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Vol. 2, No. 2

NATIONAL SAFETY NEWS

FEBRUARY, 1956



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NSC-145

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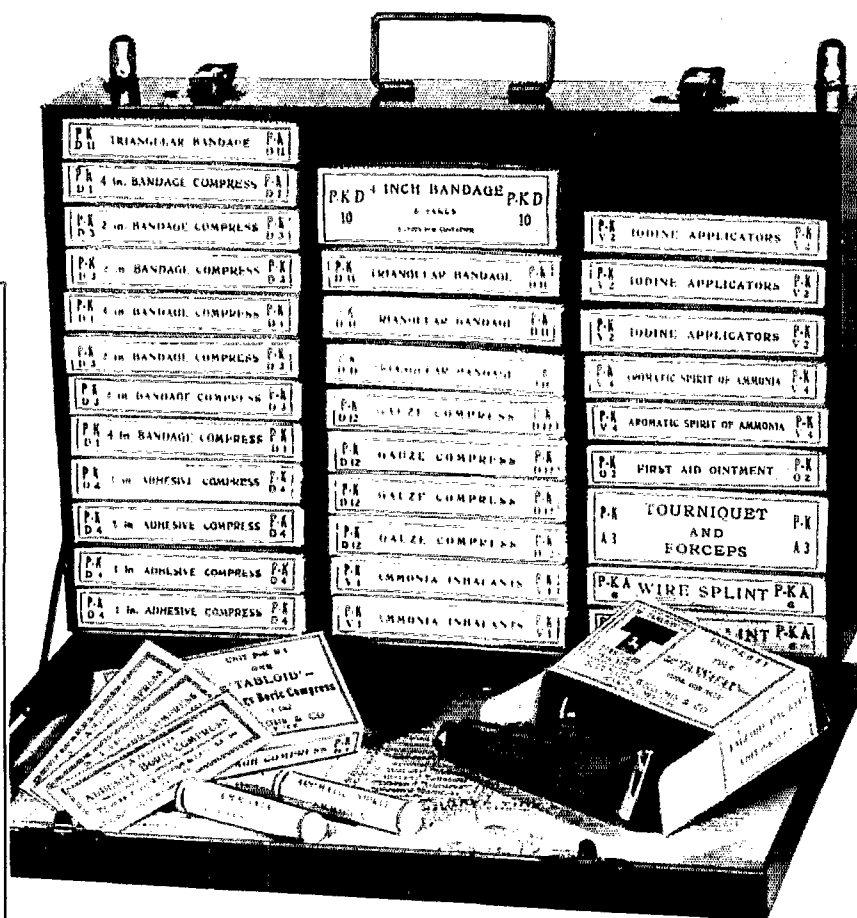
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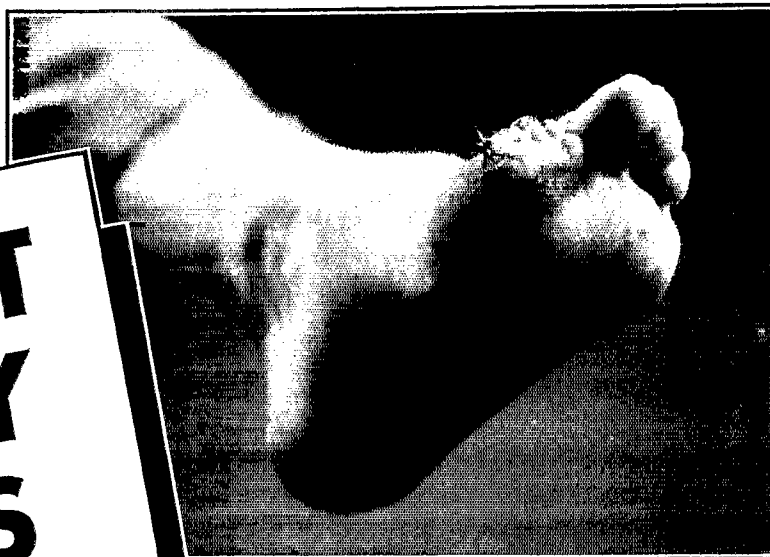
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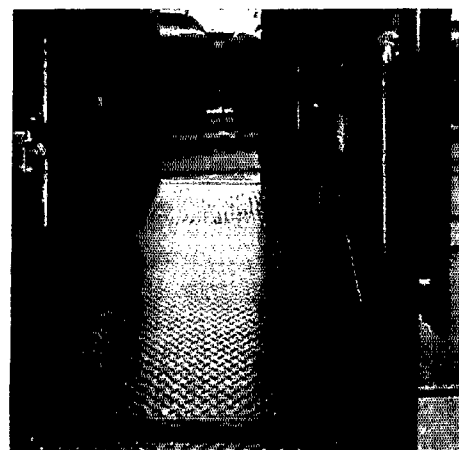
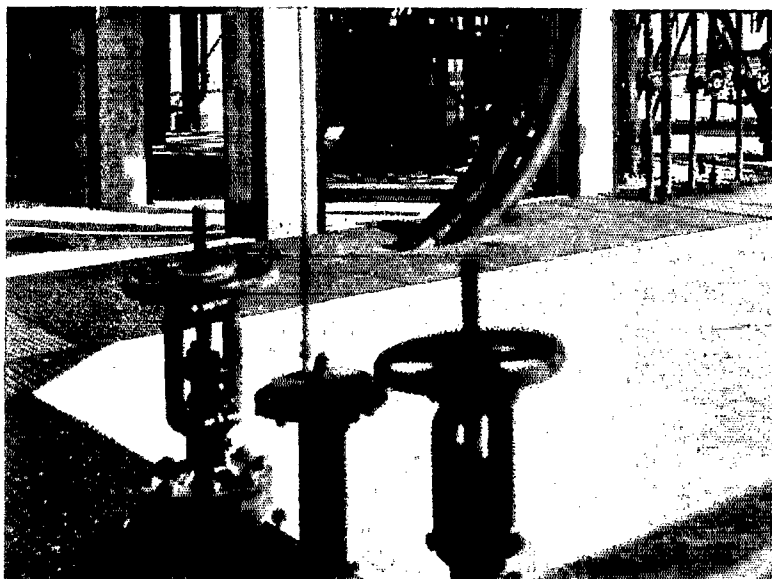
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NATIONAL SAFETY NEWS

