the pumping

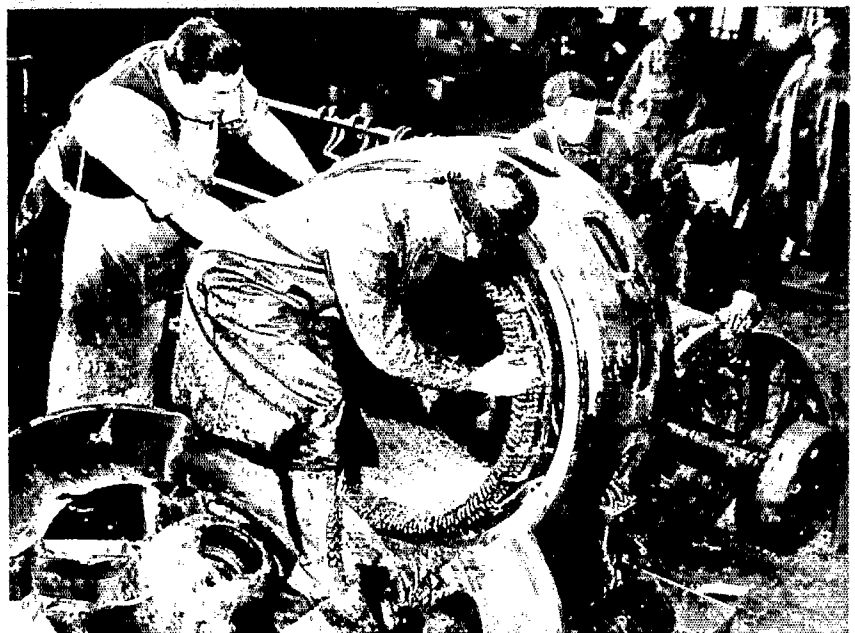
stations which supplied the city with pure water. Of water there was plenty, dark, and muddy, unfit for human consumption and, without power to pump it, useless for extinguishing fire which, ironically enough, added to the destruction of the flood.

The darkness which enfolded Pittsburgh on the night of March 18 created fear, but not panic. The National Guard, quickly mobilized, patrolled the downtown area. Boy Scouts helped to direct traffic in the outlying areas, releasing policemen for duty in the flooded district. Business and industrial concerns whose premises were under water placed their facilities at the command of the Red Cross and helped to collect food, clothing and bedding for the relief of the destitute. Most of the industries reported that comparatively few of their employees were living in the districts under water.

Candles, flashlights and batteries, kerosene lamps and lanterns were eagerly bought. The supply was soon exhausted. Charges of profiteering were heard in many quarters. According to reports, 25 cents was asked for candles—even 75 cents in some places.

But light is only one of the many uses of electricity. In an emergency people can get along with the same sources of light as their forefathers. Nor is electricity's contribution limited to such obvious uses of power as the operation of elevators and trolley cars.

It operated the pumping station which supplied water for drinking and sanitary needs. It governed communication



International News Photo



Testing a manhole with a combustible gas indicator.

Courtesy Mine Safety Appliances Co.

by radio, telegraph and telephone, pasteurization of milk, and countless other daily services. The supply of gasoline was curtailed because there was no electricity to pump it. At some gas stations the old fashioned sucker pump was installed. The gas was pumped into large tanks and into the cars.

A clerk working by candle light in his office went to the adding machine to total a column of figures. It was dead. Automatic operation of gas and oil furnaces was interrupted because there was no electricity to operate the controls. Automatic stokers also went dead.

"I don't know of anything that makes you feel so helpless as a flood," one man remarked. (Probably he had never been through a tornado or an earthquake.) "A serious fire is terrible but there is something you can do about it. But when you watch those flood waters creeping up, you have a feeling of utter helplessness."

Where would the flood stop? Would famine and disease follow the destruction? These thoughts were uppermost in people's minds during the anxious hours of March 18 and the following days.

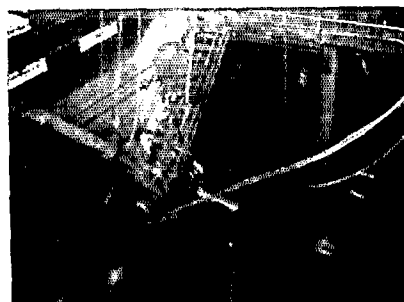
Those who have had the electric lights go dead at night without a spare fuse in the house or tried in vain to get a plumber to fix a burst water pipe, will have some slight appreciation of the situation. While the crest of the flood stopped just before reaching Smithfield Street, its effects were felt by all who were served by the electric distribution lines and the city water mains.

For a time the city was practically isolated from the outside world. Regu-

lar transportation was at a standstill. Railroad bridges were washed out in many sections, and signal systems were out of commission. Tracks were under water; trolley lines were grounded; and buses and trucks were blocked by high water and landslides. Even airplane service was curtailed by hazardous flying weather and the dangerous condition of the landing field. On Wednesday, March 18, every means of transportation in and out of the city of Pittsburgh and the Allegheny and Kiski valleys was shut off.

Air transport was resumed as soon as flying conditions permitted, and extra equipment was rushed to Pittsburgh by the TWA and United Airlines. There was a long waiting list for every flight. Meanwhile men labored heroically to restore the public services.

Newspapers printed limited editions in neighboring cities, minus the usual comics, features and advertising. The



Why the power lines were dead. A condenser pit at Springdale Station of the West Penn Power Company after most of the water had been pumped out.

dark room of the railroad company at the Pennsylvania Station was placed at the disposal of the press services and local papers, which permitted pictures of the flood scenes to be circulated promptly throughout the country.

Thanks to the prompt action of the city authorities, many of the horrors which follow in the wake of a disaster were avoided. Forces for the maintenance of law, order and health and the distribution of relief were promptly mobilized. The flooded area was roped off and patrolled by the National Guard. Bayonets and steel helmets restrained the lawless and reassured the law-abiding. There was no outbreak of crime and violence, although there were a few isolated cases of looting. Offenders were taken before a very informal court where a judge in a leather jacket dispensed justice by the light of a kerosene lantern. Anti-typhoid inoculation was conducted on a scale seldom witnessed before. Industries with well organized medical departments provided this and other health measures for their employees.

From the first threat of peril from the rising waters through the trying days of digging out of the mud, there were countless examples of fortitude and heroism. Executives in overalls worked side by side with workers to restore the city to its normal routine, working long periods without rest.

"It was like mobilizing an army for active service and building up the ordinance and commissary departments on a few hours' notice," said F. K. Singer, general plant employment manager for the Bell Telephone Company of Pennsylvania in Pittsburgh area.

Within a few hours the telephone headquarters building was turned into a temporary barracks, a self-sufficient community, prepared to maintain communication on at least an emergency basis. Cots, blankets, lanterns, oil heaters, containers for drinking water, lumber, food and first aid supplies were collected during the ominous hours while the water was rising.

The floods called for the greatest emergency shipments of telephone equipment and supplies in the history of the country. Never before had a catastrophe devastated so many areas, almost simultaneously destroying so much telephone plant inside and outside. Western Electric factories and warehouses worked day and night. Planes carried both men and materials to the stricken areas.

At the Pittsburgh warehouse, employ-

Manhole covers in the flood soaked area were removed to air the sewers and permit gas leaking from damaged mains to escape. National guardsmen and city police remained on guard and traffic was barred from the area.

International News Photo

ees fought flood conditions while endeavoring to maintain the supply service. Rising waters finally cut off power, heat and light. After 36 hours in the building, the last of the crew was forced to leave in a rowboat from the second story window. Next day a crew of 70 struggled back and made shipments to the telephone company by boat. They continued their work during the succeeding nights by the light of candles, lanterns and flashlights.

Skilled workmen, foremen and general foremen were quickly recruited from Ohio, Michigan, Eastern and Western Pennsylvania fully equipped with tools and testing equipment. These were organized into large working units and quickly donning their working clothes disappeared into manholes, basements and other places coated with mud and dripping with water.

Separate emergency organizations were set up to handle supplies, emergency power for central offices, pumping buildings and manholes, and replacing private branch exchanges and subscribers' telephone equipment.

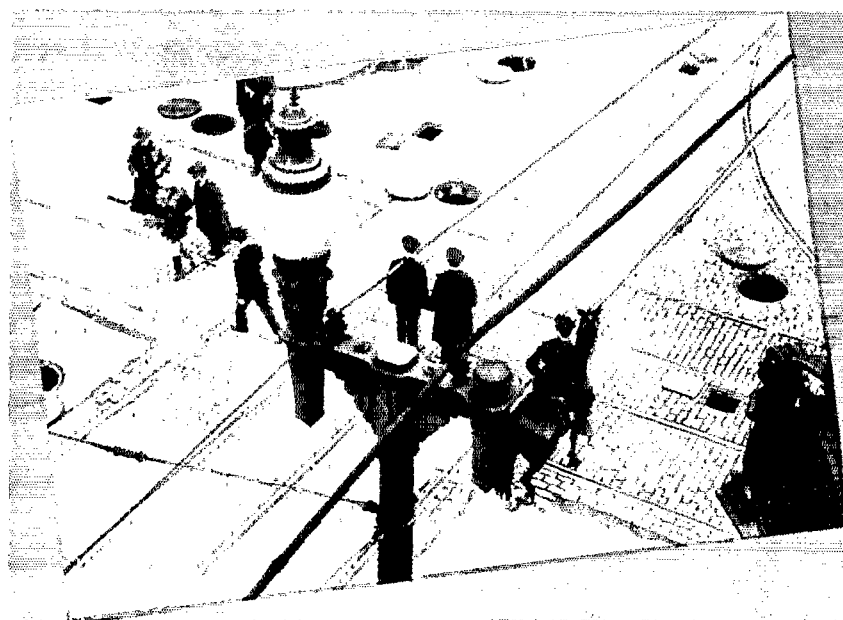
The Traffic Department had the problem of keeping the offices fully supplied with operators for which a transportation system was organized. Also, food supplies, safe drinking water, beds and bedding were required. Abnormal loads were experienced as service was restored.

As each unit swung into action, the effect of its work became apparent and each unit followed its allotted task through to completion.

Emergency services were established for the Red Cross and many of Pittsburgh's larger business houses whose services were essential in supplying foods and materials for the work of restoration and the alleviation of suffering.

The Philadelphia Company which supplies the city with electricity, gas and transportation through its subsidiaries, the Duquesne Light Company, the Equitable Gas Company and the Pittsburgh Railways, played a conspicuous and meritorious part. Through the energetic efforts of its working forces, the city was spared many of the hardships and dangers that might have followed a prolonged breakdown of services.

Had any one been able to predict the unprecedented height of the flood, more thorough preparations could have been



made. Even the U. S. Weather Bureau predicted a limit of only 34 feet. Most of the generating plants had been constructed with the great flood of 1907 in mind when the water measured 38.7 feet at Pittsburgh's point. But with the flood at 46 feet the city was helpless. It was only when the water reached that unprecedented height that the power stations and transmission cables gave way. However, the utilities were not caught entirely unprepared.

"Even before the flooding of the power stations plans were under way for building up an organization to cope with the situation and to begin the work of recovery," said President Frank R. Phillips of the Philadelphia Company in a radio address over stations KDKA and WCAE on March 24.

"Plans were instituted to secure emergency power from surrounding utili-

ties, and I cannot praise too highly the West Penn Power Company, which also suffered severely, and the Pennsylvania and Ohio Power Company and all other interconnected companies, which were in imminent danger, for the sacrifices they made to help the Duquesne Light Company and the people of the Pittsburgh district in a time of dire need.

"In an emergency of this character it is imperative that the health and safety of the people be given first consideration. In response to this need the Duquesne Light Company centered its activities upon the restoration of power to communication companies, water pumping plants, food supply institutions and hospitals as far as physically possible, to assist in every way in the maintenance of law and order.

"Let me say at this point," continued Mr. Phillips, "that it was the fine work performed by various health, policing and public works departments of the County, City and State, the valiant work of the Red Cross and numerous other social agencies, coordinated with the efforts of the utilities, including the telephone company, that, in my opinion, have been largely responsible for the preservation of life, the minimization of personal injury and the prevention of disease."

At 11:30 a.m. on March 18, the 80,000 HP turbine of the James H. Reed Power Station was shut down. This did not necessitate curtailment of service, however, because many of the large power users in low lying areas had already shut down. At that time the Colfax Power Station was still in operation.

(Please turn to page 54)



Courtesy Mine Safety Appliances Co.
The electric lights were dead but this bank continued to serve its patrons with the aid of miners' cap lamps.

ANY vehicle in good condition can be considered safe if it is handled by a driver who knows its capabilities and limitations and drives it accordingly.

Many of the new cars, however, are so much faster and smoother than the older cars that the driver is deceived as to his speed; and when he meets an emergency, both he and his vehicle are unable to cope with it.

Several years ago a manufacturer produced a new model more powerful and smooth than the previous model. The accident rate on the new model trebled that of its predecessor. A plausible explanation is that the drivers were operating the cars at far greater speeds than they would have dared to drive the old models and were getting into difficulty as a result. Each year this situation is repeated. One year's car is so much faster and smoother than the previous year's that the accident rate is building up in an alarming manner. And yet it is safe to say that the cars themselves are structurally safe.

Many accidents are caused by the driver "over-correcting" his control. This may be aggravated by poor weight distribution of the vehicle, sluggish steering, faulty braking, or fatigue on the part of the driver.

Too Fast for Weight

Some light coupes or runabouts can attain speeds at which they become directionally unstable and tend to wander on the road. The slightest bump or cross-wind can throw them out of control.

No car can be driven safely at high speeds in gusty cross-winds.

Reserve power is a safety factor if properly and intelligently used. It enables quick passing, quick acceleration, and gives the operator better control of his vehicle. However, power plants have been developed to a point far in excess of the road-holding, steering and braking abilities of the vehicles in which they are installed.

The question of speed control as a solution to the highway safety problem has often been discussed. Few operators drive with an eye on the speedometer; their attention is demanded by the road and by traffic. However, the proposal to govern all cars so that they cannot exceed 50 miles an hour is dangerous.

Some operators would tamper with the controls. Others, endeavoring to pass a car whose driver did not want to be passed, would find themselves driving beside him and at the same speed. These drivers, side by side, would be more en-

grossed in each other than in traffic, and this would be hazardous. If governors were adopted, it would be wise to govern each car to its maximum safe speed. Some older cars become unmanageable at 50 miles an hour, while a few of the newer cars can almost double that speed in comparative safety.

It would be better to apply governors to drivers than to vehicles.

A meritorious idea is to build into the speedometer a switch that can be set to sound a buzzer at any predetermined speed. This warns the driver when that speed has been reached but interferes in no way with his control of the vehicle.

Weight distribution that is adopted for easy riding often makes road-holding faulty, steering sluggish, braking erratic, and traction poor.

With the vehicle weight forward, high speed braking is in some cases only 60 per cent as efficient as on cars having the power plants placed behind the front axle. Weight redistribution and the transfer of the weight from the rear of the vehicle to the front will necessitate a great improvement in brake mechanism. While brakes have been made more reliable and efficient, the advancement to date has been only a small step in the direction of the necessary improvement.

In some vehicles with the engines mounted over the front axle there is too little weight over the driving wheels to give good traction. Such a condition makes skidding easier.

In an attempt to attain the ultimate in riding comfort too much reliance is



placed on low pressure tires and too little on spring suspension. In turning corners low pressure tires cause the camber to change dangerously. On bumpy roads the radius of the driving wheels changes constantly and to a large degree.

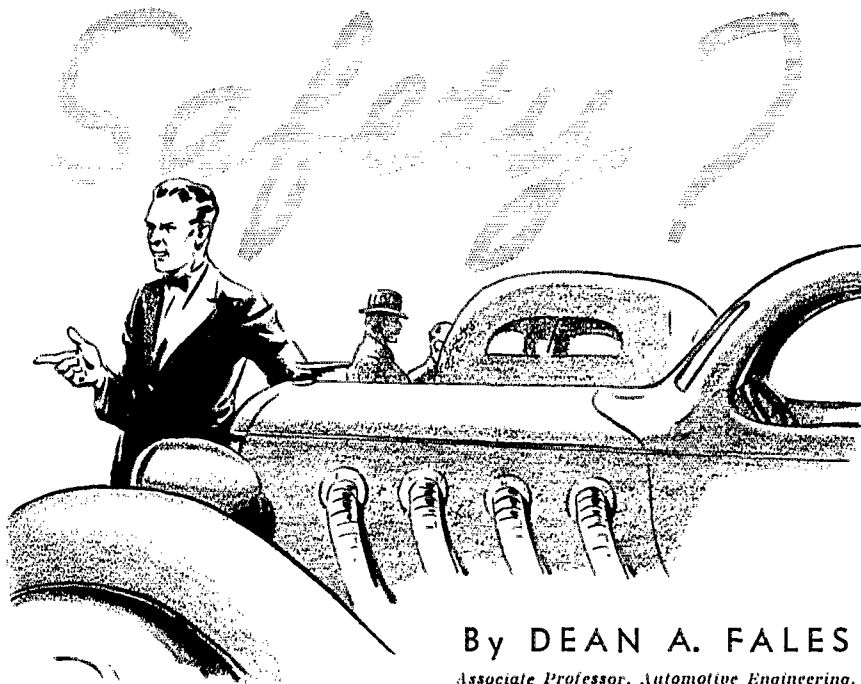
Tires have been developed to high standards, but unless they are properly inflated and replaced when worn, they offer one of the greatest driving hazards. It should be made compulsory for every operator to own and use an accurate tire pressure gage.

Caster, camber, and toe-in of the front wheels must be controlled under all conditions. Many mechanical layouts would accomplish their function, but tires that fold under on corners because of low pressure or faulty inflation counteract the planned function of the mechanical system. Tires should be considered from the standpoint of traction and road-holding ability, and the spring suspension should care for the riding comfort.

Must Cushion Jolts

In this connection shock absorbers have an important duty. In many instances they could be made more robust in the interest of safety.

The effort to gain the ease of operation that has become so popular has made steering sluggish in the modern automobile. With the present steering ratios it is impossible to correct a quick



By DEAN A. FALES

*Associate Professor, Automotive Engineering,
Massachusetts Institute of Technology*

skid, and the driver has no "feel" of his vehicle. These ratios make control in deep sand, snow or mud uncertain, since the front wheels cannot be turned quickly enough to keep the car headed in the desired direction.

Low ground clearances and long, overhanging rear structures cause many parts of vehicles to be damaged on rough roads and on ramps. Higher clearances would not only eliminate much damage to exhaust systems, steering mechanisms and power plants, but would also contribute to easy riding by allowing the springs greater movement.

Need Improved Exhaust

Exhaust systems must be made more rugged and better protected. Crank case fumes must be carried off in such manner that they cannot enter the bodies. The marine practice of drawing these fumes into the intake and providing exhaust systems that last for long periods without leaking could well be copied in motor vehicles.

To handle and operate the present high speed vehicles the driver must be alert. Fatigue destroys alertness, and the present styles are creating additional causes of fatigue.

Driving seats should place the operator in a comfortable, alert, commanding position. The controls should be in convenient and natural locations. The driver should be able to see clearly under

all conditions. Vehicles should be properly ventilated and heated. The driver's eyes should be protected from reflections and glare. There should be no annoying vibrations. A noise which in a short ride may be only a minor annoyance may become a major hazard on a long trip. Driving seats should be comfortably upholstered, should hold the driver's body in an erect position and should be adjustable forward and backward, up and down and also at an angle so that the seat and back cushions are fixed on the plane most suitable to the driver. There is no reason for making the driver's seat and the front passenger's seat alike. They have different functions to perform. Too many seats have inferior upholstery and cushions. It is as important to have an adjustable and telescoping steering post as it is to have an adjustable driving seat. All such adjustable mechanisms must be of strong construction so that they will last the life of the car. An adjustment that becomes faulty may cause a serious accident.

All controls should be conveniently placed. In too many vehicles door handles, gear shifts, levers, wind shields, and dash boards interfere with the steering. Pedals are often so closely grouped that they cannot be operated quickly.

The driver should have the greatest possible range of vision. High, long engine hoods prevent proper traffic vision. Low roofs and rounded bodies cause

blind spots at the wind shield pillars. Low roofs also make high traffic lights difficult to see. The combination of low seats and low roofs makes rear vision so limited that reversing a car becomes an adventure rather than a properly controlled maneuver. An inside mounted mirror gives only partial vision and should be supplemented by an outside mounted mirror that enables the driver to see overtaking cars.

Windshields that are steeply inclined and have no outside protecting visors cause glare and eye strain, especially when lightly coated with dust or dirt. It is practically impossible to defrost the windshield. There is no completely satisfactory defroster available.

"V" windshields cause confusing reflections in night driving in the rain.

The vacuum ventilating systems so generally used can and do draw fumes and dust into the vehicle body. This is a far more serious hazard than is commonly realized. Many cars have dangerous and even lethal quantities of carbon monoxide in the bodies under certain driving conditions.

Pressure ventilating systems can be developed that in addition will serve as heating systems and windshield defrosting units. Ample heat is available. For every horse power used to drive a vehicle, approximately twice as much power is wasted in cooling and exhaust heat.

Ventilation is Vital

The present bodies with rounded roofs and tumble home windows allow disagreeable quantities of rain to enter if the windows are open. In order to keep dry the windows are often fully closed, and with improper ventilation the driver becomes sluggish in thinking and acting.

Bright ornamental work often causes reflections that temporarily blind the driver.

Modern bodies have great rigidity, but in many cases are susceptible to "drumming" that in time wears on the occupants and tends to deaden the alertness of the driver.

The present trend in low bodies is largely style. In European racing cars that are driven at 200 miles an hour on ordinary roads the drivers are willing to suffer the handicap of greatly increased frontal areas to be able to sit erect and high enough to have the proper driving vision. Low bodies contribute to many minor accidents. In order to see out of the cars children who are passengers

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The Managing Director's Page

Laughs, Tears or Shudders?

WHAT is the best appeal to reach all kinds of people in our efforts to keep them from killing or injuring themselves? Probably the argument will never cease.

There are only a few fundamental emotions. Two of the most powerful are fear and joy—tears and laughter. Fear is probably the most powerful single motivating influence in men's lives.

But there are other factors. The safety appeal must command attention—perhaps through fear—but a lesson must be taught and a lasting impression made. The appeal to fear may be used because fear is a basic emotion, but to use it too intensively or continuously will defeat the end sought.

When members of the National Safety Council select posters from the samples shown in miniature in the NATIONAL SAFETY NEWS, the tendency is to choose the types they like rather than those that might carry the most forceful message to the men in the plant.

Posters with a strong emotional appeal (sometimes called "tear jerkers" by irreverent persons) have been popular. One showing a father carrying in his extended arms the body of his little child has been reprinted and reproduced in many forms hundreds of times. Its title, "The Pity of It", has not lost its appeal after many years of circulation.

A poster showing a widow and her child sorrowing at the tomb of a father lost through a preventable accident may appeal to the sympathies, but does it go further to arouse interest in the causes that may have led to the accident—perhaps physical hazards, failure to observe rules, lack of training in safe habits, and many other contributing causes.

Gruesome posters, those showing the horrible results of accidents—the infected wound, the scene of a highway crash with the victims draped around the wreckage, and similar unpleasant subjects—have always been in demand. Some of our members will not display a repulsive poster; others use them freely. Some of the posters produced in other countries are far more lurid than those in circulation in this country.

Psychologists state that while fear in small doses may be stimulating it has deadening effect when carried to excess. If a plant bulletin board displayed nothing but gory posters day after day, it would soon affect the majority of the employees in one of three ways: The unimpressible would cease to be affected; the sensitive would avoid the bulletin board; the morbidly inclined would be fascinated but not influenced in the right direction. To encourage promptness in securing first aid treatment a picture of an infected hand may be displayed to advantage but it should be balanced by positive, constructive propaganda.

Comic posters are more popular than the gruesome. People enjoy a good laugh. The argument against the comic poster is that accidents should not be treated lightly. Some types of comic posters are objectionable.

Posters which ridicule the workers produce a negative reaction immediately. The greatest danger is in the use of crude art work or absurd copy. Newspapers find that comic strips take second place in capturing reader attention. Humor

has its place in safety work, but it must be used skillfully and discreetly. Ridicule must not be directed against individuals.

Articles like " . . . And Sudden Death" (which swept America as Uncle Tom's Cabin did eighty years ago) arouse the public, but merely arousing people is not enough. It must be followed by convincing argument for constructive accident prevention work.

Now that the first shock of " . . . And Sudden Death" has subsided we cannot help wondering what it would require to give the public another jolt of equal force. It seemed to us that Mr. Furnas reached the ultimate in stark realism and horror in that article.

The majority of people may be shocked or titillated by appeals to their instincts or emotions, but the safety job is an analysis of causes and remedies, a matter of knowing how to change forms of behavior that may become more or less accepted habits of working and living.

M. J. Amers

INTERESTING ITEMS

An inspirational pamphlet, "The New War on Traffic Accidents," has just been published by the Council. This pamphlet, the first of a series, presents a vivid picture of the general traffic safety problem as a national menace, and calls to arms every public spirited man and woman for organized Federal, state and community safety programs. This is one of the advance broadsides in the campaign to reduce traffic accidents 35 per cent by the end of 1940. One or more copies will be gladly furnished to individuals or groups without charge. A nation-wide distribution is desired.

The press is unanimous in acclaiming the big 24-sheet "Newspaper Safety Service" just released by our Publicity Division, the most comprehensive, the most helpful and the best safety broadside ever offered to newspapers. In a very short time the country will be blanketed by this great newspaper campaign.

The General Federation of Women's Clubs has just distributed to its thousands of Clubs a splendid new booklet, "Women and the War on Accidents." This is one of their first big announcements encouraging affiliated clubs to make accident prevention one of the major projects for the immediate future. The Council is expecting real action from these influential groups. We have had the pleasure of consulting and working with their safety chairman, Mrs. Edward Hammett, on this new program which has been made possible through special funds contributed by the automotive industry.

Lieut. F. M. Kreml has been appointed director, and Captain Ray Ashworth, formerly of the Wichita Police Department, assistant director, of the new Safety program of the International Association of Chiefs of Police which, like the work of the National Congress of Parents and Teachers, is being financed by the Automobile Industry. Lieut. Kreml has also been made director of the Traffic Officers' Training School at Northwestern University.



By

ALFRED P. SLOAN, JR.

President, General Motors Corporation

DURING the Richmond campaign General Grant flashed to the world these inspiring words of determination! *"I purpose to fight it out on this line if it takes all summer!"*

Today we are engaged in another kind of war—a struggle that parallels in many respects that mad, gruesome game the world so loves to play. The vigorous, united efforts of an entire people are now being mobilized for the attack. And the new offensive must be sustained on every sector of the accident front, not only for "all summer" but for all year—and for each succeeding year, until safety has been achieved. Then we can say truthfully, "here is a land of peace"—the normal and happy estate of mankind.

Now to win any war we must first know just where and what the enemy is; and then we must attack him on all fronts. Surprise assaults may bring local or temporary success, it is true, yet after all, wars are won only through constant unyielding pressure all along all fronts.

So it is in today's war on traffic accidents which I fervently believe is now entering a new and constructive phase

The accompanying address by Mr. Sloan was broadcast over a network of 26 stations of the National Broadcasting Company on March 30, 1936, as part of a program honoring the winners of the 1935 National Traffic Safety Contest.

Not Chance, But Work

Constant, unremitting effort in the application of tested remedies has been responsible for the achievements of the winning cities and states in the National Traffic Safety Contest

that will mean success. We now know what the enemy is—an unholy alliance of ancient and inadequate highways; automobiles that are too old for safe use—or that have been allowed to become old before their time; antiquated and conflicting laws; drivers and pedestrians who do not know—and all too often do not care whether they know—how to conduct themselves safely, considerably and courteously.

We have learned that there is no single cause of accidents, but many causes. No victory is to be won by debating whether the chief hazard of the highway is liquor or excessive speed, or carelessness or bad brakes; but rather by recognizing that all of these and many other hazards combine to increase our casualty lists. And that not any one of these dangers, but all, must be done away with.

Happily today we do not have to argue whether "It can be done." It has been done! The cities we are honoring today have actually done it. None of them has done it completely; the safety leaders in these cities are the first to tell us that "they have only begun to fight." But they have already scored a most conspicuous victory. Their records are not only an inspiration but an impetus for constructive action.

Lives Saved

These six cities—Evanston, Illinois; Milwaukee, Wisconsin; Providence, Rhode Island; Syracuse, New York; Superior, Wisconsin; and Swissvale, Pennsylvania—and the many other municipalities which received second and third awards and honorable mention in the various population groups have actually saved 589 lives during the past year! There was no increase in the mortality rate here as was the trend in the country as a whole. Instead these communities *reduced* their motor vehicle deaths 17 per cent! Had the rest of the country done as well, 6,400 of our unfortunate victims of 1935 would be alive and well today.

How have they done it? Not by any sensational spurt, but by constant, unremitting effort; not by fanning the spasmodic flames of hysteria, but by the application of sane, sound and thoroughly tested remedies; not by *chance* but by *work*! Furthermore their accomplishments are due, not to the brilliant performance of any one man but to the whole-hearted cooperation of the city administration, the police, the courts and all the people.

What these municipalities have done other cities can do; whole states can do; the whole country can do. The automobile industry, which I have the honor to represent here, believes this so thoroughly that we are supporting the splendid work of the National Safety Council, the public officials and many other bodies already active in the field. We believe in practicing cooperation as well as preaching it. We are throwing our material resources into this fight—and the personal energies of our entire industry.

We believe that an essential part of the new war on accidents is to arouse and sustain the interest of all the people all the time. We most gratefully acknowledge the increasing efforts of the newspapers and the radio, which are doing so much to make the man on the street realize his individual accountability for safety.

But after all, there is nothing more futile than interest fanned to a fever heat which is not directed toward a definite objective. Words we must have, yes; but words employed as the means toward an end. They must be followed with vigorous action, intelligently directed. It is not sufficient that the driver and pedestrian possess the desire to be cautious on our streets; they must know what care consists of, and the specific things they must do—and not do—if they would avoid disaster. The new safety program must instruct both young and old in the simple, yet vital art of driving and walking on our streets.

(Please turn to page 68)



Left to right: Mayor Bryn Ostby, Superior, Wis.; Dr. B. L. Corbett, Milwaukee, Wis.; Mayor Charles H. Bartlett, Evanston, Ill.; Dr. C. H. Watson, president, NSC.

Safe Cities Honored in Nation-wide Broadcast

THE story of the success that can be won in the battle against traffic deaths was spread to all parts of the United States on March 30, when the presentation of awards to the winners of the 1935 National Traffic Safety Contest was broadcast over a network of 26 stations of the National Broadcasting System.

Representatives of the winning communities and states were guests of honor at the luncheon given by the National Safety Council at the Hotel Pennsylvania, New York City, from which the broadcast was conducted.

Alfred P. Sloan, Jr., president of General Motors Corporation, in addressing the gathering made a strong plea for unity of action throughout the country in mobilizing against traffic accidents.

Dr. C. H. Watson, president of the National Safety Council, presided. John B. Kennedy, prominent author, editor and speaker, served as master of ceremonies.

The cities and states honored at the gathering, together with their representatives, were:

Evanston, Ill., grand prize winner and winner in Group IV, cities of 50,000 to 100,000, Mayor Charles H. Bartlett; Milwaukee, Wis., winner in Group I, 500,000 population or more, Dr. B. L. Corbett, secretary, Milwaukee Safety

Commission; Providence, R. I., winner in Group II, cities between 250,000 and 500,000, Mayor James E. Dunne; Syracuse, N. Y., Group III, 100,000 to 250,000, Mayor Rolland B. Marvin; Superior, Wis., winner in Group V, 25,000 to 50,000, Mayor Bryn Ostby; Swissvale, Pa., Group VI, 10,000 to 25,000, James E. Loughran, representing Burgess D. J. Madigan.

State of Illinois, winner in Class A, Ernst Lieberman, state highway engineer, representing Governor Henry Horner; Delaware, winner in Class AAA, Walter Dent Smith, secretary of state; Minnesota, winner in Class AA, was not officially represented.

In opening the broadcast Dr. Watson said:

"We learned long ago that to stop accidents we must reach every human activity, every material thing, every habit and custom. And we must employ *human* as well as mechanical aids if we are to stem the tide of destruction.

Said Mayor Bartlett:

"The most significant thing about the records of Evanston and other winning cities is that they are not due to miracles nor to efforts which cannot be duplicated anywhere. The program of traffic accident prevention which has brought highest honors three times in the past four years to Evanston, a city which was

one of the most dangerous of its size ten years ago, is essentially simple. It is based upon engineering, enforcement and education, with a comprehensive accident reporting and record system to guide activities in each of the three fields."

Dr. Corbett declared that the success of Milwaukee in promoting traffic safety is "due to a long-time safety program initiated by the Milwaukee Safety Commission, which was organized by Mayor Hoan some twenty years ago. This Commission is a non-political body consisting of fifteen representative citizens appointed by the mayor, and 25 advisory members appointed by the Commission itself. It has been said that safety is everybody's business, but everybody's business is nobody's business unless it is properly coordinated. The Safety Commission does just exactly that. It is the coordinator, the leader and the melting pot of safety activities."

Mayor Dunne stated that Providence, R. I., "had 33 fatalities in 1932, 21 in 1933, 19 in 1934, and 18 in 1935—a most wonderful reduction from the first year named. This decrease has been brought about by an intelligent, concerted effort rather than by chance. The winning of this award does not mean that we have relaxed our efforts to make Providence the safest city in the country."

According to Mayor Marvin, "there have been many factors in Syracuse's traffic safety campaign of the last eighteen months, but the program can best be described by saying that it was based on honest, conscientious enforcement—free of political interference."

The simplicity of the program conducted by the local safety council at Superior was stressed by Mayor Ostby, who said:

"The strict enforcement of ordinary safety measures was demanded and adequate publicity given. Many Superior organizations and individuals gave wholehearted support. In Superior we teach and plan safety. Our educational program in the schools is given paramount emphasis. We find strict enforcement of traffic rules essential, but we believe the most important factor in the safety program is the teaching of traffic courtesy."

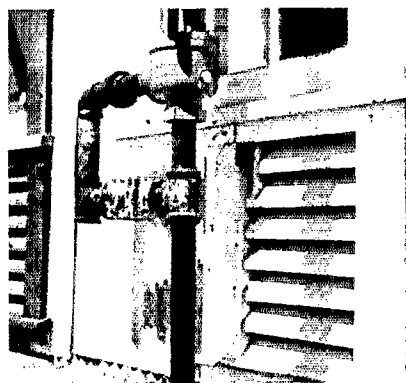
Protection Against Combustible Gases

By P. S. WILLIAMS

Chemical Engineer, Standard Oil Company of California

In the January issue of the *National Safety News* Mr. Williams described methods of detecting combustible gases. This article deals with methods of preventing dangerous accumulations

THE detection of combustible gases and the various means for protecting against them are inseparable precautions. Detection demonstrates the need for ventilation or other protective steps, and again it must be employed as a check against the adequacy of the protection. With a satisfactory means for detection at hand, investigations are made easy where otherwise assumptions or guesses would have to suffice. Hydrogen in old acid drums has caused fatal explosions which might have been avoided if some thoughtful person with a handy detector available had carried out the common sense rule of checking the interior of all containers before doing "hot" work on them. Occasionally combustible gas is being handled or encountered without those concerned knowing it is combustible. Many people

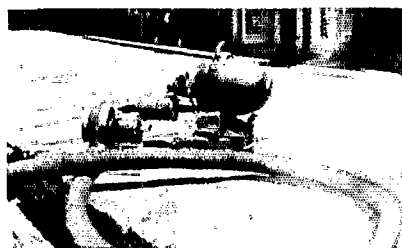


Provisions for ventilation of a gas compressor house.

are surprised to learn, for instance, that ammonia gas is a combustible which forms explosive mixtures with air.

Prevention of combustible gas accumulations, where feasible, is always the best protection. This may mean either stopping the gas at its source, or providing enough ventilation so that the accumulations never become dangerous.

Inspection of equipment handling combustible gas or volatile flammable liquids to insure that it is maintained free from leaks is an elementary but frequently neglected point. Careful design, correct material, intelligent instruction, and safe practices against accidental leaks and spills go a long way to protect against



Portable motor-driven turbine blower for street manhole ventilation.

fire and explosion hazard. Such a simple thing as a plug or cap closing the end of a valved bent line saves many mistakes. When a tank, still, or other piece of equipment is down for cleaning, valves should not be trusted. All connections through which gas, vapors, or combustible liquids can enter should be broken.

A few years ago, before vapor indicators came into general use, a tanker lay at the repair dock with her after compartments gas-free. Vapor from one of the forward tanks breathed through a leaky steam smothering valve. An explosion occurred which greatly damaged the vessel and injured several men. A steam smothering line, installed originally as a safety measure, was the accessory which allowed the vapor to go where it was not suspected. Today, with the



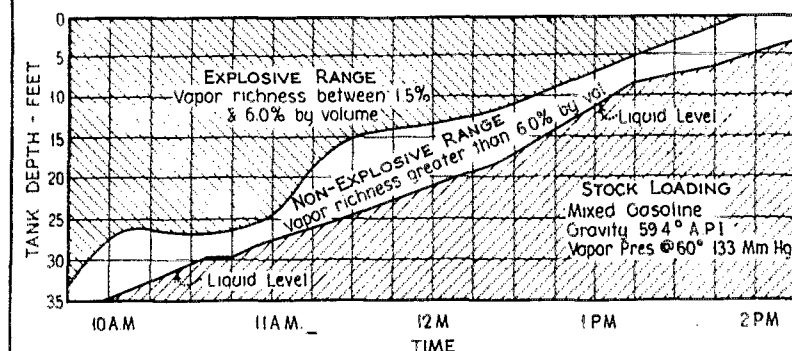
Wind sails for use in street manhole ventilation.

aid of the modern combustible gas indicator, tank ships come in for repairs with every compartment tested and the ship known to be gas-free as a unit.

Ships, incidentally, are particularly well situated to employ the cheapest, simplest, and often the most effective method available of getting rid of combustible gas—natural ventilation. When it is desired to make a tanker gas-free preparatory to repairs, cleaning of compartments, or any other reason, the crew suspend large canvas tubes from a line swung well above the deck. These tubes run through the hatches and down close to the bottom of the space to be ventilated. The tubes are cut down for some distance below their top and the canvas spread to form a sail which will catch the breeze and force air down the tubes into the bottom of the compartments. Such devices are called "wind sails." Even though there may be little or no breeze, the compartment is usually warmer than the outside atmosphere, and a large volume of air is induced to flow down the tubes by convection.