Published monthly in the interest of accident prevention and industrial health

Volume 33

FEBRUARY, 1936

Number 2

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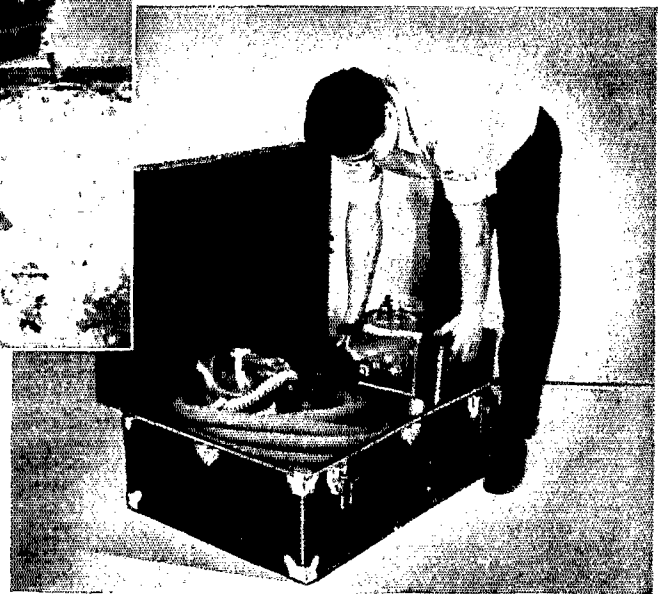
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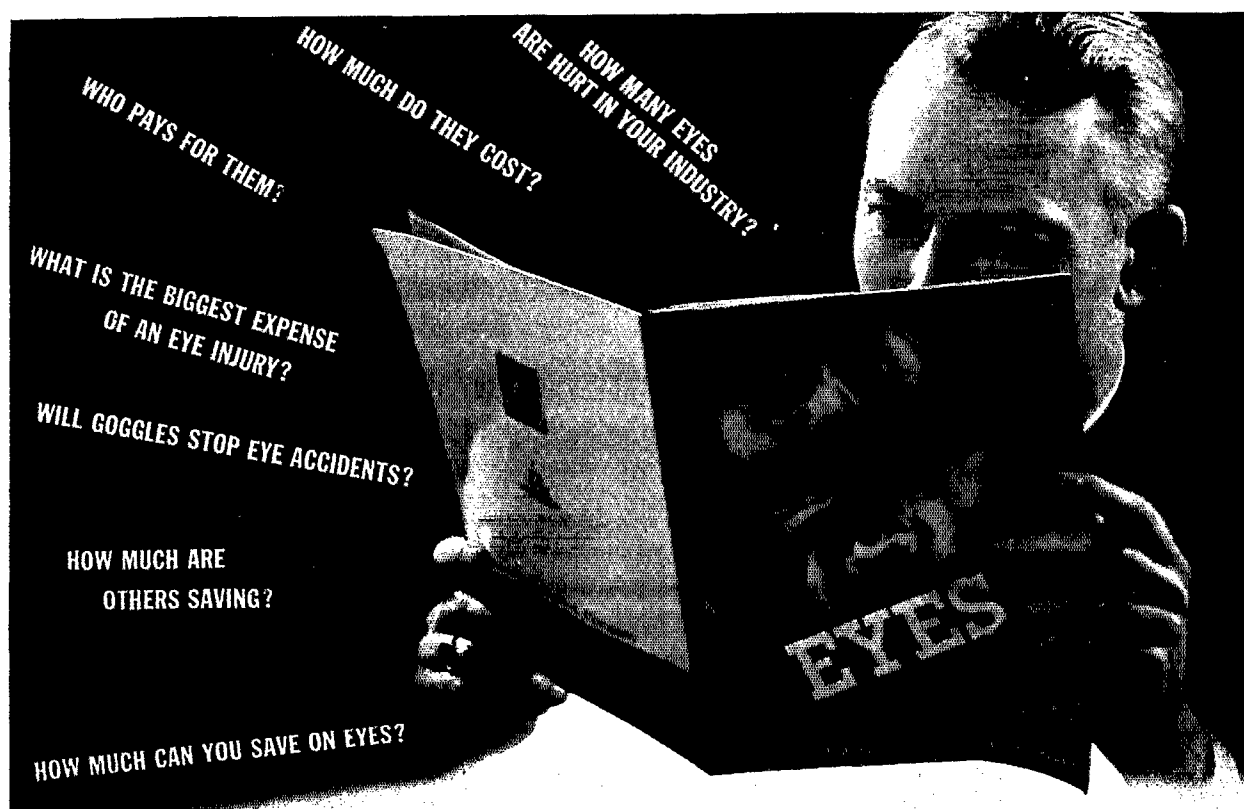
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NATIONAL SAFETY NEWS

FEBRUARY, 1936

Published by National Safety Council, Inc.

The Employer's Influence

INDUSTRIAL and commercial concerns have made an important contribution to public safety through their fleet safety programs. Had private motorists maintained as high a standard of safe driving as the commercial driver, the national highway toll would be much less alarming. The motorist who blames the majority of accidents on trucks, taxis and buses can find no statistical support for his charges.

If it were possible for every company to secure reports of all accidents involving automobiles owned by employees, a comparison with the experience of company owned vehicles would be interesting.

What the employee does on his own time is usually regarded as his own business. However, the employer can exercise a salutary influence over his workers outside of working hours. Threats of drastic discipline should an employee violate a traffic rule or be involved in an accident are not desirable but every member of the organization should be made to realize that the company is behind all measures for public safety and that employees are expected to do their part.

Many companies have included safe driving in their programs of safety instruction. All but a few of those who operate automobiles are in the employee class (including executives) and there is no more effective medium of reaching any individual than through his employment:

The Human Side of the News

THREE-YEAR old Jeanette Knight lay in state in her tiny coffin on Christmas day. In her arms was the doll she had wanted Santa Claus to bring her. Jeanette died on Christmas eve from injuries received when she was struck by an automobile.

"You had better hurry up and kiss me, mother. My lips are getting dry." The seven-year old boy smiled wistfully from the hospital bed as his life ebbed.

He had been playing with the little red wagon which parental self-denial had contributed to his Christmas joy. Danger was far from his thoughts as he pushed it out into the street.

Just two poignant items which were conspicuous in the news because of certain very appealing touches. And tragedy seems all the more heartbreaking when it has a background of holiday gayety.

"How painful a mystery is the death of a child," said Sylvestre Bonnard, the lovable old hero of a charming story by Anatole France. Even those who are calloused by familiarity with grief and suffering find their emotions stirred when a child is involved.

Statistics lack power to arouse the imagination and inspire action. But back of the pages of cold figures are countless cases filled with tragic human interest.

FEBRUARY, 1936

In this Issue

IN THE construction of Wheeler Dam, the Tennessee Valley Authority has been confronted by exceptionally serious hazards. These are being checked by the same methods that have brought results in other industries. (Page 11).

Not so many years ago a woodworker was known by his missing fingers. But that is now ancient history. With machines operating at even higher speeds, woodworking departments sometimes roll up safety records that are envied by less hazardous departments. (Page 15).

After reading Roy Bonsib's article, we understand why the service station attendant displays such alacrity when we drive up for five gallons of regular or ethyl (or just air and water). Of course he wants to please, but he's also afraid we might get hurt if we wandered around the premises or tried to service our cars. Such accidents are costly in claims for damages and loss of patronage. (Page 17).

The year 1935 was an interesting one for the Safety Movement, and 1936 promises to be just as interesting, if not more so. At last the public has begun to realize the gravity of the motor vehicle accident problem. The outstanding developments of this eventful year are summarized in the Managing Director's report. (Page 19).

Many people have the attitude that anything they can collect from an insurance company is so much gained. When the management feels that way, the foremen aren't worrying about accident costs either—until the company is penalized for its unfavorable experience. Here is the story of one company with a better than average record which felt that the rate could be reduced still more by cooperating with the insurance carrier. (Page 23).

Those who used to believe that accident prevention would travel on its own momentum until business improved have been rudely awakened during the past five years. The human tendency toward backsliding is all too evident in those plants where supervisory vigilance is relaxed. And even the most safety-conscious plant has its safety sinners who call for constant vigilance on the part of foremen. In the du Pont organization, where engineering, training and supervision have reached a high degree of effectiveness, a recent contest resulted in the reporting and correcting of a vast number of unsafe practices and unsafe conditions. The major hazards had already been taken care of but housekeeping and maintenance can never take a holiday. Nor can we ever be sure that a veteran worker who knows better will not succumb to the temptation to take a dangerous short cut. (Page 25).

George the Fifth

BITAIN'S monarchs have less power than most rulers yet few men have exercised a more profound and far-reaching influence than George V. He reigned in the hearts of millions of his subjects throughout the world.

Sorrow over his passing is not confined to the British commonwealth of nations. The world admired his character and devotion to duty and loved him for his humanity.

The Managing Director's Page

The Young Kitten and the Old Cat

IN 1913, when the Council was born, it had many of the characteristics of the frisky young kitten, but 22 years later, naturally, the cat possesses the sense of values and the calm judgment that should be synonymous with maturity.

The annual task of making a brief record of the 1935 activities of the Council naturally turns my mind backwards. Like the kitten, we had no experience to draw from in 1913. Surely we know much more about safety today. We know, also, something about the requirements of tomorrow. And yet, in another 22 years, our successors may be an entirely different breed of cat.

In 1913 our young kitten said the world looked generous. With well founded optimism he used this logic, "Just as soon as the people now paying the accident bill realize how much they are saving through prevention they'll be glad to pay the price of applying tested safety methods everywhere." Well, it hasn't worked out just that way. The cat has gone through several booms and depressions; he has seen accident

prevention grow into a science that saves millions upon millions of dollars annually, but he hasn't seen much change in his economic support.

For some unaccountable reason this great and good science of safety has not appealed to the imagination of our people.

After 22 years we still have on our hands the vexing problem of making accident prevention dramatic and appealing to the rank and file of our citizens. How many millions of accidents must yet occur before safety is accorded the same acceptance that is now given to other worthy welfare movements?

In the early days our Congress Exhibits were photographs, showing in brilliant colors the safeguards applied to machinery. We need these reds, blues and yellows to mark the spots of protection. Instead of a marble monument to mark a battle field we need a colorful and dramatic display with these words emblazoned upon it:

"At this point we discovered a human accident trap. We have eliminated the hazard. No one can be injured at this spot now."

This old faithful cat, as it looks back to its joyous and venturesome beginning more than two decades ago, knows that stopping accidents requires money. The prevention of most accidents has now been reduced almost to a formula. We can go into any factory, any community, and say to the leaders with absolute confidence: "We can tell you definitely what you must do to stop accidents. If you will follow these methods, painstakingly tested over a great number of years, you can prevent accidental injury and death and save all the money you are now wasting."

These are sweeping, conclusive statements. I do not forget that accident prevention is a continuous process; that training, discipline and education must be a definite, continuous thing; for example, training to acquire physical or mental habits approved by experience. There are fairly definite methods of controlling the thoughtless, undisciplined persons, who cause the majority of accidents, and over a period of 22 years we have learned a great deal about this phase of it. Their habits cannot be changed in a day, but they can be changed over a period of time.

The tremendous outburst of public sentiment on the subject of automobile accidents in 1935 is one proof that the public is beginning to understand that accidents can and should be prevented. What the public does not seem to understand is that prevention costs vast sums of money; and it is not yet willing to pay the bill.

Taking it for granted that there is some wisdom in this matured cat, and that the necessary money would be spent economically and practically, I am convinced now, at the beginning of 1936, that the accomplishments two decades from now will be much greater . . . provided the people have faith and provided the money for protection is forthcoming.

INTERESTING ITEMS

The question is often asked the National Safety Council: "Have you any tangible proof that all of the safety efforts since 1913 have resulted in a reduction of accidents?" Of course, one answer is that the record has been spoiled because of the introduction of the automobile, and the increasing number of accidents due to the operation of automobiles. But we do know that in industry alone there have been approximately 250,000 fewer fatalities and 25,000,000 fewer non-fatal injuries during the intervening years than there would have been had industrial accidents continued to occur in the same number as they did in 1913.

While always taking the position that the compilation of accident statistics must be primarily justified by the usefulness of the information to the person compiling it, the Council has also stressed the additional advantages to be obtained by sending copies of reports to headquarters. The national compilations thus made possible represent a valuable background with which each reporting industry, or city, or state, can compare its own experience. The fine cooperation previously shown in reporting this information is being repeated this year. As a result the usual national summaries of accidents will be completed within a few months and the facts made available to all the cooperating agencies and to the general public. Have you sent your reports?

The Council's new booklet "Safe at Home" is now in the fourth edition. This expresses the growing interest in the prevention of home accidents. Under the National Safety Council's auspices some eleven Regional or Local Safety Conferences are being organized, and there are prospects of a dozen more before 1936 is completed. This year promises to be the most active we have ever known in the realm of safety.