Modification of the wind sail idea may be used to solve many ventilation problems ashore. A sight familiar to San Franciscans is the "wind deflector ventilator" employed by the Telephone and Telegraph Company to ventilate cable man holes while men are underground splicing cables or carrying on other work. The wind sail has been successfully applied to tanks, and is particularly useful in ventilating through roof hatches those field tanks which have not been provided with a side manhole. When a side manhole is available in a tank, it may be opened and an improvised wind

VAPOR ANALYSIS IN TANKER COMPARTMENT LOADING GASOLINE S S Lubrico - Compartment No 9



Concentrations in ship's tank during filling.

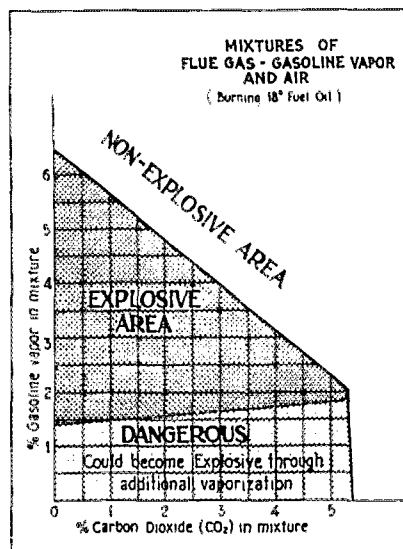
deflector of galvanized iron sheet or other available material erected at that manhole to best catch the breeze, thus aiding the usual natural tendency toward ventilation out through the open roof hatches.

Natural ventilation has the great advantage of going ahead with its work many cases and getting the most dangerous part of a job completed without such potential sources of ignition as machinery, static from steam, and human attendance. We do know that differences in density are largely responsible for most unaided ventilation. Hence in equipment filled with a heavy vapor, conditions will usually tend to reverse from an initial pouring out of vapor at lower openings to subsequent upward movement induced by absorption of the sun's heat or other temperature elevating environment. Street manholes which have accumulated natural or manufactured gas will tend to ventilate themselves when opened as these gases are lighter than air. This all depends on circumstances, however, and the only safe assurance is brought by checking with an indicator.

If we would take an indicator and investigate, we would find many cases where natural ventilation does a job while preparations are being made to employ some mechanical means. There is the instance when a blower set-up was planned to prepare a very gassy 115 x 30 feet crude oil tank for cleaning. The blower was set at the side manhole, and the manhole and the top hatches opened to allow the heaviest of the vapors to "pour" out the side manhole. The tank was opened at the end of the

afternoon and the job left until morning. As data on the rate of ventilation was desired, the man on the job made indicator observations the first thing in the morning preliminary to starting the blower. He found the tank atmosphere well below the limit established at which the cleaning operations were to begin and the blower was not found necessary throughout the job.

It is evident that not only safety, but economy as well, may be promoted by having the intelligent picture of gas movements afforded by a combustible gas indicator. One of many illustrations which may be cited is the cleaning of gasoline tank cars in oil refineries and distributing stations.



Variation of explosive range of gasoline vapor-air mixtures with change in carbon dioxide concentration.

Gasoline tank cars must be cleaned free of rust each time they are filled. General practice is to steam these cars upon arrival at the filling station for a period of many hours, after which they are cleaned by washing with hose streams, and often some scraping or shovelling is necessary after that. This "wet" process in one refinery where a large tank car business is done averaged \$4.00 per car and tied the cars up for around 48 hours.

A study of the natural ventilation which goes on when a gasoline tank car is opened top and bottom was carried out using a combustible gas indicator. It was found that the cars gas-freed themselves within 8 hours after being opened up. Any small puddles of gasoline which might be trapped in uneven bottoms are floated out by the addition of a little water. When the cars are found to be gas-free, men enter and sweep the dry rust down, and out of the bottom opening. This "dry" cleaning process costs only from \$.50 to \$.75 per car, as compared to \$4.00 for the steam and water, and ties up cars only about half as long.

Vents on buildings are familiar to all of us. The usual form is some sort of roof vent, either at the eaves or at the apex. This is satisfactory if we are sure that the gas will rise. In plants handling heavy gases or vapors, or volatile combustible liquids such as propane, butane, ether, gasoline, carbon bisulphide, etc., adequate vents, or louvers, should be provided at the low points. Pipe trenches, pump kits, or other depressions in such plants which might trap heavy vapors should be eliminated or provided with forced ventilation or with some warning device such as a continuous combustible gas alarm.

In general, mechanical ventilation should blow air toward the space to be cleared, and any equipment which might possibly be a potential source of ignition should be placed well out of the way of the gas which is vented.

Often the expense of proper ventilation is offered as an excuse for taking chances. As an example of what can be done, it is worth while to mention an improvised ventilating tool consisting of a hand forge blower with a cheap canvas conductor tube. This forms a convenient ventilator for small containers in inaccessible locations. It has been used to clear manholes and small sumps. Because it is inefficient and tiring to operate, its application is limited.

Advantage should always be taken of a situation which involves vapor spaces

normally above the explosive range as a simple means for protection. Vents from such equipment as may fall in this category should be studied carefully, however, to insure that gas may be discharged and disseminated safely. Heavy vapors should be discharged well up into the air so that they will diffuse to a concentration below their lower explosive limit before reaching points where accumulation could take place. The possibility of a vent fire should always be considered, and some provision made for snuffing it out.

Simply venting gas or vapor to the air is sometimes difficult to accomplish without creating some hazard, and usually constitutes an economic waste. These considerations combine to make attractive the installation of gas gathering systems from tank vents, still vents, drying processes, or filling operations which will bring the waste gases to some central location for appropriate recovery treatment. Such recovery systems are in widespread use, turning into profit what would otherwise be a hazard. Valuable vapors are condensed back to a liquid form by compression or absorption processes, while any remaining non-condensable gases are available for burning under boilers or process equipment.

Vent fires are sometimes put to use. Waste gas in the oil fields has been burned to avoid creating a hazard. In repairing large gas lines in open country, a slight flow of gas is sometimes kept coming and allowed to burn at a cut or opening. Lines may be welded with the flicker of flame at unsealed sections of the joint giving the operators assurance that gas is flowing out and being safely disposed of while the danger of explosive gas and air mixtures inside the pipe is being avoided.

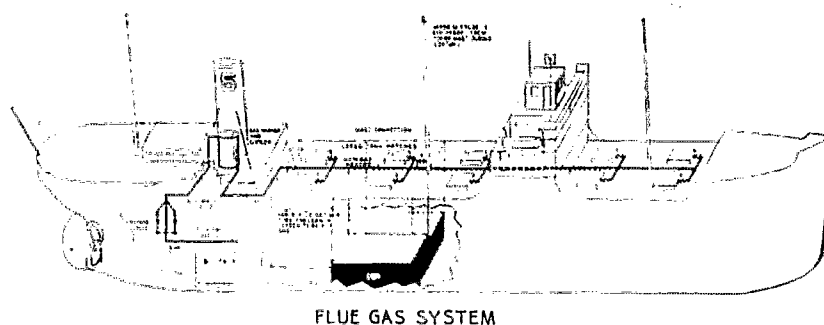
Where operations, or materials handled, preclude a normal vapor condition outside the explosive range, the ratio of oxygen to combustible can be adjusted to force this condition. In a combustible liquid tank, for instance, where the vapor concentration hovers around the explosive range, it is often possible to inter-connect the vapor space of the tank with that of some neighbor where the concentration of vapor is normally well above the upper explosive limit. Interchange of vapor between the tanks will then tend to keep them both out of the explosive range.

Sometimes, if the vapor is of little value, the desired end may be accomplished most economically by removing the roof of the offending tank, or at least keeping all hatches open. The converse

of this is often successful; the tank is made gas-tight, and some foreign gas is introduced to take the place of the air. Natural gas, still vent vapors, and cracking still gas are examples of combustible gases which have been used successfully

gas are coming into prominence, some discussion of principles involved is warranted:

Explosive or ignitable mixtures result when air and combustible gases or vapors are mixed in certain proportions. The



Boiler flue gas has proved effective in protecting oil tankers.

for this purpose in the oil industry. In some instances, an inert gas, such as boiler flue gas has proved most satisfactory.

A good example of protection against explosive mixtures by the use of boiler flue gas is found in the marine transportation of petroleum products.

Tankers discharge their contents so rapidly that the air drawn into the compartments does not have time to become laden with enough vapor to bring the mixture above the explosive range. Lack of convection also tends to keep vapor concentration down. As a result, the mixture formed in the compartments is nearly always an explosive one, and persists in this state until the ship is loaded again, when it is forced out amid the deck activities of the ship's personnel. Recognizing these conditions, the Standard Oil Company of California developed a flue gas system which was described by Mr. H. H. Hall in his paper, "Protecting Tankers with Flue Gas," presented before the American Petroleum Institute in 1930.

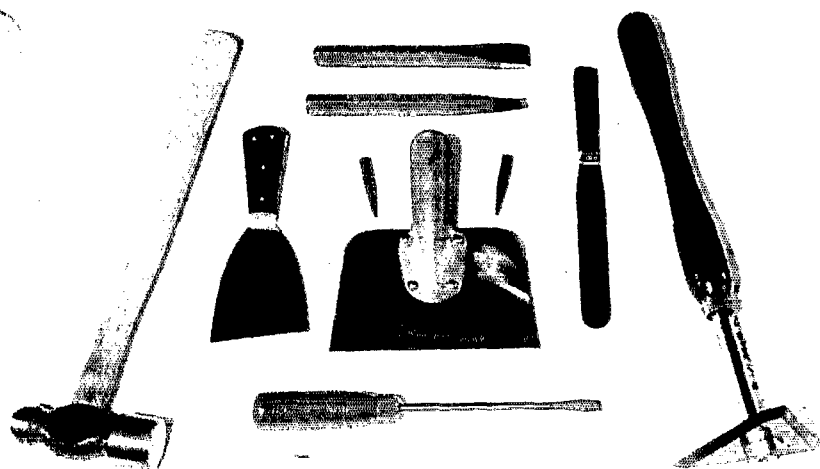
Briefly, the boiler flue gases are drawn from the uptakes, forced through a cooling and washing device, and allowed to fill the tanks in place of air. A cargo piping connection is also provided, so that in gas-freeing the ship's tanks, the compartments may be cleared of vapor by flushing with flue gas, and thus avoid explosive mixtures. All vapor is collected during ship loading operations or gas freeing and discharged at the top of one of the hollow masts. As these systems and other applications of inert

gas is the combustible and the oxygen is the supporter of combustion, while the 80 per cent of nitrogen present in the air is "inert" and serves simply as a diluent. If a mixture contained only oxygen and combustible, much more violent explosions would result. If extra nitrogen be added, the violence of the explosion can be still further reduced, until a point is reached where burning will no longer take place. This is the principle on which the use of inert gas is based.

Common gases other than nitrogen, which may be considered "inert" in this sense are carbon dioxide, and vapors of certain non-combustible organic liquids, such as carbon tetrachloride.

The quantity of inert gas required to prevent the formation of explosive mixtures depends on the nature of the combustible, the kind of inert gas, and the proportions in which the combustible and oxygen are present. With mixtures of petroleum vapor and air, assuming that the combustible and oxygen bear the optimum ratio one to the other, it has been found that the addition of about 40 per cent of extra nitrogen in the mixture will prevent the formation of explosive mixtures. If carbon dioxide is employed, about 25 per cent need be present in the final mixture to prevent explosion. If carbon tetrachloride vapor is employed, only 12½ per cent need be present in the mixture to preclude explosion. Flue gas, which is a mixture of nitrogen, carbon dioxide, and some oxygen, is a fairly effective inert gas.

(Please turn to page 70)



Tools That Won't Spark

By JACK DELMONTE

Electrical Engineer

Beryllium-copper alloys have been found practical for many operations where sparks from steel tools would be highly hazardous

AN INCREASING demand for sparkless working tools, to be used in industrial establishments where even the slightest spark might cause a serious explosion, has been evident within the past two years.

In industries subject to explosion hazards no effort is insignificant which seeks to eliminate every possibility of a mishap. Plants that fall into this hazardous category include chemical and paint factories, oil refineries, and places where explosive dust mixtures permeate the atmosphere. The consequences of industrial explosions are well known. The toll of life and equipment is unforgettable.

There are several flammable, highly volatile liquids whose use must be surrounded with the utmost caution. In this group are gasoline, turpentine, ether, benzene, naphtha, varnish removers, acetone and similar substances. Regulations governing the handling of these materials are necessarily strict. In some cases the use of hobnail shoes or leather heels is forbidden in rooms where the materials are kept, for the grating of an iron nail upon a stone surface may cause a spark which will have a catastrophic effect. Tools that may spark are also prohibited on such locations.

However, a plant layout may be such that tooling operations are necessary in

the vicinity of flammable materials. In these cases there is an urgent need for sparkless working implements.

A recently developed alloy, beryllium-copper, has made available a group of working tools ideal for use under such conditions. These tools are singular in two respects. They are the highest strength non-magnetic copper alloy implements ever developed; and they do not give off sparks either when in use or when placed against a revolving grindstone. They are being manufactured by several concerns.

Beryllium-copper tools, of course, are considerably more expensive than ordinary steel tools. Therefore there is no advantage in purchasing them where no explosion hazard exists.

The high cost of such tools is due not to processing difficulties, but to the high cost of beryllium itself. Beryllium occupies the fourth place in the periodic classification of elements, being one of the lightest metals known. As a pure metal it has not had much practical use, because it is very brittle and consequently hard to work with. However, as an alloying medium, it has untold possibilities. The refinement of the metal is a very expensive process. A few years ago beryllium could not be obtained for less than \$200 a pound. The present

price has reached a new low of \$40 a pound. Metallurgical developments in this country and abroad are responsible for the technical refinements which have lowered the cost of the metal.

Alloys of beryllium-copper exhibit their most desirable mechanical characteristics when 2.0 to 2.5 per cent beryllium (by weight) is present. The alloy is first annealed, then quenched from a temperature of 800 degrees centigrade. This is followed by heat treatment at approximately 300 degrees centigrade for two or three hours. The greatest strength is obtained by cold working, followed by further heat treatment, and an alloy with a tensile strength of 190,000 pounds per square inch and a hardness of 365 Brinell results.

These high strength characteristics are unique for copper alloys, beryllium-copper being the strongest yet developed. It has been remarked that beryllium has an effect upon copper analogous to the effect of carbon upon iron, thus making possible a series of useful alloys. The tensile strength and the hardness of beryllium-copper are comparable to those of tool steels, and for this reason the metal has been applied to working tools. A further advantage is the absence of sparks.

Care must be exercised in the tool-making process, however, since the temper will be drawn if the tools are overheated. Beryllium-copper will retain its strength and hardness only when the correct heat treatment is given. In sharpening the finished tools, care must be taken not to overheat them, and cold water must be on hand to quench the product frequently.

In the hardened state the strength and resistance of beryllium-copper alloys to wear and corrosion are evident, for the alloys have been applied successfully in hammers and blades in grinding mills, mixers, and pulpers. Hand tools, such as floor scrapers, chisels, boiler picks, pry bars, and wrenches, are also made of this special alloy. Specially designed tools of all descriptions can be manufactured on demand.

The use of beryllium copper is by no means confined to the manufacture of sparkless working tools. This represents only one application of a high-strength non-magnetic alloy. The material is proving superior to phosphor-bronze in electrical devices, for example. Offering good electrical conductivity and the strength and hardness of spring steel, beryllium-copper promises to forge rapidly into the foreground as a useful and valuable industrial material.

Lubricating Modern Machinery

By W. F. SCHAPHORST, M.E.

The principal function of a lubricant is to preserve machinery. The principal function of a lubricating system is to preserve human beings

YOU are conversing with an engineer who operates a Diesel engine.

You are very much interested in this type of mechanism. You ask, "In the operation of a Diesel engine, what is the most important thing? Strength?

The engineer replies, "No".

"Size?"

"No".

"Fuel?"

"No".

"First cost?"

"No".

"Name of manufacturer?"

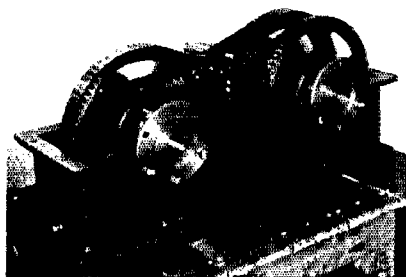
"No".

Feeling that you have mentioned just about everything, you ask, "What, then?"

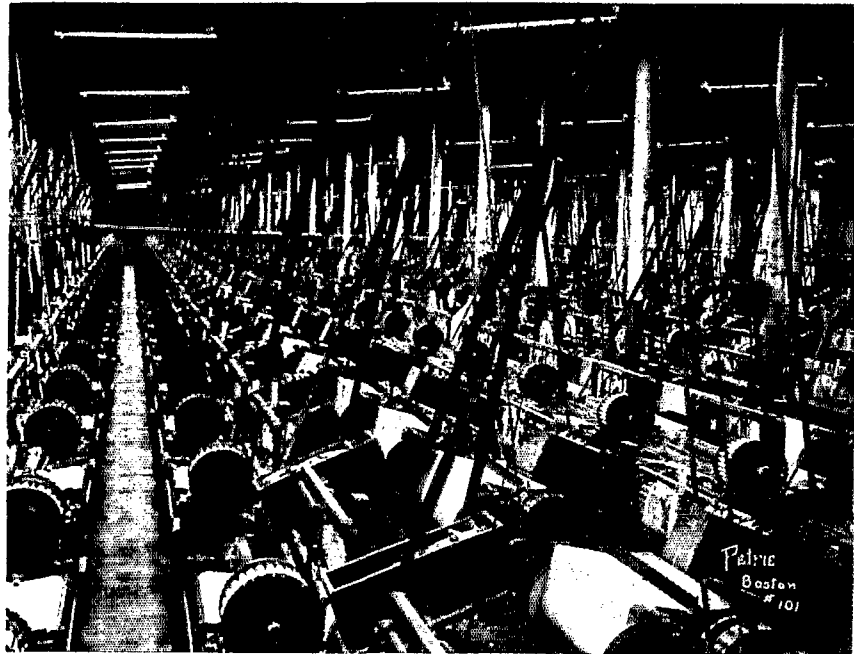
The engineer replies, "Lubrication."

Seeing that you don't quite comprehend, the engineer continues, "Attempt to operate a Diesel engine without lubricating it, and what would happen? The cylinders would soon get hot, and the engine would stop. The wear in the cylinders, on the pistons, and on the bearings would be terrific. In a short time the engine would be ruined.

Few people seem to be aware of the importance of lubrication. Manufacturers understand its importance and



Enclosed silent chains, lubricated by submergence. If left exposed, they would provide an excellent place for catching clothes, fingers and oil can spouts.



Remember the old days when it was necessary to climb ladders to oil those lineshaft bearings? That hazardous job is no longer necessary.

caution purchasers to "keep this machine well oiled." But in nine cases out of ten the machines suffer from lack of proper oiling. This applies even to automobiles. Nine automobiles out of ten are short-lived because they are insufficiently and improperly lubricated.

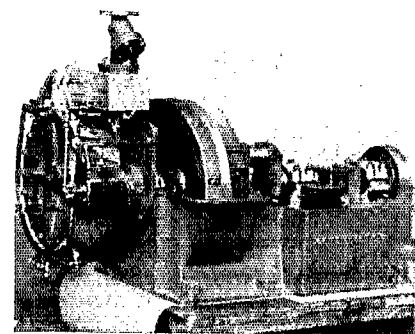
But returning to Diesels, I have before me an interesting booklet by a prominent American manufacturer. It contains detailed instructions on operating Diesels. The very first injunction is: "Test the water system." This, of course, is closely related to lubrication, because a cool engine is more efficiently and economically lubricated than a hot one. Therefore, lubrication comes *first*.

The second instruction is: "Fill the engine with lubricating oil."

More space is given to lubrication than to any other subject. For instance in the section devoted to "Running the Engine," four paragraphs out of seven pertain to lubrication.

How About Safety?

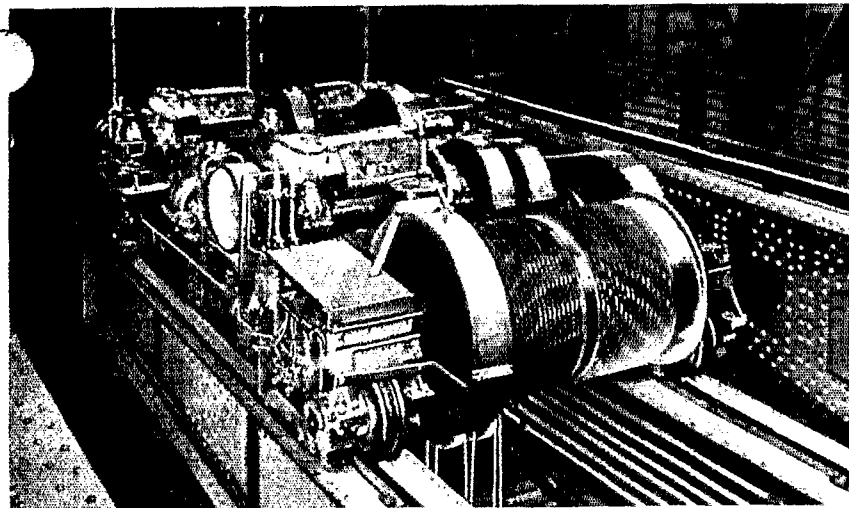
"But wait a minute!" You could reasonably shout at the engineer who is so cocksure that lubrication is most important. "How about safety? Isn't it more important that the engine be *safe*? Shouldn't the engine be so de-



Pumps, gears and turbine. The one-time lubrication problem for high speed pump driving has been solved effectively.

signed and built that it won't explode; won't exude poisonous gases; won't catch the operators' arms, hair, or clothing?"

Of course the engineer will have to admit that you are right. There is never any "come back" to a sane safety argument. It was my good fortune, some twenty years ago, to be present at a meeting of the American Society of Mechanical Engineers when Dr. Diesel told about his experiences in the development of the engine that now bears his name. At one point he nearly lost



Climbing around on and lubricating an overhead crane with an oil can is dangerous. Three manually operated systems take care of lubrication on this crane.

his life because of incorrect design attributable to his own ignorance. The engine was not the finished product of today. In its experimental stage it was decidedly unsafe, as is commonly true of so many important developments. The approach to perfection—which of course includes perfect safety—requires much thought, toil, and time. Although today we have Diesels that seem really to have “arrived,” a hundred years hence they will doubtless appear quite amateurish.

But here is a brief outline of the latest Diesel:

Entirely enclosed; no visible external moving parts; dust cannot enter; the operator would have difficulty in hurt-

ing himself in any way, even if he tried to do so; entirely automatic and positive lubrication; if something goes wrong, the operator is warned by a noise signal.

What more could one ask?

If a world-wide contest should be conducted to select the most suitable symbol representative of danger in industry, a simple sketch of an old-fashioned “oil can” would probably win the contest. The oil can has been present at numberless maimings and deaths. Many oil cans, if they could talk, could relate interesting and harrowing stories.

Machine designers have given serious thought to the problem of lubrication. As a result the danger element has been rendered almost extinct, even in situations precluding the application of lubricant except through the old hand operated oil can.

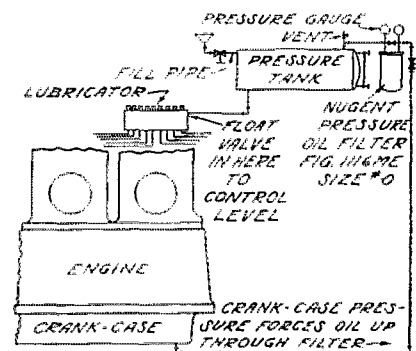
Take for example the former slow-moving, horizontal, double-acting, refrigerating ammonia compressors. They were “wide open” and required hazardous hand oiling. They have given way to high speed single-acting vertical types, and lubrication is one of the important reasons for the change in design. The vertical type is easily oiled, automatically, and less oil is required. The cylinders and all bearings are cared for by automatic indicating and pressure lubricators. The modern compressors also are so completely enclosed that the only visible moving part is the drive shaft which is the connecting link between the driver and the compressor. Operating a refrigerating compressor is therefore much safer today.

“Splash lubrication” of high speed machinery is now fairly common practice. The piston or other reciprocating

part is caused to slap against the surface of a reservoir of lubricant, creating a “splash.” The drops of oil that are thus splashed upward in a more or less haphazard manner cling to the moving parts and find their way to the surfaces that must be lubricated. The method usually serves the purpose very well, although in many cases it has been discarded in favor of the more scientific pressure lubrication system.

Submergence in oil is another modern way in which high speed machinery is lubricated, as, for example, chain drives.

Chains, by the way, have had much to do with making industry safer by largely taking the place of those former open gears that required oil-can lubrication. In fact the modern so-called “silent chain” is really a gear—an “internal gear”—a metal belt containing



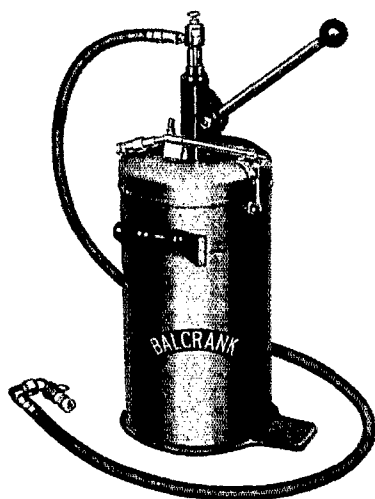
How a modern Diesel engine is pressure lubricated. Oil is filtered as rapidly as it is used.

gear teeth. These chains are frequently entirely enclosed in a metal box, the sprockets partially submerged in lubricant. This method of lubrication is satisfactory for most commercial speeds. At extremely high speeds, however, the centrifugal force becomes so great that chains have been known to become “dry,” even though submerged in lubricant. Forced lubrication is then adopted—and is effective. Danger to the operator, in either case, is negligible.

High speed machinery, as a rule, is oil lubricated. Grease lubrication, however, is coming into favor because of the improvement in methods of application of grease, and also improvement in the quality of greases available. I believe high speed machinery will therefore be grease-lubricated to a greater extent in the future. Unless true oil film lubrication can be achieved, which in many cases is impossible, grease lubrication will in most such cases provide a better answer than any drip or forced oil lubricating method. As a general rule, at the

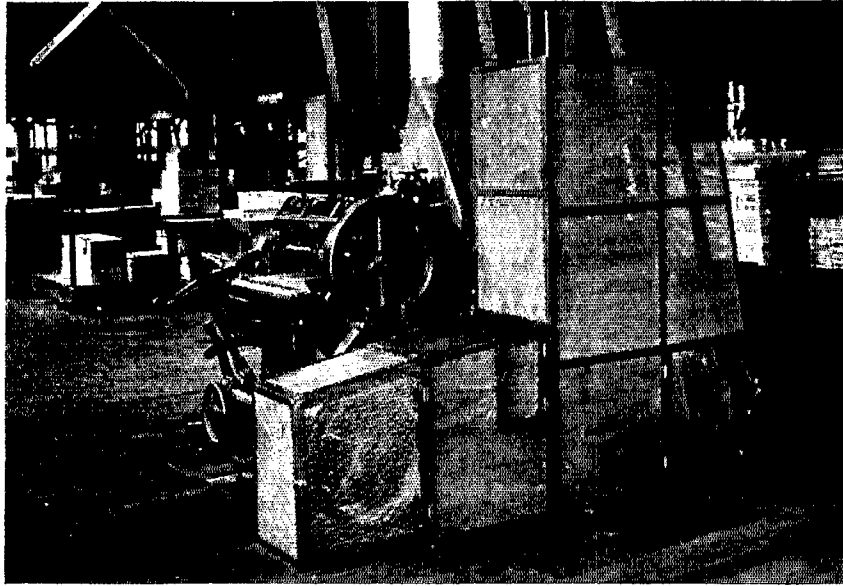
(Please turn to page 53)

NATIONAL SAFETY NEWS



A type of device which is replacing the oil can in many establishments. It is a portable, hand-operated, high-pressure lubricator, capable of developing a pressure of 5000 pounds per square inch. Handles practically any kind of lubricant.

It's Easy to be Safe



By H. W. GABOR

New York State Insurance Fund

THE profusion of mechanical safeguards offered on the industrial market and the ingenuity of modern remodeling methods make it easier today than ever before for an industrial plant to be safe. Many companies have found it possible to use men and materials already on hand to achieve physical safety.

Yet insurance carriers constantly receive reports of accidents obviously caused by faulty mechanical equipment or unsafe physical environment.

In the midst of abundant opportunities for mechanical safety many plants have failed to take full advantage of the physical safety measures available.

This is especially true in many small plants, where the employer, surveying a hazard which should be corrected, takes the position that he "can't afford it," or that it "can't be done," or that the condition actually is not hazardous "because nobody ever goes there."

The program of mechanical safeguarding must be arranged in the proper sequence to assure its success.

The first important consideration is planning the layout of plant equipment. Two factors are involved here. One is the relationship of departments with respect to operations and processes. This should be based on the kind of work

performed in each department, to assure a smooth production flow from raw material to the finished product without unnecessary handling or rehandling. The second factor is location of equipment. This should be accomplished to provide for a logical succession of operations within a department, to offer adequate working space around each machine, to secure maximum advantage of both natural and artificial illumination without glare, and to permit adequate passageways for transit and for the handling and trucking of material.

Power Transmission

The importance of power transmission in achieving mechanical safety must not be overlooked.

If the older type of equipment is used, with steam engine drive through belts, line and jack shafting with hangers, clutches, sprocket and chain drives and gears, a careful examination should be made to determine whether anyone might be injured by any moving part. Shafting, fast-moving belts and pulleys, and couplings exposed to contact should be enclosed or barricaded with standard rails, regardless of location. Sprockets, chains and gearing should be effectively encased.

But accidents still occur with shocking frequency because simple safeguards have not been provided

If the more modern electric motor drive to a group of machines is used, similar precautions should be taken with motor belts, pulleys and shafting.

If the modern, individual machine motor drive is used, it will generally be found that the manufacturer has enclosed all dangerous moving parts, but this should be checked to make sure.

All of this is, of course, elementary. It should be obvious to anyone really interested in making plants physically safe. And yet a monotonous succession of accident reports indicates that many have failed to provide the necessary factor of safety in power transmission.

Numerous injuries are caused by contact with moving parts of a machine, yet oftentimes a simple precaution can eliminate the hazard. The application of mechanical belt shifters to machines with cone pulleys has not only obviated injuries formerly caused by shifting belts by hand, but has also resulted in a saving in time.

Most moving parts, such as gearing, chains and cams, can be neatly encased with sheet metal enclosures which will constitute protection against deterioration as well as a physical safeguard for the worker. A good mechanic will have little difficulty in designing, fabricating and applying effective, inexpensive machine guards.

Take a good, long look at the points of operation of your machines, the source of the most serious and costly injuries to machine operators in industry. In certain manufacturing classifications point-of-operation accidents aggregate as much as 50 per cent of the total cost of all injuries.

At one time the application and use of safeguards at the point of operation was resisted on the grounds that it could not be done, that it would interfere with the work, that the worker would refuse to use the guard, or that the operator would become so dependent upon the guard as to be injured in the event that the guard failed.

It must be admitted that some of the pioneer attempts at point-of-operation guards were more notable for their formidable size and cumbersome operation than for utilitarian value. Since that

time, however, these guards have been modified that in many cases they have become integral parts of the machines, and their operation has become a logical step in the job process.

The mechanical safeguarding of wood-working machines is highly important, because of the high operating speed of such equipment, the fast moving parts and the keen cutting action. All parts on which someone may be injured should be effectively guarded, but particularly the points of operation of such machinery as circular saws, band saws, jointers, molders, planers, shapers and similar equipment where one small slip may mean a serious cut or dismemberment.

There are very few operations on machines that cannot be effectively safeguarded without interfering with the operation, if the guards are properly designed, applied and maintained, and if the operator of the machine is properly trained in their use.

In many small shops that do not qualify for credits under the compensation insurance rating plans because of limited payroll, we find hazardous machinery being operated in an unguarded condition, especially at points of operation. The guarding of such machines in these cases may not qualify for credits, but it is certain that unguarded punch presses and circular saws can chop off fingers just as effectively and quickly in a small shop as in the large plant, where compensation credits prevail.

In many shops the employer has had machine guards constructed by his own employees. Many such appliances have been devised by foremen or employees. These are particularly effective from the psychological standpoint, for whatever the design or material, if a guard is made by an employee who is thus given an opportunity to display his own ingenuity and skill, this guard will generally be blessed with a long life of effective use because of the local pride in achievement.

Hazards Classified

Any program of mechanical safeguarding should be planned to encompass all types of hazardous exposures. Here are the principal classifications:

1. **PRIME MOVERS.** Boilers—the proper operation of safety and blow-off valves and similar equipment incidental to the boiler; engines—their flywheels, shafting, cranks, moving governor parts and other revolving or reciprocating units; motors—pulleys and belts, and chain drives.
2. **TRANSMISSION.** Shafting, pulleys, belts, clutches, couplings, gearing, sprockets and chains, set screws and any other revolving parts.
3. **MACHINE DRIVES.** Belts, pulleys, chains, shafts or other fast moving drive devices.

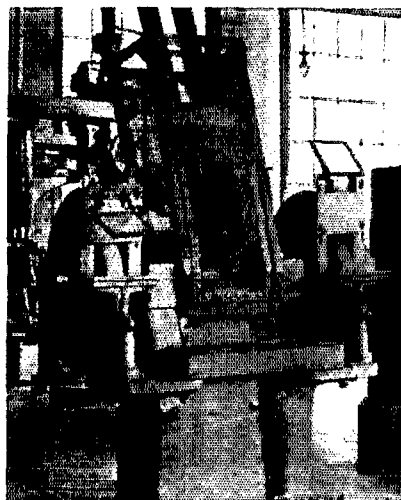


Plate glass shields are provided for these grinding wheels but the sign warns operators that goggles must be worn.

4. **MACHINE PARTS.** Belts, shafting, sprockets, chains, cams, and gearing of all kinds.
5. **POINTS OF OPERATION.** Every dangerous operating point should be effectively guarded where there is any cutting, punching, forming, squeezing, sawing or shaping process during which the hands or fingers of the operator may be caught and injured.
6. **ELEVATORS.** Whether passenger or freight, these should have safe doors or gates at the hoistway entrance; a safe enclosure for hoistway and car; a signal system; and car control. All exposed machine moving parts, including the counterweight, should be effectively safeguarded.
7. **CRANES AND OTHER HOISTING EQUIPMENT.** Dangerous parts should be enclosed or guarded. All overhead cranes should be equipped with a limit stop device to prevent over-running.
8. **MECHANICAL EXHAUST SYSTEMS** for removal of dust, gases and fumes. These should have wire screens over fans and other moving parts with which contact might be made.

Information on methods of safeguarding equipment is available to every employer from his insurance carrier, who maintains a corps of trained engineers for that purpose, or from the National Safety Council, which is equipped to give the same service. Information regarding requirements of the labor law may be obtained from state departments of labor or from industrial commissions.

Manufacturers of safety equipment and devices have, through many years of careful research, developed machine guards, principally for points of operation, which function very efficiently when properly applied and maintained. These manufacturers have been uniformly prompt and considerate in furnishing information when requested.

No program of safeguarding is complete without proper provision for the maintenance of the guards. These guards

are subjected to considerable use and sometimes abuse. That many of them survive as long as they do is an indication of the durability of the material and quality of the workmanship in their construction.

Such equipment, whether of wood or metal, must be given care and maintenance equal to that expended on other mechanical devices. Indeed, unless they are properly maintained, the employer who purchased them or ordered their construction is losing money on his investment.

The relationship of mechanical safeguarding and accident costs has not been emphasized as much as it deserves.

It is universally recognized that accidents which occur on mechanical equipment develop a high severity, frequently are lost-time cases and may result in a schedule loss of a finger or a hand. Consequently such accidents are among the most expensive injury cases in industry. The average direct cost of compensable accidents in New York State is about \$400. From this it is possible to obtain some idea of the dollar value of preventing the occurrence of such injuries by applying and maintaining effective mechanical safeguards, especially at dangerous points of operation. These safeguards should be regarded as instruments of economy.

In preparing for a program of mechanical safeguarding it is well to give careful consideration to the important psychological factors involved. The most important one is the department foreman who is held accountable for injuries to employees under his supervision and control. He may have some ideas of constructive value which he will be glad to express upon request. If the foreman has a part in the program for mechanical safeguarding, it will doubtless be successful; but if he is denied the recognition which he thinks he should enjoy by reason of his position and responsibility, the program will be handicapped at the start and may soon founder. Many accident prevention programs, including those for safeguarding equipment, have languished and died principally because of the apathy of a department foreman who did not feel he was an integral part of the safety program in the plant. Place the responsibility upon the foreman for the safety of those under his control, but also ask him for his suggestions on accident prevention. The human element is still the most powerful force upon which a program may be founded. Given the opportunity, your foreman will doubtless rise to the emergency. (Please turn to page 52)

A Columnist Rides the Cab

And understands why engineers get gray before their time

Howard Vincent O'Brien, whose column, "All Things Considered," is one of the popular features of the *Chicago Daily News*, confesses that he has always had a craving to blow a locomotive whistle. Recently his ambition was realized when he was invited by the Illinois Central Railroad to ride its new streamliner, The Green Diamond, from Chicago to St. Louis. This description of the trip is reprinted in part from the *Daily News* of April 7.—The Editor.

EXCEPT in spots it wasn't a particularly fast run — not much faster, on the average, than one can go in a trailer. But it was certainly cleaner and quieter and smoother than any ordinary train ride.

This train is the all-of-a-piece type—"articulated" is the technical word. It is made of steel throughout but weighs less than the old-style equipment. It cost close to half a million dollars, but the 1,200-horsepower Diesel engine burned only about \$7 worth of fuel oil on the 300-mile trip here.

My fun came when I was allowed to go up in the cab with Jack Clarke, traveling engineer of the Chicago division, and stand behind Tom ("Slim") Scott,

who was at the throttle. A. C. Jungden, the factory representative, stood on one side of me, explaining things, and George H. Danver, traveling engineer of the Springfield division, was helpful on the other.

In practically no time at all, thanks to the counsel of these experts, I was an old-timer, pulling away at the whistle cord and bellowing "clear block" as the open signals flashed by.

One gets some new ideas of the world from the cab of a high-speed locomotive. And one gets a little pessimistic about the human race. At least half a dozen times during the ride motorists slipped across just in front of us, only to halt on the far side and gape at the passing train.