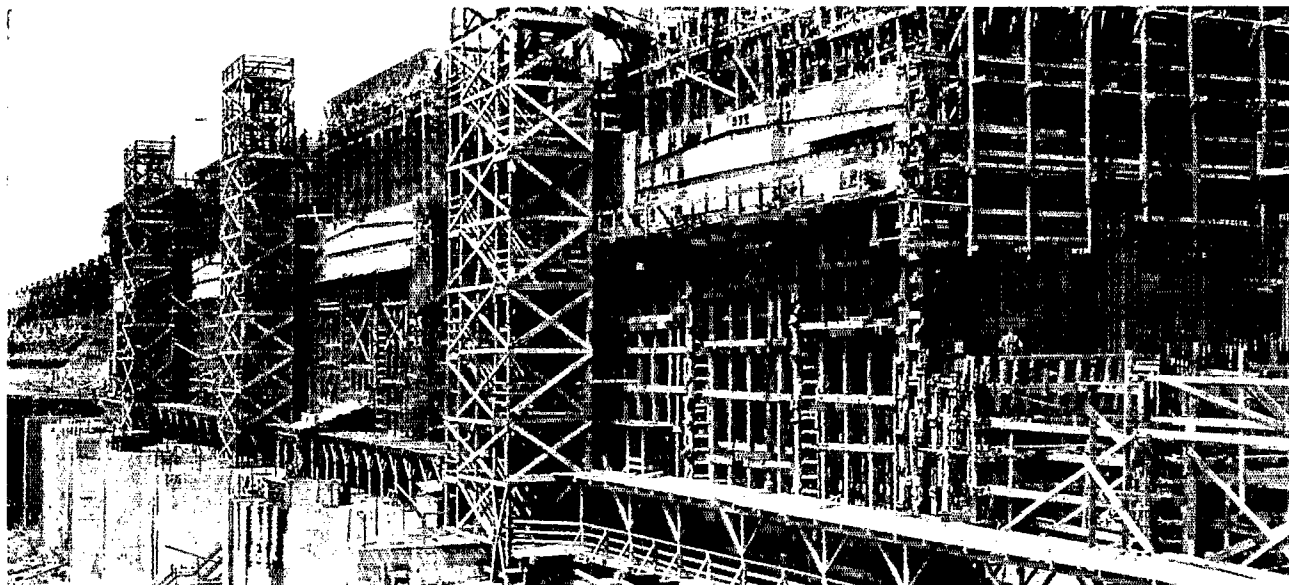
Bad as the motor vehicle accident situation was in 1935 there is one favorable indication: From 1933 to 1934 motor vehicle deaths increased twice as much as gasoline consumption—15 per cent against 7 per cent. From 1934 to 1935, however, gasoline consumption increased six times as much as motor vehicle deaths—6 per cent against 1 per cent.

W. J. Americs.

NATIONAL SAFETY NEWS

Plenty of Hazards, But an Energetic Safety Program

At WHEELER DAM



by
GEORGE A. SCHWEPPE

RECORDS show that dams, in too many instances, have been built at a high cost in human life. From the start to the finish, the risks to which workers on these great projects are exposed seem to grow in proportion with the height and volume of the huge water barriers. An outstanding exception at the present time is Wheeler Dam, the great \$27,000,000 navigation and flood control project which the Tennessee Valley Authority is constructing across the Tennessee River near Muscle Shoals.

So far, but four fatalities have occurred on the job and the number of other serious injuries has been well below the average rate for this type of work. The work has progressed for over two years with approximately 6,000,000 man-hours worked under conditions which might leave the casual observer to expect a rather high injury rate. If the present accident rate is maintained, a new record in accident prevention will be accomplished.

Work on Wheeler Dam was started in November 1933. At present, the dam is well over two thirds completed. Approximately 4,600 were employed at the peak of activities — from May 1 to November 15, 1935. When completed the dam will be almost a mile and a quarter in length and will raise the present river level 51 feet. Of the six cofferdams needed to clear the river bed for construction purposes, the last was completed and the enclosed area unwatered about the first of November 1935. With the work of blasting into the bed rock completed in this last section huge cranes in this and other areas, during the four six-hour shifts of each working day, swing buckets of concrete from the floating mixing plants to the forms, and large completed sections of the dam are ready for the open spaces between them to be closed. At the south river bank, the power house section, considered the most hazardous of all the construction areas because of its height and the complexity of the operations at that point, is rapidly nearing completion. The final cofferdam carried the work to the already completed lock.

That the accident prevention prob-

The covered passageway and the stairwells leading to various working areas in the power house section at Wheeler Dam

lems present may be better realized it is pointed out that the dam is located at the head of Wilson Lake, approximately 15½ miles upstream from Wilson Dam, and that while the construction work is being carried on in comparatively quiet water, the wide expanse of the river at this point has necessitated the use of a considerable amount of floating equipment with a minimum of construction facilities on the river banks. An additional accident exposure is presented by the fact that supplies and equipment received at the Wilson Dam rail-head must be put on barges and then towed to the dam site. At the dam site the concrete mixers operate on barges which are moored alongside the cofferdams, and the concrete transferred from the mixers to the forms by cranes.

From the beginning, however, the Tennessee Valley Authority has been keenly aware of the importance of adequate safety measures. While the Authority was still in the formative



Wheeler Dam has an up-to-date hospital complete with ambulance service

stage, Chairman Arthur E. Morgan issued an administrative memorandum in which he expressed the desire that the Authority set the example of proficiency in accident prevention.

How Safety Work Is Organized

On the executive staff at the Wheeler Dam there are two engineers who devote their entire time to safety work covering the four working shifts. Serving in an advisory capacity, they are charged with the inspection of all work with regard to the workmen's safety and to devise means for eliminating job hazards. Working with them is a central safety committee composed of the construction superintendent; representatives of the Personnel Division, the police and fire prevention service and the medical service; a representative of the Workers' Council, the employees' central labor board; and nine workmen selected from the construction force.

These nine workmen are selected to serve terms of three weeks each. They are rotated so that three new members are appointed each week. As their terms expire, although retired, they become permanent members of the committee. As retired, each member is given a lapel button and a personal letter from the construction superintendent, expressing appreciation for interest shown in the accident prevention work and urging that he continue to maintain an active interest in safety. Meetings of this Central Safety Committee are held weekly with the construction superintendent presiding. Each week the three incom-

ing members of the committee, together with a safety engineer and the chief of the Fire Department, prior to the hour of the meeting, make a complete patrol of the job for the purpose of detecting hazards that recommendations may be offered in the meeting to correct conditions or practices which might lead to or cause accident or fire.

The functions of the Central Safety Committee are as follows:

1. To detect or anticipate job hazards and recommend corrective measures.
2. To lend assistance to the Safety Section in its educational program through group or mass meetings of workmen, bulletin board publicity and other methods employed.
3. To suggest ways and means of improving the housekeeping throughout the job.
4. To report unsafe practices or hazardous working conditions found on the job for the purpose of determining corrective measures.
5. To assist the Medical Section by bringing to the attention of that section violations of sanitary regulations and cases such as men being injured and failing to report for medical treatment.

Meetings of the Central Safety Committee are brief and to the point. The practical side of safety work is always stressed. Safety measures must not slow up production or increase costs and yet must accomplish their purpose. In the solution of major safety problems careful checking has determined that through increased efficiency due to an added feeling of security afforded workmen, the cost of making the provisions required for safety has been saved many times over.

With its provision for employee representation, the safety program has injected the element of self-government. The men are eager to serve on the committee, and once having served, they are staunch advocates of the program.

The Central Safety Committee is supplemented by auxiliary safety commit-

tees. These committees meet weekly with the safety engineers. Members are rotated and are awarded safety buttons and letters of appreciation in the same manner as members of the central committee.

Four media are used in safety educational work. They are: (1) Posters and signs. (2) Lectures. (3) Motion pictures. (4) Personal contacts.

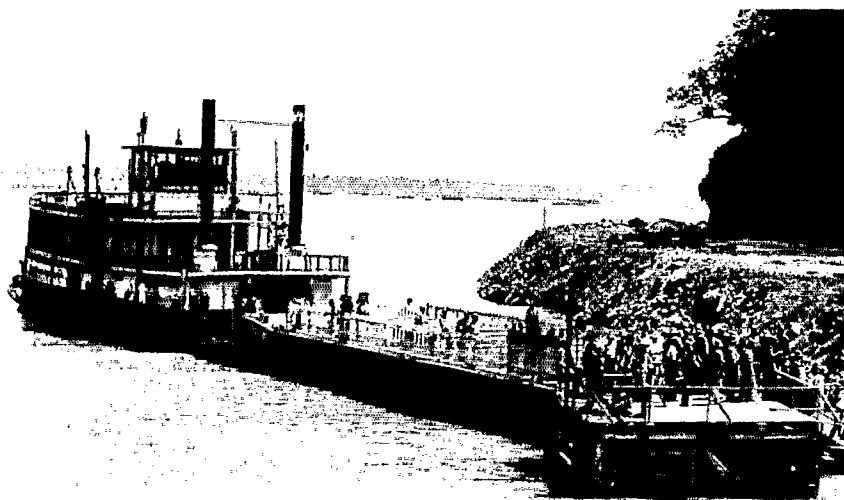
Men reporting and leaving work on the south bank of the river use a stairway that leads to the construction area. At both ends of the stairway there are bulletin boards, and over the head of the stairway is a sign, "Safety Pays."

The bulletin board at the bottom of the stairway contains the accident report for the day. Whenever a man is injured, his name, occupation and the details of the accident are written in chalk on this board.

At regular intervals lectures are held in the Recreation Building. Frequently the speakers are employees and officials of the TVA, but often outside speakers are obtained. The lectures are not limited to safety measures on the job, although these naturally are considered the more important. Often speakers have dealt with such subjects as reckless driving on the highways, first aid, preventive measures against tetanus, and the like. The purpose of the lectures, in short, is to make the men more careful not only during working hours but during the times they are off duty as well. These lectures have been supplemented with interesting motion pictures.

All on-coming crews are required to

This flat barge was converted into a ferry by equipping it with seats and providing a fence to keep passengers from falling overboard



be near the point where they relieve the off-coming crew, fifteen minutes before the change of shifts. It is understood by all foremen that if they so desire, the safety engineers will meet with them and their crews during that time interval to discuss with their workmen such phases of safety as seems advisable. On the other hand, should the accident record of any crew, the nature of contemplated work or observations of working practices make such meetings advisable, such meetings of from five to ten minutes duration are held where the men are waiting time to make relief.

In addition to the mass instruction at lectures and other gatherings there is the individual instruction through personal contact with the men on the job. The safety engineers and the Central Committee are continually on the lookout for instances where men are growing careless and assuming unnecessary risks. Whenever these are found, the men are individually approached, the hazards pointed out and safer ways of doing the same work efficiently are shown. As evidence of the splendid co-operative safety spirit, workmen approached with suggestions have in every case reacted favorably. In no case has it been necessary to take disciplinary action because of repeated violations.

The first check for safety is made when the man is physically examined before he is employed. The medical examiners are particularly on the watch for defects, either congenital or acquired, which may tend to make the man an accident risk. Particular attention is being given to sight and hearing, and especially to the semi-circular canals

within the ear, which control the individual's sense of balance. This last is of importance where a man has to work in high places.

In order that proper first aid service be available at all times, a well-equipped hospital is maintained on the upper level at the south river bank. A doctor is always available.

The first aid room at the hospital, as well as the first aid station in the fourth cofferdam area, is manned twenty-four hours of the day. Because of the courteous and efficient service rendered by first aid men, very little difficulty has been experienced because of unreported injuries. An ambulance of the latest improved type is stationed at the hospital and an ambulance boat to transport hospital cases across the river to the hospital is stationed near the first aid station at Number 4 Cofferdam.

Boxes containing stretchers and blankets are located at strategic points. Basket type stretchers are placed at locations where injuries may occur at high elevations. In order that stretchers may be more quickly located, stretcher boxes are painted white with a red cross on all sides near the top end.

Classes in first aid training under capable instructors are continually available to workmen desiring such training. This work is carried on because men trained in first aid work are likely to have a greater interest in accident prevention. A sufficient number of employees have completed this training to give almost complete assurance that a trained man will be near should an accident occur at any location on the job.

It is definitely understood among the entire personnel at Wheeler that every personal injury accident must be reported and first aid received.



Workers on scaffolds have the additional protection of safety belts and life lines

Each foreman is supplied with accident report cards which he must complete in case of injury to any man under his supervision. These reports signed by the foreman, show: the date and hour the injury occurred, the name of the injured workman, a description giving the nature of the injury and how the accident occurred and the names of witnesses to the accident. This report must be turned in at the designated place not later than at the end of the shift during which the accident occurred. This close reporting has resulted in prompt investigation of accidents to avoid recurrences and by prompt and proper first aid treatment of minor injuries cases of infection have been held to a minimum.