In the Wink of an Eye

It became easier to understand why it is that in something like half the grade-crossing accidents the motor car hits the train! It was easier to understand, also, why an engineer's trick at the throttle is only two or three hours. It is nerve-wrecking work.

If automobile drivers were obliged to take a ride in the cab of a locomotive they would be more careful to stop, look and listen. A 250-ton mass of steel, hurtling through the air at 100 miles an

hour, is almost as inevitable as fate. It can be stopped, but not quickly. At that speed it covers something like 150 feet in the winking of an eye.

There should, of course, be no grade crossings. But, since there are, the wise thing is to hold everything if there is a train so much as in sight. This might waste a little time, and would be bad for the hospital business; but there would be fewer widows and orphans, and fewer engineers with shattered nerves.

Clear Block Ahead!

A ride in a locomotive brings home the fact that we have gone far beyond dependence on our individual senses. The engineer does not even pick his track. Signals, operated by unseen hands, tell him where to go, and how fast. Every few miles the fireman holds out his hand and picks up written orders. Not for an instant is the train out of guidance. It proceeds every foot of the way by carefully worked-out calculation. When the engineer cries "clear block ahead!" and the fireman echoes "clear block ahead," it is as nearly clear ahead as tested machinery and a great number of agile human minds can make it.

When the speedometer needle crept up to 100, I confess that I thought somewhat of defective switches and broken rails, and reflected that, since this was a test run, my life insurance would carry no double benefit. But this dismal mood soon passed, and my soul grew calm in its faith in the green lights.

I was sorry when I gave the crossing signal for the last time and said farewell to those cool, sturdy men, the knights of the throttle.



MAY, 1936

WHAT EVERY ENGINEER DREADS

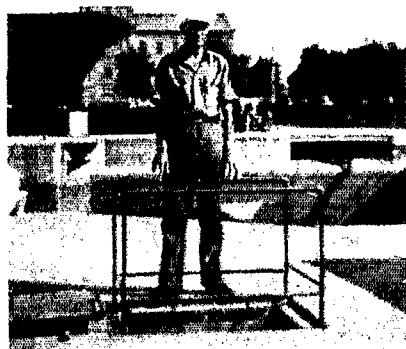
An entire family of twelve, consisting of Marion McBride, his wife and their ten children, lost their lives in this grade crossing crash at Grabill, Indiana, on the afternoon of January 24, 1936. A dirt-road crossing can be just as dangerous as one on a main highway.

THE SAFETY EXCHANGE

"A ROUND TABLE IN PRINT"

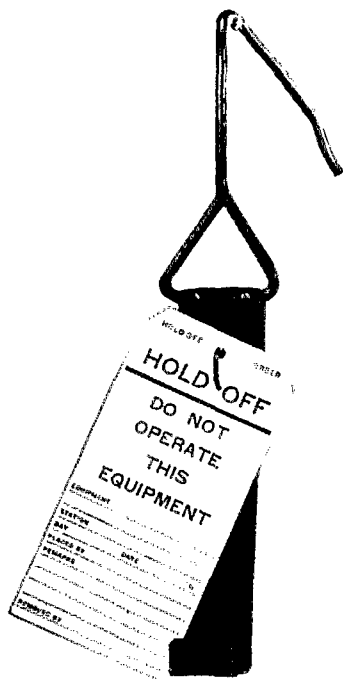
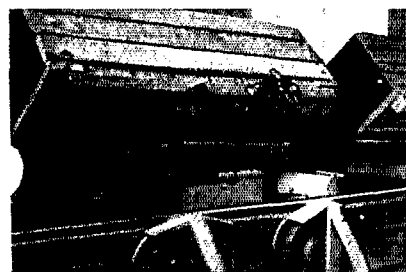
Collapsible Manhole Guard Is Easily Made

This collapsible man-hole guard is made of ordinary conduit piping and assembled in one piece. It can be folded flat, easily transported, and is adjustable. The guard here shown has special feet for a particular type of man-hole; however, slight changes in design make the guard applicable for any man-hole. The guard was developed by the United States Engineers at Rock Island, Illinois.



Safety Racks Keep Quarry Cars Out of Crusher

To prevent the trucks of man cars in quarries tipping and falling into the stone crusher when dumping, this safety rack was developed. Heavy angle iron extends over the truck wheels of the cars, so that when the car is tipped, there is no way in which it can fall. Before the J. E. Baker Company, York, Pa., developed this safety rack, there was constant danger that a car would fall into the crusher, pulling a man with it.



A Useful Holder for Warning Tags

The "hold-off" card holder illustrated, is made of fibre and copper wire. It holds the card in an upright position, is easy to attach, and will not allow the card to be blown away. It is used by the West Penn Power Company.

Blue Prints Aid Drivers In Avoiding Accidents

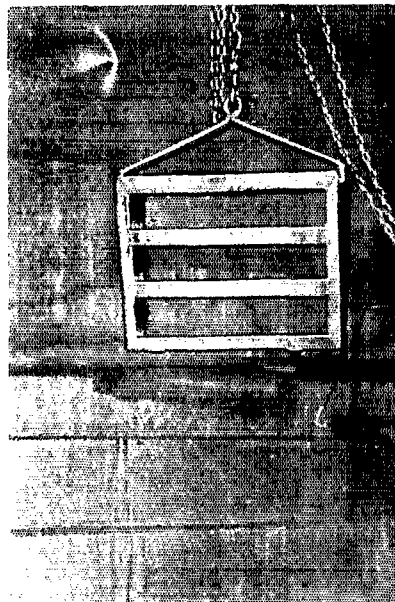
Employees of the Nova Scotia Light and Power Company report to the Engineering Department any accident hazards which have become chronic along their routes. An engineer then makes a trip to the spot and sketches the situation. A blue-print is made of the hazard, and instructions for avoiding accidents at the particular spot are printed on the blue-print.

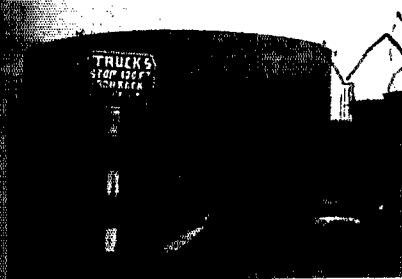
The car operators, even though they are more or less familiar with the dangers along their route, are warned of the hazards and put more definitely on their guard.

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

Cleaning Rack Prevents Burns

To prevent burns to workers cleaning articles in chemical baths, the Corduroy Rubber Company, Grand Rapids, Mich., devised this wooden rack. Articles to be cleaned are placed in the rack, which is raised, then lowered into the cleaning bath by a hoist. This eliminates the necessity of handling any material on which chemicals may remain. The workman can stand away from the bath while material is being submerged and is subject to little danger from splashing chemicals.





Trucks Must Keep Back While Others Are Loading

This warning sign is used by the Associated Oil Company at San Francisco, California, to warn trucks to stop back 100 feet from the loading platform while other trucks are in the process of loading. The danger here is that a spark from the truck coming up to the loading platform might ignite the vapor of the oil or gasoline being put into the truck already at the loading platform. The sign is of simple construction and is easily made. The upright is made of an old four-inch iron pipe, and the sign with the lettering on it is made of scrap sheet steel.

Score Sheet Easily Kept Up to Date

A safety score sheet that is easily kept up to date has been devised by the Hudson Coal Company, Scranton, Pa. The sheet shows the all-time record and also the number of days worked since the last lost time accident. It is made of heavy cardboard, and the numbers, which are separate pieces, are inserted into tabs cut into the poster.

It is Now---

20

Working Days

Since the Last

**LOST TIME
ACCIDENT**

in This Section

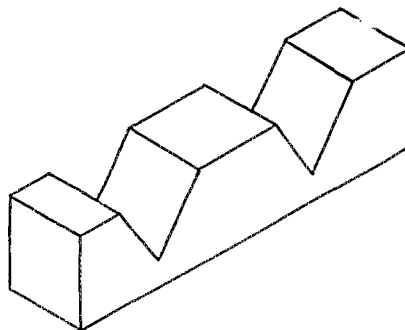
Former Record---

73

BE SAFE---NOT SORRY

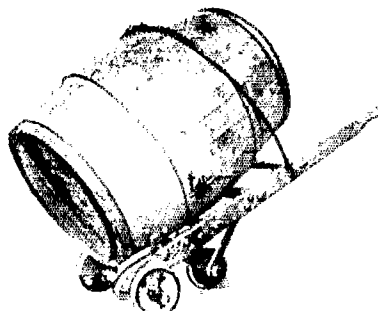
Block Prevents Round Stock Rolling Off Trucks

To prevent cylindrical objects from bumping together, or rolling off trucks, set them in a notched block, such as illustrated. The objects are held firmly, and the danger of breakage is reduced. There is also less danger of an object rolling off and injuring a workman.



Third Wheel Improves Two-Wheel Truck

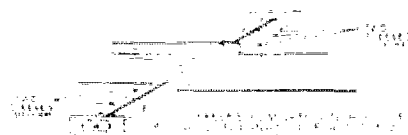
The truck shown in the accompanying illustration has three wheels instead of the customary two. The extra wheel



makes turning easier, especially sharp turns, and takes considerable weight off the operator's hands. The barrel is held in place by a metal strap, and rests on an iron bracket.

Sleeve Guards Cover Pinch Point

These leather sleeve guards were designed in the Sanford Mills, Sanford,



Maine, to cover up the pinch point between the two rolls on a warper through which the cloth passes. The leather is stitched, and cut to fit rolls of any size.



Safety Belts Are Seamen's Friends

The accompanying photograph shows a seaman using a Lykes Life Belt, designed by the Lykes Bros., Ripley Steamship Company. Each vessel is supplied with a suitable number of belts, and under no condition is a seaman allowed to go over the side for painting, scaling, or other work until equipped with a life belt. When a man reaches the boat-swain's chair, or staging from which he is to work, the line on the belt is hauled up and made fast on deck fitting, allowing only sufficient slack in the line to permit him freedom in his work. The life belt is also used where men are sent into deep tanks or other compartments of this nature where there is danger of sustaining a fall.

Sign Warns When Road Is Closed for Repairs

This road sign is used in the refinery areas to close the roads for traffic when there may be danger of fire or explosion while repair operations are in progress in the refinery. The sign is used by the Associated Oil Company, San Francisco, Calif.



Safety Instruction Cards

SAFETY Instruction Cards, one of the most popular services ever offered by the National Safety Council, are being published again after a lapse of several months.

Many new cards are being compiled, and several of the old cards are being revised. The list will be expanded to cover a representative number of subjects in all industrial fields.

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

The cards contain a wealth of practical safety information, condensed into the most compact form—clear, readable and easily understood. They cover specialized information which is so specific that it is not readily adapted to bulletin board or poster use.

The cards may be distributed to advantage among operating executives, foremen and workmen. Members are invited to submit suggestions for new subjects.

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Cleaning out large tanks	293
Air hoist operation	142
Aprons, protective	228
Artificial respiration	165
Auto tires, inflation	208
Axe, how to handle	191
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Bricks, how to pile	242
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Driving long rods	21
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Safety Instruction Cards are printed on white card stock, 3 by 5 inches, slightly heavier than government postcards. In any quantity the price is one cent per card (all of one kind or selection) with a minimum order of 25 cents. Stamps or cash may be sent with order, or an invoice will be rendered.

The order should specify "Safety Instruction Cards," and give the numbers of the cards selected.

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(Please turn to page 32)

NATIONAL SAFETY NEWS

SAFETY COMMITTEE CHAIRMAN



1. Hold regular committee meetings, see that all members attend, and always consider these and other items:
 - a. Minutes of last meeting.
 - b. Reports of recent accidents.
 - c. Reports and recommendations of safety inspector.
 - d. Discussion by committee members.
2. Committee members should determine (from accident reports) the causes of all accidents. If additional facts are needed, secure them by personal interview with the foreman of department where accident occurred.
3. Have accident analyses and summaries made up and from these determine the outstanding hazards of the various departments. Report these findings, with your recommendation, to the management.
4. Have your committee discuss the inspector's reports on unsafe conditions and practices; if his recommendations are approved, make proper disposition of them.
5. Encourage committeemen to report their own observations.
6. All recommendations not complied with should be discussed at each meeting. No recommendation should be set aside until it has been decided that it is impractical.

 SAFETY INSTRUCTION CARD No. 296

MILLING MACHINE OPERATORS

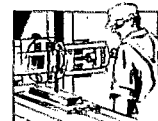


Many injuries occur on milling machines. It is not always practical to guard the point of operation. When the cutter is unguarded be doubly careful.

1. Keep all guards in place when machine is running.
2. Make sure that cutter and arbor are secure.
3. See that the work is clamped securely.
4. Check speeds and feeds.
5. Keep hands away from work when machine is running.
6. Avoid cuts and other possible injuries by using a brush to remove chips.
7. Wear snugly fitting clothing; loose garments are easily caught in machinery.
8. Keep floor about the machine clean and free from objects that might cause a fall.
9. Keep your mind on the job.
10. If you are not sure about the safe procedure, ASK YOUR FOREMAN.

 SAFETY INSTRUCTION CARD No. 297

METAL PLANNER OPERATORS



1. At start of each shift, before switching on power, see that all guards are in place.
2. If any adjustment or repair is necessary, stop the machine.

3. See that tools and materials are tightly clamped.
4. When removing or setting tool, stop the machine and shut off power.
5. When loosening tool holder, hold tool with one hand or place a support under it.
6. Have planer idle when adjusting length of "bed" stroke. Never ride the "bed."
7. Leaving tools of any kind under the "bed" is extremely hazardous.
8. Use a brush (not hands) to remove chips; keep chips off "ways", "floor" and "bed" of planer.
9. Wear goggles and stand out of the line of flying chips.
10. Wear snugly fitting clothing; loose garments are easily caught in machinery.
11. If not sure about the safe procedure, ASK YOUR FOREMAN.

 SAFETY INSTRUCTION CARD No. 298

MACHINE SHOP WORKERS

1. Keep floors free of tools and unnecessary materials; keep aisles and passageways clear.
2. Put oily waste and all flammable materials in the metal cans provided.
3. When lifting heavy objects, squat, keep back straight, lift with the legs. Bending over may cause strains.
4. Riding on crane hooks or chains, and on trucks or conveyors is dangerous.
5. Keep out from under all suspended loads.
6. Climbing over piles of material leads to falls.
7. Wash thoroughly with soap and warm water before eating and before leaving plant. Do not use cutting oils or compounds for washing purposes.
8. Help keep the washrooms, locker rooms, toilets, drinking fountains, and other service equipment clean and sanitary.
9. Get first aid for every injury, no matter how slight it may seem to be.
10. Horseplay is often the cause of serious injury.
11. If in doubt about the safe procedure in any situation, ASK YOUR FOREMAN.

 SAFETY INSTRUCTION CARD No. 299

ELECTRIC TRUCK OPERATION

1. Before starting work, inspect truck thoroughly—brakes, electric controls, tires, guards, etc.
2. If in need of repair, do not operate; report to your supervisor or the proper repair department.
3. Operate the truck with care and only for the purposes intended.
4. Observe all plant traffic rules for the safety of employees and equipment.
5. Sound horn, reduce speed and proceed with caution when entering or leaving buildings, and when passing doorways, entrances, exits, corners, and passageways.
6. Pile loads securely and so that view ahead is unobstructed.
7. Before starting be sure others are in the clear. Do not start with a jerk which may spill load.
8. Always keep truck under control; be ready to stop quickly in any emergency.
9. Use extra care when backing.
10. Permit no one to ride with you on truck or load.
11. When leaving truck, remove control handle; if you will be absent long remove cut-out plug.

 SAFETY INSTRUCTION CARD No. 300

BUILDING WRECKERS

1. Make sure that gas, electricity and water are shut off.
2. In handling material from upper floors, use care to protect all persons below.
3. Never throw timbers or other objects from upper floors.
4. See that timbers are lowered slowly; do not overload material chutes, place warning signs at chute ends.
5. Do not stand near the discharge and if any chute.
6. Be watchful of falling objects.
7. Use no makeshift support; be sure that each ladder has all rungs in good repair.
8. Make sure that any temporary staging or platform is safely constructed for the load it is intended to carry.
9. Do not leave boards with protruding nails around. Carefully pile them with nails down.
10. Wear goggles, heavy soled shoes, heavy gloves, and stout garments.
11. Place screens to protect others from flying debris.

 SAFETY INSTRUCTION CARD No. 301

TIPS TO THE NEW EMPLOYEE

We are trying to work safely in our plant, and we ask your help and co-operation in following safety suggestions.

1. Before starting any machine, be sure you understand its operation and how to do the work safely.
2. See that all guards are in place. Do not remove any guard or make any safety device inoperative.
3. Wear goggles and the other protective clothing necessary on your job.
4. Your clothing should fit snugly. Loose or ragged garments, flowing ties, and jewelry are easily caught in machinery.
5. Follow safe practices. You will never be expected to do any job exposing you to danger, provided the work is done in a proper manner. Consult with your supervisor on any job that appears to have dangerous elements.
6. Report to your supervisor any unsafe or unsanitary condition you may notice about the plant. We want to make everything safe by removing the CAUSES of accidents. You can help!

 SAFETY INSTRUCTION CARD No. 302

OTHER DRIVERS' MISTAKES

You can often prevent a traffic accident by a courteous or generous action when the other fellow has made a mistake.

1. When some driver insists on "hogging" the right of way, let him take it.
2. Be prepared for the driver who tries to "run the yellow" at the stop light.
3. When a driver tries to pass you and misjudges the space available, drop back and let him into the line.
4. If an approaching driver, in passing other cars, has difficulty in getting back into his own lane, slow down for him.
5. When some driver foolishly tries to pass you on a hill or curve, drop back and let him into the line.
6. If a driver behind you is ever anxious to get around your car, pull over and let him go on his way.
7. Always expect the unexpected from any driver near you.
8. Watch out for pedestrians, both in the middle of the block and at street intersections. Nearly half of all traffic fatalities involve pedestrians.

 SAFETY INSTRUCTION CARD No. 303

CUTTING OILS AND COMPOUNDS (Skin Troubles)

Operators who work with cutting oils and compounds may be troubled with rash, pimples, or boils, if they permit the skin to become plugged with dirt and oil.



1. Before beginning work, both in the morning and after lunch, wash hands and arms with soap and warm water.
2. When quitting work, both at noon and night, scrub hands and arms thoroughly with soap, warm water and a soft brush.
3. After each washing, and scrubbing, rub the flesh with vasoline, lanolin, or other ointment to prevent chapping.
4. Keep an individual soft brush and soft towel for your own use. Avoid hard or stiff brushes.
5. Do not wipe the hands with waste; metal particles on the flesh or in the waste may scratch the skin.
6. Have your working clothes laundered at least once a week.
7. Get first aid promptly for all cuts and scratches.
8. Report to your foreman at the first sign of skin irritation.
9. Never permit anyone to spit in the oil pans or reservoirs, or contaminate the cutting fluid in any way.

 SAFETY INSTRUCTION CARD No. 304

CARE of GAS MASKS (Canister Type)

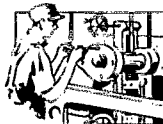
1. Read and observe carefully the manufacturer's instructions.
2. Any mask that has been used must be cleaned, inspected and prepared for use again before it is stored.
3. Clean the mask by thoroughly wiping it with a damp cloth and let it dry before putting it into case.
4. Do not fold or crease the mask improperly when putting it away.
5. Store masks in a cool dry place. Rubber deteriorates from the action of light and air; fabric deteriorates if allowed to remain moist.
6. See that the new canister contains exactly what is required for protection against the specific hazard to be encountered.
7. Never use a canister that has been saturated with moisture.
8. Masks and canisters should be assembled for thorough inspection at least once every two weeks.



SAFETY INSTRUCTION CARD No. 305

MACHINE OPERATORS

1. Before beginning work on any job, get specific instructions from your foreman.
2. See that all guards are in place before starting machine.
3. Using hands or body as a brake to stop a moving machine part is hazardous, even when the power has been cut off.
4. Do not shift moving belts by hand.
5. Avoid using, adjusting or repairing machinery that is in motion.
6. Report all needed repairs. Make no repairs yourself unless told to do so by your foreman.
7. Before starting repairs on any machine, be sure the power is off, and make sure that the power will remain off and machine will not start until you have completed the job.
8. When changing such machine parts as face plates or chucks on lathes, it is dangerous to use power.
9. Wear snugly fitting clothing; loose garments are easily caught in machinery. Wear goggles and protective clothing specified for the job.
10. If in doubt about the safe procedure, ASK YOUR FOREMAN.



SAFETY INSTRUCTION CARD No. 306

PUNCH PRESS GUARDS

Punch presses can be guarded for ANY operation. The following check list will suggest a practical guard.

1. Mechanical feeding device, with point of operation isolated.
2. Minimum plunger travel, $\frac{1}{8}$ inch or less, so that operator's fingers cannot enter danger zone.
3. Cover, barricade or enclosure which prevents operator from placing hands between dies.
4. Hand control device, preferably two-handed device, replacing the foot treadle and keeping operator's hands busy while the plunger is in motion.
5. A device to prevent or interrupt movement of plunger if a part of operator's body is in danger zone.
6. A device that will pull or push operator's hands out of danger zone as the press is tripped.
7. Hand tools necessary in placing or removing pieces from between the dies.
8. Combinations of the above devices.



SAFETY INSTRUCTION CARD No. 307

Safety Instruction Cards

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Correspondence

SAFETY LADDERS

CHICAGO—The writer has read an article in the March National Safety News and found it of much interest.

There are, however, several points which contradict to some extent the rules as laid

down in the American Standard Safety Code for Construction, Care and Use of Ladders which was finally approved April 11, 1935. One of these points is a comparison between open boring and blind boring of side rails. You lay stress on the fact the "preference seems" to be for the blind boring where the tenon does not extend through the side rail. There may be some good points relative to this, but there are just as many, if not more, reasons why this is detrimental.

When a ladder rung goes only partially through the side rail, the rail is smooth and solid on the outside. Although some engineers claim that this method strengthens the side rail, the additional strength is practically negligible. The bad part of blind boring is the fact that when ladders are left outdoors or in damp storage the rungs absorb a certain amount of moisture. The ends being covered by the side rail, they have less opportunity of drying out than when the tenon extends through the side rail. You can realize that when a tenon rung starts to decay the situation is very serious.

In this article it was not mentioned that open boring permits visual inspection at all times. Furthermore, with the blind boring method, a driving fit of the tenon cannot be obtained. In blind boring there is also the possibility of the tenon not extending far enough into the side rail.

As for hand-split rungs being superior to machine-turned rungs, we should like to ask in what manner, provided the machine-turned rung has an equally straight grain?

Quite often in a hand-split rung the spacing of tread is not equal. This is not the case with a straight grain machine-turned rung. This variation may range from a very slight fraction of an inch to pretty near a full inch. Where the variation is great a hazard exists, particularly in descending.

Under the paragraph of "Inspection and Maintenance," you bring out very strongly that it is hard to detect rot of tenons. This, it would seem, would leave the preference for open boring.

N. F. BORGAARD,
Protective Equipment, Inc.

NATIONAL SAFETY NEWS

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-oxymereuri-fluorescein-sodium)



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

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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.

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INDUSTRIAL HEALTH

A Non-Technical Symposium for Physicians and Laymen

Industrial Dermatitis

By OSCAR L. LEVIN, M.D.

Dermatologist, New York City

THE most common occupational skin disease is dermatitis. It may be defined as an inflammation of the skin which is characterized by certain signs and symptoms.

It has been estimated that skin reactions may be caused by more than 700 substances used in industry. No occupation is exempt from dermatitis. The Industrial Bulletin of the New York State Labor Department for June, 1934, stated that of 692 claims heard on the occupational disease calendar in New York City during 1933, 461 were for skin diseases. According to relative frequency of occurrence, the industries listed were: (1) Food; (2) Trades, domestic and personal service; (3) Fur, leather and ivory; (4) Metals and machinery; (5) Clothing and millinery; (6) Public service; (7) Building trades and chemicals. A more detailed account is contained in the Industrial Bulletin for August, 1934.

Since any substance with which the skin comes in contact may be a direct or local cause, the list of possible irritants would include practically every substance used in all occupations. However, the causative agents differ greatly in their effect upon the skins of different individuals, both with regard to the type of lesion produced and to the intensity of the reaction.

The direct exciting agents may be classified as follows:

1. **PHYSICAL AGENTS**, such as light, cold, thermal, actinic, roentgen and radium rays.
2. **MECHANICAL AGENTS**, such as friction, pressure, pricks, abrasions, cuts and scratching.
3. **PRIMARY IRRITANTS**, which include the chemicals that produce eruptions in varying intensities in all skins—gaseous poisonous vapors, acids, alkalis, alkaloids, formalin, TNT and phenol.

4. **SPECIFIC IRRITANTS AND SENSITIZING AGENTS**. These produce reactions resembling allergy in about 70 per cent of individuals. Poison ivy, poison sumac, primrose, plants, vegetables, wood, oils, lacquers, oleoresin, turpentine, hexamethylenetetramine, paraphenylenediamine, iodoform, alkaloids, (morphine, quinine, atropin) benzene, aniline dyes, metals like mercury, iodine, arsenic and their derivatives, fungi producing molds.

5. **DEHYDRANTS AND DESSICATORS**, which dry the skin by taking up water. Alkalies, hypertonic solutions, salt, sugar, and glycerine.

6. **DETERGENTS AND FAT SOLVENTS**, which dissolve the horny layer, soften the skin and allow penetration by other chemicals and infectious agents: Soap, mild alkalies, water, alcohol, oils, turpentine and aniline.

7. **BIOLOGIC, BACTERIA AND FUNGI**, which include vegetable and animal organisms. These produce local and general eruptions by their growth and their toxins.

The physical state of an irritant influences its effect on the skin. Toxic gases and vapors are most active, while fluids are less active than gases but more so than solids.

The dermatologist should be familiar with the various chemical offenders, the processes employed in factories, and the conditions of the plants in which men work. He should also compile and report means to prevent and correct existing evils.

Reactions Vary

The difference in action of the various causative agents on the skin of different individuals is so great that substances producing a marked effect in some will have no effect at all in others. The primary irritants are those which affect every one in varying degrees. Some react to a first exposure, others only after an extended time.

The intensity of action in those who respond thus depends not only on the character of the offending agent, whether it is a caustic or an apparently innocent substance like a plant bulb but also upon

the type of skin. This is partly due to the variations in the structures of the skin with age, sex, race, color and habits of the individual.

Other factors predisposing to reaction are heat, cold, moisture, sunlight, the climate and the season of the year. The most important factor in the mechanism of the skin reactions is the degree of hypersensitiveness. It is commonly known that in chemical factories only a very few men react to weak solutions, while the number of workers responding increases with the increased concentration of the solution, until finally, at the highest concentrations, only an occasional individual escapes being affected.

Contact Tests

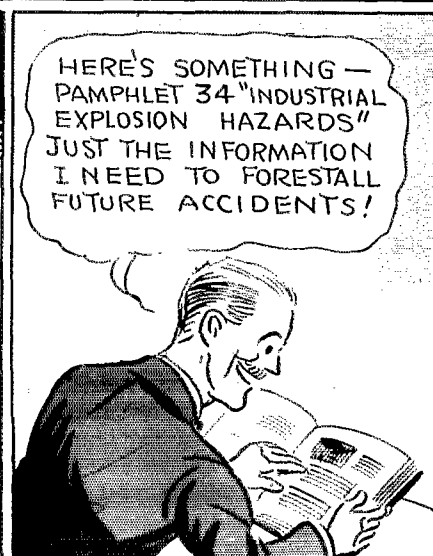
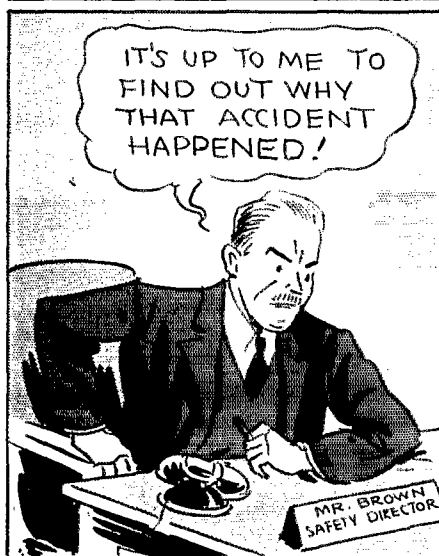
It is of practical value in industry to employ the patch or contact test as a means of determining the hypersensitivity of a worker. To perform the test, a small quantity of the suspected substance is applied to the skin surface. If the substance is a liquid, a small piece of gauze is soaked in the solution and applied to the back or the upper part of the arm and covered with wax paper or cellophane, which is held in place by adhesive.

Solid substances may be made into a solution or mixed with water and applied in the same manner. The skin selected for the patch test must be free from lesions and be protected from coming into contact with any agent, such as hard or rough clothing, which might produce an eruption by contact. It is often desirable to perform a control test in a normal individual, using the identical set-up in order to compare results. The patch is kept on for 24 hours, unless there is severe itching or burning. After that time, the patch is removed and the skin is compared with the normal. The reaction may vary from a mild erythema, a one plus reaction; to a four plus reaction with erythema, swelling, vesicles, and open lesions.

In the reading of the test, the reaction from the adhesive should not be confused with a possible negative result with the tested substance. Positive reactions

From a paper read at a meeting of the New York State Department of Labor. This important paper, which is somewhat technical, was reprinted in full in Industrial Medicine for October, 1935.

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20 N. WACKER DRIVE CHICAGO

may be delayed, and may appear several days after removal of the substance tested.

The practice of applying undiluted irritants to the skin for testing should be condemned. It has been my experience to observe a number of patients with keloids resulting from the use of caustics for testing purposes.

Identifying the Irritants

Individuals often disclose polyvalent sensitivity, and it is therefore advisable to identify the various ingredients of the substance to which a patient is found to be sensitive.

Certain constitutional predisposing factors may influence the hypersensitivity of an individual. A seborrheic individual is predisposed to dermatitis. He shows a greasy skin, a tendency to acne, baldness, and repeated attacks of boils and carbuncles. Some individuals seem predisposed to boils and carbuncles.

The neurogenic patient is particularly prone to dermatitis. Such patients disclose areas of inflammation, especially in the folds of the skin, on the flexor aspects of the elbows and knees, and on the back and sides of the neck. Many of the obstinate chronic cases belong to this group. It would be profitable for employers, particularly in chemical factories, to examine all applicants for evidence of involuted or active lesions of this condition.

Patients with an ichthyotic tendency, as characterized by abnormal dryness, thickening and parchment-like skin on the palms and the front of the tibias and follicular plugging of the outer surfaces of the upper part of the arm, suffer severely from cold and moisture.

Dermal sensitivity may be increased by other abnormal systemic conditions, such as foci of infections in various parts of the body; by metabolic disease, such as diabetes, gout, nephritis; by general infections, such as tuberculosis, syphilis, diphtheria; by disfunction of the endocrine and vegetative nervous system, and by general debility and bad habits.

Skin abnormalities, growths and deformities predispose to dermatitis.

To prevent frequent occurrence of such skin conditions, all possible precautions should be taken. An applicant for work that might expose him to contact with an irritating substance should be submitted to the patch test before being admitted to work and, in case of a positive result, should be employed in some other occupation less dangerous to him. Every applicant should be allowed a thorough cutaneous examination, and a

record of his family history, previous skin disease, and substances handled in former jobs should be kept. The habits, personal hygiene and constitutional complaints should be noted. Occupational stigmata, like stains, pigmentation, scars, keratosis and deformities should be investigated. The blond, the dry, the thin, the atrophic, the seborrheic and the ichthyotic skins are predisposed to dermatitis.

The laboratory should be used for detection of abnormalities, such as the presence of hematoporphyrin in the urine, determination of the Wasserman test and similar tests, a microscopic study of tissue, and for the presence of tenia. All susceptible individuals should be excluded as applicants.

The physical and hygienic conditions under which men work should be under constant supervision of a physician. The importance of personal hygiene must be impressed upon the employees and, where practicable, they should be periodically examined and any skin conditions detected immediately treated and recorded for future reference. The employees should be given instructions as to the dangers of the particular type of work in which they are employed, and how to protect themselves.

The wearing of gloves and the use of grease safeguard against excessive moisture and dryness. Gloves should be kept clean and free of chemicals and infectious agents and they should be washed every day. Excessive perspiration and irritation from the gloves themselves should be avoided. A weak vinegar solution should be applied to neutralize alkalies, and a weak alkaline solution for acids, oxidizing substances like sodium sulphite for chrome, and dilute alcohol to remove irritants like lacquer, foreign particles and infectious agents.

At the end of the day, a shower with sufficient clean towels should be supplied. R. Prosser White advised the preliminary use of sodium sulphite before the bath in all industries involving exposure to chemicals, dyes, drugs, coloring materials, irritating dusts or fluids. A warm solution of this chemical is also valuable in removing color stains on the skin, wool, cotton, leather and wood.

Treatment

The external treatment differs according to the exciting agent, the stage of the disease, its situation, the type of lesion.

The first step is to remove the causative agent in a manner as indicated above, by acids, alkalis, sodium sulphite,

dilute alcohol, etc. Such topical and physical agents should then be applied as will remove the pathological tissue and hasten involution, so that there will be restitution of normal tissue.

In the earlier states, dilute wet dressings, powders and lotions are advised to promote the radiation of heat, evaporation of the discharge, and to relieve congestion and favor absorption. With the subsidence of the acute state and the tendency of the lesion to become dry and scaly, pastes are employed. Best results are obtained by spreading the paste on strips of unbleached muslin or gauze, which are placed upon the inflamed skin and bandaged lightly. Dressings must be changed frequently in order to avoid irritation from discharges and infections.

If the condition tends to become obstinate, slightly astringent wet dressings combined with applications of solutions of silver nitrate and tar may prove to be of value.

When the eruption is of a chronic type, more stimulating ointments are employed. Various tar products achieve excellent results. In the more infiltrated and thickened passages, the ointment should be not merely applied but rubbed in vigorously.

Of the physical therapeutic agents, X-rays are the most valuable for chronic lesions and pruritus. Others, like quartz rays, ultra-violet rays from Alpine lamps, and infra-red rays, are used mainly for stimulation. At times, they are employed to convert a resistant eruption into an acute inflammatory one, so that relief may finally be obtained by soothing and protecting the intentionally produced dermatitis.

Finally, the doctor turns to the worker as his chief aid. The worker in hazardous occupations must become familiar with the hazards of his occupation and aid in avoiding them. Employers should cooperate in protecting the employee by installing the necessary safety measures.

Scorpion's Bite Is Deadly

MORE lives have been lost in Arizona from the sting of scorpions than from the bite of any other venomous insect or reptile, according to the records of the Arizona State Board of Health. The records disclose 35 deaths from poisonous insects and reptiles in the past 6½ years. Of these 25 were caused by scorpions.

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BELL TELEPHONE SYSTEM



Skull Crackers (Yard Drops)

Industrial Data Sheet D-Me. I

A. Problem

1. What precautions should be taken in the use of skull crackers when breaking old castings and other metal scrap?

B. Hazards

2. The principal hazard is the possibility of injury by flying fragments of metal.

C. Discussion

3. A skull cracker consists of a derrick or other hoisting apparatus which lifts a heavy metal ball by mechanical or electrical means and drops it on the object to be broken. If the ball is held in place mechanically, it is released by a pull on a long rope, one end of which is fastened to the hook carrying the ball and the other end held by a worker outside of a high enclosure. If an electromagnet is employed to raise and hold the ball in place, the ball is released by opening a switch in the electrical circuit.

D. Precautions

4. The area about every skull cracker should be entirely surrounded by a substantially constructed barricade or other enclosure of sufficient height to protect persons working in the vicinity and all passers-by from injury by flying fragments of metal.

5. Windows of derrick engine house should be provided with heavy metal screens. Roof of house should be of heavy reinforced construction.

6. "DANGER--KEEP OUT" signs should be posted at all openings to enclosure surrounding the skull cracker. (See Note X.)

7. If the drop ball is held in place

mechanically, a safety hook should be used to prevent premature or accidental dropping of the ball.

8. The rope for releasing the drop ball should be long enough to extend outside the skull cracker enclosure.

9. Before the ball is raised, all persons should leave the skull cracker enclosure and go to a safe place of refuge.

10. Before the ball is dropped, the skull cracker operator should know definitely that no one is within the enclosure. He should sound a suitable signal, such as a gong or whistle, to indicate the ball is about to be dropped.

11. All gears, sprockets and other dangerous moving parts of the derrick should be enclosed with substantial metal guards.

12. If a skull cracker is operated electrically, all wiring should be as specified in the National Electric Code and the National Electrical Safety Code.

13. Before a skull cracker is used, it should be definitely known that all parts are in good working condition.

14. Every skull cracker, whether mechanically or electrically operated, should be inspected at regular intervals to make sure all parts are maintained in good order.

15. No one should be permitted to enter the skull cracker enclosure when the drop ball is in the raised position.

16. When a piece of metal is being placed in position to be broken, the skull cracker operator should see that all precautions are being observed to prevent

injury by the piece or the equipment used.

17. If an electromagnet is used to load broken pieces into a car or other conveyor, no one should be permitted to pass under the magnet with its load. The operator of the electromagnet should not swing the load over workmen.

18. Men handling metal to be broken or broken pieces of metal should wear heavy leather gloves or leather hand pads to protect their hands against cuts. Goggles should be worn to protect the eyes against possible injury by small flying objects of metal or debris. (See Note Y.)

19. Men working about a skull cracker should wear safety shoes as a protection to their feet against injury by falling objects. (See Note Y.)

20. Every effort should be made to keep the area within the enclosure free from holes and pieces of metal or other obstructions which may be a stumbling hazard.

21. In case it is necessary to operate the skull cracker after dark, the area about and within the enclosure should be clearly lighted by electric flood lamps. (See Note Z.)

NOTE X: Detailed information on warning signs will be found in Safe Practices Pamphlet No. 81, "Warning Signs, Their Use and Maintenance."

NOTE Y: Detailed information on suitable leather gloves, hand pads and safety shoes will be found in Safe Practices Pamphlet No. 16, "Protective Clothing." Detailed information on goggles will be found in Safe Practices Pamphlet No. 14, "Goggles."

NOTE Z: Detailed information on proper artificial lighting about skull cracker operations will be found in Safe Practices Pamphlets No. 17, "Yards," and No. 22, "Industrial Shop Lighting."

National Safety Council, Inc.