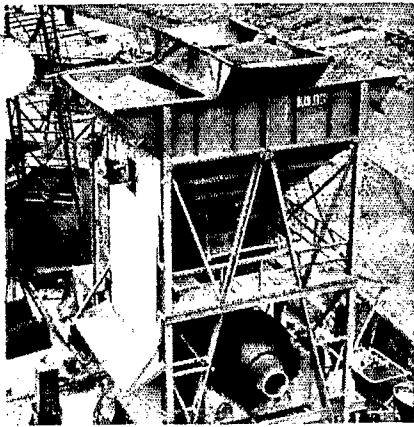
Fire Prevention

Throughout the Safety Program, fire prevention has been given close attention. Over the entire job fire extinguishers of the various types have been properly placed to protect against the particular hazard present at each location. This protection is supplemented by water lines and fire hydrants and reels of fire hose equipped with nozzles. At advantageous points throughout the camp, shops and office building sites, hose houses, properly equipped, are located beside fire hydrants.

A modern type fire truck is located at police and fire department headquarters which responds to calls that may come in over the fire alarm system at any hour. The efficiency of the fire prevention service and the proper placement of fire fighting equipment have so

The entrance to the job at Wheeler Dam





How a hazard was corrected. The bin at the left above the mixers used to be loaded with heavy crushed stone, endangering those who were forced to walk beneath. The workers' safety committee changed this. Sand is now loaded in that bin, and a roof was attached to the wall beneath. All four mixing plants were rearranged this way.

successfully met the demands that no fire loss or damage has occurred.

Public Safety

Through the medium of safety posters and appropriate safety literature, obtained from the National Safety Council, the safety page of the weekly job publication "The Wagon Wheeler," mimeographed letters, etc., members of the personnel are urged to spread the safety movement throughout the communities in which they live, are urged to teach friends the prone pressure method of artificial respiration and first aid work learned on the job in order that the benefit of the safety movement under way at the present time will continue to bear good results even after Wheeler has been finished and the construction forces have gone their way.

No visitor is permitted to wander over the job unattended. To avoid the possibility of the public being injured each guest must secure a pass from the construction superintendent who personally issues such passes, and the visitor is then accompanied by a capable guide.

Insofar as it has been practicable to do so, walkways have been built leading to various parts of the job. The purpose of these is not only to afford quick and ready access to the areas, but also to keep the men away from dangerous areas and from those parts where pedestrian traffic would interfere with the efficiency of the work.

Two sections of these walkways are of particular interest. One is in the power house area and the other is in a portion of the dam where construction work has temporarily subsided.

The power house rises approximately 100 feet above its foundations. There are at the present time more men employed on the power house than at any other part of the dam. Forms are constantly being erected and removed, reinforcing steel set in position and large quantities of concrete being placed. Because of the height of the construction, the number of men employed in a comparatively small area, and the necessity of handling large quantities of supplies and materials at this point, the work on the power house is unquestionably the most hazardous work on the dam.

The covered walkway at the power house section is along the downstream side. From it there are stairways at regular intervals, each affording a quick and convenient passageway to some definite unit area. The type of construction—heavy rough timber—affords considerable protection from flying missiles. Directional signs have been placed along the walkway and, in addition, there are painted warnings against such practices as careless dropping and throwing away of waste materials.

As an additional safeguard, carpenters and other workmen who would ordinarily have to carry their tools around on the job, place their tool kits in a skip on arriving at the power house section, and the tools are lifted to them at the working areas by crane.

In this connection, no riding of hooks on booms of cranes is allowed anywhere on the job. Occasionally when a man has to go to an otherwise inaccessible place, a bos'un's chair is rigged up and the man lifted by crane. On all material cranes only experienced riggers are used to fasten the loads, so that proper cable fastenings are assured.

On all high work, such as the stripping of forms and for certain carpentry and other work in the power house, or other sections where workmen are exposed to the danger of falling, the men wear a safety harness, to which is attached a steel cored rope. Should a man fall while wearing one of these harnesses, the maximum drop would be five feet. The harness has also been found particularly valuable in rock drilling and blasting where work often must be performed on a steep grade.

At first the men did not take kindly to this equipment. When they discovered its value, however, they began putting their harnesses away with their tools

and locking them up in their kits. Now many of them consider the safety harness as indispensable as their tools.

The dynamite used in blasting operations is stored at isolated locations. Only a twenty-four hour supply is kept on hand at the end of the third cofferdam area. Dynamite boxes are opened with a wooden wedge and wooden maul in accordance with procedure approved by the Institute of Explosives Manufacturers. The detonators are kept separate from the dynamite in handling, hauling, and storage.

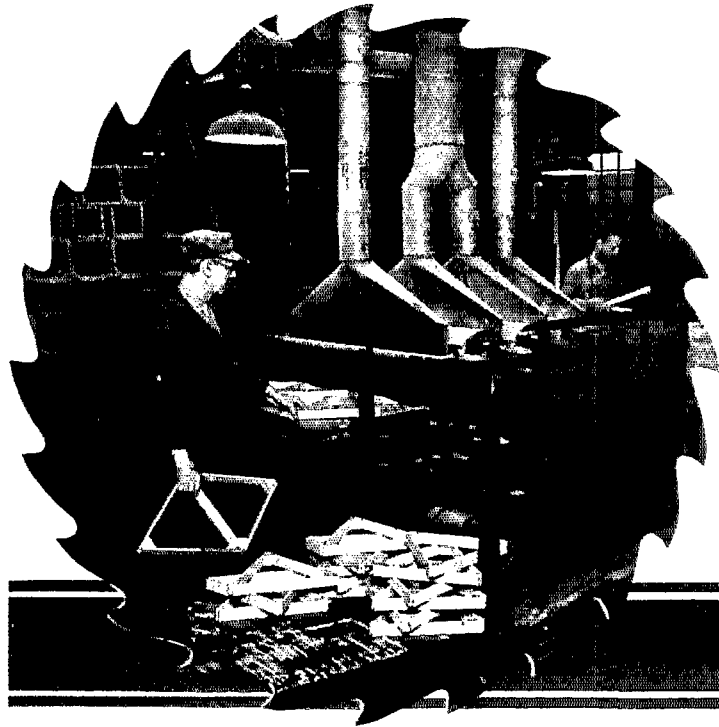
When shots are ready to be fired, a whistle blows and an inspection is made to see that everyone is under cover. There is a five minute interval between the time the whistle blows and the shot goes off. Then, after the shot, there is another whistle, after which the men return to work.

To safely transport men living on the north side of the river to and from the job a large steel barge was equipped with an enclosing fence, life preservers and lines, and benches to comfortably accommodate 200 men. This ferry is towed by one of the TVA steamboats.

As construction has moved along from one stage to the next, the Safety Section has worked closely with the construction staff and the men on the job in devising methods by which the work could be done speedily and efficiently and at the same time with a minimum of hazard to the men concerned. As the construction work progresses, newer and better safety measures are being devised. The aim is to establish a record for Wheeler Dam as the nation's outstanding construction job from the standpoint of accident prevention.

"A salt tablet with every drink" has become a hot weather habit





Sharp Edges, High Speeds

By H. E. SEELY

*Insurance Department, Brunswick-Balke-Gollender
Company, Chicago*

This plant's experience proves that the operation of high-speed woodworking machinery need not prevent a good safety record

THIS discussion of the precautions necessary in the operation of high-speed woodworking machinery is based upon the experience of our main plant at Muskegon, Michigan. At this plant, we are employing at present an average of 800 men working approximately one and one-half million hours a year. Our high-speed machinery includes:

- 8 shapers, turning 7,200 r.p.m.
- 1 router, turning 20,000 r.p.m.
- 1 50-inch planer
- 1 36-inch planer
- 1 Daniels planer
- 5 jointers (1 veneer)
- 1 matcher (flooring)
- Disk sanders
- 12 band saws, all sizes
- 1 all-electric molder
- 6 Madison lathes

Our equipment also includes a number of power saws, spoke lathes and many other slower machines. Not all of the saws, jointers and lathes are in what we call the woodworking department.

In addition, we have a few machines which are not found in the average woodworking plant. They are for the manufacture of bowling pins and are automatic in operation.

Originally the tree was cut in slices and the flat cross sections cut up as one would cut a cartwheel of cheese. The first operation of turning these triangular blocks is now done outside of the Muskegon plant and they come to us looking like oversized milk bottles. High-

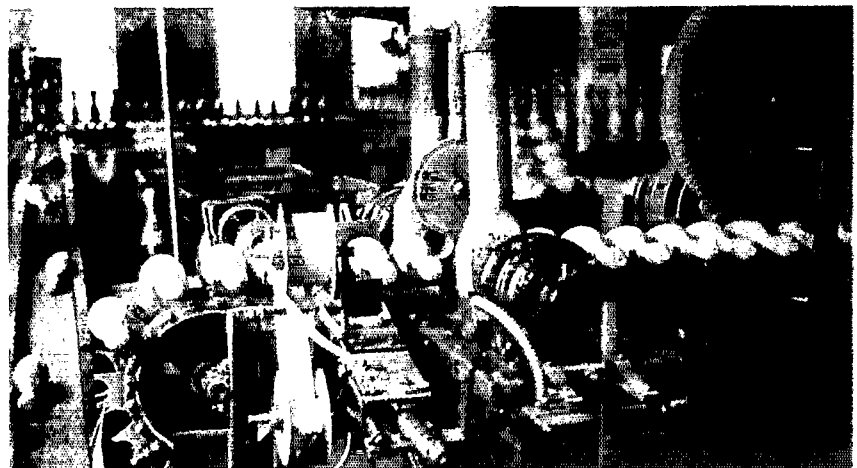
speed machines take the rough blocks, turn them down to finished size, sand them smooth, and then cut off the tops and bottoms, leaving the pins ready for the finishing and packing departments.

Careful planning of these machines has provided for the enclosing of all parts, leaving an opening in front for the insertion of the work and its removal when the operation is completed. Occasionally a block will slip or tear loose, but as the spin of the knives is away from the opening, the only damage is a split block, a lot of noise, and a moment lost in stopping the machine and clearing out the fragments. At no time does the operator's hand come within eight

inches of the knives. Once the piece is set in place, the machine brings the block up to the knives, turning it around for the cut and then back to position for removal.

Careful attention is given to keeping the knives sharp and tightly set.

For the past five years the record of the woodworking department has been dented but twice. In 1931 a cold room temperature was partly responsible for a man slipping his hand into a mitre saw, the injury resulting in a loss of 30 days. The second blow was in 1933 when a fly-back on a rip saw caused a loss of two weeks' time. We now use a self-feed attachment.



This automatic machine cuts off the tops and bottoms of bowling pins leaving them ready for the finishing and packing departments.

During the same period we had 46 disabling injuries in other departments. Of these 31 involved compensation. While the record for the plant as a whole leaves much to be desired, we have made progress since the beginning of 1934. We had a stretch of 227 accident-free days that year and another of 214 days in 1935. Both records fell just short of a million man-hours. We will catch that prize yet.

The record mentioned in our wood machines department is due largely to a remarkable foreman, Mr. Beatty, and a hard working safety committee that has the backing of the plant management and the maintenance department. Mr. Beatty is a permanent member of the safety committee along with all department heads.

For several years the supervision of accident prevention was mostly on paper—from me at Chicago to the plant at Muskegon. Yes, they had a safety organization, and they also had accidents.

During the 1933 Safety Congress in Chicago our factory superintendent happened to be in the city and was persuaded to attend several of the morning sessions. It is significant that from that time safety meetings began to mean more, recommendations no longer lay in the doldrums, and the new current ran on through to the workers. Our accident reports have reflected this change.

Parenthetically, let me express my conviction that pre-Congress activities

should be extended to getting more executives to attend and bring the rest of us along, if only to see that they (the executives) don't miss anything.

Some of Mr. Beatty's ideas are worth quoting here.

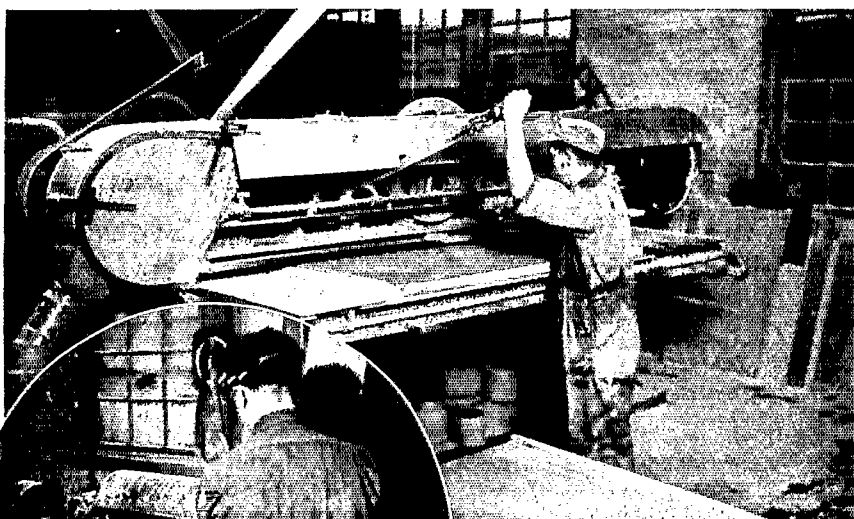
First, in answer to my question on the use of accidents likely to occur in the use of high-speed machines, I was surprised to have him pick shapers as the safest. My recollections of what used to be said about shapers are hardly printable, but it does seem that there are some hazards, which have not been entirely overcome by the safety that is being built into modern machines by the manufacturers.