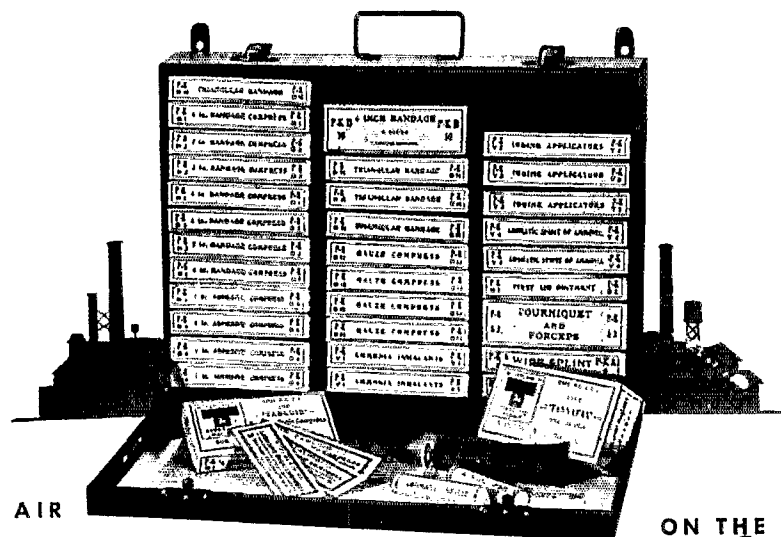
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The Bulletin Board

● A page for those who maintain the Show Windows of Safety
Conducted by Stan Kershaw

Posters in Full Color

FOR the first time in the history of the Council, the production of posters in full color is being tried. In the next few issues of the NEWS there will appear one 9x12 inch poster of this type, selected for its forcefulness.

The first of the series is shown in miniature. Unfortunately it cannot be



NATIONAL SAFETY COUNCIL

reproduced here in the striking colors of the original poster.

Experience tells us that the idea is of first importance in a poster. Next comes the execution of the design, and last, but by no means least, is its power of attracting attention. Color plays a big part in making a poster attractive, and this is the reason for the present experiment in full color posters.

Be sure to try these new posters on your bulletin boards and let us know how your people react to them.

Traffic Posters Will Help Save 38,000 Lives

INDUSTRY will play a tremendous part in the national campaign to lower the traffic accident rate. Industry's workers off duty make up a large

portion of the motoring public, and industry controls much of the commercial vehicle traffic.

These drivers can be reached through plant bulletin boards by using traffic posters intermingled with industrial subjects. In addition, much can be done by giving full support to the community safety program.

To all who are interested in community campaigns, the following paragraphs from the Council's *Public Safety Memo No. 81* may be of interest.

Posters are a part of the answer to the problem of what to do quickly to arouse public interest. They are a tangible and readily understood medium.

The promiscuous display of posters should be discouraged. Their placement should be planned with due regard for the civic pride of the community. Better results will be obtained from a few posters well placed on attractive billboards than from a great number plastered about in such a manner as to arouse the ire of civic-minded people.

Posters should not be placed where their presence will create a hazard either by diverting attention or obstructing the view.

Inasmuch as the safety movement is non-partisan and has no commercial, political or sectarian aims, the display of safety posters is ordinarily permitted in places of extraordinary value from an advertising standpoint not available for commercial purposes. This alone puts a safety poster program at a decided advantage.

When locating posters, the exact location should be determined by a study of traffic. It is quite obvious that the best locations will depend upon the answers to four questions, namely:

1. How many people pass the place under consideration?
2. Are conditions such that they will have time to absorb the poster messages?
3. What competitive attractions are there?
4. Will the poster itself create a traffic hazard?

Street cars and buses frequently carry external bulletin boards which are par-

ticularly appropriate locations for safety posters. It is highly desirable, therefore, that the full cooperation of the street railway and bus companies be obtained if their vehicles are equipped with such boards. (Frequently these places require posters of special sizes.)

Posting in indoor locations has its advantages. It simplifies the posting and keeps the posters out of the weather, but it should only supplement the outdoor posting.

Good indoor locations are as follows:

1. In the traffic court on the wall where violators and visitors may see them plainly.
2. In the traffic violations bureau where those who have come to settle for tickets may read while waiting in line.
3. In the corridors of public buildings, particularly the police department, court house, city hall, etc.
4. In schools, especially the high schools.
5. Large public garages where drivers waiting for cars or settling bills may read while they wait.
6. Store windows, especially those of vacant buildings where the posters will not obscure other displays.

IT is a waste to locate posters where they will not be seen plainly for several seconds.

Someone should be made definitely responsible for seeing that posters are put up as soon as they are received. If only a few posters must be changed a police officer or clerk may do this in a few minutes. If a large number must be changed, and a professional bill poster is not employed, an officer or messenger may be assigned to deliver the posters and preferably to see that they are put up by the persons who have agreed to do so. Boy Scout organizations have been useful in doing this work in many cities. Each troop is made responsible for one or more boards, or for all the boards for one month. Caring for poster boards may also be made an activity of junior safety patrols.

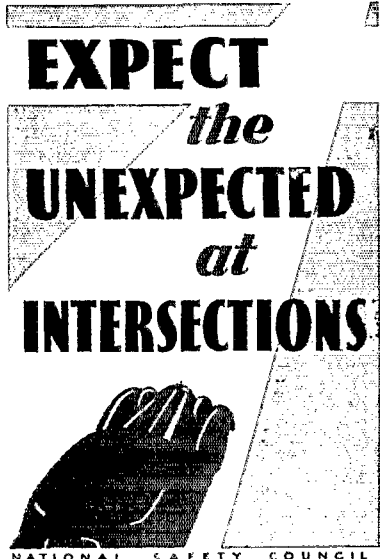
Professional bill posters are fully equipped for this work and since they

(Please turn to page 68)

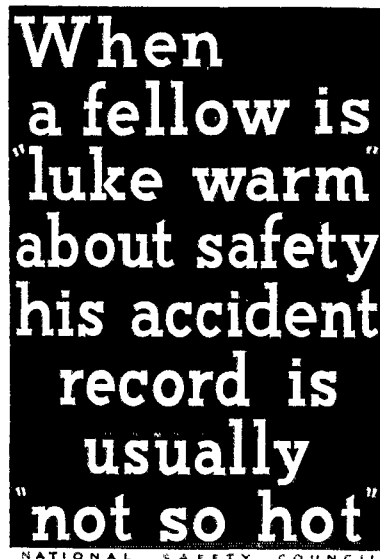
NATIONAL SAFETY NEWS



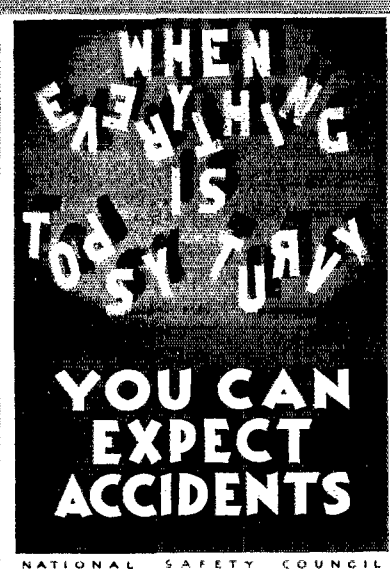
5775-B 17x23 inches 4 units



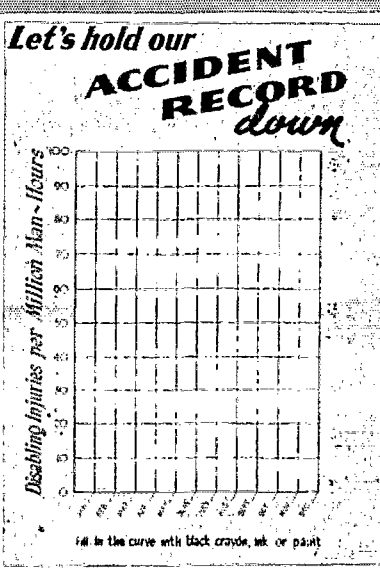
5780-C 25x38 inches 8 units



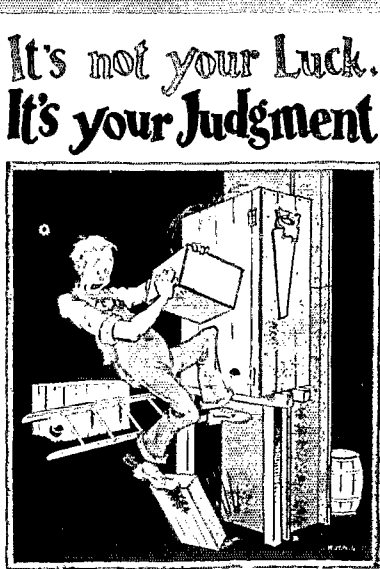
5772-B 17x23 inches 4 units



5275-B 17x23 inches 4 units



5773-B 17x23 inches 4 units



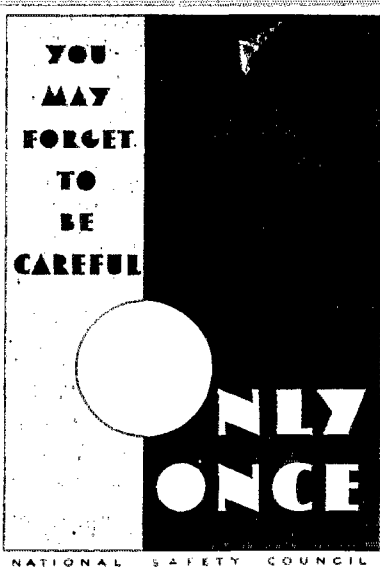
2434-B 17x23 inches 4 units



5777-B 17x23 inches 4 units



5401-B 17x23 inches 4 units



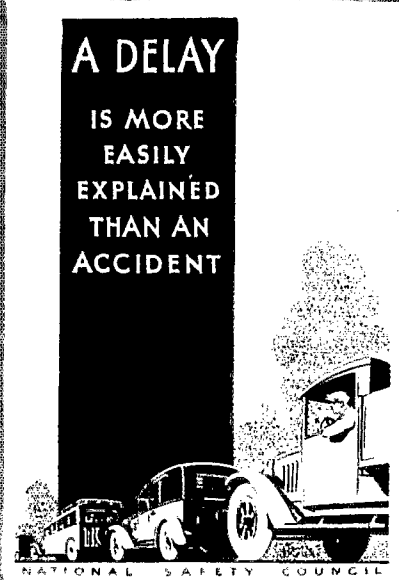
5771-B 17x23 inches 4 units



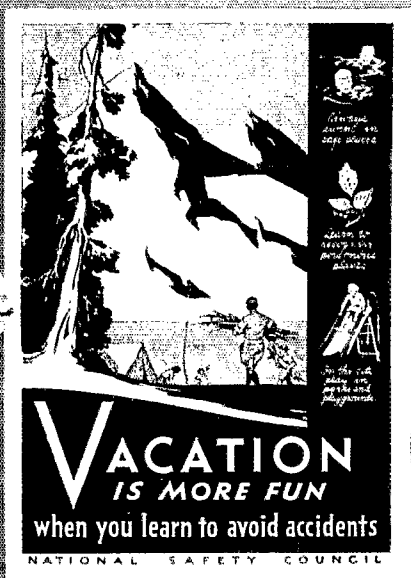
5776-B 17x23 inches 4 units



4167-B 17x23 inches 4 units



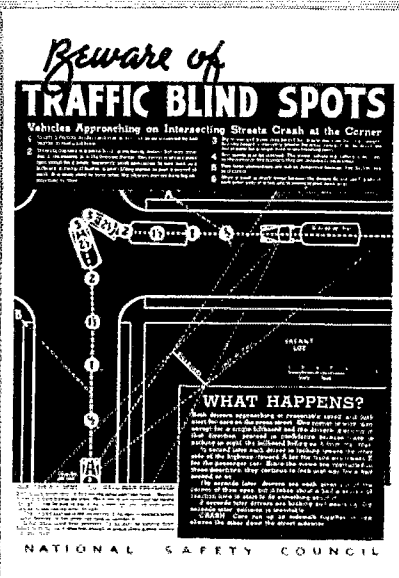
4397-B 17x23 inches 4 units



5779-D 12x18 inches 2 units



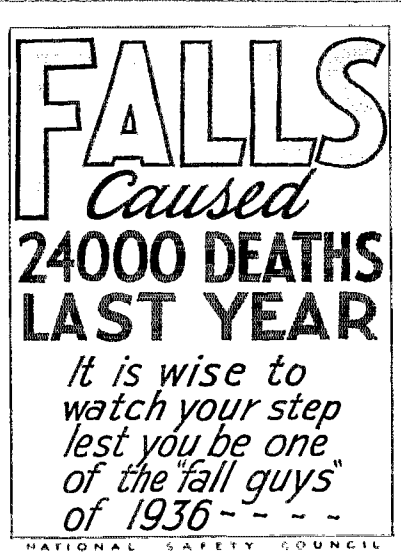
5774-B 17x23 inches 4 units



5769 9x12 inches 1 unit



5768 9x12 inches 1 unit



5783 9x12 inches 1 unit



5764 9x12 inches 1 unit

Handling the Injured automobile accidents



Don't move the injured
unless absolutely
necessary

Get them off the road.
Stop serious bleeding.
Keep them warm.
Get a doctor.

**Incorrect
Handling May
Make Injuries Worse**

NATIONAL SAFETY COUNCIL

5770 9x12 inches 1 unit

SHORTY SEE: ONE HABIT YOU CAN'T OVER DO *is the* SAFETY HABIT



NATIONAL SAFETY COUNCIL

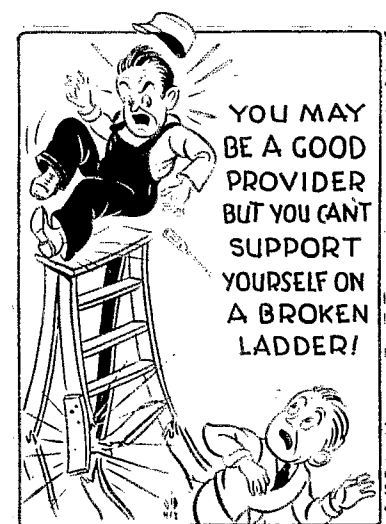
4069 9x12 inches 1 unit

SHATTERED HOPES



NATIONAL SAFETY COUNCIL

5760 9x12 inches 1 unit



YOU MAY
BE A GOOD
PROVIDER
BUT YOU CAN'T
SUPPORT
YOURSELF ON
A BROKEN
LADDER!

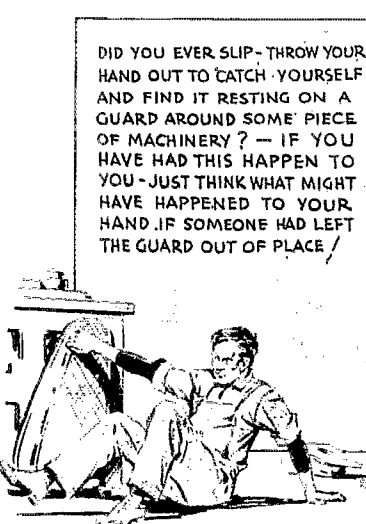
NATIONAL SAFETY COUNCIL

5416 9x12 inches 1 unit



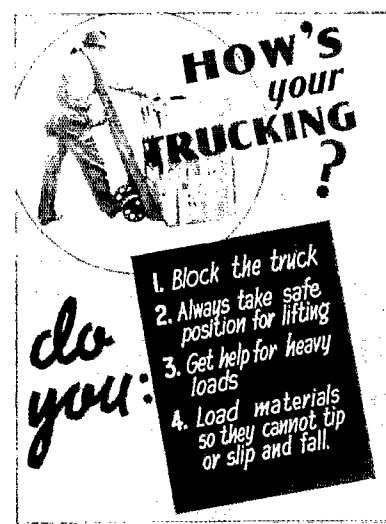
NATIONAL SAFETY COUNCIL

4390 9x12 inches 1 unit



NATIONAL SAFETY COUNCIL

5405 9x12 inches 1 unit



**do
you:**

1. Block the truck
2. Always take safe position for lifting
3. Get help for heavy loads
4. Load materials so they cannot tip or slip and fall.

NATIONAL SAFETY COUNCIL

5767 9x12 inches 1 unit

**NEVER
SMOKE
OR GO
NEAR FLAME
while wearing
GAS
SOAKED
CLOTHING**



NATIONAL SAFETY COUNCIL

5244 9x12 inches 1 unit

No passengers were killed in collisions or derailments of trains in the United States in 1935
**BUT OVER 2000 TRESPASSERS
ON RAILROAD PROPERTY
LOST THEIR LIVES**

- PLEASE Encourage children to play in safe places away from railroad tracks, cars, bridges, cranes and other railroad property
- PLEASE Avoid taking short cuts across or along railroad tracks. Never crawl under or between cars
- PLEASE Before crossing tracks at crossings LOOK and LISTEN. After train has passed make sure no other trains are approaching in either direction
- PLEASE Do not crawl under crossing gates when they are down. Respect the warning signals of the crossing watchman and the flashing lights or wigwag signals



NATIONAL SAFETY COUNCIL

5781 9x12 inches 1 unit

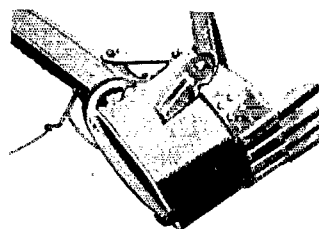
MAY, 1936

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



NATIONAL SAFETY COUNCIL

5761 9x12 inches 1 unit



**KEEP
OUT FROM
UNDER**

NATIONAL SAFETY COUNCIL

4035 9x12 inches 1 unit

**HEAVING
LINE**



NATIONAL SAFETY COUNCIL

5762 9x12 inches 1 unit



**YOU MAY NOT
BE ABLE TO SEE
BETTER WITH
GOGGLES BUT YOU
MAY SEE A LOT
LONGER**

NATIONAL SAFETY COUNCIL

5412 9x12 inches 1 unit

**TIME
TO GET DRESSED**



**TOOLS LIKE THESE
SHOULD GO TO THE
REPAIR SHOP OR
JUNK PILE - THEY
ARE DANGEROUS**

NATIONAL SAFETY COUNCIL

5007 9x12 inches 1 unit

CRASH!



**EXTRA
CAUTION
IS NEEDED AT
CURVES**

2585 9x12 inches 1 unit

**A PLACE FOR EVERYTHING-
EVERYTHING IN
IT'S PLACE**



**GOOD HOUSEKEEPING
IS GOOD SAFETY**

NATIONAL SAFETY COUNCIL

1653 9x12 inches 1 unit

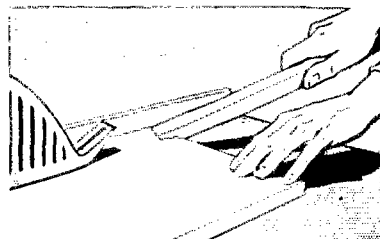
**R
U
B
B
E
R
G
L
O
V
E
S**



**NEVER REMOVE THEM UNTIL
ENTIRELY IN THE CLEAR AND
OUT OF REACH OF ALL LIVE
WIRES AND EQUIPMENT**

NATIONAL SAFETY COUNCIL

5235 9x12 inches 1 unit



**BE A GOOD
OPERATOR**

**NEVER GIVE THE
SAW A CHANCE AT
YOUR FINGERS.**

NATIONAL SAFETY COUNCIL

5759 9x12 inches 1 unit

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

NATIONAL SAFETY NEWS

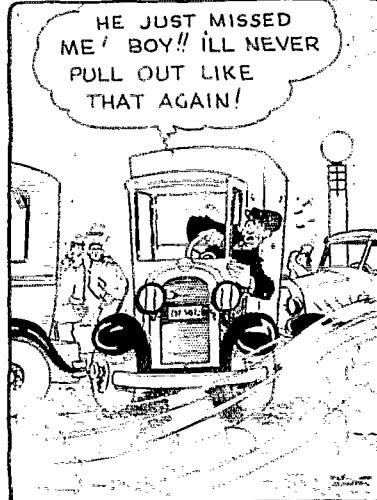
GIVE HIM A HAND



SHOW THE NEW MAN
HOW TO DO HIS WORK
THE SAFE WAY • *you*
were 'green' once too!

NATIONAL SAFETY COUNCIL

5408 9x12 inches 1 unit



NATIONAL SAFETY COUNCIL

5415 9x12 inches 1 unit



NATIONAL SAFETY COUNCIL

5278 9x12 inches 1 unit



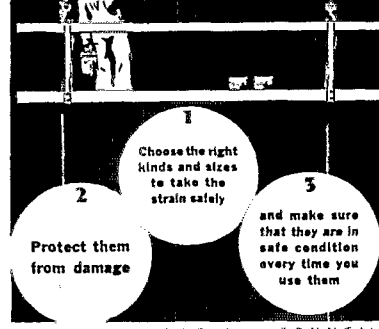
TELL US

If you see a condition here
that is dangerous, tell us
about it at once. We would
rather have your sugges-
tion now than an accident
report later. :: :: :: ::

NATIONAL SAFETY COUNCIL

5009 9x12 inches 1 unit

Know Your ROPES



NATIONAL SAFETY COUNCIL

5712 9x12 inches 1 unit

*There'd be a heap
less trouble in
this old world-
if everybody
practiced Safety*



NATIONAL SAFETY COUNCIL

5218 9x12 inches 1 unit



2519 9x12 inches 1 unit

MAY, 1936

Caught

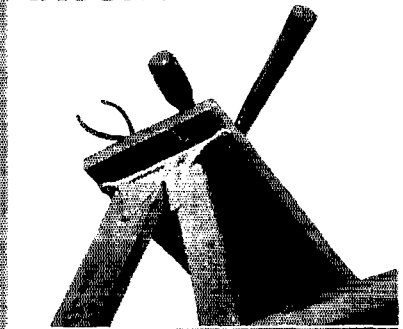


**Be Careful
not to Wear
Loose Clothing**

NATIONAL SAFETY COUNCIL

2735 9x12 inches 1 unit

TOOLS DONT CAUSE ACCIDENTS



**IT'S THE PEOPLE WHO
MISUSE or MISPLACE THEM**

NATIONAL SAFETY COUNCIL

5420 9x12 inches 1 unit

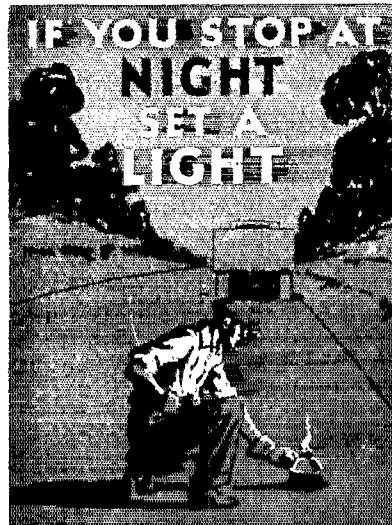
Electrotypes may be purchased from the National Safety Council for \$2 each



**BEAT
THE GERMS TO IT
WITH FIRST AID**

NATIONAL SAFETY COUNCIL

5026 9x12 inches 1 unit



NATIONAL SAFETY COUNCIL

4899 9x12 inches 1 unit



**NAIL *those* NAILS *before*
THEY NAIL YOU**

NATIONAL SAFETY COUNCIL

5030 9x12 inches 1 unit

**NEVER
PURPOSELY
EMBARRASS
A MAN AT
WORK...**

*It flusters him
and he is apt
to meet with
an Accident.*

NATIONAL SAFETY COUNCIL

3766 9x12 inches 1 unit

**What
did your last
near-accident
teach you?**

NATIONAL SAFETY COUNCIL

5421 9x12 inches 1 unit



The charred remains
of a waste paper
basket—into which
someone threw a
match that had
an afterglow—

**A WASTE PAPER BASKET
IS NO MATCH
FOR A MATCH**

NATIONAL SAFETY COUNCIL

5763 9x12 inches 1 unit

**PRESERVE YOUR LIFE
BY "CANNING"
CARELESS HABITS**



ACCIDENTS DON'T
HAPPEN ON JOBS
THAT ARE HANDLED
RIGHT.



NATIONAL SAFETY COUNCIL

3765 9x12 inches 1 unit

**SOME PEOPLE ARE
ALWAYS
GETTING HURT
WHY?**

NATIONAL SAFETY COUNCIL

5409 9x12 inches 1 unit

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

NATIONAL SAFETY NEWS

YOU_
CAN'T DEPEND ON
LUCK
BUT_
YOU CAN ON
SAFETY
NATIONAL SAFETY COUNCIL

5410 9x12 inches 1 unit



"FOR SAFETY"
KEEP TOOL REST PROPERLY
ADJUSTED TO COMPENSATE
FOR WEAR ON WHEEL
NATIONAL SAFETY COUNCIL

4421 9x12 inches 1 unit

OUR
SAFETY RULES
IMPOSE NO
HARDSHIP

But THEIR
VIOLATIONS
MAY

NATIONAL SAFETY COUNCIL

5029 9x12 inches 1 unit



KEEP THOSE
FLOOR OPENINGS
COVERED!
NATIONAL SAFETY COUNCIL

4680 9x12 inches 1 unit

I WAS
ONLY
FOOLING
is

NO ALIBI
FOR HAVING
INJURED A
FELLOW WORKER
NATIONAL SAFETY COUNCIL

5022 9x12 inches 1 unit

USE TONGS
ONLY



HANDLING ICE WITH
HANDS OR FEET
CAUSES CUTS SLIPS
AND STRAINS
NATIONAL SAFETY COUNCIL

2765 9x12 inches 1 unit

A NASTY BURN!
may be the result if you
neglect to keep hose
in good condition



NATIONAL SAFETY COUNCIL

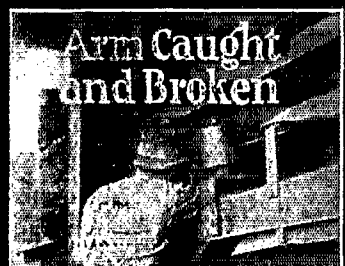
4709 9x12 inches 1 unit

AFTER A SAFE DAY
ON THE
JOB



MAKE SURE YOU
GET HOME
SAFELY-
NATIONAL SAFETY COUNCIL

4410 9x12 inches 1 unit



WHEN MAN TRIED TO
CLEAN IDLER IN MOTION



Stop Conveyor
Before Cleaning

4885 9x12 inches 1 unit

Class War in Cement

By GEORGE E. SOKOLSKY

in New York Herald Tribune

AT THE Des Moines station I met A. J. R. Curtis, of the Portland Cement Association. You are liable to meet him anywhere. So we breakfasted and talked safety. Mr. Curtis's job is to make the cement industry 100 per cent safe for the worker. He represents the bosses.

He was to attend a regional safety meeting of cement men in Iowa and Wisconsin and places near by. I thought I might look in on them during my spare time. So I sat through lots of very short speeches—these were workmen, not bosses or professors, so the speeches were short. Also, they asked me to lunch, and a very good and manly lunch it was. None of these tearoom fripperies that men eat nowadays, but a real man's lunch with the roast beef rare.

* * *

It is impossible to talk safety without talking about industrial relations. And you can't talk industrial relations without coming very close to human relations. That is, you can't do these things if you are a worker or a foreman or a superintendent. Others can manage to talk about anything without relating either their ideas or their statistics to the realities of ordinary life. Professors and social workers are particularly gifted that way.

But here was a group of simple men. There was a plant superintendent from Duluth who had come up from the ranks. I talked to him a hard line of Bourbonism, the sort of thing that a nineteenth-century industrialist or a Stakhanovist in Russia today might really believe. He was shocked.

"You can't treat men that way," he said. "It wouldn't be right. Good Lord, even if there aren't enough orders to go around, industry must give the man some kind of a living wage."

"You see, it's like this. The men have to have a high wage rate because the number of hours they put in has to amount to something at the end of the week."

Then I listened to a safety instructor tell the story of the man who put his thumb on the wrong side of a chisel and then hit the thumb instead of the chisel. He left a part of the thumb on the chisel.

Reprinted by permission of the New York Herald Tribune.

"What's wrong with you?" the worker was asked. "You've always been careful. What's on your mind?"

"Well, I don't mind telling you," the dethumbed worker explained. "I've got too much on my mind. I hadn't ought to come to work today. My wife's down and there's no one to look after the baby. I tried to get a woman to come in this morning but I couldn't find one. I was thinking about home, I suppose."

Then the safety instructor told how the foreman said he'd take care of things. He put up the money. They got a practical nurse. They got a doctor and some medicine.

Safety apparently is not limited to red signs and "Follow Rule 4" signs, and things of that sort. It has also to do with discovering why a worker is all upset and doing something about it.

The story also was told of a worker who got to day-dreaming to such an extent that his life was imperiled. He might day-dream himself into a broken leg or a crushed arm. It had the foreman all worried.

So the foreman got him to one side and they had a heart-to-heart talk. It seems that during the depression this worker got into debt, and all the townspeople knew him for a decent fellow and the shopkeepers gave him credit. Then when he went back to work, they all knew about it and they came down on him like a ton of cement blocks. They wanted their money. Every time he walked down the main street, some one would step out of a store and ask him when he would pay up. Well, he owed too much to pay up all at once, so he never could get straight.

So when he got to working he got to worrying. He wondered whether he could go to a movie show without some storekeeper feeling himself robbed. He wondered whether he could drink a glass of beer without some one demanding an explanation of him. He was hounded.

The foreman knew that story well. It was everybody's story. It was his own story. Maybe it was even the boss's story. Who could tell?

* * *

So he suggested to the worker that he let him handle his debts. That he give him a list of the people to whom he owed money. The foreman and may-

be even the boss would see if some scheme could not be worked out so that he could pay something out of each week's pay envelope. Maybe if these storekeepers knew that there were to be payments they would stop hounding him. And it was done.

For hours I listened to these simple men working out their own problems. They were all employees. Apart from Mr. Curtis, no high-powered executive was present. A good part of the seats were taken by men who had lime on their boots and sand in their fingernails. Decent fellows who had jobs and wanted to keep them with surety and safety.

Meetings of workers like this are always taking place all over the country. At such meetings no grandiloquent demands are made. No speeches on the class struggle are delivered. Nobody threatens. Nobody strikes. The men and the foremen and superintendents get together and decide on policies, and usually what they decide is carried out. It was amusing to listen to workmen say: "This is impractical." The business couldn't carry this." They know. They know what it costs to operate.

Connecticut Sets Speed Limit at 45 Miles

FACED with the need of drastic measures to reduce the accident toll, the state of Connecticut has decided to set a speed limit of 45 miles an hour for motor vehicles using the highways. The State Highway Department has announced that it will proceed rapidly with the posting of all main highways, warning motorists of the speed restrictions. Existing signs which conflict with the new limit will be removed.

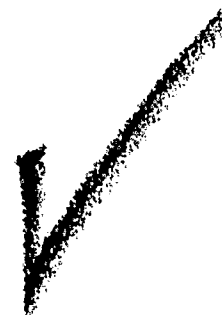
In addition, the Highway Department is authorized by the Commission to post rates of speed lower than 45 miles an hour at congested and hazardous sections where the maximum speed would conflict with safe operation.

Last fall, the State Traffic Commission issued an official "hint" to motorists that the maximum speed under the most favorable conditions should be 45 miles an hour. Much favorable comment was received on this suggestion, according to Michael A. Connor, State Motor Vehicle Commissioner. Little criticism convinced members of the Commission that the public desired definite action.

Violators of the new speed law, it is announced, face possible loss of their operator's licenses, as well as a court fine of \$10 to \$100 for conviction on the speed charge.

SAFETY ENGINEERS

Check with this



It's no accident that Safety Engineers recommend Safetoe Shoes

The fine, dependable construction of Brownbilt SAFETOE Shoes appeals to the discerning mind of the Safety Engineer. He knows that, in a safety shoe, it is just as important to use leather in the right places as it is to use steel in the right places. He recommends SAFETOE because in this shoe every detail of construction is rigidly checked . . . to provide strength and service, to provide protection from within as well as from without.

Besides that, he has these five other reasons for recommending the Brownbilt SAFETOE



H112-1—"Safetoe"

Men's Black Elk Blucher, Steel Box Toe, Riveted Steel Shank, Full Double Flex-Dry Leather Sole, Whole Rubber Heel, Welt, Safetoe Last.

A, B 7-12, C 6-12, D, E 5-12.

1. Fully Tested—steel toecaps which have successfully passed the Rockwell, Impact and Compression Tests made by an impartial laboratory.
2. Rugged Dependability—selected materials throughout—three kinds of soles—Oak Bend Leather, famous Cord soles or long-wearing composition.
3. Utmost comfort—ample toe clearance, inside finished smooth, no chafing or rubbing.
4. Puncture-Proof Sole—Model H-100 is made with flexible spring steel plate between insole and outsole.
5. 25 Types and Patterns—including oxfords and high shoes—distinct types to meet the demands of every industry and every worker.

Write or wire for information on our special Industrial Plant Selling Plan. Details gladly given, without cost or obligation.

MANUFACTURERS—ST. LOUIS

Brown Shoe Company

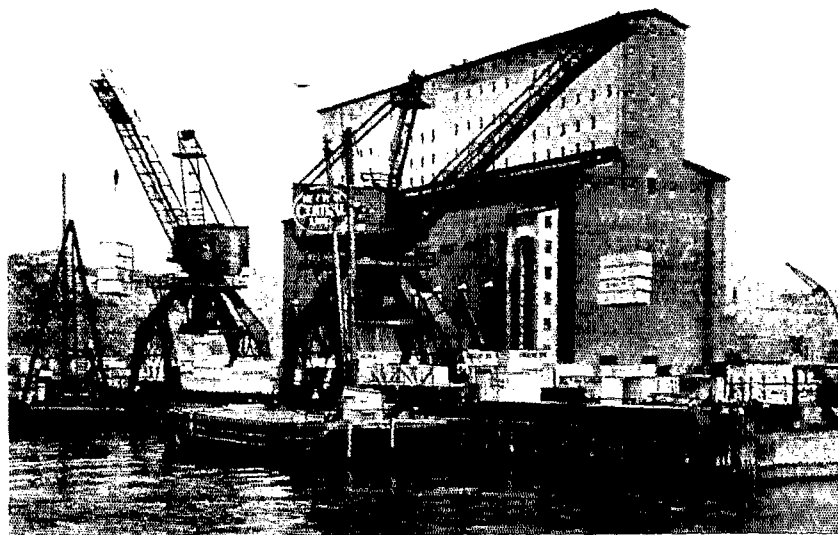
Also Makers of Brownbilt, Buster Brown and Air Step Shoes

BROWN *bilt* SAFETOE SHOES

Handling Freight in the Port of New York

By A. J. HARVEY

*Freight Agent, New York Central System,
Weehawken, N. J.*



Handling open top freight from cars or dock to lighters for lighterage movement to various steamship lines

THERE is probably more material handled in the Port of New York and New Jersey than in any other area in the country. With this vast volume of business at our door it is very necessary that at all freight terminals, docks, and warehouses, we continue striving for safe methods of handling the various commodities.

The direct water frontage of the Port of New York is 771 miles. The developed frontage measured around piers and heads of slips is 346 miles. The frontage measured around piers and along shore line is 995 miles.

Within this vast area is located a network of 12 railroads with more than 100 freight stations of the various trunk lines; also the many steamship lines with sailings to all ports of the world. One can understand, in view of such facilities, why the volume and variety of domestic, coastwise, inter-coastal, import and export tonnage handled far surpass those of any other port in this country.

Having partially described the Port of New York, I am going to give you a picture of the activity within a lighter-

age freight terminal, one that is in operation 24 hours each day, Sundays, and holidays, handling freight of all description from a package weighing 15 pounds to one of 70 tons with its own equipment, consisting of locomotive cranes, electric gantry cranes, and river derrick cranes.

At this terminal we have handled, under ground storage rules and regulations, considerable structural steel for some of the largest buildings erected in New York City, also granite and marble of various sizes and weights. Such commodities are handled with wire slings and Lewis pins. During the continued extreme cold weather we handled with cranes many cars of steel pipe of various sizes up to 55 feet in length and 10 inches in diameter, each pipe weighing a little more than half a ton.

This pipe is handled with hooks, usually two pieces at a time. We have found it a safe method, even though it is a little slower than the sling method. For protection against weather conditions the pipe is covered with grease, and men are compelled to climb open top cars to cut the wire and remove the

blocking. We found that if the men sanded the pipe and wrapped their feet with burlap, pipe could be handled safely, despite the hazards in climbing around the cars in such extreme weather.

In transferring boxed automobiles from open top cars to lighters, or from cars to dock by electric cranes, we use auto grab hooks 16 inches long and 4 inches wide with 10 points on each grab hook. They have proved satisfactory and safe as well.

It is felt at this terminal that equipment must be inspected daily. Wire slings must not be used if it is thought they are not in the best possible condition. Hoisting falls are kept properly greased. If these precautions should not be taken, much damage to freight and many personal injuries might result.

We feel that men of ordinary ability, trained in moving all kinds of heavy rough freight, will find ways to handle such commodities safely.

While this gives a brief description of handling freight in open top equipment, it must be borne in mind that there is also a considerable volume of freight received in box or closed cars, handled through the covered piers. This consists of such commodities as agricultural implements, canned goods in boxes and cartons, bagged goods, newsprint paper, refrigerators and tin plate. All these things require protection and care in handling. To handle such commodities we use the electric lift truck with "dead" and "live" skids and the usual two-wheel hand truck, the blades of which are protected to prevent the possibility of damage to shipments.

Considerable imports at this time of the year are offered for storage in transit, such as wood pulp, sisal, paraffine wax, cocoa beans, rags and other classes of freight, some of which are placed in the lofts of the piers in order to give better protection from weather conditions. For further protection we cover such shipments with tarpaulins when necessary. The proper stowing and handling of freight in the warehouse or on the piers is most important.

(Please turn to page 52)

NATIONAL SAFETY NEWS

TRIMO

THE PIPE WRENCH THAT WORKS AS A UNIT

AND GIVES YOU FAST, RHYTHMIC RATCHET ACTION

• Flexibility is only possible with a Swinging Frame. Trimo has a swinging frame design and double acting spiral spring making it possible for jaw and frame to work as a unit.

And because this is possible, Trimo has $3/32$ of an inch added flexibility — an instantaneous bite and a quick release.

In other words, TRIMO gives you swift, sure, rhythmic ratchet action. It is the smoothest, fastest and safest pipe wrench sold anywhere.

TRIMONT MFG. CO., INC.
ROXBURY (BOSTON), MASS.

MADE THROUGHOUT OF CHROME MOLYBDENUM
STEEL — HANDLE DROP FORGED — NOT CAST



*Look for the Red Tag
always attached
to Trimo*



**TRICHROME CUTTER
WHEELS**

Thin blade special analysis
steel—silvered to resist rust.
Identified by red hub.

TRIMO CHAIN WRENCH

Replaceable parts, quality
steel make this giant chain
wrench safest and most
serviceable.

TRIMO PIPE CUTTERS

Trimo, Barnes and Saunders
type.



Method of stowing freight on skids in pier warehouse.

Terminal facilities provide for the berthing of vessels at both open and covered piers to transfer cargo directly to or from vessels. Bulk shipments, including such material as ore, scrap iron, etc., are handled in this manner. We have been favored this year with considerable tonnage of this type.

Stevedores use different methods in discharging cargoes. In handling sisal or wood pulp in bales some use an ordinary hook. They place eight such hooks on the hoisting fall, each hook under the wires on bales, and hoist six to eight bales from the ship in one draft, landing them on the dock. When this method is used, wires often break, scattering the contents. Some stevedores use a rope sling instead of hooks. With this method they can hoist six bales at a draft.

We consider the latter system much safer from a personal injury standpoint, as well as a property damage angle.

In handling bulk shipments magnets and clamshell buckets are used.

Loading cars properly is a very important matter if the lading is to reach its destination in a satisfactory condition. Proper bracing and chocking are vital, and care must be taken that the correct material and correct size nails are used. In loading machinery non-skid plates have been used with considerable success. In fact, it is felt by those who have made an extensive study that this is the ideal method. It has proved itself over and over again on all railroads in the Metropolitan area, carload after carload of machinery arriving at destination without damage.

I have heard it said that a freight station presents a greater variety of personal injury hazards than any other department of railroad operation, though these hazards do not always invite major injuries. If that is a fact, the Metropolitan Area freight stations, with fogs and tidal conditions to contend with, are surely more hazardous than those located

inland. This statement, however, is not used as either an excuse or an alibi for the station accidents we may have. I am quite certain that none of my colleagues in the various trunk lines use it in connection with their safety records.

When the safety movement began to be emphasized among employees by the supervisory forces, the statement was often heard that the transportation companies were doing it for their own selfish interest to prevent payment of claims. Education along safety lines has brought home to us all the fact that the movement was a very humane one.

It is much more satisfactory to be known as a preventer of accidents than an investigator. No one will deny that investigations have their uses, but I am quite certain that there is little comfort in assuring an injured person after an accident that an investigation will be made.

Unless one is absolutely sold on safety he cannot sell it to anyone else. He must actually believe that accidents and personal injuries can be prevented almost to the point of total elimination. He must have faith to bring it about. He must also take a positive stand and stick to it day after day until those he works with have caught the spirit.

Keeping the personal injuries down to the lowest possible level should be the aim of every employee at all terminals. Only constant supervision will accomplish this result.

The majority of station accidents consist of finger and hand cuts and bruises, occasional broken legs and foot injuries. The majority of foot injuries can be prevented by wearing safety shoes. We trust that the wearing of such shoes on duty will soon be made compulsory. It is difficult to determine whether strains and hernia actually occur while on duty. Thorough pre-employment examinations are helpful in determining the existence of such conditions.

It's Easy to Be Safe

(Continued from page 26)

Some years ago a small factory in Brooklyn, making sheet metal specialties which involved a great amount of power press work, had an increasingly bad accident experience due to dismemberments occurring at points of operation of the presses, which were entirely unguarded. The foreman of the press department had some ideas but he did not seem able to sell them to his employer.

The insurance carrier advised the employer that these accidents could be prevented, that the points of operation of the presses should be guarded as previously recommended, that the risk was costing the carrier considerable money for avoidable injury cases, and that the employer must take prompt action to correct the unfavorable situation.

Realizing that he was faced with a possible increase in rates, the employer called in the press department foreman and asked what could be done. The foreman replied that with a little time, material, and the help of a toolmaker he could devise safeguards that not only would make the presses safe, but would also increase production. The employer gave the foreman a free hand on two presses. The latter completely enclosed the points of operation on both machines.

On one press a slide feed was installed, and on the other a magazine feed. The treadle rods of both presses were equipped with disconnecting devices, interlocked with the die enclosure. An attempt by the operator to reach inside of the die enclosure or behind it would disconnect the treadle rod, and the press could not be tripped.

The result of the improvements on the two presses was an increase of 50 per cent in the number of stampings a day on each press with absolute safety to the operator. The employer promptly authorized the foreman to equip other presses in a similar way.

Many employers have had similar experiences which have made it necessary for them to develop a program of safeguarding equipment. One employer was paying nearly 40 per cent excess premium because of accidents, mostly the point-of-operation type. Through mechanical safeguarding, improving his operation, and developing the cooperation of his foreman and employees, he was able over a period of years to reduce accidents sufficiently to qualify for a substantial credit. He is now saving more than \$1,000 annually in compensation insurance costs, thanks to accident

prevention through mechanical safeguarding.

In these days of expanding costs the progressive and forward-looking employer must not miss the opportunity open to him to reduce accident expense. There is, moreover, no more effective method of developing a cooperative spirit between the executives and personnel in any organization than a visible earnest effort to safeguard employees.

Lubrication

(Continued from page 24)

present time, ball and roller bearings are grease lubricated, and successfully so, with the result that grease is being more and more favorably regarded for bearings subjected to heavy shocks and extreme loads.

Take for example the steel industry. In new mills being built today there is considerable high speed machinery, especially in the finishing end. Steel plants have long been concentrating on safety measures of all kinds and in nearly all mills and departments have established regulations covering the lubrication of various machines. In some instances interruption of production is required to permit safe and proper lubrication. In the event that the lubrication operation is attempted without a complete or partial shut-down a severe accident hazard would be encountered. The steel industry has known many cases of injuries resulting from clothing being caught on a spindle or wabblers in connection with lubrication of roll necks while the mill has been in operation. The manual lubrication of overhead cranes has also taken its yearly toll. Obviously, the automatic lubricating system is a decided improvement over the old hand-oil-can method.

There are a number of excellent lubricating systems in use in present day plants involving pumping of the lubricant through tubing from a central point. In high speed steam engines, turbines, and the like, a common practice is to maintain a continuous flow of oil from the central point and then back through a filter, the oil thereby being kept clean. There is no danger element.

The "single line system," now being commonly employed for many purposes has distinctive advantages. The central grease pumps in this system can be compared to a water pumping station. By means of automatic control a constant line pressure is maintained sufficient for the requirements of all the bearings to be lubricated, just as in a water system

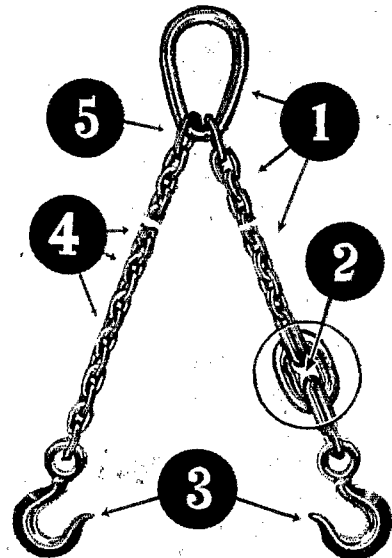
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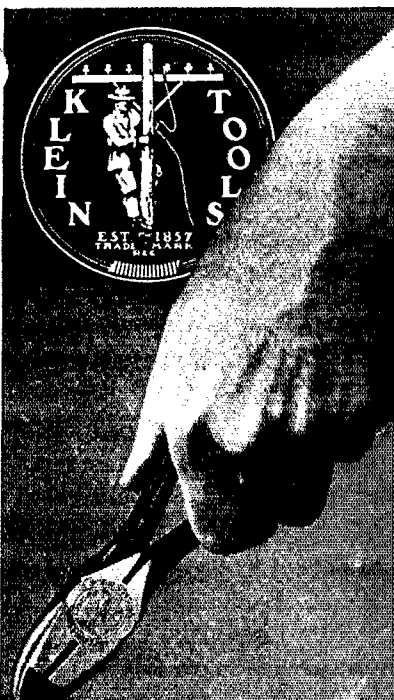
Write for descriptive folder on this new extra-strength, low cost chain.

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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.

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SAFETY! KLEINS

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

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

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



AS REPUTED THROUGH JOBBERS

KLEIN & Sons
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there is sufficient pressure to furnish water to every faucet. Distributing valves, known as self-indicating displacement valves, are located at various points along the main header line, one for every two bearings to be lubricated.

At the more vital points, such as roll stands in steel mills, these groups of valves are automatically operated at a predetermined time interval by means of a positive-operating motor drive unit and an adjustable time clock. Other groups of valves serving bearings which do not require such frequent lubrication are operated by a simple lever known as a hand tripper. Thus in one instance 200 bearings on certain hot coilers are lubricated in several groups by means

of hand trippers in practically one operation. The operator can lubricate all of these bearings, putting a measured volume of grease into each, in two or three minutes' time. By glancing at his sight indicators he can be absolutely certain that no bearing has failed to receive its allotment of grease.

In all cases the self-indicating displacement valves are located in an accessible place where the operator can make periodic inspections or any changes or adjustments that may be necessary with complete safety, even while the machinery is in operation. The operator is never exposed to danger, and in addition the machinery receives far better lubrication than it ever did in the old days of hand-oil-can lubrication.

Men Against the Floods

(Continued from page 13)

The river continued to rise, however, and the employees at Colfax worked frantically to erect bulkheads to protect the station. The water did not get as high as the top of the bulkheads but at 3:55 in the afternoon the tremendous pressure of water in the Allegheny River broke through into the basement. This left the company with no power generating capacity.

With the recession of the flood a tremendous job faced the company. Serious damage had been suffered by the transmission and distribution circuits, particularly in the underground areas. Many of the lines were in such condition that they had to be rebuilt before power could be applied to them. Distribution lines and cables leading to less essential points were still in good condition. The public was requested by radio and through the newspapers to use electricity only for essential purposes. Many householders after several days and nights of deprivation were inclined to use the current lavishly when it again became available.

Working against time, utility employees performed incredible feats in getting equipment back into service. All underground substations, vaults, manholes and tunnels, as well as the basements in the down-town district, were filled with water and mud. Here was a tremendous pumping problem and in addition all electrical apparatus as well as cables had to be cleaned, tested and repaired before service could be restored.

Within four hours after the shutdown, the Duquesne Light Company began to

put power into some of its lines—thanks to the neighborly assistance of nearby power companies. Within ten hours, two carloads of equipment from the New York Edison and the Philadelphia Electric Companies were on the way to Pittsburgh by special train. Motors and other electrical equipment were dried out as rapidly as possible, the Duquesne Light Company servicing its own equipment, and Westinghouse, General Electric and other companies expanding their facilities to the limit to restore apparatus for industrial and commercial users.

"While there wasn't any time to think about safe practices, years of safety work showed when the emergency came," said E. J. Kreh, manager of accident prevention for the Philadelphia Company. "The crews did the right thing automatically. More than once the men on the job corrected the men from the office who came out on the job to help. These emergency helpers knew the theory of safety, but the men on the job had been putting it into practice for years. Safe working habits stuck, even when the water was rising rapidly."

The same experience was repeated from many another industry which had been carrying on safety work consistently year after year.

The street railways suffered a relatively small physical loss due directly to the flood, but power for the operation of cars was temporarily restricted, and traffic conditions down-town made it impossible to maintain anything approaching normal service. Every available bus was pressed into operation and used in a plan

of coordinated service with the steam railroads.

Gas supply was practically normal except in the districts under water, where it was necessary to shut off the supply for reasons of safety.

With courage and determination officials and employees of the West Penn System faced the onslaught of the flood waters. This utility group, which provides power and transportation for a wide territory surrounding Pittsburgh, met the emergency in a manner in keeping with the finest traditions of public service.

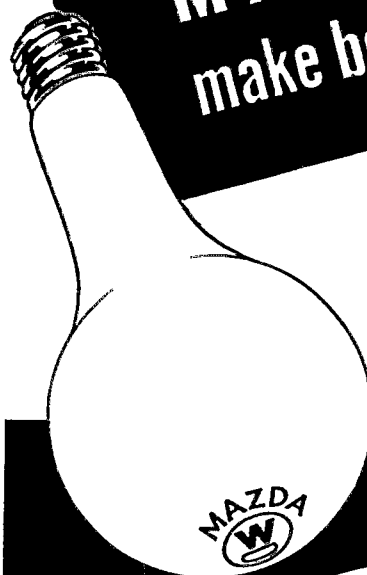
When the alarm sounded, the system sprang quickly into action. Supervisors were routed from their beds; day crews were called back to their posts; night turns were instructed to stay on duty. Power station crews worked like beavers building sand bag dikes, but to no avail in the case of the Springdale Station, the main source of power supply. The station was completely deadened when the relentless flow of flood waters swept over the dikes, filled the condenser pits, stopped the pumps and then the five massive turbines. Storeroom gangs worked frantically to move stores and equipment out of the reach of the rising water. Line trucks set out to locate trouble. Pumps were put in operation to drain flooded basements. Dispatchers remained at the switchboards through 36 and 48-hour stretches. Telephone operators worked overtime to handle an incessant barrage of emergency calls. Engineers racked their brains to devise quick temporary replacements for wrecked equipment, while firemen and steam engineers worked madly to push all usable generating equipment to the maximum capacity.

That, in brief, was the picture of conditions as summarized in the Flood Edition of the *West Penn News* which was published before the headquarters building had dried out. This issue of 20 pages with numerous illustrations presents a graphic account of many angles of the flood as described by West Penn employees.

Almost indescribable difficulties were encountered in the efforts of the West Penn crews to maintain service. Washouts, landslides and deep water made many of the roads impassable. Line trucks were forced to travel as much as 20 miles off their route to reach a source of trouble two miles away.

Sandbag dikes erected at a severe expenditure of effort by weary men sometimes went for naught when the whole bank of the river was washed out

Reduced prices on Westinghouse MAZDA LAMPS make better light cheaper



● Large size Westinghouse Mazda Lamps are now offered at the lowest prices in history.

Reductions average 20% on the most popular sized lamps for selling and manufacturing, and for sight-saving in the home. Now, more than ever, everyone can afford Better Light—Better Sight.

New prices effective May 1, 1936

WATTS	OLD PRICE	NEW PRICE
150 clear	\$.40	\$.25
200 clear	.55	.45
300 clear	.90	.75
500 clear	1.55	1.40
150 clear	\$.65	\$.50
200 clear	.90	.80
300 clear	1.35	1.20
500 clear	2.30	2.15

Prices on comparable types of inside frosted lamps and white bowl lamps have been reduced proportionately.

THREE-LITE LAMP \$.80

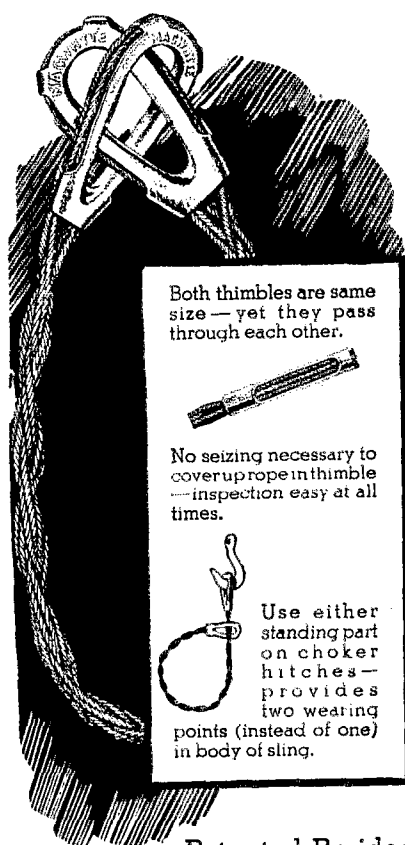
100-200-300 \$1.00



NEW MACWHYTE THIMBLE

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Rope Slings increases
utility...speeds loading
...easier to handle



Both thimbles are same size — yet they pass through each other.



No seizing necessary to cover up rope in thimble — inspection easy at all times.



Use either standing part on choker hitches — provides two wearing points (instead of one) in body of sling.

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

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MACWHYTE WIRE ROPE

Slings

ATLAS • DREW • MONARCH

and water gushed through basement walls. In other districts reconstruction was hampered by the breakdown of communication. Telegraph and telephone lines were down; batteries were flooded, and the lines still open were swamped with calls.

All through that eventful night of March 17 and far into the following night load dispatchers used every resource at their command to secure available power from every source. It was rerouted around damaged lines and equipment—every possible method was used to keep the vital energy flowing in sufficient quantity for the more important needs.

Power station and emergency crews labored valiantly to keep their plants from being flooded and to get their flooded units back into service. Men worked waist deep in water to get auxiliary motors loose from their foundations so that they could be dried and restored to operation.

Some of this equipment was still in operation when the water reached it. Because of the urgent need for power it had been kept producing, and as a result it was burned out when water shorted the wiring. In many cases complete overhauling was necessary to make the equipment usable.

An appalling picture of havoc confronted the lines department. Lines were down, river crossings lost, and other high voltage connections swept away. All available men were pressed into service to wrestle with the tangled mess of wires that had to be restored to service.

The coal mine across the Allegheny River from the Springdale Station, which is connected with the station by way of a tunnel under the river, was saved from the flood waters through the prompt action of the employees who closed the flood gates to the mine and piled motors against them.

One station was kept in operation by welding steel doors and window sash to their frames, a measure which proved quite effective in keeping the equipment dry.

Through the efforts of the crews and the power loaned by the Ohio Power Company, Pennsylvania Electric Company, and Monongahela West Penn Public Service Company, emergency power was fed through interconnections to the city for the operation of telephones, fire alarms, water pumping stations, hospitals and other indispensable services. Industrial plants and mines cooperated by curtailing their consumption of current so that the people of the

neighboring cities would not suffer undue hardship.

The transportation companies of the West Penn System also suffered severely. Miles of track and trolley lines were washed out, car barns were flooded, and all power services in the Kiski and lower Allegheny Valley were out of commission. Everything possible was done to maintain service on all lines and to restore interrupted service with borrowed buses and shuttle lines.

The safety department of the West Penn System under the direction of Harold F. Webb, faced a tremendous task during the reconstruction period. More than 150 additional men were taken on for the clean-up operations, and they provided an additional safety problem. In the emergency the value of a working force trained in safe methods was again demonstrated.

First aid service presented another difficulty. Most of the supplies had been ruined by water, and the danger of infection and tetanus from abrasions received while working in the muck deposited by the river was a serious menace. Again the splendid service of the supply houses enabled the company to replenish the first aid cabinets with the minimum of delay, in spite of the difficulties.

Another hazard presented itself as the turbines in the power stations again commenced to turn. It was feared that men who had been working with "cold" equipment might forget the standard precautions when the lines again became energized. To forestall accidents men were reminded that all equipment was to be regarded as hot, and equipment was tagged and barricaded. Members of the safety department were constantly out on the job supervising the operations and checking up on sanitary conditions throughout the territory. During the two weeks following the crest of the flood no lost-time injury attributable to flood conditions was reported.

The office of the safety department on the third floor of the West Penn Building down by the Monongahela River remained above the high water mark, although the flood waters reached a height of 14 feet in the building. The prized trophy won in the safety contest of the Public Utilities Section a few years ago was warped from prolonged immersion, and the bronze plaque had to be remounted.

The mills along the rivers also had their troubles. As the water rose, the blast furnaces had to be banked. In starting up again the mills had the prob-

NATIONAL SAFETY NEWS

lem of cleaning away the mud and drying out electrical equipment. Moreover, starting up a blast furnace calls for extreme caution because of the hazard of carbon monoxide gas. Masks, inhalators and other essential equipment had been caught under water. The Carnegie Illinois Steel Company faced this difficulty in four flooded mills, but thanks to the splendid work of the company's own men and the exceptional service rendered by the Mine Safety Appliances Company and the Bishinger-Kohler Company operation was resumed without serious mishap.

At Braddock, Edgar Thomson Works of the Carnegie Illinois Company was down, with the blast furnace, pump house and power plant under several feet of water. The testing laboratory was, of course, helpless without electricity, but the company made connections with an outside power line. Like many another firm in the inundated area, the company contributed large quantities of supplies to the Red Cross and the local hospitals for the relief of the flood victims.

At Ford City sand bag dykes erected by employees of the Pittsburgh Plate Glass Company were instrumental in saving not only the plant but a large section of the town. Similar instances of men's courageous fight against the flood in defense of their homes and their jobs could be told from scores of communities in the afflicted areas.

As the waters receded, Pittsburgh still faced serious perils. Damage to gas mains resulted in leakage, and every basement and manhole in the downtown district had to be tested for combustible gases. More than 170 volunteer mine workers under the direction of the U. S. Bureau of Mines and the State Department of Mines worked day and night to complete the immense task. Assisting in this work were Dr. J. B. Garner, head of the Utilities Survey Commission and N. W. Hartz of the Mine Safety Appliances Company. Electric cap lamps and mine safety lamps and combustible gas indicators which had proved so important in mine safety were again proving their value in protecting the city against further destruction.

That water, electric power and communication facilities were restored to Pittsburgh hours ahead of normal expectancy was due in large measure to the efforts put forth by the Westinghouse service division. Hours before the flood reached its crest at midnight on March

(Please turn to page 82)

MAY, 1936

JUMBO SAFETY POSTERS



Courtesy Portland Cement Ass'n.

Glens Falls Portland Cement Company at Glens Fall, N. Y. puts safety messages across in a big way. These billboard type posters are finding favor in many plants because of their attention getting value.

EVERY month more companies are building these new JUMBO OUTDOOR SAFETY POSTER boards.

Size 11 foot 8 inches by 9 foot 11 inches, these effective Jumbo Posters identify, in a big way, the company's leadership in safety, both to their employees and to the public.

For further information write

NATIONAL SAFETY COUNCIL
20 N. Wacker Drive
CHICAGO

They're Going to Atlantic City

The Reason: The 25th National Safety Congress,

October 5-9, 1936

Jersey's industrial, commercial and public life.

* * *

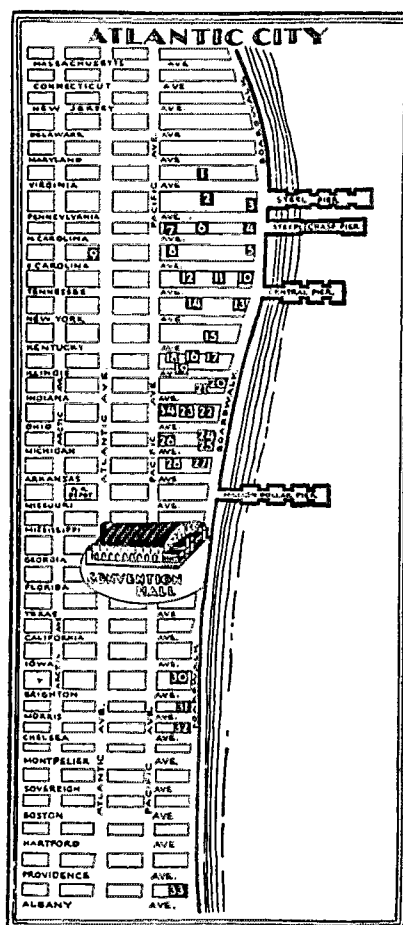
Application forms for hotel rooms are now available at Council headquarters. These forms contain a map of the city and all necessary information about the various hotels. Their use in writing for reservations will simplify the work of handling requests.

* * *

Many member companies are already making plans to send one or more employee delegates to the Congress. A trip to Atlantic City is a most suitable reward for employees who make outstanding contributions to the plant's safety program.

* * *

The map reproduced below shows the location of the vast Convention Hall and the leading hotels in Atlantic City. The rooms most convenient to the meeting rooms will, of course, go to those making reservations early.



NATIONAL SAFETY NEWS

ALTHOUGH the Congress is still five months in the future, many foresighted delegates are making sure of getting the rooms they want in the most conveniently located hotels. While there will be ample accommodations for all delegates, it may not be possible to place late registrations in the hotels housing the sessions. Members are requested *not* to write direct to the hotels when making reservations. All requests for hotel rooms should be made to National Safety Council Housing Committee, c o Convention Bureau, Atlantic City, and should include a second and third choice of hotels.

* * *

Programs for ten subject sessions have been arranged and invitations sent to speakers. The subject sessions are: Fire Prevention, Safety Belts, Safety Training, Maintaining Interest in Safety, Safety Equipment, The Injured Worker, Exhaust Systems, Safety Exchange — Round Table, Occupational Diseases, Safety Fundamentals for Beginners.

The Congress Exhibit and 40 per cent of the meetings will be held in the Convention Hall. The other meetings will be held in the Ambassador, Chelsea and Ritz-Carlton hotels.

* * *

The Annual Meeting of the American Association of Industrial Physicians and Surgeons will be held in Atlantic City Monday and Tuesday of Congress Week. Sessions will be held at the Traymore Hotel.

* * *

Two joint sessions will be held by the Street and Highway Traffic Section and the Vehicle Fleet Section. One will be on the problems of the driver and the other on the maintenance of vehicles.

* * *

The 1936 New Jersey Safety Congress Committee has been organized under the personal supervision of Governor Harold G. Hoffman. Its membership includes many of the leaders of New

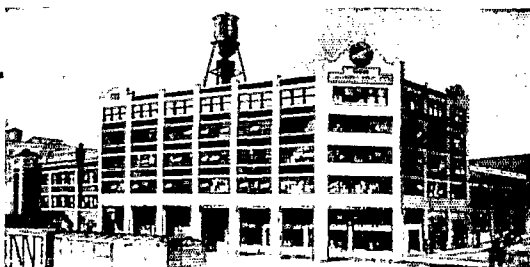
*HOTELS AND RATES

BOARDWALK HOTELS				
Map No.	Hotel	Single	Double	
31	AMBASSADOR	\$3.00 to \$6.00	\$6.00 to	\$10.00
32	CHELSEA	3.00 to 5.00	5.00 to	8.00
30	RITZ-CARLTON	3.00 to 5.00	6.00 to	10.00
21	Brighton	4.00 to 5.00	6.00 to	8.00
5	Chalfonte			
4	Haddon Hall	3.00 to 8.00	5.00 to	10.00
22	Claridge	4.00 to 9.00	6.00 to	11.00
25	Dennis	4.00 to 6.00	6.00 to	10.00
13	Knickerbocker	3.00 to 4.00	5.00 to	7.00
24	Marlborough-Blenheim	4.00 to 6.00	6.00 to	11.00
10	New Belmont	2.50 to 3.00	4.00 to	6.00
33	President	3.50	5.50 to	6.00
3	Seaside	3.00 to 4.00	5.00 to	6.00
27	Shelburne	4.00 to 6.00	6.00 to	8.00
20	Traymore	4.00 to 10.00	6.00 to	12.00
AVENUE HOTELS				
28	Arlington	2.50	4.00 to	5.00
6	Colton Manor	3.00 to 5.00	5.00 to	5.00
1	Franklin Inn	2.50	4.00	
23	Glaslyn-Chatham		5.00	
	Grossman's	2.50 to 3.50	4.00 to	6.00
17	Jefferson	3.00 to 3.50	5.00 to	6.00
18	Kentucky	2.50	4.00	
7	Lafayette	3.00 to 4.00	5.00 to	7.00
19	Madison	3.50 to 4.00	6.00 to	7.00
15	Monticello		5.00	
2	Morton	3.50	5.00 to	6.00
12	Princess	2.50	4.00	
	Richfield	2.00 to 3.00	4.00 to	6.00
1	Senator	3.00 to 4.00	5.00 to	7.00
	Thurber	2.50	4.00	

*All rooms with bath unless otherwise specified. Two rooms with connecting bath, suites consisting of a parlor and one or more bedrooms, and lower priced rooms with running water but without bath, available in most of the listed hotels. When requesting information from the Housing Committee be sure to specify the hotels of your choice as well as details of the accommodations desired.

**WEST
DISINFECTING
COMPANY**

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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 helps keep 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 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

"DRESSTEEL" LO-CUTS
Real Dressy Styles on a Slightly
Narrower Toe. Style, Comfort,
and Added Protection of Steel
Safety Toe-Boxes



Goodyear Welt
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Style 9514

SPECIFICATIONS: Fine Black Calfskin; one-piece quarter lining; invisible eyelets; oak leather soles; rubber half heels; steel arch-supports and steel boxes.

Sizes, 5 to 12. Widths, C, D & E.

"Bonus Shoes"

SAFETY FIRST SHOES contain a bonus both for the man who wears them and the company that recommends them to employees. They are full of *Plus Value*—a "Bonus" with every pair!

STEEL TOE BOXES
FIRST QUALITY MATERIALS
FINE WORKMANSHIP
UNEQUALED VALUE

*Write for complete catalog,
prices and details of
merchandising plan.*

SAFETY FIRST SHOE CO.
HOLLISTON, MASSACHUSETTS

THE SAFETY LIBRARY

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

BOOKS AND PAMPHLETS

Dust Explosives

DUST EXPLOSIONS DURING FIRE FIGHTING. By David J. Price. Published by the U. S. Department of Agriculture, Washington, D. C., 1936. Free. Pamphlet. (Circular 385).

NOTES ON TESTING THE EXPLOSIBILITY OF COAL DUSTS AND A PROPOSAL TO HAVE AN INTERNATIONAL TEST METHOD. By G. S. Rice and H. P. Greenwald. Published by the U. S. Bureau of Mines, Washington, D. C., 1936. (I. C. 6878).

The authors' experiences and beliefs concerning large scale tests of the explosibility of coal dust are summarized.

Mines

METHANE—INDICATING DETECTORS PROVE DEPENDABLE IN SAMPLING AIR IN ANTHRACITE MINES. By R. D. Currie. Published by the U. S. Bureau of Mines, Washington, D. C., 1936. Free. (I. C. 6874).

PERIODICALS

Contests

PAYS 2499 TO 1. BRIGGS HANDICAP SAFETY SWEEPSTAKES COMES TO SUCCESSFUL CLOSE. By C. G. Smith. In *Factory Management and Maintenance*, March, 1936, p. 112.

All-time plant safety records broken. Real winners were 99.96 per cent of the workers, many of them engaged on hazardous jobs, who came through 60-day period without accident.

Health Hazards

DETERMINATION OF INJURIOUS CONSTITUENTS IN INDUSTRIAL ATMOSPHERES. II: DETERMINATION OF SOLVENT VAPORS IN AIR BY MEANS OF ACTIVATED CHARCOAL. By Warren A. Cook and Allan L. Coleman. In *Journal of Industrial Hygiene and Toxicology*, April, 1936, p. 194-210.

"The purpose of this paper is to present a practical method for the determination of solvent vapors in air. A brief discussion is given of various physical methods, namely, the interferometer, refractive index, and thermal conductivity methods. The adsorption method is described in detail together with an ap-

paratus utilizing this method for field determinations."

AN EXAMINATION OF THREE HUNDRED WORKERS ON GRANITE AND SANDSTONE QUARRIES. By Sk. V. Gudjonsson, with the assistance of K. Becker. In *Journal of Industrial Hygiene and Toxicology*, April, 1936, p. 215-221.

"An investigation concerning 300 stonecutters from the rocky Danish island of Bornholm is reported. Most of them were granite cutters, but some were also sandstone cutters. They were all exposed to great amounts of stone dusts without any protection, and most of them had been employed for several years in the occupation. By far the greatest number of them worked entirely or partly in the open air except those who were employed in the crushing mills. The percentage of silicosis was greater among old men than young ones, if both had had the same length of employment."

EXPERIMENTS ON THE PHYSIOLOGICAL PROPERTIES OF TRICHLOROETHYLENE. By H. Taylor. In *Journal of Industrial Hygiene and Toxicology*, April, 1936, p. 175-193.

"A short review of the literature is given, following which experiments are reported which were devised to investigate the chronic effects of trichloroethylene. Preliminary experiments showed that concentrations in air of 0.5 and 0.4 per cent trichloroethylene vapor produced deep anesthesia in rats, while 0.2 per cent gave only slight narcosis.

PULMONARY ASBESTOSIS: INCIDENCE AND PROGNOSIS. By J. Donnelly. In *Journal of Industrial Hygiene and Toxicology*, April, 1936, p. 222-235.

A SURVEY OF A GROUP OF EMPLOYEES EXPOSED TO ASBESTOS DUST. By S. B. McPheeters. In *Journal of Industrial Hygiene and Toxicology*, April, 1936, p. 229-239.

"The evidence presented in this study warrants the opinion that with the reduction of dust concentration now feasible by available dust elimination devices, the incidence of significant asbestosis would in time approach the vanishing point."

THE TOXICITY AND POTENTIAL DANGERS OF CRUDE "DUPRENE". By W. F. von Oettingen and W. Deichmann-Gruebler. In *Journal of Industrial Hygiene and Toxicology*, April, 1936, p. 271-272.

It appears that crude "DuPrene" is not likely to produce irritation of the skin in normal individuals, that it can be handled safely even at temperatures of 100° C. without causing systemic effects, and that only at temperatures of 75° C. may a moderate irritation of the mucous membranes of the eyes and nose be observed, which can easily be prevented by proper ventilation.

2-CHLORO-BUTADIENE (CHLOROPRENE): ITS TOXICITY AND PATHOLOGY AND THE MECHANISM OF ITS ACTION. By W. F. von Oettingen and others. In *Journal of Industrial Hygiene and Toxicology*, April, 1936, p. 240-270.

The experiments indicated that chloroprene is a toxic material which should be handled with great precaution. Contamination of the skin and of the hair should be avoided, and the inhalation of vapors as low as 0.3 mg. per liter may cause toxic symptoms.

Hotels

EMPLOYEE HEALTH AT THE WALDORF. A large hotel, like a city, has its sanitary department, and constant watchfulness is needed to prevent housemaids' knee and cuts from smashed liquor bottles. In *Personnel Journal*, April, 1936, p. 305-371.

Power Presses

GUARDING OF POWER PRESSES. By G. Shroshree. In *International Labour Office, Industrial Safety Survey*, Jan.-Feb., 1936, p. 1-5.

Vocational Education

VOCATIONAL TRAINING IN INDUSTRIAL PLANTS. In U. S. Bureau of Labor Statistics, *Monthly Labor Review*, March, 1936, p. 650-654.

"After 2 days' consideration of various phases of the problems arising from the use of Federal funds in vocational training in industrial plants (commonly referred to as "plant training"), a special advisory committee on February 1, 1936, recommended to the United States Commissioner of Education the adoption of a set of special standards and



191,676 KILLED BY FALLS IN TEN YEARS*

Accidental injuries caused by falls are usually severe. This is proved by the New York Department of Labor Reports for 1933. They show that falls were responsible for 22 percent of all compensated industrial accidents and for 29 percent of the compensation paid.

Stonehouse Falling Hazard Signs are attractive, forceful warnings . . . reminders to be careful. Made on steel, in standard Accident Prevention colors and designs, with brief, to-the-point wording, furnished from stock.

They will help materially to reduce your Falling accidents. Send for complete list of "Falling Hazard" signs and prices.

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Stonehouse
SIGNS, INC.
Manufacturers

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1925 to 1934

There's a Stonehouse
Accident Prevention Sign
for every industrial pur-
pose.



ACCIDENT PREVENTION Steel • SIGNS IN STANDARD COLORS AND DESIGNS



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.

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

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 \$18.00 per doz.

Sample postpaid \$1.50

CHIPPEWA-A

MAY, 1936

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DUST CONTROL...*Suppression*

...Collection...Disposal

BE YOUR DUST PROBLEM
SMALL OR LARGE, IF IT
INVOLVES TEMPERATURE
CONSIDERATIONS OR
REQUIRES *Wet or Dry*
TREATMENT

Consult **BLAW-KNOX**
for a prompt economical solution



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Offices in Principal Cities

safeguards to cover this type of program. The commissioner accepted the recommendations and announced that he would place them in effect at once as official policies. He also retained the advisory committee to serve indefinitely in connection with various problems of trade and industrial education as they may arise in the future.

"The report, and the standards recommended by the committee as to the conditions under which a public-school system may or may not be justified in establishing training programs within a private industrial plant during the working day at public expense for which Federal reimbursement may be granted are given in part."

Asked and Answered

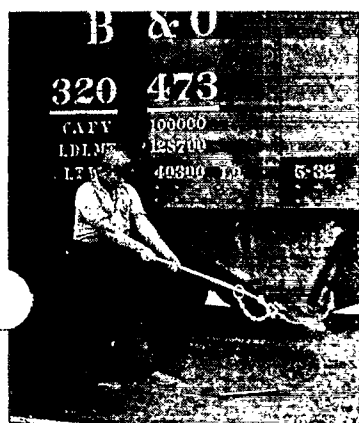
STERILIZING OIL

QUESTION: Will you kindly send us information on germicides used in disinfecting cutting oils and emulsions?

ANSWER: Paragraph 32 of National Safety Council's Safe Practices Pamphlet No. 44, "Safe Use of Cutting Tools and Emulsions," reads in part: "Numerous attempts have been made to sterilize cutting oils by the addition of germicides instead of by heat. At the outset it was found that most germicides, if used in sufficiently strong solutions to be effective, corroded the metal or interfered with the lubricating properties of the oils and emulsions, or irritated the skin of the workers. During the past few years, however, several Council members report excellent results from the use of germicides with a relatively high phenol coefficient."

This statement is in accord with those made by Dr. William J. McConnell, past assistant surgeon, United States Public Health Service, Treasury Department, in United States Public Health Service Report 770, "Dermatitis Following the Use of Cutting Oils and Lubricating Compounds," in which he states, "The sterilization of oil is accomplished in two ways. The first, by means of heat, is perhaps the most efficient and at the same time the cheapest method available . . . A second method is that of chemical sterilization. The chemicals generally used for sterilization are phenol, cresol and other coal tar derivatives. These, however, are expensive, and used in concentrations sufficient to be efficacious, not infrequently cause a dermatitis themselves. The use of inorganic and metallic germicides, such as mercuric chloride, copper sulphate, silver nitrate, and ferrous sulphate, is restricted because of their corrosive action on the metals with which they come in contact . . . The concentration of the chemical to be used depends a great

NATIONAL SAFETY NEWS



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

deal upon the character of the oil or compound. In the report of the Commission of the English Ministry of Munitions, phenol or other coal tar antiseptics, to one per cent, is recommended as an effective aid in reducing bacterial content of oil . . . It appears that the ideal method for sterilizing the oil would be to combine the heat and the chemical methods. This would afford a constant sterilizing process by the chemical as well as an intermittent one by the heat."

In Paragraphs 29 and 30 of Safe Practices Pamphlet No. 44, methods of sterilizing cutting oils by means of heat are described in detail. Figure 6 of that pamphlet illustrates graphically a cutting oil filter and sterilizer used by one large manufacturer. In the pamphlet will also be found valuable information on the filtration of oil, hygienic practices for workers, and skin troubles due to the use of cutting oils.

Personals

HERMAN J. SPOERER, since 1923 safety inspector at the Evanston, Illinois, works of the Youngstown Sheet & Tube Company, has been transferred to the company's Indiana Harbor Works to fill a similar position at the larger plant left vacant by the death of Arthur Berquist.

Mr. Spoerer's service with the company dates back to 1918 when he entered the transportation department at South Chicago Works and was later promoted to the position of safety inspector. In 1923 he was transferred to Evanston. He was one of the organizers of the Evanston Safety Council, serving three years as its president, and was also active in the Kiwanis Club, Chamber of Commerce, and other civic activities.

HARRY BARSANTEE, associate editor of PUBLIC SAFETY and member of the National Safety Council staff for more than six years, has resigned to accept the position of director of the News Bureau of the Travelers' Insurance Company, Hartford, Connecticut. A graduate of the University of Wisconsin School of Journalism, he had several years of practical newspaper experience on Wisconsin papers before joining the Council staff in 1929. He has a thorough knowl-

POSITION WANTED

AS SAFETY director in mining company. South America preferred. Ten years' experience, excellent record. Speaks and writes Spanish fluently. Has taught first aid, mine rescue and organized safety committees. Address P. O'Callaghan, Perez Canto 239, Nunoa, Santiago, Chile.

MAY, 1936

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This Improved Steel Toe—High—Roomy—Strong—Combined with the "Perfect Rocker" Wooden Sole—Lightweight—E.Z. Walking—Provides Complete—FOOT PROTECTION—at a price.

Write today.

REECE WOODEN SOLE SHOE Co., Inc.
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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.



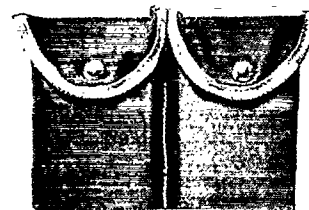
Use coupon now to send without obligation for a complete description of the self-contained Davis Combination Kit for men who work outdoors.



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.

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55 Van Dam Street, New York City

Please send my copy of your Bulletin on Snake Bites to

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DAVIS EMERGENCY EQUIPMENT CO., INC.

Chicago, Ill. • New York City • Houston, Tex.
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Wipe Out the MENACE OF HEAT SICKNESS

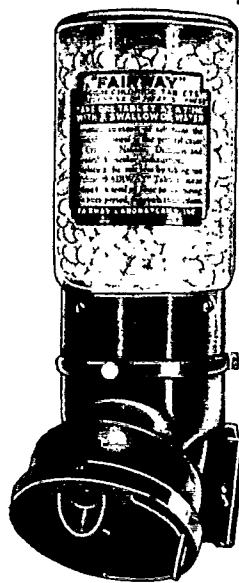
Install this modern industrial safeguard against the liability of Cramps, Extreme Muscular Fatigue, Nausea, and other ill effects common to hot work in industry.

Keep your workmen on their feet in the hottest weather—keep them in that normal state of muscular energy and mental alertness that protects production.

"Fairway" Tablets of pure sodium chloride have proven themselves over seven years in all types of hot work.

Give the workmen this protection at an insignificant cost.

Your choice of these two practical dispensers—extra tablets in reserve cartons—fully described in booklet "Prevention Of Heat Sickness" sent free on request.



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SANKEY FOOT GUARDS

Protect your workers feet before an accident happens and save compensation, medical and other costs.

These guards are made of 16 gauge steel or Rigidium, an aluminum alloy. Designed to give the utmost in foot protection and also to provide comfort and free and easy foot movement. Light in weight but exceptionally strong. Will withstand an impact of 300 foot pounds. Send for sample and details.



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ELLWOOD CITY, PENNSYLVANIA

edge of publicity work, a fine understanding of safety, and is a capable writer.

Mr. Barsantee succeeds G. D. Newton who becomes agency assistant in casualty lines for The Travelers.

ERNEST N. SMITH, executive vice-president of the American Automobile Association, died at his home in Washington, D. C., on April 10 following a brief illness. He was 51 years old.

Mr. Smith had been in charge of the national headquarters of the American Automobile Association since 1924 and had previously been in charge of the Department of Resolutions on Referenda of the United States Chamber of Commerce. For several years he had been prominent in the field of public safety and was joint author with J. C. Furnas of the recently published book, "Sudden Death."

Surviving are the widow, a daughter, and two sisters.

Public Safety Division Increases Staff

JAMES G. HAYDEN, formerly of the U. S. Bureau of Public Roads and the Michigan State Highway Department, has joined the staff of the National Safety Council as an assistant traffic engineer in the Public Safety division. He replaces James Stannard Baker, who is now doing field work for the Council in the East. Mr. Hayden was graduated in mechanical engineering at Michigan State College. Since that time he has had wide experience in traffic survey work.

DONALD S. BERRY has been added to the staff as assistant traffic engineer. He is a graduate of the South Dakota School of Mines, where he received a B. S. degree; he has an M. S. degree from Iowa State College; and he will receive the Ph. D. degree from the University of Michigan shortly. He has had broad

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

experience in highway research work with the South Dakota State Highway Department, the Iowa Engineering Experiment Station, and the Michigan State Highway Department.

RAYMOND G. ROSS has been placed in charge of home safety work in the Public Safety Division. The work was formerly conducted by Howard Seehausen, who is now devoting his full time to the National Traffic Safety Contest as an assistant to Paul Stricker, director of the Public Safety field forces. Mr. Ross has been assistant advertising manager of the homes division of Montgomery, Ward and Company, sales promotion manager for the Chicago branch of Pierce Arrow, advertising representative for Henri. Hunt, McDonald Company, and sales representative for the Manz Company.

Canton Holds Safety and Fire Prevention Campaign

MORE than 25,000 persons were contacted through 105 meetings held during the Sixth Annual Safety and Fire Prevention Campaign in Canton, Ohio. The campaign was sponsored by the Safety and Fire Prevention Committee of the Canton Chamber of Commerce, with the Industrial Commission of Ohio and the Foremen's Clubs of Stark County cooperating. The program included industrial, home and school fire prevention and street and highway safety. The campaign lasted through the week of March 23 to 28.

On Thursday evening, March 26th, more than 200 drivers attended a meeting which was addressed by Harry L. Sain, special representative, Division of Safety and Hygiene, Ohio Industrial Commission, R. B. Criswell, Ohio Inspection Bureau, and F. M. VanDevanter, Cities Service Oil Company, New York City, who is a widely known authority on carbon monoxide.

Recognition cards from the Stark County Safety Council were awarded to 275 commercial drivers in the city who operated without accident during 1935.

Included in the meeting were 42 industrial meetings of factories, eleven store meetings of employees, 20 public school demonstrations on fire prevention, five evening meetings on fire prevention, three carbon monoxide demonstrations, one convention Northeast Ohio Parent-Teachers' Association, eight Parent-Teacher Associations, Granges, churches, four service clubs, and twelve addresses over Station WHBC.

MAY, 1936



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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

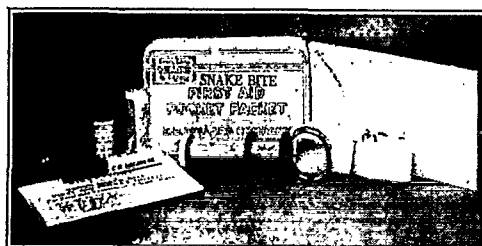
DETROIT
C. H. Dockson Company
2885 E. Grand Blvd.
CHICAGO
E. D. Bullard Company
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Safety Service Company
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W. P. & R. S. Mars Co.
324 W. Michigan St.
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E. D. Bullard Company
1 Main Street

WEST

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Everything
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There are 22 Species of Rattlesnakes in the United States



The venom of all species of rattlesnakes is sufficient to kill a man. Fortunately, medical science has recommended first aid treatment of snake bites which saves lives.

The treatment is based on the extraction of venom deposited by the snake.

The Bullard Venex Snake Bite Kit is built to conform to medical recommendations and contains everything necessary for effective first aid treatment. The outfit is packed in a pocket size metal box and is non-breakable and will not deteriorate with time or under any weather conditions.

Outfit consists of One non-breakable suction tube, for extraction of venom.

Sterile lancet for opening bite.

U. S. Army tourniquet for controlling flow of blood.

Antiseptic for painting skin around bite.

Aromatic spirits of Ammonia and paper drinking cup for shock treatment.

Complete, simple, first aid instruction sheet.

This first aid treatment is now used by the U. S. Forest Service, many of the large construction companies and wherever there is hazard from snake bites.

A Venex First Aid Kit will be mailed postpaid to any address in the United States on receipt of \$2.50. Mail orders will be given prompt and careful attention.

For industrial users, the Venex Kit may be examined at any office listed here. Descriptive catalog sent on request.

BULLARD

AT THIS VERY MINUTE



PROPELLAIR

For exhausting
fumes, dust, odors,
for safer working
conditions--and at a lower cost
than any other propeller-type fan.

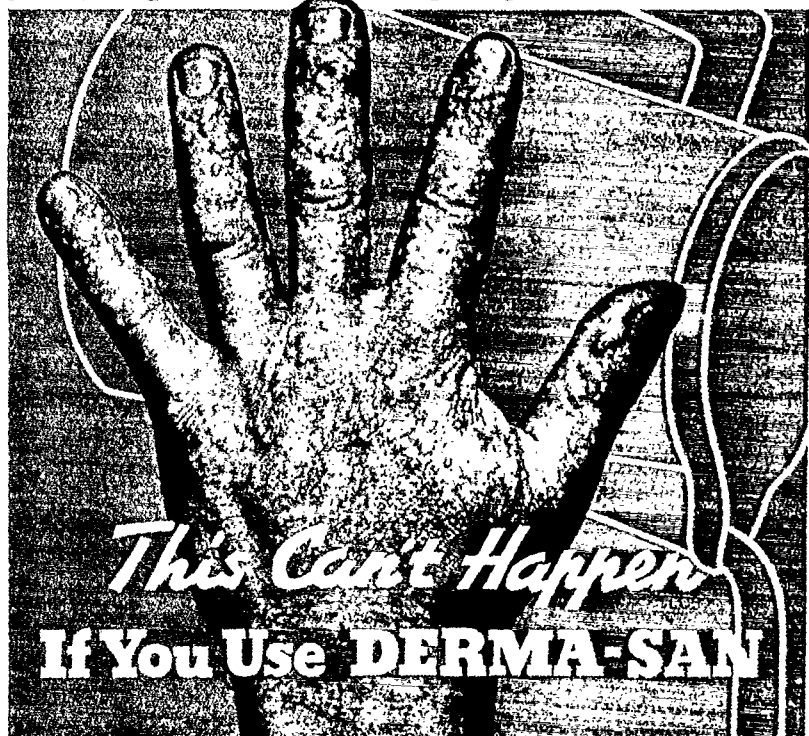
ARE WHIPPING THOUSANDS OF PROBLEMS LIKE YOURS

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30-page catalog.

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DERMA-SAN

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● OIL DERMATITIS costs plant owners millions of dollars each year. A single germ of this serious skin disease—carried from worker to worker by infected cutting lubricants—can put your entire force under doctor's care... cripple production... cause compensation payments. Protect your men from oil infections by using Derma-San. Pour one pint of Derma-San into 35 gallons of cutting lubricant and keep Oil Dermatitis out of your plant.

Derma-San is ideal for all general plant sanitation

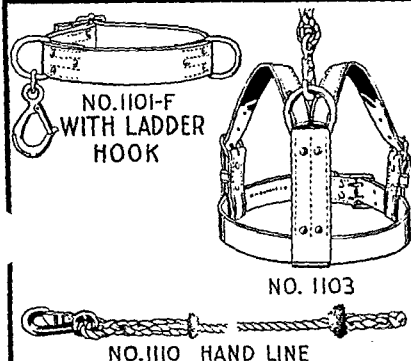
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BUHRKE Safety Industrial Harness



There are many industrial operations where Safety Belts or Harness should be worn. Buhrke equipment is made of selected steer hide harness leather or a variety of fabrics as may be required for the particular job. Equipped with forged steel hardware, but where conditions require non-sparking equipment, forged brass will be furnished. Our experience is available to assist you in designing special equipment, if necessary, for your requirements.

R. H. BUHRKE CO.

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Style or Safety?

(Continued from page 15)

must stand or kneel in the seats. They often obstruct the driver's view in part, and in sudden stops they frequently are thrown to the floor or against the sides of the body.

Low seats and small windows discourage the use of hand signals. The use of automatic semaphore types of signals, such as are compulsory in some European countries, would do much to correct this problem.

The current styles in rounded and sagging running boards present a slippery and dangerous surface when wet or icy. A nonskid type of running board cover would improve safety conditions for entering and leaving a vehicle. A driver who has been bruised in getting into his car thinks more about his pain than about his driving.

On vehicles where headlights offer the most convenient means of pushing the car when stalled, these lights must be firmly mounted so that they cannot easily be thrown out of adjustment.

In too many cars the use of tire chains is discouraged by the construction of the mud guards and the wheel housings.

Bumpers of flimsy construction or bumpers that are not mounted at a standard height may be a source of danger rather than protection.

The European sports cars to which previous reference was made do not measure up to American standards of easy riding at more moderate speeds, but they can be handled with safety and assurance at 100 miles an hour. In America we are producing cars that give the easy riding desired at moderate speeds, and while some of our cars are capable of speeds approaching 100 miles an hour, their road-holding and steering characteristics are unpleasant and sometimes dangerous at top speeds.

In judging the safety of vehicles we must consider it not only from the new car standpoint, but we must also visualize what it will be when the car is five to seven years old and has had little maintenance. Some of our present vehicles with flimsy exhaust systems (placed where they can be damaged on bad roads and ramps and of such light material that they will rust through quickly) and vacuum ventilating systems can be expected to become decidedly dangerous in a few years.

If the highways are to be made safer, drivers must be educated in high speed

NATIONAL SAFETY NEWS

driving. Vehicles must be kept in the best of condition by compulsory inspection and by owner education.

If the present style trend continues, automobiles are going to be increasingly dangerous to drive. If safer automobiles are to be built, more consideration must be given to the requirements of the driver. An investigation of all causes of driver fatigue should be made by properly qualified experts. From such an investigation would come recommendations that might be used as standards for driving seat positions, adjustments and cushions; control positions, adjustments, and effort required to operate; minimum areas of the vision (front, side, and rear), wind shield wipers and mirrors; ventilation, wind shield defrosting and heating; allowable amount of noise and vibration.

It is admitted that style has a powerful sales value, but when style in any way adversely affects the safe operation of such a potentially dangerous weapon as a fast motor car, that style must be curbed. If cars are produced that in time become unsafe, the industry at that later date will suffer for its present haste and lack of attention to safety features.

Safe Drivers Overcome Unusual Road Hazards

THIRTY drivers of the Keystone Express System, a Southern California motor truck company, were presented with National Safety Council no-accident driver medals and certificates at a recent meeting held in the company's motor freight terminal in Los Angeles. Ten of the drivers operated Keystone Express trucks without an accident for a period of one year; eleven drivers maintained a no-accident record for two years; and nine operators for three years.

Many of the men have to their credit 100,000 miles and more of safe driving. They are subjected to many hazards, particularly in the winter and spring, when heavy fogs hang over the roads in the early morning. On exceptionally cold mornings, in the citrus belt, they must contend with "smudging"—as dangerous to drive through as heavy fog. Heavy rains constitute another problem. In addition to this there are all the ordinary hazards of driving in narrow alleyways and congested city streets and also on the open highway.

Drivers receiving one-year awards included Henry Breeher, Thomas M. Dunbar, Leonard C. Eifler, John L. Kerr, Billie Hayes, Henry Earl Cockrell, William P. Jeffs, Arnold Smalley, Roland Farmer, and Archie H. Davidson.

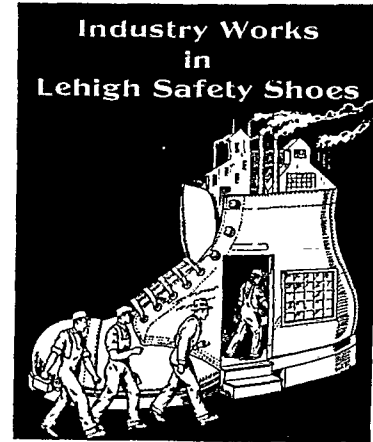
Two-year awards were given Hugh C. Hinds, Donald A. Berry, Charles I. Ardinger, Carl Liebig, Earl Roser, William H. Dixon, Roy E. Lacey, Emmert Guyer, Joe L. Orr, Paul Zimmerman and Lyle W. Keiser.

Three-year awards were made to James W. McGregor, Orris W. Payne, L. E. Dyke, George A. Cary, Cyril F. Weigand, Fred E. Hoover, William Peters, Clarence B. Smead and Russell Payne.

MAY. 1936

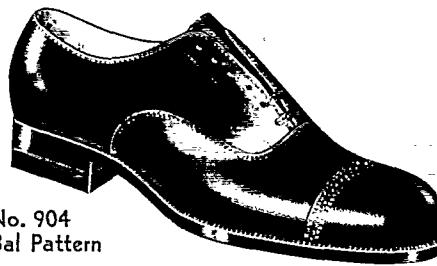
Lehigh Safety Oxfords

for Work, Dress and Office Wear



Registered U. S. Patent Office

There are many industrial occupations where the Lehigh Safety Oxford can be worn with the assurance of adequate protection and also give the wearer complete comfort and style. Especially desirable for superintendents, foremen, workers on assembly lines and where chips or loose material is not apt to fall in the top of the oxford. All our Oxfords are fitted with the improved steel box toe. Complete details gladly sent on request.



No. 904
Bal Pattern

FOR OFFICE WEAR

901—Black Calf Bal Oxford, 9 Iron Oak Leather Sole, Rubber Heel, Sizes A 6-12, B 6-12, C 5-12, D 4-12, E 5-12.

DRESS OXFORD

909—Gun Metal Blucher Oxford, 9 Iron Oak Leather Sole, Rubber Heel. Sizes, C 5-12, D 5-12, E 5-12.

WORK OXFORD

913—Black Elk Blucher Oxford, 9 Iron Oak Leather Sole, Rubber Heel. Sizes, D 5-12, E 5-12.

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

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, 1 models.

CLEMENTS—CADILLAC

PORTABLE BLOWER ELECTRIC

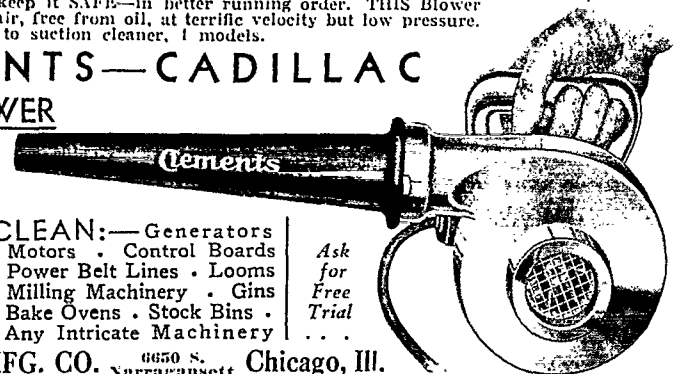
• BLOW, SPRAY, SUCTION

The Most Useful Tool in Any Shop

CLEAN:—Generators
• Motors • Control Boards
• Power Belt Lines • Looms
• Milling Machinery • Gins
• Bake Ovens • Stock Bins •
• Any Intricate Machinery

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Narragansett

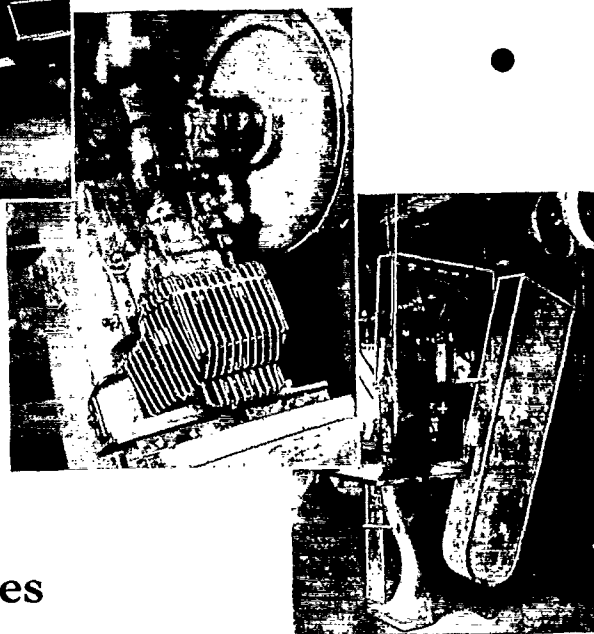




for SAFETY GUARD ECONOMY

Use
H & K

Guard
Accessories



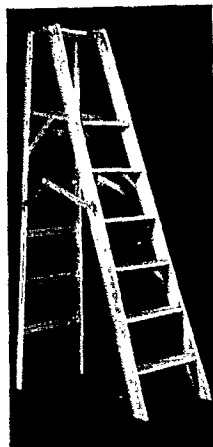
When you look behind the scenes of those companies that have the best safety records invariably you will find a good deal of attention has been given to the proper safeguarding of all machine hazards. H & K Guard Accessories are the answer to this important phase of an accident prevention program. Easily assembled in your own plant to meet your specifications. Economical in cost and long lived. Write for prices and details.

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

THE HARRINGTON & KING PERFORATING CO.

5645 Fillmore Street—CHICAGO 114 Liberty Street—NEW YORK CITY

ALUMINUM LADDERS



Safety, durability and economy are all combined in one when aluminum ladders are used. In addition, are the important features of ease in handling, extreme lightness, strength, fire-proofness and cleanliness. Not an experiment—tested under actual use for 5 years before being offered for general use. Illustrated to the left is our Platform Step Ladder that can be furnished in 4-6-8-10 foot sizes. Rigid in construction. Ideal for many uses in all industrial plants.

For complete information on single wall, extension, roof, folding and step ladders send for catalog.

Aluminum Ladder Company

121 Fifth Avenue, Tarentum, Penna.

The Bulletin Board

(Continued from page 40)

operate on definite schedules, arrangements can nearly always be made with them to handle the entire posting job at reasonable rates.

The National Safety Council publishes one special traffic poster monthly in two or three colors. The size is 25x38 inches (8 units). In addition, there are published other 17x23-inch posters (4 units) and 9x12 inch posters (1 unit) which are suitable for traffic use. Many of the most popular traffic posters published in the past are kept in stock. Forthcoming special traffic posters are illustrated in PUBLIC SAFETY the month previous to publication, and in the NATIONAL SAFETY NEWS for the month of issue. The other small posters appear in the NEWS each month.

Members of the National Safety Council may receive traffic posters as part of the allotment to which they are entitled. Public Safety members are entitled to 300 units per year. If poster orders are placed early enough, the Council can have the imprinting of the member's name done at a lower price when the posters are being printed. The Council will also imprint orders from stock at cost, but this is naturally more expensive. Prices of posters in addition to membership allotments and prices of imprinting will be furnished upon request and arrangements can be made to supply a quantity each month on a standing order.

It is often desirable to connect newspaper publicity with the posters being displayed at the same time. One of the most successful ways to do this is to use in the newspapers miniature reproductions of these posters, with short comments. The National Safety Council is prepared to furnish electrotone miniature reproductions of all its posters at \$2.00 each.

Not Chance But Work

(Continued from page 17)

The need of education is imperative, of course, but we must not forget for one instant that the shock troops in this war are the public officials who are charged with building, maintaining and policing our highways. The automobile industry joins the National Safety Council in standing squarely behind these authorities and giving them maximum encouragement and assistance in building and maintaining an adequate street and highway system, enacting uniform

NATIONAL SAFETY NEWS

standard laws, and enforcing these laws impartially and intelligently.

To our distinguished guests, to the official heads of the cities and states which you represent, and to those officials of 51 other communities in widely scattered sections of our country who are participating in this program through the magic of radio, I extend the most heartfelt congratulations on behalf of all of us who are banded together in the new war on accidents. You have saved scores, yes hundreds of lives. You have kept thousands of people free from the tragic effects of crippling injuries. These lives saved, these injuries prevented are in themselves the most eloquent praise that could be conferred. The recognition we extend to you at this time is meagre indeed compared with the real rewards of your efforts.

You sought for, found and identified a most serious emergency in your respective communities. You recognized clearly the danger signals of traffic accidents. And you drew the enemy out into the open, and by your courageous, consistent fight you are driving him from your midst.

You have set an example to every other city and every other state. You have proved that *it can be done*. On behalf of all the allies in the ranks of safety I thank you and congratulate you from the bottom of my heart.

Eye Magnet Is Dangerous For Laymen's Use

THE old adage about fools rushing in where angels fear to tread is nowhere better exemplified than in first aid for eye injuries. Many physicians in general practice hesitate to use a magnet to extract an iron or steel particle from an injured eye, yet one member of the National Safety Council recently reported an advertisement for such a magnet directed to laymen.

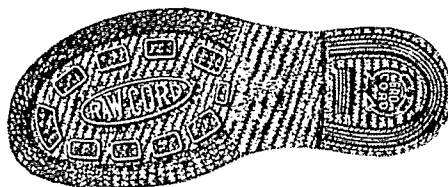
Much damage can be done to an eye if the operator is unskilled in the use of the device, and the American Medical Association has declared that putting such a magnet into the hands of laymen is almost criminally dangerous.

A New Simile

He looked like the kind of man who would pass the car ahead of him on a curve, drop a match in a kerosene can to see if it was empty, try to beat the train to the crossing, or put his fingers in a lion's mouth to see how many teeth it had. —R.H.L. in *Chicago Tribune*.

MAY, 1936

SURE FOOTING IN ALL WALKS of LIFE



Safety Engineers are primarily interested in preventing accidents while people are under their supervision, during working hours in factory and office. However, it is a known fact that workers must come to work prepared to prevent as many accidents as possible if the Safety program is to be successful.

Shoes equipped with GRO-CORD or RAW-CORD Soles and Heels when worn by your workers will help to prevent accidents not only while they are on the job, but at other times as well. Because of its CORD-ON-END construction GRO-CORDS and RAW-CORDS provide the greatest NON-SLIP. Good workers are Safe workers; ask them to protect their jobs by wearing GRO-CORD or RAW-CORD Soles and Heels. These soles and heels are made for work shoes—dress shoes—sport shoes, and children's play shoes—providing "sure footing in all walks of Life".

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.



FACTORY



OFFICE



HOME



PLAY

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

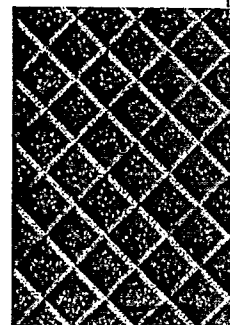
FERALUN (Also Bronzalun, Alumalun and Nicalun)
Anti-Slip Treads

**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



MANAGEMENT And Accident Prevention!



COSTS mount rapidly when the regular man on the turn is replaced because of injury.

Costs drop and production leaps ahead when workers are equipped with personal safety equipment that permits their "digging in" with no fear of injury.

Hundreds of industrial concerns throughout the United States employ-time study and efficiency experts in an effort to find ways and means of cutting costs and speeding up production . . . yet many executives frequently overlook the fact that one sure way to reduce costs in operation is to apply scientific management to accident prevention.

Personal safety equipment is more than just any glove or any legging . . . it is the proper glove for the job.

Why not employ outside advice on these safety problems just as you employ efficiency experts?

This service is available . . . and what is more, it costs nothing to have your plant inspected for its danger sources by a STEEL-GRIP man.

MAY WE SERVE YOU!



INDUSTRIAL GLOVES CORPORATION

725 GARFIELD BLVD.
DANVILLE, ILL.

Chicago

Newark

Detroit

Combustible Gases

(Continued from page 21)

With flue gas of ordinary composition, a mixture of somewhat over 50 per cent of flue gas with air will be incapable of supporting combustion.

Steam is probably the most widely used inert gas. Its advantages and disadvantages have been argued many times. Wet steam has been shown to be a prolific source of static, and for this reason may introduce a source of ignition. Few large storage tanks have enough steam supply available to bring the entire interior of the tank up to the temperature of about 170° F. necessary to preclude the existence of explosive mixtures. To turn steam into a gasoline tank which is equipped with gas-tight appurtenances, and normally contains vapor too rich to explode, seems an illogical method of fire protection. The result of such treatment is that great volumes of vapor are expelled to create hazard in the vicinity, and subsequently explosive mixtures are formed in the tank when the condensing steam sucks in air.

On the other hand, a tank warmed by steam ventilates more quickly than a cold tank, and there is no question that in cleaning small containers an ample steam supply is very effective. The general conclusion is that each case in which steam may be used should be considered individually.

While oxygen-lean gas has great value in substituting for air where combustible gas cannot be eliminated, or in displacing combustible gas prior to admitting air, it should not be relied upon where ventilation will bring unqualified safety. For instance, the recent suggestions that carbon tetrachloride, carbon dioxide, or nitrogen be introduced into small tanks and certain other types of containers which have contained combustibles are not recommended.

These attempted "cure-alls" tend to minimize the importance of proper cleaning. Without confirmatory tests in each instance, there is always a chance for misapplication of the process. Liquid carbon tetrachloride in contact with hot metal breaks down into the highly toxic gases, phosgene and chlorine. Furthermore, any one of the suggested inert gases is expensive. The American Petroleum Institute has published a manual on "Cleaning Petroleum Storage Tanks" developing sound principles which will serve as a safe guide under most circumstances involving combustible gas

hazards in cleaning equipment.

Under certain conditions, substances termed "pyrophoric compounds" are formed which glow or even burst into flame when exposed to the air. One of the best examples of a pyrophoric compound is the iron sulphide formed in equipment handling those crude oils, petroleum distillates, or cracked petroleum which contain considerable hydrogen sulphide. Ventilation with air in this case is inherently dangerous, so that special methods must be employed. The simplest method, and one frequently used, is to completely fill the equipment in question with water before opening it to the air.

Steaming provides a means for ventilating and eliminating oil residues particularly well adapted to small equipment subject to pyrophoric accumulations. The job must be done thoroughly before admitting air, however, as the steaming leaves any residues warm, and, unless the volatile constituents have been evaporated, more ready to give off vapor than before steaming. Rapid vapor accumulations following steaming is not an unusual history.

Flue gas has been used with good success in driving out combustible gas without incurring danger from explosive mixtures. A portable flue gas generator for such service in oil refineries has found limited application. After displacement of the combustible gas, washing down of the interior may be done from manholes or hatches as flue gas ventilation continues, or an internal rotating nozzle, such as the Butterworth System provides, may be used.

In every problem of protection against combustible gas, assurance of success is gained only by making adequate tests. Simple indicator means are available to check all steps of the various methods of protection. It is necessary where dealing with inert gas mixtures, or with vapor concentrations above the lower explosive limit, to mix additional air with the samples tested by a combustible gas indicator. This is done without altering the operation of the indicator by placing in the sampling system a device known as a "range multiplier." The additional air introduced insures sufficient oxygen for reaction with the combustible present. The resulting reading is then multiplied by a fixed factor, usually 10, to arrive at the concentration of combustible in the original sample.

In checking the efficacy of inert gas

NATIONAL SAFETY NEWS

protection, either the oxygen content of the mixture or the inert gas content may be used as an index. With flue gas protection, a check for carbon dioxide furnishes the correct and most rapid method for estimating what degree of dilution of the oxygen content has been accomplished.

Summing up the subject of controlling combustible gas hazards, greatest emphasis must be placed on the necessity for knowing the condition of every situation as it actually exists. To attempt protection without the intelligence afforded by an appropriate indicator is to work blindly.

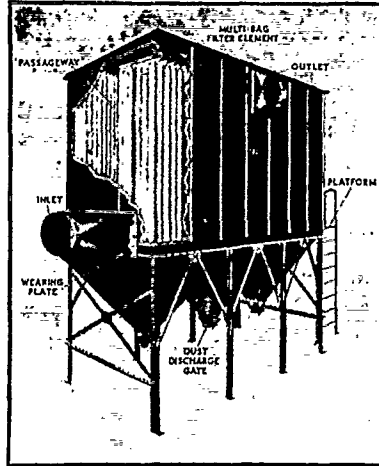
With the problem illuminated by definite data, plans may be laid to avoid or mitigate hazards. In every case considered, the primary assumption should be made that a potential source of ignition exists. Hence, where combustible gas is normally and unavoidably present, protective measures must attempt to make it a safe neighbor for fire by preventing it from forming flammable mixtures, and then keep the two as well separated as possible. Where gas is incidental, protection must be directed toward its elimination, and continual vigilance maintained to prevent its encroachment into an area in which a source of ignition is assumed.

Small portable turbine blowers are available either with a direct connected electric drive or belt driven. Since it is sometimes difficult to get the blower in a place where no vapor can reach it, an explosion-proof motor is recommended. A gasoline engine driven generator placed in a safe location is used as a source of power where necessary.

Several designs of propeller type blower are available. Such devices are remarkably portable considering the amount of air delivered, and installation cost is a minimum. Briefly, they are simply a motor-driven propeller of the airplane type mounted directly in the pipe or duct used for ventilation.

Ventilation is only one of several methods of protection against combustible gas. As a matter of fact, in any case where the normal concentration of gas or vapor is above the explosive range, ventilation would introduce a hazard which did not exist before. Gasoline tanks are kept free from ventilation by building the roofs gas tight and equipping them with positive acting breathers which allow flow of air inward only to prevent vacuum from collapsing the structure. As a result, the vapor space has explosive mixtures in it over a minimum period of time and in minimum amount.

for "SAFETY FIRST" use **DRACCO** DUST CONTROL



The NEW DRACCO
MULTI-BAG FILTER

There is DANGER in DUST

A Plant with a DUST hazard is not 100% "SAFETY FIRST". DUST is a dangerous element that should be controlled. It not only impairs health but is also destructive to equipment and reduces Plant efficiency. DRACCO Engineers with many years experience in solving DUST problems of every description, may be able to render you invaluable service. No cost or obligation.

Write for Bulletin No. 301

DRACCO CORPORATION

Successors to The Dust Recovering & Conveying Co.

4073 E. 116th St.

Cleveland, Ohio

DON'T let your men SUFFER FROM BURNS!

Use Tannoid—the "Pain Killer"—to bring lasting relief from the pain of a burn. Tannoid reduces the suffering of your men.

You will appreciate also these important advantages of using Tannoid:

- 1—Tannoid lessens the toxic effect of a burn. By preventing the absorption of poisonous substances, which gather around a burn—Tannoid saves lives formerly lost.
- 2—Local astringent effect of Tannoid prevents loss of body fluids.
- 3—Secondary infection is markedly limited.
- 4—Scar tissue formation is less after the use of Tannoid than observed after ordinary treatments.

Tannoid is water soluble and greaseless—"No painful scrubbing up"

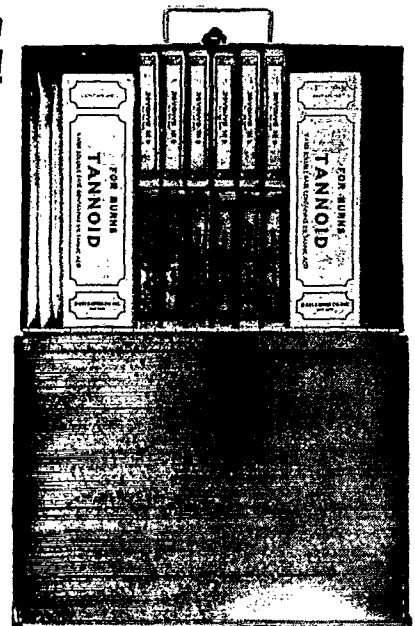
Davis Burn Kit contains:

- 6—5 oz. tubes of Tannoid
 - 10—Bandage Compresses
 - 10—Bandages
 - 6—Applicators
- Convenient and compact, the Davis Burn Kit provides all necessary materials for quick easy relief for treatment of burns.



DAVIS EMERGENCY EQUIPMENT CO., INC.

Chicago, Ill. • New York City • Houston, Tex.
Davis Emergency Equipment Co., Ltd. • San Francisco



Davis Emergency Equipment Co., Inc.
55 Van Dam Street, New York City

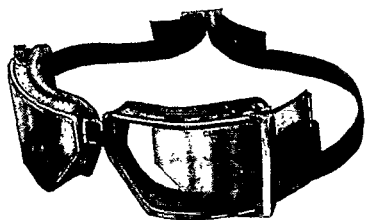
Please send my copy of your Bulletin on Tannoid to

Name _____

Address _____

City _____

SUPERIOR



CESCO
STYLE NO. 220

WIDE VISION GOGGLE

Regardless of the goggles you are now using today, *this Cesco No. 220 Wide Vision Goggle* will appeal to you.

This general utility goggle is now available with Super-Safety Lenses (optically ground) that not only afford maximum protection against flying objects but also the glass does not change direction of the light rays passing through the lens—there is no deviation in the line of sight—eye strain is eliminated. Other features include wide vision, comfort for the wearer and adequate ventilation.

One trial of this product and you'll know you have met a goggle you must have. The features are no more spectacular than its moderate price. Use coupon for descriptive folder.

CHICAGO EYE SHIELD CO.
2323 Warren Blvd.
CHICAGO, ILL.

Chicago Eye Shield Co.,
2323 Warren Blvd.,
Chicago, Ill.

Please send me folder showing the No. 220 Wide Vision Goggle.

NAME.....
COMPANY.....
STREET.....
CITY.....STATE.....

Contest Brings Out Limerick Fans

IT'S seldom an easy matter to finish a job someone else has started, but those who took part in the March Safety Calendar Contest had little trouble finding suitable last lines to finish the limerick on which the competition was based.

The flood of entries proved that the limerick fan is a thriving species not only in the United States but also in foreign lands.

The completed limerick which won the first prize of \$20 for Harris Brightly, 4568 Carter Avenue, St. Louis, Mo., who received a calendar from Bemis Bro. Bag Company, St. Louis, was:

Joe went for a spin yesterday
And whizzed through the streets, so
they say—
At sixty per hour
Some gadget went sour
Now, on Safety, Joe's "harping" away.

C. Krackenberger, Southern Natural Gas Corporation, Birmingham, Alabama, who received his calendar from that company, won the second prize of \$10. His offering was: "Of course, a 'nut' *would* act that way!"

Winner of the third prize of \$5 was J. F. Jeffreys, Arkansas City, Kansas, who received a calendar from the Kanotex Refinery. His last line was: "Have you seen scraps of Joe out your way?"

Winners of the fifteen \$1 awards were:

C. A. Dodds, 4419 East Ninth St., Kansas City, Mo. Calendar from Wabash Railway.

Mrs. Anne Fry Bailey, 417 Elm Ave., River-ton, N. J. Calendar from The Kieckhefer Container Company, Delair, N. J.

Lester B. Lawrence, 512 Holmes Ave., Lima, Ohio. Calendar from The Ohio Power Company.

Mrs. J. M. Hampton, 429½ Woodworth Boul., Port Arthur, Texas. Calendar from The Texas Company.

Joseph H. Clements, 33 Rhode Island Ave., East Orange, N. J. Calendar from Koppers Gas and Coke Co., Kearny, N. J.

Arthur G. Keefe, 1016 S. E. Hawthorne Boul., Portland, Ore. Calendar from The Pullman Company.

Margaret L. O'Connell, 52 Lincoln St., Chicopee Falls, Mass. Calendar from The Chicopee Electric Light Dept.

Chris P. Skilton, c/o The Delaware & Hudson Railroad Company, Carbondale, Penn. Calendar from D. & H. R. R. Co.

Mrs. M. K. Partenheimer, 148 Wayne Ave., Haddonfield, N. J. Calendar from Eavenson & Levering Co., Camden, N. J.

Irene F. Smith, 1408 Riverview Ave., Wilmington, Del. Calendar from E. I. du Pont de Nemours & Co.

Pearl M. Rebinan, 1502 Lunt Ave., Chicago, Ill. Calendar from Western Electric Company.

Alfred Leistiko, Vaughn, Mont. Calendar from Anaconda Copper Mining Co., Great Falls, Mont.

Harold Jenkins, 206 Front St., Minersville, Pa. Calendar from Hill Coal Co., Minersville.

Mrs. Abbie Conley, 312 Park Ave., Nevada City, Calif. Calendar from Empire Star Mines Co., Ltd., Nevada City.

C. A. Kelly, 2929 Fourth Ave., Hibbing, Minn. Calendar from Jones & Laughlin Steel Corporation, Virginia, Minn.

Many entries were eliminated from the competition because they failed to conform to the rhythm or rhyme scheme of the published limerick.

Judges of the contest were Dr. C. H. Watson, president of the National Safety Council; Harry Guilbert, director of the Bureau of Safety and Compensation, The Pullman Company; and L. J. McEnnis, Jr., Publicity Division, National Safety Council.

Those who failed to win in one of the first three contests are urged not to be discouraged. The remaining contests offer sufficient variety to appeal to diversified talents.

Realizing the value of the contest plan in promoting safety consciousness, several plants are conducting their own contests in connection with that sponsored by the Council, thus arousing added interest and giving their employees a double chance to share in the rewards.

Among these are the American Hide and Leather Company, Lowell, Mass.; the Kendall Refining Company, Bradford, Pa.; the Louisville Car Wheel and Railway Supply Company; and the Union Steel Products Company, Albion, Mich.

Walter Gleason, of the Hammermill Paper Company, Erie, Pa., writes that the calendar contest is one of the finest things the Council has ever done to stir up home folks on safety. He submits the fact that his own household was upset for several weeks while his son was working on the January contest.

M. Wile & Co. Winners in N. Y. Endurance Contest

THE third no-accident endurance contest of the Associated Industries of New York State, Inc., came to a close March 26, when an employee of the Du Pont Cellophane Company at Buffalo

NATIONAL SAFETY NEWS

suffered an arm injury, thus eliminating his company and leaving the firm of M. Wile and Co., Inc., Buffalo, as the winner of the elimination contest which started October 1, 1934. Ten firms were entered. The contest had run nearly 18 months.

With its record still unbroken, the Wile Company had 1,887,036 man-hours to its credit at the time the report was filed. Records of the other nine firms follow:

Dunn and McCarthy, Inc., Binghamton, 1,748,364.75 man-hours in a 13-month period; The Pullman Company, Buffalo shops, 1,567,656 man-hours in 8 months; International Business Machines Corporation, Binghamton, 1,483,966 man-hours in 4 months; DuPont Cellophane Company, Buffalo, 1,440,257 man-hours in 17 months and 26 days; Dunn and McCarthy, Inc., Auburn, 1,057,248 man-hours in 9 months; International Paper Company, Fort Edward, 889,590.80 man-hours in 11 months; Procter and Gamble Manufacturing Co., Mariner's Harbor, S. I., 651,264 man-hours in 7 months; Washburn Crosby Company, Inc., Buffalo, 587,837 man-hours in 7 months; Aeolian American Corporation, East Rochester, 498,421 man-hours in 7 months.

A special trophy will be awarded the management and employees of the Wile Company at the Western New York Safety Conference to be held at the Hotel Statler, Buffalo, on May 27 and 28.

A fourth no-accident endurance contest will be started at the conclusion of the 1936 State-Wide Accident Prevention Campaign of the Associated Industries. All firms which complete the 1936 campaign with perfect scores and an exposure of 200,000 man-hours or more will be eligible to compete in the endurance contest.

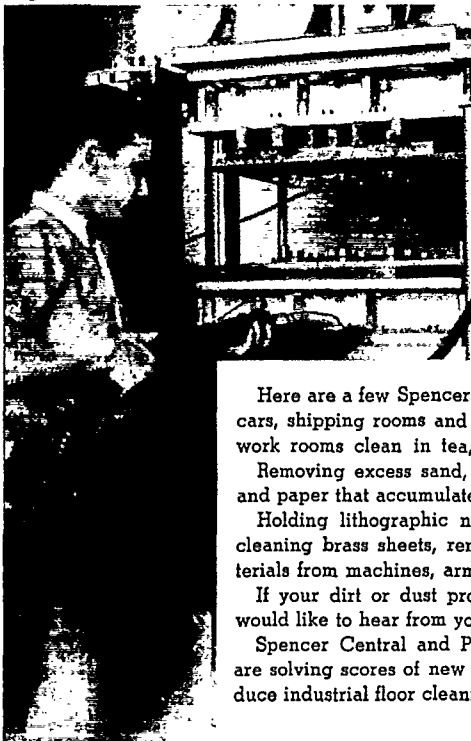
No-Accident Awards to 38 Drivers

NO-ACCIDENT driver awards, issued by the National Safety Council, were presented recently to 38 bus and truck operators of the Santa Fe Trail System and the Southern Kansas Stage lines.

The presentation meetings were addressed by Roy E. Mason, superintendent of operators in the Wichita Division, and F. A. Hobbie, safety supervisor for the Atchison, Topeka, and Santa Fe Railroad. The latter pointed out that safety precautions practiced by the railroad are also applicable to bus and truck operation.

Operators who drove buses and trucks one, two and three years, without accident, covering distances ranging from 60,000 to 250,000 miles, were honored at the meetings and presented with safe driver emblems.

MAY, 1936



100 uses for VACUUM in industry

Here are a few Spencer applications: Cleaning barrels, box cars, shipping rooms and products before shipment; keeping work rooms clean in tea, spice, watch and radio factories. Removing excess sand, soap, starch, lead, fertilizer, wood and paper that accumulates during the process of production. Holding lithographic negatives, lifting paper for sorting, cleaning brass sheets, removing sand from doors, color materials from machines, armature chips and coal dust. If your dirt or dust problem is not mentioned above, we would like to hear from you. Spencer Central and Portable Vacuum Cleaning Systems are solving scores of new problems every year. Also they reduce industrial floor cleaning costs. Bulletin on request.

SPENCER

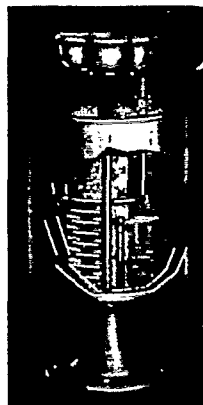
HARTFORD

CENTRAL AND PORTABLE
VACUUM CLEANING SYSTEMS

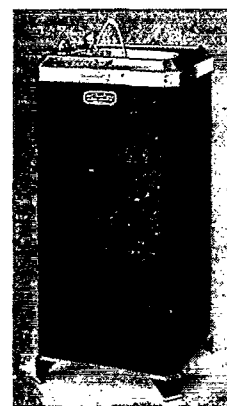
THE SPENCER TURBINE COMPANY, HARTFORD, CONN.

S-51

Only Halsey Taylor Coolers give you ALL these advantages



No. 2800 Ice Cooler



Electric

- Two-stream projector, automatic stream control, maximum health-safety!
- Heavy cork-insulated walls, bottom and cover—maximum cooling capacity, minimum ice consumption.
- Drinking water cannot come in contact with ice or melted water—sanitary!
- The most sturdy construction throughout, trouble-proof service, low maintenance costs.

The fact is that Halsey Taylor combination coolers and drinking fountains have been standard with industry everywhere for years and have become recognized as without comparison for efficiency and economy. Write for latest folder illustrating and describing Halsey Taylor ice and electric coolers as well as wall and pedestal fountains for office or factory!

THE HALSEY W. TAYLOR CO., WARREN, O.
Largest Manufacturers of Drinking Fountains

HALSEY TAYLOR

Cooler Fountains



Two-Stream Projector

LINEMAN'S INSULATED TOOL BAG

Style L



For hoisting and lowering tools, insulators and supplies.

Manufactured of heavyweight, hard woven canvas and specially designed, flexible, waterproof leather bottom.

Collapsible—No metal parts.
12" diameter—15" deep.

Side rope loop for placing over pin, holding bag at correct working position.

Handle holes and loop holes leather reinforced inside and outside.

PREVENT ACCIDENTS
Equip your line crews with this serviceable product.

Other products purposely designed for the Electrical Industry include glove bags, line hose bags, portable danger signs, danger flags, insulated brushes, solder catch pans, pike pole guards, fuse pullers, portable hand lamps, linemen's belts and climbers.

**INDUSTRIAL PRODUCTS
COMPANY**

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

Coming Events Of Interest to Safety Men

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. Nimtz, 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.

May 27-28, Buffalo, N. Y.

Western New York Safety Conference. Frank E. Redmond, general chairman, 406 Root Bldg., or William J. Guilbert, executive secretary, Chamber of Commerce, Buffalo, N. Y.

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.

June 18, Chippewa Falls, Wis.

First Annual Upper Mississippi River Valley Safety Conference. William J. Melville, secretary-manager, Chippewa County Safety Council, Chippewa Falls, Wis.

Sept. 23-24, Augusta, Me.

State-wide Safety Conference. W. J. Brennan, safety engineer, Department of Labor & Industry, Augusta, Me.

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.

Nov. 12-13, 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.

Honor Roll

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

E. I. du Pont de Nemours & Co.

On March 25 the Power Department of E. I. du Pont de Nemours & Co., Inc., Dye Works, Deepwater, N. J., established a record of 1,570,362 man-hours without a disabling injury.

Medusa Portland Cement Co.

Two plants of the Medusa Portland Cement Company, located at York, Pa., have worked more than 800,000 man-hours each without a disabling injury accident. The Gray Cement Plant, employing an average of 93 men, reported 809,949 safe man-hours as of March 31, 1936, at which time the record was still unbroken. The record began Feb. 16, 1931.

The White Cement Plant, with an average of 80 employees, has gone 918,091 man-hours—since September 13, 1929—without a disabling injury. This record, too, was unbroken at the time of reporting, March 31, 1936.

Missouri Portland Cement Co.

The Thousand-Day Club, a unique organization of the Cement Section, welcomed its twelfth member on January 22—the Kansas City Mill of the Missouri Portland Cement Co. The mill has operated more than one thousand days without a chargeable injury.

The mill celebrated its entrance into the club

with a meeting of all employees, addressed by R. G. Uhlig, general operating manager, John W. Mather, counsel and personnel manager, and other officials.

Norfolk & Western Railroad

The Portsmouth, Ohio, Shops of the Norfolk & Western Railroad worked from August 23, 1934, to January 24, 1936, for 519 consecutive days, without a reportable (three-day) accident. The number of man-hours recorded during this time was 3,519,789.

Roxboro Cotton Mills

The Roxboro, North Carolina, plant of the Roxboro Cotton Mills completed the year 1935 without a single disabling injury accident. The 300 employees of the plant averaged 250 eight hour days, or a total of 600,000 man-hours, without a mishap.

Texas Electric Service Co.

Despite the difficulties of supervision, with employees scattered in 16 localities over a wide area of west Texas, the transmission section of the Texas Electric Service Company has completed a five-year period without a disabling injury accident — 835,201 safe man-hours — covering the years 1931 to 1935, inclusive. The record was still unbroken at the date of reporting, April 4, 1936.

Youngstown Sheet & Tube Co.

On January 1, 1936, the South Chicago Works of the Youngstown Sheet and Tube Co. completed three years without a disabling injury accident—a total of 2,663,509 safe man-hours, with an average of 466 men working per day. The record began January 2, 1933, and is still unbroken.

Make Record Despite Shipyard Hazards

WHEN a crew of 701 men, engaged in a particularly hazardous industry such as shipbuilding, can work 2,390,802 man-hours over a period of two years with only 19 lost time accidents — the safety organization in charge may well feel that it is approaching its goal.

The record cited is that of the Bath Iron Works Corporation, Bath, Maine. During the record period, extending throughout 1934 and 1935, not a single amputation was suffered nor an eye lost, despite unusual hazards encountered daily. Only ten fractures were sustained. Neither permanent nor partial disability resulted to any man in this organization during the period. The lost time involved amounted to only 365 days. This accomplishment is believed to be a record for safety in the shipbuilding industry.

For the past six years, accidents have been declining rapidly in the Bath Iron Works. The ratio of hours lost to hours worked has decreased more than 95 per cent since 1930.

In 1930 the ratio of hours lost to hours worked was 1.018 per cent; in 1931 it was .905; in 1932, .638; in 1933, .147; in 1934, .110; and in 1935, .048 per cent.

Those who are familiar with the hazards of shipbuilding can appreciate this performance. Although it is classified as metal trades work, shipbuilding is far more hazardous than the ordinary indoor metal trades occupation. The

MAY, 1936

DUST and TROUBLE

STIRRING UP

BROOM SWEEPING MERELY SCATTERS THE FINE DUST

Old-fashioned floor sweeping stirs up clouds of fine powdery dust that remains suspended in the air—a menace to health—a source of costly damage to the semi-finished product.

HOFFMAN VACUUM CLEANING REMOVES AND COLLECTS IT

Hoffman systems clean thoroughly, scatter no dust. No swept-up piles of dirt to be re-handled. Coarse litter and fine dust alike are collected for easy disposal. End dust hazards, cut cleaning costs. Investigate!

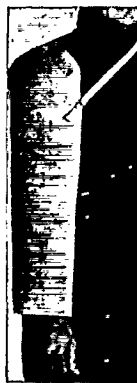
SEND FOR
NEW BOOKLET
"REMOVE THE
MENACE OF
DUST"

U.S. HOFFMAN MACHINERY CORPORATION
AIR APPLIANCE DIVISION, 111 FOURTH AVE., NEW YORK

HOLCOMB PROTECTION

Welders' Protective Garments

No. 1523 - Perfect Welders Sleeve. 23 inches long covering the entire arm up to the shoulder. Fastened with neck strap fitted with adjustable snap buckle. Also furnished in 14 and 18 inch lengths.

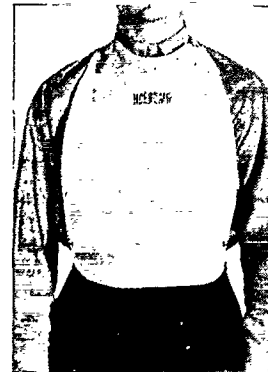


Holcomb Welders' Garments

Chrome Leather Sleeves
Chrome Leather Gloves
Special Chrome One-Fingered Mitts
Pigskin Gauntlet Gloves
Non-Burnable Heavy Pigskin Gloves
Chrome Leather and Fireproofed Duck Bib Aprons
Chrome Leather Aprons (Slit Type)
Chrome Leather Bibs
Chrome Leather, Asbestos and Fireproofed Duck Suits and Leggings
Fireproof Blankets and Curtains
Chrome Leather Coats, Pants and Jumper Suits

The Holcomb Safety Garment Company has made a special study of protective garments for welders. This has made it possible for them to develop a complete line of products that will provide maximum protection, comfort and dependability. For complete information on these garments and a wide variety of safety clothing for all purposes write for a copy of catalog No. 100.

No. 051-Chrome Leather Welders' Bibs. A recent Holcomb innovation that insures complete protection against burns to the neck, chest and waist from arc welding.



HOLCOMB SAFETY GARMENT CO.
118 N. Jefferson St. Chicago, Ill.

An Exclusive Holcomb Development

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: 6, 8, 10, 11 gallons.

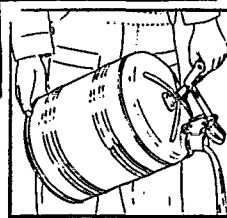
Opens with Foot
Closes automatically

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

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

LESSENS INSURANCE RATES

Protect your plant—your employees—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.



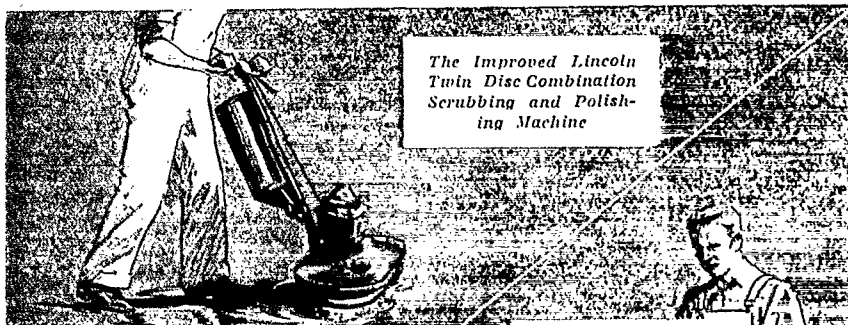
SIZES
1 gal to
5 Gallons



Justrite

TRADE MARK

Justrite Mfg. Co. 2087 Southport Avenue
CHICAGO, ILLINOIS



The Improved Lincoln
Twin Disc Combination
Scrubbing and Polishing
Machine

NEGLECTED FLOORS EXACT AN APPALLING TOLL IN OUTPUT AND PROFITS

THIS frequently overlooked barrier to efficient plant operation handicaps workers—delays the movement of materials and creates a safety hazard that frequently proves fatal. Lack of proper floor cleaning equipment is mainly responsible for this alarming condition.

Alert to this fact, hundreds of industrial executives have solved their floor maintenance problem with a LINCOLN Twin-Disc. These miracle floor machines quickly remove heavy accumulations of grease, dirt, steel chips and other extraneous matter and leave a safe, sanitary floor. Let us demonstrate this to you at our expense. Write for complete details on our FREE demonstration offer.

LINCOLN-SCHLUETER
OR MACHINERY COMPANY, INC.
W. Grand Ave. Chicago, Ill.

The Lincoln Industrial
Special for Dry
Cleaning Factory
Floors



work is done on staging, through winter and summer months.

During the time covered by the report of the Bath Iron Works, the *U. S. S. Dewey* was built, launched and delivered, and two other vessels of similar design were practically completed and ready for launching. A complicating factor in the problem of building these ships was the fact that they were arc-welded for the most part instead of riveted.

A great part of the success in attaining this record is attributed to housekeeping, for scrupulous cleanliness marks the operations.

At the weekly safety meetings management and men sit side by side to work out safety problems.

No-Accident Awards Won by 86 Drivers

DESPITE the hazards of congested Brooklyn traffic, 86 salesmen drivers of the Larsen Baking Company, Inc., of that city, completed the last fiscal year without an accident. In recognition of this extraordinary record, the salesmen were awarded no-accident driver medals issued by the National Safety Council. The presentation took place April 4 at a meeting of the company's entire sales force.

Five-year awards were given to three drivers; 15 drivers won four-year awards; 16 were given three-year awards; 22, two-year awards; and the remainder one-year awards.

In making the presentation Charles E. Larsen, president of the company, said:

"The record of these drivers is plain proof of what can be accomplished with care. If trucks such as these can be operated all day on the streets of a congested city in complete safety to pedestrians and vehicles, what excuse has the driver of a pleasure car for being involved in an accident? Utter disregard for traffic regulations and lack of consideration for the rights of others characterize too much of the average driving everywhere. If all motorists exercised caution and good common sense, the terrific life toll would be greatly reduced."

A gift of the company's stock was presented to each of the drivers winning a safety award.

E. S. Rutter, director of safety, reviewed the company's safety record. He also called attention to the National Safety Council's Five-Year Program to reduce accidents 35 per cent or more, urging cooperation in this move.

A congratulatory message from W. H. Cameron, managing director of the National Safety Council, was read.

Employees Honored For Safety Record

THE second best safety experience in the company's history was recorded by the Edison Company of Boston during the past year, during which both the frequency and the severity rates of lost time accidents were exceptionally low. There was not a single fatality and only 40 disabling injury accidents.

As a reward for their cooperation in making this record possible, more than 700 employees of the company were guests at recent dinner meetings. Employees in the generating, distribution, laboratory, general service, supply and meter reading departments were included.

Sidney Hosmer, vice president and general manager, and Leavitt L. Edgar, operating vice president, spoke of the importance of continued individual effort for safety.

NATIONAL SAFETY NEWS

The LINCOLN Twin Disc
SCRUBS - WAXES - POLISHES

Robert E. Dillon, generating superintendent, was presented with a bronze plaque marking the victory of the Boston Edison Company power station employees in the 1935 competition with employees of the Duquesne Light Company of Pittsburgh.

Awards Won by Van Drivers

TEN van drivers of the Neptune Storage, New Rochelle, New York, were presented with National Safety Council Safe Driver Awards recently for driving an aggregate of 190,000 miles without accident.

Two-year awards were made to John Desmond (55,000 miles); Frank Jorge (30,000 miles); John White (20,000 miles); Edward Hane (20,000 miles); Harry Olson (15,000 miles); John W. Brown (10,000 miles).

One-year safe driving medals were awarded to William Troisi (10,000 miles); Robert McClellan (8,000 miles); John Clark (8,000 miles); and Lawrence Geisel (4,000 miles).

Ben F. Kirschenbaum, vice president of Neptune, presided. William J. Fleming, safety engineer for the Globe Indemnity Company, who spoke before the presentation of awards, commended the men for maintaining a perfect record despite the hazardous driving conditions prevailing this winter.

Hold Training School for Factory Inspectors

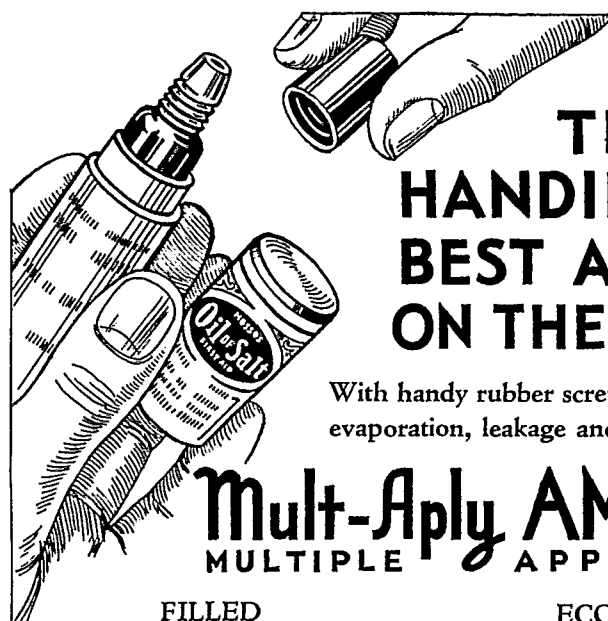
A COURSE in factory inspection training, sponsored by the Division of Labor Standards in cooperation with the School of Hygiene of Johns Hopkins University, was inaugurated in Baltimore on February 10, with a registration of 27 inspectors from Maryland, North Carolina, West Virginia and Tennessee.

The sessions of the school lasted 10 days, during this period the common problems which confront all factory inspectors in the administration of safety and health laws were thoroughly discussed. A portion of each day was devoted to the inspection of selected factories and industrial units in the Baltimore area. Morning sessions were given over to a discussion of such problems as protective devices, lighting, ventilation, and kindred subjects.

Following the Baltimore sessions, the inspectors visited the Division of Labor Standards where conferences were held with officials of the Department of Labor, including the Children's Bureau, Women's Bureau, etc.



MAY, 1936



THE HANDIEST AND BEST AMPOULE ON THE MARKET

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

Multi-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

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.

Write for Samples and Quotations

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

New and Improved GAS TIGHT GOGGLE

BECAUSE the new Davis Gas Tight Goggle is completely moulded in one piece, head strap and eye cups, there is a direct saving to you in replacement costs as compared with a goggle with a garter elastic head band which soon loses its elasticity and becomes useless.

Extremely light of weight, this goggle is considerably more comfortable to wear than a heavier goggle which is annoying on the face.

Your men will also be pleased with the wider vision of the Davis Gas Tight Goggle as well as the feature of "non-fogging."

Use coupon to send now, without obligation, for circular containing more detailed information.



DAVIS EMERGENCY EQUIPMENT CO., INC.
Chicago, Ill. • New York City • Houston, Tex.
Davis Emergency Equipment Co., Ltd. • San Francisco

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

Name _____
Address _____
City _____ NO-1

Shipyard Establishes Frequency Rate

A NEW safety record in shipyard work has been set by the Federal Shipbuilding and Dry Dock Co., Kearny, N. J., which completed the past year with an accident frequency rate of 3.9 per million man-hours worked.

Only 17 men out of an average working force of more than 2,200 lost time during the year through accidents, and none of these was seriously injured. The Federal's nearest competitor among ship

yards along the Atlantic Coast had a frequency rate of 8.24. Rates of other yards for 1935 were 9.53, 9.68, 16.07, 19.65 and 49.86.

A well coordinated safety program, which places direct responsibility on a maximum number of employees, is given credit for Federal's achievement. The organization is headed by a central safety committee, meeting monthly, and consisting of four representatives of the employees and four of the management.

The employee members are chosen by employee-representatives in the plant.

One of the members is elected from the employee-representative group, but the remaining three may or may not be employee-representatives, according to the discretion of the electors.

The management members of the central committee include the manager of industrial relations, who acts as chairman, and three assistant superintendents.

In addition to the central committee there is a safety committee in each shop, consisting of three to seven members, according to the size of the shop force. These groups meet at least once a month in the offices of the foremen, who serve as chairmen. At the end of a three-months' period the men are excused from attending further meetings, though they are still considered members of the shop safety committees, and new members are chosen to meet with the foremen.

In this way more and more employees are being added to the safety organization, and eventually the majority of men in the plant will be members.

3461 PANGBORN DUST COLLECTORS *are now* CONTROLLING DUST

More and more, day by day, Industry learns (to its sorrow) of the power Dust has to destroy property.

But looking on the bright side, more and more manufacturers, engineers and industrialists are learning that Pangborn modern Steel Frame, Cloth Screen Collectors efficiently and economically CONTROL DUST—*stopping its destructiveness and converting it into useful and profitable by-products.*

What is being done for others can be done for you. Let's talk it over now.

Write for information

PANGBORN CORPORATION

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

HAGERSTOWN MARYLAND

Only Davenport Wood Sole Shoes Have all of these Protection Features!

STEEL or Composition Safety Toe Optional on All Styles.

—Wire Staple Stitching (not nails) of Uppers to Selected Maple Wood Soles.

—Full Gusset that keeps out dust.

—All seams sewed tightly with Wax Thread of High Tensile Strength.

—Soft Pliable Sole Leather Counters (not hard irritating composition).

—High Quality Soft Felt Insole.

There is no greater foot protective shoe at any price. Write for our low quantity prices!

F. J. STAHLER SHOE COMPANY,
DAVENPORT IOWA



Contests Aid Railroad in Accident Reduction

AT THE end of eight years of organized safety contests the Pennsylvania Railroad System looks with satisfaction upon a reduction of more than 73 per cent in accident frequency.

Summarizing the results of the 1935 employees' safety contest, officials of the railroad report an average of 5.1 accidents to employees per million man-hours worked. Before the contest plan was inaugurated in 1927, there had been 19.1 casualties per million man-hours.

In the competition among the major regional units of the System, the New York Zone won first place with 4.20 reportable (three-day) accidents per million man-hours in all departments.

In the Equipment Maintenance Division the Altoona Works won first place among the major units, establishing the remarkably low record of 1.83 accidents per million man-hours. Altoona Works is a large industrial plant, producing some of the heaviest units manufactured, including electric and steam locomotives, freight and passenger cars, and parts for both locomotives and cars. Heavy equipment repair work is also done there. During the period of the record a considerable part of the construction work on the Pennsylvania's new streamline electric and steam locomotives was completed at Altoona, as well as a large order for new freight cars, much of the work being done under rush conditions.

NATIONAL SAFETY NEWS

Nineteen operating units of the railroad participating in the contest made perfect records in one or more departments. Not all of them, however, were counted as winners, because the contest

rules declare that where two or more units in a single group have perfect records, the award is given to the one working the largest number of man-hours.

States Strengthen Safety Activities

THE war on traffic accidents, sponsored and directed by the National Safety Council in an effort to reduce the slaughter on the streets and highways 35 per cent or more by the end of 1940, is rapidly crystalizing and taking form. Local safety councils, state safety councils already in existence and public officials are working in close cooperation with the eight field men recently sent out by the Council.

In many areas existing organizations are broadening and strengthening their activities to synchronize them with the tempo of the five year plan. In other sections working organizations are being set up.

The movement of the campaign is indicated in reports from various centers of activity.

Arizona—Governor B. B. Moeur has issued a proclamation asking complete cooperation in the campaign and calling for a meeting in Phoenix to organize a state safety council which will be charged with the responsibility of making the campaign a success.

Kansas—One of the many new activities undertaken by the Kansas Safety Council is the preparation, by the superintendent of education, of a course in safety education for the grade schools. A 100-day campaign with a "Safety Caravan" is being undertaken by the Kansas American Legion under the leadership of Earl Todd, State Safety Chairman and Highway Commissioner.

Iowa—The Iowa State Safety Council has organized nearly a score of county safety councils and is having difficulty in keeping up with the demands for organization from practically all counties in the state.

Nebraska—The Nebraska Safety Council is also busy organizing local groups. The Council plans to sponsor a uniform state traffic law and a drivers' license law.

New York—The Bureau of Motor Vehicles is adopting a more rigid and thorough examination of automobile

drivers. Plans are being worked out for an expanded driving test.

Maine—The Maine highway safety campaign organization is planning a state-wide highway safety conference for the middle of June.

New Mexico—A state highway safety conference was held April 20 in Santa Fe.

Minnesota—An attendance of 800 state, county, and city officials and citizens from all parts of the state marked the Minnesota Public Safety Committee award presentation dinner, held in St. Paul April 14. The State Safety Council is working vigorously to improve its traffic accident prevention work.

Michigan—Four committees have been named to direct the four-point program consisting of legislation, education, enforcement and engineering.

New Jersey—The New Jersey Safety Council adopted a constitution and by-laws at a state conference March 25. The articles provide for the organization of local and county safety councils throughout the state, in addition to state-wide committees.

Pennsylvania—The Governor's Highway Safety Council, together with an executive board composed of public officials, is working energetically on a program which contemplates the organization of county, city, township and borough committees throughout the state.

Utah—Salt Lake City, through the State Industrial Commission, has invited the Pacific Coast Safety Conference to meet there in September.

Question Asker: "Do you drink?"

Man: "No."

Asker: "Why don't you drink?"

Man: "My boss forbids it, my customers won't allow it and it goes against my conscience."

Asker: "Those are surely good reasons. What business are you in?"

Man: "I'm a bartender."

He socks 'em a mile
BUT HE THREE-PUTTS EVERY GREEN



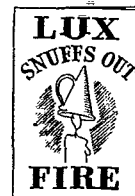
BE SURE YOUR FIRE EXTINGUISHER HAS NONE...

THERE'S no competition like industry. Second-raters don't fit in . . . especially fire extinguishers that can't do a complete job.

Can the extinguishers in your plant come through in emergencies? Can they handle paint or gasoline blazes? Short-circuited electrical equipment fires? Do they leave a mess, create dangerous fumes?

The safe answer to all these questions lies in one and only one extinguisher — LUX. Safety engineers rely on LUX to kill all kinds of fires . . . snuff them out with a fire-killing blizzard of carbon dioxide snow. LUX is clean, dry and harmless to man or materials. It leaves no mess, no gas. Yet it is the fastest known extinguishing agent.

Fire extinguishers that do their jobs as efficiently as LUX have a definite place in thousands of industrial plants. A new booklet describes the value of LUX to you. Write for your copy of "Instant Death to Any Fire."



Walter Kidde & Company
51 West Street, Bloomfield, N. J.



For All Electrical and Flammable Liquid Fires

WITH THE MANUFACTURER

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

Over the Shoe Boot

A new style of boot to serve outdoor workers in wet weather is announced by the Industrial Products Company, 800 W. Somerset Street, Philadelphia, Pa. It fits right over regular shoes and is said to be



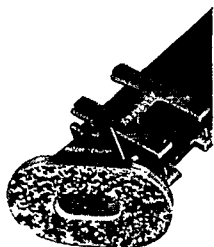
restful as the shoes take the weight. It is easy to put on or take off. Made of rubber with net lining and provided with strap and buckle at the top for holding securely around the leg. It is serviceable for a variety of uses.

Halco Sweat Band

A new accessory for wearers of goggles is announced by the A. E. Halperin Company, Inc., 267 Atlantic Avenue, Boston, Mass. It is designed to prevent foggy lenses and do away with faulty vision, annoyance and danger. It is worn on the forehead and snaps on and off easily. It has replaceable sterile gauze bands. The Halco Sweat Band can be washed many times. Safety and efficiency are aided by keeping goggles free from sweat and fog.

Non-Skid Ladder Shoe

The American Allsafe Company, Inc., 210 Franklin Street, Buffalo, N. Y., announces a new non-skid ladder shoe. Large



carborundum grits provide a non-skid grip on all surfaces such as steel, wood, concrete and other types of floors under haz-

ards of water, ice, oil, etc. The large area of the contact plates also provides a safe footing on soft ground. The shoes are self-aligning to assure a solid footing for the ladder on uneven surfaces and a stop prevents the ladder from being set at unsafe angles. No drilling of ladder rails is necessary as the design of the saddle acts as a ferrule for rail ends and takes the wear and tear off the swivel bolt. This ladder shoe is made of a strong light weight aluminum alloy.

Pyro Optical Pyrometer

The Pyrometer Instrument Company, 105 Lafayette Street, New York, announces the Pyro optical pyrometer for accurately measuring temperatures in processes involving the production or application of high heat. With this instrument high temperatures are measured by comparing and balancing the brightness of the hot body with that of a calibrated electric lamp. It is used for measuring temperatures from 1400 degrees F. to the



highest known temperatures attainable in industrial or scientific work. It requires only a very small surface on which to sight and there is practically no limit to the distance at which the object may be observed.

It is further claimed the rapid increase of the photometric intensity of the light emitted by a hot body in comparison with the temperature is shown by the fact that the visual effect of red radiation at 2500 degrees F. varies twelve times as fast as the temperature. A small change in the temperature, therefore, results in a great variation in brightness, and measurements made this way provide a means for determining temperatures with precision and accuracy.

Each instrument is furnished in a strong leather covered steel carrying case. The inside cover contains a spare service lamp and a red tip master lamp, besides the service lamp in the instrument. It weighs about three pounds.

Safety Belt for Window Cleaners

A new departure in construction of a bolt-type window cleaners' belt is announced by the Rose Manufacturing Company, 2265 South Logan Street, Denver, Colo. They state the Safe-Hi Bolt Belt is



made to withstand any fall with only one side of the belt attached. This type of fall puts a great strain on the equipment. A 200 pound weight dropped eight feet (the customary length of such belts) expends 1,600 foot-pounds of energy, the same as a 1,600 pound weight dropped one foot.

Some of the new and exclusive features claimed for this belt are: new waist belt of linen webbing with 5,600 pounds tensile strength and with special stainless steel tongueless buckle; aluminum bronze terminals testing over 70,000 pounds per square inch and over five tons on each terminal; new, safe, and convenient locking device; new bronze rope eyes, through which both the waist belt and the ropes are inserted; new adjustment loop of stainless steel, welded into the terminal; a new rope produced especially for this belt, it is soft, pliable, waterproof yacht manila used double, giving a total strength of 5,600 pounds; a new and safe method of adjusting and fastening ropes; a new terminal which fits both single and double anchors and is so designed as to put the minimum strain on the anchors either in leaning back or in falling; a very light belt, approximately five pounds, with a specially designed back rest to protect the wearer from rubbing, chafing and pinching.

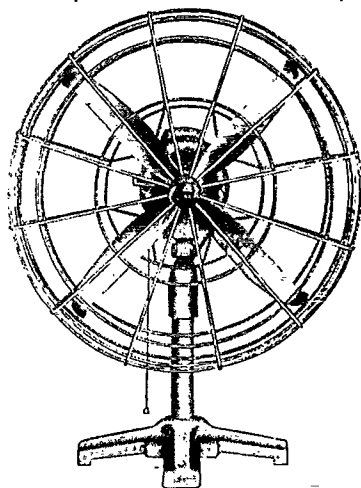
Floor Truck for Fragile Products

A new floor truck listed as No. 1595 "Q" type is announced by the Lewis-Shepard Company, Watertown Station, Boston, Mass. The manufacturer states this truck has a one piece steel frame, arc-welded throughout; a smooth flush hardwood top, steel bound all around; roller bearings in all wheels and castors; and is equipped with new type, easy rolling, industrial balloon tires to save floors, make less noise, do less damage to the load and to more safely handle fragile products.

NATIONAL SAFETY NEWS

Circulating Fan

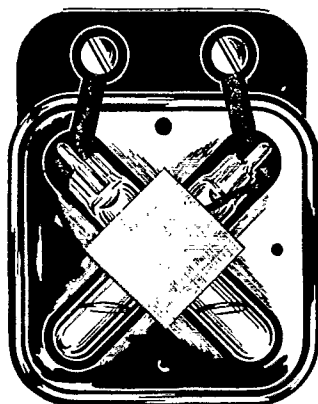
A new line of circulating fans is announced by Propellair, Inc., Springfield, Ohio. They state this new fan, which can be operated at either of two speeds,



is distinguished by the amount of air flow it supplies and by its thrifty use of current. Special construction has so reduced the hum that it can be used in all rooms where a minimum of noise is desirable. It is furnished with a pearl grey baked enamel finish to harmonize with any interior. It is available in four different mountings, floor, wall, ceiling and bench, making it adaptable to all uses.

Safety Overturn Switch

This device is designed to minimize the risk of fire by automatically breaking the ignition circuit when a motor vehicle overturns. It contains two specially designed mercury switches set at a carefully predetermined angle. The manufacturer claims the construction of these switches is such



that no amount of bouncing or jarring can break the circuit, but as soon as the switch is tipped beyond the angle at which the vehicle will overturn, the mercury flows to the opposite end of the tube. This opens the circuit and kills the motor. It is a small compact unit of molded plastic, ruggedly built, requires no service or adjustment and draws no current. Manufactured by the Pines Winterfront Company, 1135 N. Cicero Avenue, Chicago.

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.

MAY, 1936

Trade Publications

for your

SAFETY EQUIPMENT LIBRARY

A Service For Our Readers

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

1. Aluminum Ladder. Catalog No. 1.

This catalog illustrates and describes a number of ladders of all aluminum construction adaptable to many industrial uses. Aluminum Ladder Company.

2. Are You Protected Against Toe Accidents?

Interesting folder covering safety shoes, oxfords and rubber footwear for foot protection for all industrial operations. Lehigh Safety Shoe Company, Inc.

3. Fractional Size Couplers. Folder

illustrates and describes fractional size automatic couplers for mine and industrial cars. Have all the features of full size standard railway couplers. American Steel Foundries.

4. Instant Death to Any Fire. This

interesting pamphlet illustrates and describes all sizes of carbon dioxide portable fire extinguishing equipment. Included is a new model recently placed on the market. Walter Kidde and Company, Inc.

5. Combination Surface and Needle Pyrometers. Literature il-

lustrates and describes this set of instruments adaptable for use in die casting, plastic molding, rubber processing, paper, textile, electrical, pottery and many other industries. The Pyrometer Instrument Company.

6. Pallet Handling Equipment.

Four page folder illustrating, specifying and describing equipment designed solely for the handling of the new low 3 1/2 inch clearance pallets on which tin plate, strip steel, etc., is being shipped by manufacturers. Barrett-Cravens Company.

7. The Pyroil News. The March issue

of this interesting publication tells about the manufacturer of Pyroil and gives a picture story of how and where it originates. Pyroil Company.

8. Play Safe. This interesting little fold-

er shows how perforated metal together with other guard accessories can be used to make guards to protect against machine hazards. The Harrington and King Perforating Company.

9. Anti-Slip Products. A four page

folder dealing with anti-slip products for all walkway surfaces. Included are a number of dimensional drawings showing various applications. American Abrasive Metals Company.

10. Non-Tamp Plug Fuses. Folder

covers these new fuses that fit all standard or ordinary porcelain cut-out blocks, panel board receptacles, etc. Also illustrates and describes the non-tamp cut-out fuse cabinet panels. National Electric Products Corporation.

11. Handy Data Book on Chains.

Catalog No. 7. An interesting book on all kinds of chain, both welded and weldless. More than a catalog as it contains valuable data compiled in handy reference form dealing with chain wear, stress, etc. Columbus-McKinnon Chain Corporation.

12. Megolite Safe Flashlight. This

folder gives an interesting description of a new flashlight designed for dependable safe use in oil and gas plants, ships, mines and all places where fire, gas, explosion, chemical or electrical hazards are present. Inertia Devices, Inc.

NATIONAL SAFETY NEWS

May, 1936

20 North Wacker Drive
Chicago, Ill.

Please have sent to me the publications I have checked:

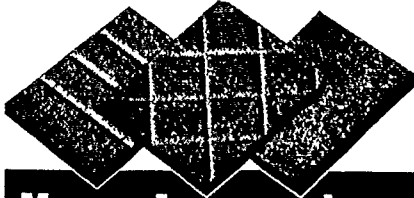
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Title.....

Company.....

Address.....

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.

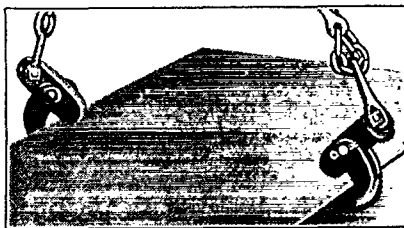
Over 40 years' Experience is at your service for the asking.

AMERICAN MASON SAFETY TREAD CO.
LOWELL, MASS.

**IN STOCK AT TEN PLANTS
RYERSON STEEL-SERVICE**

Chicago

Jersey City



Save Time and Money

In Handling Boiler Plate

IT'S expensive to handle boiler plate with old-fashioned chains or hooks, which have a tendency to slip, causing accidents.

The use of Never Slip Safety Clamps will reduce these expenses, because these clamps do not slip. Two clamps and chains will do the work of four bent hooks and chains, and do it without harming the plate. Even at an angle, Never Slip Clamps will hold work without slipping. Made in two styles for lifting plates horizontally and vertically.

Write for details

Never Slip Safety Clamp Co.

P. O. Box 448

Grand Central Annex, New York, N.Y.

MAY, 1936

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SAVES FALLS



The man on a Dayton Safety Ladder has no fear of falling. He works faster and better, saves your time and money.

The Dayton does not tip or wobble, has wide platform with protecting guard rail. Made of airplane spruce—light and strong—in sizes 3 to 16 feet. Moderately priced.

Write Dept. NSN-5 for details.

The DAYTON SAFETY LADDER Co.
121-123 West 3rd St. Cincinnati, Ohio

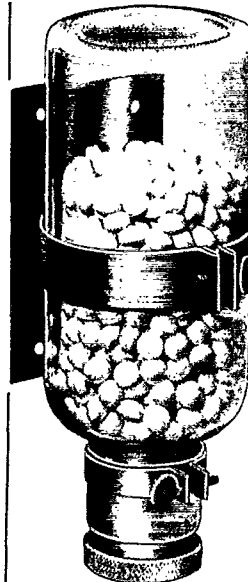
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Safety Ladder

(Patented)

Stock carried on Pacific Coast by E. D. Bullard Co., Los Angeles and San Francisco, and by 100 other distributors from coast to coast. Made and distributed in Canada by Safety Supply Co., Toronto.

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.

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Cleveland, Ohio

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Street _____
City _____
State _____

THE BUYERS' SERVICE

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A

Accident Prevention Service

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American Foundry Equipment Co.
General Abrasive Co.

Adhesive Tape and Plaster Remover

Alarms, Fire

Mine Safety Appliances Co.

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Mussio Laboratories, C. A.

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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
Pangborn Corporation
Surtz Mfg. Co., The

Awards, Prize

Mine Safety Appliances Co.

B

Badges and Buttons

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Mine Safety Appliances Co.

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Sallsbury & Co., W. H.
Strauss Company, The

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Safety First Supply Co.
Standard Safety Equipment Co.
Strauss Company, The

Belts, Tree Trimming

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Mine Safety Appliances Co.
Pulmosan Safety Equipment Corp.
Strauss Company, The

Belts, Window Cleaning

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Blowers, Portable, Electric

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Spencer Turbine Co.
Surtz Mfg. Co., The
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Justite Mfg. Co.

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Protectoseal Company
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Safety Equipment Service Co., The
Standard Safety Equipment Co.

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Columbus-McKinnon Chain Corp.
McKay Company

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Mine Safety Appliances Co.
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Standard Safety Equipment Co.
Strauss Company, The

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Safety Clothing Co., The

Compounds, Floor and Stair, Non-slip

Containers, Explosive Liquid

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Industrial Products Co.
Justite Mfg. Co.
Mine Safety Appliances Co.
Protectoseal Company
Pulmosan Safety Equipment Corp.
Safety Equipment Service Co., The
Strauss Company, The

D

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Davis Emergency Equipment Co., Inc.
Mine Safety Appliances Co.
Portable Lamp & Equipment Co.

Detectors, Indicators, Recorders, Carbon Monoxide

Bullard Company, E. D.
Davis Emergency Equipment Co., Inc.
Mine Safety Appliances Co.

Detectors, Pyrotechnic

Mine Safety Appliances Co.

Disinfectants and Deodorants

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

In Safety, There Is No Place
for "Just as Good"

**Talk
SAFETY**

Accident
Prevention
Equipment
Manufacturers
Section
of the
National
Safety
Council

We are all accustomed to having a store clerk say "why not try so and so, it's just as good". This practice may cause no harm for general products, but where safety equipment is concerned it may prove fatal to take a chance with an inferior product or one not designed for the job in hand. There are many conscientious manufacturers and distributors of safety products who take pride in recommending only the equipment they feel sure will give maximum safety. To be safe, buy safe.

Pulmosan Safety Equipment Corp.
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Blankets, Fireproof

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Safety First Supply Co.
Standard Safety Equipment Co.

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Mine Safety Appliances Co.
Pulmosan Safety Equipment Corp.

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Safety First Supply Co.
Standard Safety Equipment Co.

C

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Protectoseal Company
Safety Equipment Service Co., The

Cans, Waste

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Industrial Products Co.

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Pulmosan Safety Equipment Corp.
Strauss Company, The

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Safety First Supply Co.

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Clothing, Acid Proof

THE BUYERS' SERVICE

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Exterminator, Rodent

West Disinfecting Company

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Kilde & Co., Inc., Walter
Mino Safety Appliances Co.
Pulmosan Safety Equipment
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Pyrene Mfg. Company

F

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Blaw-Knox Co.
Dracoo Corporation
Pangborn Corporation
Propellair, Inc.
Surtly Mfg. Co., The

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Belt
Clipper Belt Lacer Co.

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Standard Safety Equipment Co.

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Co.

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Safety First Supply Co.
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Pulmosan Safety Equipment
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Fountains, Drinking,

Factory
Frigidaire Corporation
Bradley Washfountain Co.
General Electric Co.
Taylor Co., Halsey W.

Fumigants

Bauer & Black

G

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Abbott Laboratories

Germicides, Cutting Oil

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West Disinfecting Company

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Co., Inc.
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Co.
Industrial Products Co.
Safety Equipment Service
Co., The
Strauss Company, Inc., The

Safety First Supply Co.
Strauss Company, The

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Heat Cramp Preventives
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Pangborn Corporation
Pulmosan Safety Equipment
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Safety Equipment Service
Co., The
Safety First Supply Co.
Standard Safety Equipment Co.
Strauss Company, Inc., The
Willson Products, Inc.

Hoists, Electric

Holders, Tool

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Hooks, Safety Belt

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Bullard Company, E. D.
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Co., Inc.
Industrial Products Co.
Mino Safety Appliances Co.
Portable Lamp & Equipment
Co.
Pulmosan Safety Equipment
Corp.
Safety Equipment Service
Co., The
Strauss Company, The

Hooks, Safety, Hoisting

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Williams & Co., J. H.

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Davis Emergency Equipment
Co., Inc.
Industrial Products Co.
Mino Safety Appliances Co.
Safety Equipment Service
Co., The
Safety First Supply Co.

I

Inclinators, Carboy

Bullard Company, E. D.
Industrial Products Co.
Safety Equipment Service
Co., The

Indicators, Flammable

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Davis Emergency Equipment
Co., Inc.
Mino Safety Appliances Co.

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Co., Inc.
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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 Mason Safety Tread
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Co., Inc.
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Industrial Products Co.
Mino Safety Appliances Co.
Patent Scaffolding Co., The
Pulmosan Safety Equipment
Corp.
Safety First Supply Co.
Surtly Mfg. Co., The

Think SAFETY

Always Keep Dangerous Sub- stances In Special Containers

Often too little thought is given to the handling or storage of hazardous substances. Acid has been found in milk bottles, gasoline in unmarked tin cans, hazardous powdered chemicals in old boxes, etc. Serious injuries, explosions and fires are caused by such unsafe practices. One worker nearly died from drinking a small quantity of penetrating oil (nitrated benzene) that was in the bottom of a tin cup he used to take a drink of water. Safe containers can be supplied from a number of reliable sources. Be sure your plant has a plentiful supply on hand.

Accident Prevention Equipment Manufacturers Section of the National Safety Council

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Mino Safety Appliances Co.
Pangborn Corporation
Pulmosan Safety Equipment
Corp.
Safety Equipment Service
Co., The
Safety First Supply Co.
Surtly Mfg. Co., W. H.
Standard Safety Equipment Co.

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Cover, H. S.
Davis Emergency Equipment
Co., Inc.
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Safety Equipment Service
Co., The
Safety First Supply Co.
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Gongs, Sirens, Horns and other Signaling Devices

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Harrington & King Perforating
Co.
Industrial Products Co.
Surtly Mfg. Co., The

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Industrial Products Co.
Mino Safety Appliances Co.
Pulmosan Safety Equipment
Corp.
Safety Equipment Service
Co., The
Safety First Supply Co.
Standard Safety Equipment Co.
Strauss Company, The

Guards, Gear

Surtly Mfg. Co., The

Guards, Grinding Wheel

Surtly Mfg. Co., The

Guards, Jointer

Industrial Products Co.
Safety Equipment Service
Co., The
Standard Safety Equipment Co.
Surtly Mfg. Co., The

Guards, Kick Press

Surtly Mfg. Co., The

Surtly Mfg. Co., The
Wiesman Mfg. Co.

Guards, Saw

Bullard Company, E. D.
Industrial Products Co.
Safety Equipment Service
Co., The
Standard Safety Equipment Co.
Surtly Mfg. Co., The

Guards, Shaper

Industrial Products Co.
Standard Safety Equipment Co.

Guards, Treadle

Surtly Mfg. Co., The

H

Hand Cream

Bullard Company, E. D.
Davis Emergency Equipment
Co., Inc.
Industrial Products Co.
Mino Safety Appliances Co.

Hats, Safety

Bullard Company, E. D.
Industrial Products Co.
Mino Safety Appliances Co.
Pulmosan Safety Equipment
Corp.

THE BUYERS' SERVICE

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Ladders, Safety

Aluminum Ladder Co.
Bullard Company, E. D.
Dayton Safety Ladder Co.
Mine Safety Appliances Co.
Patent Scaffolding Co., The
Pulmonan Safety Equipment Corp.
Safety First Supply Co.

Lamps, Safety

Benjamin Electric Mfg. Co.
Bullard Company, E. D.
Davis Emergency Equipment Co., Inc.
Mine Safety Appliances Co.

Lanterns, Carbide

Bullard Company, E. D.
Lanterns, Electric
Bullard Company, E. D.
Industrial Products Co.
Justite Mfg. Co.
Mine Safety Appliances Co.

Leathers, Hand

Bullard Company, E. D.
Holecomb Safety Garment Co.
Industrial Gloves Corp.
Industrial Products Co.
Pulmonan Safety Equipment Corp.
Safety Equipment Service Co., The
Safety First Supply Co.
Standard Safety Equipment Co.
Strauss Company, The

Leggings

Bullard Company, E. D.
Davis Emergency Equipment Co., Inc.
Industrial Gloves Corp.
Industrial Products Co.
Pulmonan Safety Equipment Corp.
Safety Equipment Service Co., The
Safety First Supply Co.
Standard Safety Equipment Co.
Strauss Company, The

Lighting Equipment, Industrial

Benjamin Electric Mfg. Co.
General Electric Company
Westinghouse Electric & Mfg. Co.

Lockers and Hangers for Clothing

Industrial Products Co.
Lockers, Lumber
Industrial Products Co.
Mine Safety Appliances Co.
Safety Equipment Service Co., The

Lubrication

Pyroll Company

M

Machines, Floor Cleaning, Electric

Lincoln-Schluter Floor Mchrs. Co.

Markers, Traffic

Safety Equipment Service Co., The

Masks

American Optical Company
Bishinger-Koehler Mfg. Co., Inc.
Bullard Company, E. D.
Chicago Eye Shield Co.
Davis Emergency Equipment Co., Inc.
Industrial Products Co.
Lamborn Corporation
Pulmonan Safety Equipment Corp.
Safety Equipment Service Co., The
Safety First Supply Co.
Standard Safety Equipment Co.
Strauss Company, Inc., The
Willson Products, Inc.

Mats, Standing, Safety

Bullard Company, E. D.
Davis Emergency Equipment Co., Inc.
Industrial Products Co.
Safety First Supply Co.

Metal, Expanded

Surtz Mfg. Co., The

Metal, Perforated

Harrington & King Perforating Co.

Meters, Light Testing

General Electric Co.

Strauss Company, Inc., The
Wheeler Mfg. Co., F. H.

Poster Service

Elliott Service Co.
National Safety Council, Inc.
Bullard Company, E. D.
Chicago Eye Shield Co.
Davis Emergency Equipment Co., Inc.
Industrial Products Co.
Mine Safety Appliances Co.

Protectors, Arm

Bullard Company, E. D.
Davis Emergency Equipment Co., Inc.

Standard Safety Equipment Co.
Strauss Company, Inc., The

Publications, Safety

National Safety Council, Inc.
Safety Magazine Publishing Corp.

Pullers, Fuse

Bullard Company, E. D.
Industrial Products Co.
Mine Safety Appliances Co.
Safety Equipment Service Co., The

Rope, Wire

Macwhyle Company
Williamsport Wire Rope Co.

S

Scaffolding, Safety

Patent Scaffolding Co., The

Screw Drivers, Non-Skid

Industrial Products Co.
Surtz Mfg. Co., The

Seats, Toilet, Sanitary

Shades, Eye, Non-breakable

Bullard Company, E. D.
Chicago Eye Shield Co.
Davis Emergency Equipment Co., Inc.
Industrial Products Co.
Mine Safety Appliances Co.
Safety Equipment Service Co., The

Shades, Window, Industrial

Shoes, Safety, Factory and Foundry

Brown Shoe Company
Bullard Company, E. D.
Industrial Products Co.
International Shoe Co.
Lehigh Safety Shoe Co.
Mine Safety Appliances Co.
Safety Equipment Service Co., The
Safety First Shoe Co.
Safety First Supply Co.

Shoes, Wooden Sole

Industrial Products Co.
Revere Wooden Sole Shoe Co., Inc.
Stahmer Shoe Co., F. J.

Signs, Accident Prevention

Bullard Company, E. D.
Industrial Products Co.
Mine Safety Appliances Co.
Safety Equipment Service Co., The
Safety First Supply Co.
Standard Safety Equipment Co.
Stonehouse Signs, Inc.

Sirens and Signals

Bullard Company, E. D.
Industrial Products Co.

Slings, Chain

American Chain Co., Inc.
Columbus-McKinnon Chain Corp.

Slings, Safety, Wire Rope

Macwhyle Company
Williamsport Wire Rope Co.

Soap

Huntington Laboratories, Inc.
West Disinfecting Co.

Soles, Shoe, Non-slip

Lima Cord Sole & Heel Co.

Sterilizing Equipment

Straps, Safety

Durkie Company, R. H.
Bullard Company, E. D.
Davis Emergency Equipment Co., Inc.
Industrial Products Co.
Klein & Sons, Mathias
Strauss Company, Inc., The

Stretcher Units

Sweat Bands for Goggles

Halpern Co., Inc., A. E.

Systems, Dust Control

American Foundry Equipment Co.
Blaw-Knox Co.
Dracoe Corporation
Faulstich Corporation
Surtz Mfg. Co., The
T. S. Hoffman Machinery Corp.

T

Tents, Pneumonia

Bishinger-Koehler Mfg. Co., Inc.
Mine Safety Appliances Co.

Testers, Fuse

Tools, Linemen

Bullard Company, E. D.
Davis Emergency Equipment Co., Inc.
Industrial Products Co.
Klein & Sons, Mathias

A Few of the Many Instances
Proving the
Value of Safety Equipment

Practice
SAFETY

Accident
Prevention
Equipment
Manufacturers
Section
of the
National
Safety
Council

GOGGLES. One firm reports the replacement of 350 lenses during one year. Welding lenses or cover glasses are not included.

FIRST AID. Linewalker was struck on right leg by cotton mouth. Gave himself first aid treatment from snake bite kit. Recovery was rapid.

SAFETY HATS. A brick fell 20 feet, landing on the head of a workman. Safety hat prevented serious injury.

SAFETY SHOES. A slab weighing 1190 pounds fell on laborer's foot. No injury because of safety shoe protection.

Industrial Products Co.

Movers, Railway Car

Bullard Company, E. D.
Industrial Products Co.
Safety Equipment Service Co., The
Standard Safety Equipment Co.

O

Oxygen Breathing Apparatus

Bishinger-Koehler Mfg. Co., Inc.
Davis Emergency Equipment Co., Inc.
Mine Safety Appliances Co.

P

Pads, Miners'

Lehigh Safety Shoe Co.
Portable Lamp & Equipment Co.

Pads, Knee

Bullard Company, E. D.
Holecomb Safety Garment Co.
Industrial Gloves Corp.
Industrial Products Co.
Mine Safety Appliances Co.
Safety Equipment Service Co., The
Safety First Supply Co.

Holecomb Safety Garment Co.
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, Inc., The

Protectors, Finger

Bauer & Black
Industrial Gloves Corp.
Safety Equipment Service Co., The
Strauss Company, Inc., The

Protectors for Linemen

Bullard Company, E. D.
Davis Emergency Equipment Co., Inc.
Industrial Gloves Corp.
Industrial Products Co.
Pulmonan Safety Equipment Corp.
Safety Equipment Service Co., The
Safety First Supply Co.
Salisbury & Co., W. H.

Pumps, Oxygen

Bishinger-Koehler Mfg. Co., Inc.
Mine Safety Appliances Co.

R

Respirators

American Optical Company
Bishinger-Koehler Mfg. Co., Inc.
Bullard Company, E. D.
Chicago Eye Shield Co.
Cover, H. S.
Davis Emergency Equipment Co., Inc.
Industrial Products Co.
Mine Safety Appliances Co.
Pangborn Corporation
Pulmonan Safety Equipment Corp.
Safety Equipment Service Co., The
Safety First Supply Co.
Standard Safety Equipment Co.
Willson Products, Inc.

Resuscitation Equipment

Bishinger-Koehler Mfg. Co., Inc.
Bullard Company, E. D.
Davis Emergency Equipment Co., Inc.
Mine Safety Appliances Co.

THE BUYERS' SERVICE

See Advertisers' Index, Page 83—When writing, please mention National Safety News

Tools, Marking or Stamping	American Mason Safety Tread Co.	Inc.	Standard Safety Equipment Co.	Wrenches, Non-sparking
	Industrial Products Co.	Mine Safety Appliances Co.		
	Inland Steel Co.	Vending Machines, Sanitary	Washroom Equipment, Industrial	Wrenches, Open End
Tools, Non-sparking	Surtly Mfg. Co., The		Bradley Washmountain Co.	Trimont Mfg. Co.
Ameco Metal, Inc.	Trestles, Safety, Extension	Ventilating Equipment		
Bullard Company, E. D.		American Foundry Equipment Co.	Welding Equipment	
Davis Emergency Equipment Co., Inc.	Industrial Products Co.	Blaw-Knox Co.		Wrenches, Pipe
Pulmosan Safety Equipment Corp.	Patent Scaffolding Co., The	Draco Corporation		Trimont Mfg. Co.
	Safety First Supply Co.	Panborn Corporation	Wrenches, Hopper Car	
Torches, Blow	Trophies		Industrial Products Co.	
Klein & Sons, Mathias		W	Safety Equipment Service Co., The	
Treads, Safety	Valves, Oxygen	Washers, Safety for Grinding Wheels	Safety First Supply Co.	Wrenches, Socket
American Abrasive Metals Co.	Bishinger-Koehler Mfg. Co.,	Industrial Products Co.	Trumbull Mfg. Co., The	

The following companies are those whose names appear under the various headings contained in this Buyers' Service

Abbott Laboratories	North Chicago, Ill.	Fairway Laboratories, Inc.	Bellville, Ill.	Never Slip Safety Clamp Co.	New York, N. Y.
Aluminum Ladder Co.	Tarentum, Pa.	Frigidaire Corporation	Dayton, Ohio	Patent Scaffolding Co., The	Chicago, Ill.
American Abrasive Metals Co.	Irrington, N. J.	General Abrasive Co.	Niagara Falls, N. Y.	Pittsburgh Plate Glass Co.	Pittsburgh, Pa.
American Chain Co., Inc.	New York, N. Y.	General Electric Co.	Cleveland, Ohio	Pionellair, Inc.	Springfield, Ohio
American Foundry Equipment Co.	Mishawaka, Ind.	Halperin Co., Inc. A. E.	Boston, Mass.	Protectoseal Co.	Chicago, Ill.
American Mason Safety Tread Co.	Lowell, Mass.	Harker Mfg. Co.	Dayton, Ohio	Pulmosan Safety Equipment Corp.	Brooklyn, N. Y.
American Mutual Liability Insurance Co.	Boston, Mass.	Harrington & King Perforating Co.	Chicago, Ill.	Pyrene Mfg. Co.	Newark, N. J.
American Optical Co.	Southbridge, Mass.	Holcomb Safety Garment Co.	Chicago, Ill.	Pyrocl Co.	LaCrosse, Wis.
American Tel. & Tel. Co.	New York, N. Y.	Huntington Laboratories Co.	Huntington, Ind.	Reece Wooden Sole Shoe Co., Inc.	Columbus, Nebr.
Ameco Metals Inc.	Milwaukee, Wis.	Hynson, Westcott & Dunning, Inc.	Baltimore, Md.	Safety Equipment Service Co., The	Cleveland, Ohio
Bauer & Black	Chicago, Ill.	Industrial Gloves Corp.	Danville, Ill.	Safety First Shoe Co.	Holliston, Mass.
Benjamin Electric & Mfg. Co.	Des Plaines, Ill.	Inland Steel Co.	Philadelphia, Pa.	Safety First Supply Co.	Pittsburgh, Pa.
Bernhard, Robert A.	Rochester, N. Y.	International Shoe Co.	Chicago, Ill.	Safety Magazine Publishing Corp.	New York, N. Y.
Bishinger-Koehler Mfg. Co.	Pittsburgh, Pa.	International Shoe Co.	St. Louis, Mo.	Salisbury & Co., Inc. W. H.	Chicago, Ill.
Blaw-Knox Co.	Pittsburgh, Pa.	Johnson & Johnson	New Brunswick, N. J.	Spencer Turbine Co., The	Hartford, Conn.
Bradley Washmountain Co.	Milwaukee, Wis.	Justite Mfg. Co.	Chicago, Ill.	Stahmer Shoe Co., F. J.	Davenport, Iowa
Brown Shoe Company	St. Louis, Mo.	Kiddle & Co., Inc. Walter	New York, N. Y.	Standard Safety Equipment Co.	Chicago, Ill.
Buhrke Co., E. H.	Chicago, Ill.	Klein & Sons, Mathias	Chicago, Ill.	Stanchouse Signs, Inc.	Denver, Colo.
Bullard Co., E. D.	San Francisco, Calif.	Lehigh Safety Shoe Co.	Allentown, Pa.	Strauss Co., Inc.	Pittsburgh, Pa.
Burroughs-Wellcome & Co. (U.S.A.) Inc.	New York, N. Y.	Libbey-Owens-Ford Glass Co.	Toledo, Ohio	Surtly Mfg. Co., The	Chicago, Ill.
Chicago Eye Shield Co.	Chicago, Ill.	Lima Cord Sole & Heel Co., The	Lima, Ohio	Sutlor Co., Halsey W.	Warren, Ohio
Clements Mfg. Co.	Chicago, Ill.	Lincoln-Schlueter Floor Mch. Co.	Chicago, Ill.	Trimont Mfg. Co.	Boston, Mass.
Clipper Belt Lacer Co.	Grand Rapids, Mich.	McKesson-Hall-VanGorder Co.	Cleveland, Ohio	Trumbull Mfg. Co., The	Warren, Ohio
Columbus-McKinnon Chain Corp.	Tonawanda, N. Y.	McKay Co.	Pittsburgh, Pa.	Unlon Switch & Signal Co.	Swissvale, Pa.
Cover, H. S.	South Bend, Ind.	Marwhistle Company	Ken-sha, Wis.	U. S. Hoffman Machinery Corp.	New York, N. Y.
Davis Emergency Equipment Co., Inc.	New York, N. Y.	Merk & Co., Inc.	New York, N. Y.	West Disinfecting Company	Long Island City, N. Y.
Dayton Safety Ladder Co., The	Cincinnati, Ohio	Metropolitan Life Insurance Co.	New York, N. Y.	Westinghouse Electric & Mfg. Co.	East Pittsburgh, Pa.
Draco Corp.	Cleveland, Ohio	Mine Safety Appliances Co.	Pittsburgh, Pa.	Williamsport Wire Rope Co.	Williamsport, Pa.
Ellwood Safety Appliance Co.	Ellwood City, Pa.	Mosso Laboratories, C. A.	Chicago, Ill.	Willson Products, Inc.	Reading, Pa.
Elliott Service Co.	New York, N. Y.	National Safety Council, Inc.	Chicago, Ill.		

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The Accident Barometer

Prepared by the Statistical Bureau, National Safety Council

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.

ACCIDENTAL DEATHS in February numbered 7,500, according to present estimates. This is an increase of 5.7 per cent from the February 1935 total of 7,100. This advance occurred in the face of a sharp reduction in motor vehicle deaths. Compared with January, however, the February total represents a decrease amounting to 600 deaths. Motor vehicle fatalities dropped about 800, while both other public and occupational fatalities each increased about 100. The home total remained unchanged. The January-February total of all accidental deaths is now placed at 15,560 compared with 14,730 for the first two months of 1935, an increase of nearly 7 per cent.

OCCUPATIONAL ACCIDENTAL DEATHS totaled approximately 1,300 in February, or about the same number as estimated for February, 1935. For the first two months of the year the total was 2,600, or 100 deaths more than occurred in the first two months of 1935. The inter-plant contests of community safety councils showed an average frequency rate per million man-hours of 9.87 for February compared with 15.57 for February 1935, and a severity rate per thousand man-hours of 0.85 against 0.81 for the same month last year. The January-February average frequency rate was 10.66, or 32 per cent under last year, while the severity rate was 0.62—a drop of 33 per cent from 1935. In the six sectional contests conducted by the National Safety Council the February frequency rate averaged 10.74, an advance of 7 per cent over the comparable rate or last year. This offsets the January improvement, and makes the January-February average rate about the same as last year's comparable figure. Deaths reported during March to Industrial

Commissions in 18 states numbered 634 compared with 602 for March 1935, an increase of 5 per cent.

STEAM RAILROAD ACCIDENTS in December resulted in 440 deaths and 2,720 persons injured. This is an increase of 13.1 per cent in fatalities and 4.4 per cent in injuries. Most of the advance in deaths came from grade crossing accidents, while the increase in injuries was shared by employees on duty and persons involved in grade crossing accidents. There were substantial decreases in both deaths and injuries of trespassers. The annual total of injuries was 1.9 per cent below the comparable total for 1934, but deaths went up 4.7 per cent. The details of the death totals for 1935 and 1934 are as follows:

	1935	1934
Passengers on trains	15	27
Travelers not on trains	8	12
Employees on duty	555	526
Other non-trespassers	1,814	1,660
Trespassers	2,712	2,654
Total	5,107	4,879

It should be noted that most of the grade crossing deaths come under the title "other nontrespassers."

MOTOR VEHICLE DEATHS in February decreased sharply, both from January and from February, 1935. The total is estimated to be 1,880 or 15.5 per cent less than last year's February total of 2,230. This change is especially welcome because the January reports indicated an increase of 7.6 per cent over January 1935. The two months' total is now placed at 4,580 compared with 4,740 for the same months of 1935. This is a net decrease of 3.3 per cent. Although this is only about half of the 7 per cent decrease which has been set as a goal for safety efforts this year, a March record as good as February's will be sufficient

to bring the three months' total down to the desired level.

COMMERCIAL VEHICLE FLEETS in the National Fleet Safety Contest had 5.11 accidents per 100,000 vehicle miles during February. This is an increase of 61 per cent over the rate for February 1935. All types of fleets shared in the advance. The rate for buses was 1.54 compared with 1.37 for February last year; for passenger cars, it rose from 2.40 to 3.32. Trucks had the greatest increase—from 4.67 to 8.05. This bad experience goes far to offset the improvement made in earlier months of the Contest, but the eight months' average for buses is still only 1.09 compared with 1.30 for the same eight months of the preceding Contest. Passenger cars now have an average rate 3 per cent higher than in the 1934-35 Contest, and the average for trucks is 15 per cent higher.

PUBLIC (NOT MOTOR VEHICLE) DEATHS numbered approximately 1,200 in February, or about 100 more than occurred in the same month last year. This advance was distributed fairly evenly over several types of accidents and age groups, so there is no significant change from last year in individual totals. Deaths occurring in the first two months of the year are estimated at 2,300, or 9 per cent above last year.

HOME ACCIDENTS RESULTED in about 3,300 deaths during February, according to present reports. This is an increase of 22 per cent over the comparable total for February, 1935. The largest advance was in deaths from falls, which went up 31 per cent. Deaths from burns or explosions increased 12 per cent. Most of the added deaths were of persons 65 years or more old, although children under five years had a slightly poorer experience. The two months' total of home deaths is now placed at 6,500, compared with 5,800 in the same period of 1935.

LOOKING AHEAD There will probably be an increase of about 500 in the accidental death total from April to May. This amounts to an advance of 7 per cent. The increases will be in motor vehicle accidents, in falls, and in drownings. Fatal burns and asphyxiations will continue their seasonal decrease. However, all these changes will be relatively small in extent.

All Accidental Deaths

January-February

1936	15,560
1935	14,730
1934	15,271

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

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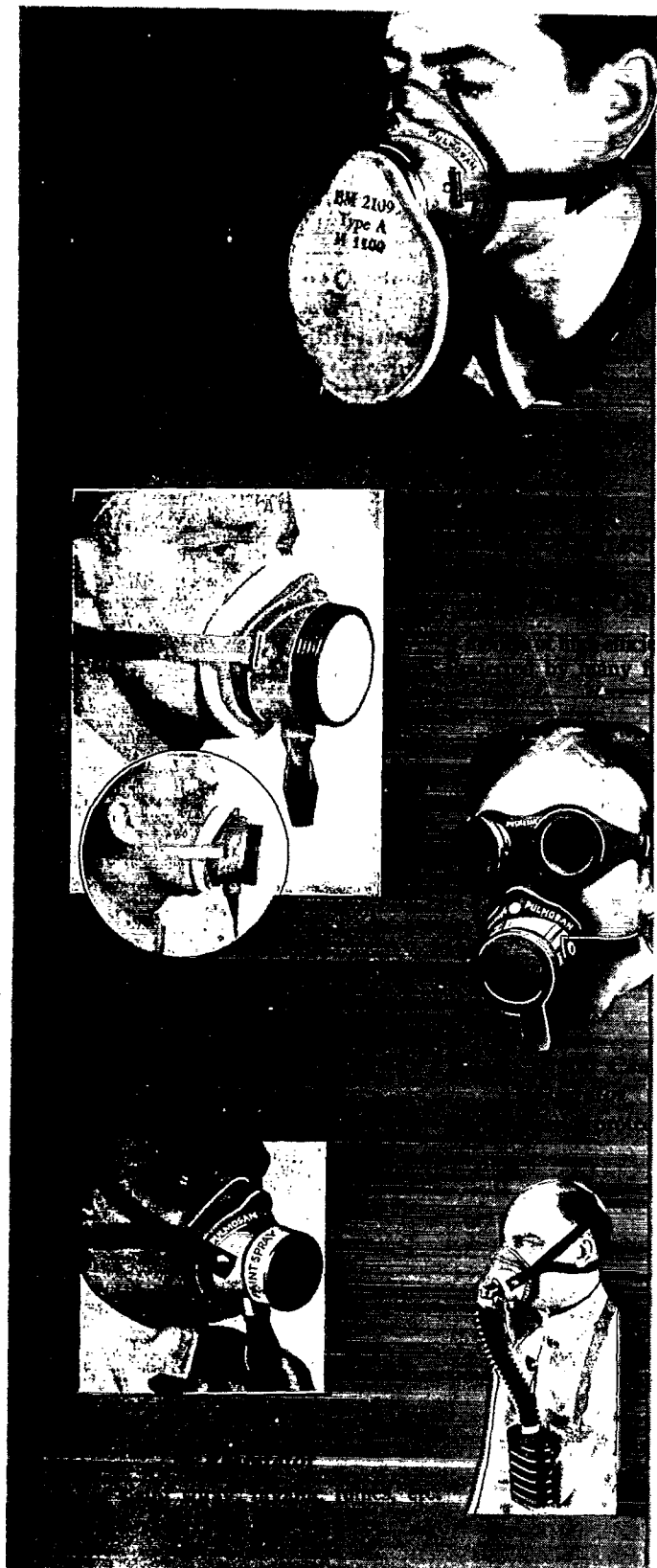
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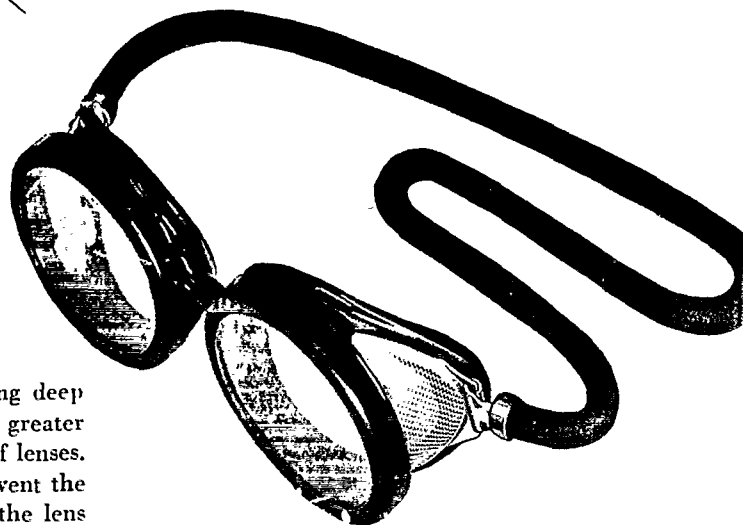
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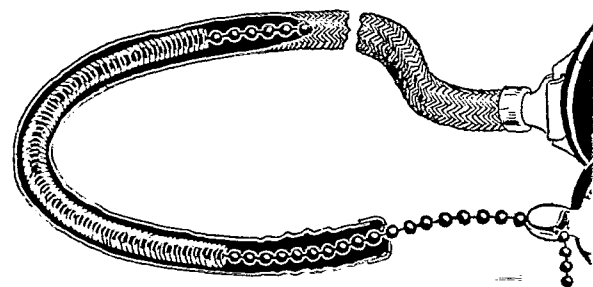
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