With the exception of one department, our shapers are now operated with guards. The work we do allows the use of the chute type of guard. Not all plants

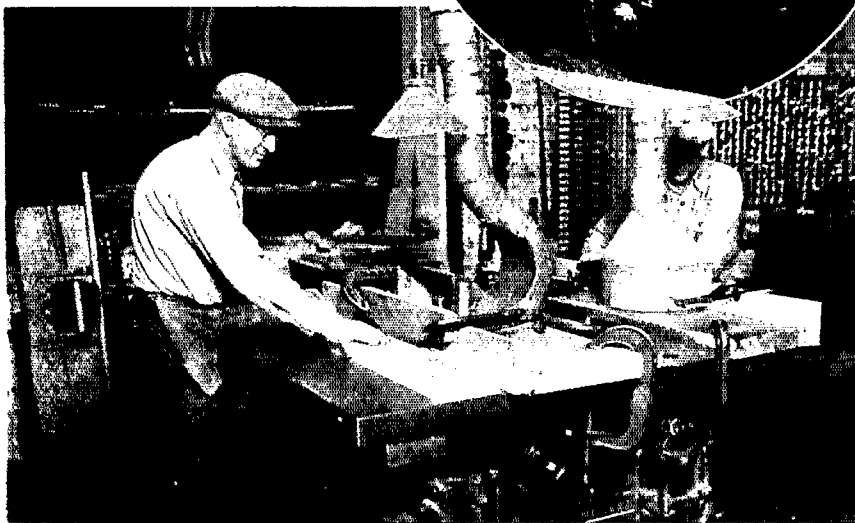
can use this type of guard, nor can any standard rule or guard be recommended. However, a good safety man can select some guard from the various types used on shapers and avoid the dangerous practice of operating an unguarded machine. Improved collars of the grooved type are used in some cases, but on all our jobs sufficient time is allowed to have the job properly set up and Ok'd. No half-way work is permitted. The one rule in force on shapers is the dismissal of any man caught *trying* to operate a shaper without a guard.

The one operation performed without a guard is one in which the opening in toilet seats is cut out and shaped. Here a heavy hard wood hand chuck is used. No accidents have yet resulted with this device in use.

Exhaust systems with adjustable hoods



Above: The exhaust hood on the belt sander acts as a guard by covering the belt and pulleys. Circle: An automatic high speed machine which turns the rough blocks down to finished size. Below: A guarded shaper can be used on most types of work. Adjustable exhaust hoods remove most of the cuttings.



remove most of the cuttings and no man is permitted to use his hands for brushing off the table; a strip of wood or some other material is used.

Jobs have been refused to men claiming to be shaper hands who have been found to come from shops where standardized manufacturing of the same part has permitted delegating to crews the job of setting machines and making and sharpening of knives, leaving the operator to do the same piece over and over again without acquiring any real understanding of the machine's peculiarities. To hold a job with us, the operator must know his shapers.

Jointers and Planers

On our jointers a slatted type of sliding guard is used. It is held in place by a spring so as to cover the knives beyond the width of the stock. These are prob-

(Please turn to page 52)

Service with Safety

By ROY S. BONSI

Chief Safety Inspector, Standard Oil Company (New Jersey)



SAFEGUARDING the employee on the job is an important consideration in service station work. But patrons and passersby are a source of even greater concern to the oil companies. They are much more difficult to teach and control than the employees, and any injury to persons or damage to their property will result in claims and loss of goodwill. Both of these factors have a direct effect on sales quotas and marketing costs.

Accident records of our service stations scattered throughout the eastern section of the United States from the Canadian border to the Gulf and from the Atlantic Ocean to the Mississippi River, and reports from other oil companies operating service stations in various parts of the United States, indicate that most of the disabling injuries, both to employees and the public, involve:

1. Falling
2. Lubrication
3. Tire and air service
4. Radiator service
5. Windshield service
6. Customer self-service

A classification of hazards based on claims paid to non-employees indicates that the following result in the greatest financial losses:

1. Slipping, tripping and falling on sidewalks, driveways and station property.
2. Lubrication lifts and hoists.
3. Tire and air service.

The Falling Hazard

Falls usually result from poor housekeeping, and, in most cases, can be prevented. If grease or oil is permitted to remain on the driveways, salesmen in their haste to give prompt service will slip and fall; customers and people passing through the station may also slip. Therefore, all grease and oil should be removed promptly. Care should be

observed when washing driveways and walks not to leave soapy water on the surface. Tri-sodium phosphate has been found very effective for removing grease and oil. It does not leave a slippery surface nor does it affect the hands. The use of gasoline for cleaning service station floors and driveways is dangerous, and should be prohibited.

1. Unsafe Driveways and Walks. Broken pavement and holes in concrete and asphalt driveways should be repaired as soon as possible. There are a number of special patching materials on the market which have been found to be satisfactory for this purpose.

2. Protruding Objects. No objects, such as tops of fill pipes or other obstructions, should protrude from the ground, nor should tools be left lying on walks or driveways.

3. Icy Surfaces. One of the most difficult slipping and falling hazards to eliminate is ice and snow, especially when there is a heavy downpour with rapid freezing, making it impossible to keep walks and driveways free from ice. Such a condition existed last winter and many injuries resulted. A light sprinkling of sand on ice in front of all entrances (toilet and office), along side-

Protecting customers and employees against accident is a serious problem in service station operation

walks and near pits, will minimize such accidents. However, a thick coat of sand will increase rather than decrease the hazard.

Several state highway departments, including New York and New Jersey, have found that sand mixed with flake calcium chloride is more effective and economical than if each were spread on separately or used alone. As soon as the mixture is spread over an icy surface, the calcium chloride, even at sub-zero temperature, melts the top surface of the ice sufficiently to imbed the sand permanently in the ice. This produces a sandpaper-like, non-skid surface *within a few minutes*. The recommended mixture is 100 pounds of flake calcium chloride per cubic yard of sand.

4. The Old-fashioned Greasing Pit, which still exists at some of the older stations, is also a slipping hazard. Many such pits are provided with ladders at one end. Regardless of how good the housekeeping at the service station is, men get oil and grease on the soles of their shoes, causing them to slip off the ladder rungs and fall into the pits. Very often the men do not use the ladders. After cars have driven on to the pits they swing themselves down by the bumpers. This practice has resulted in severe falls and strains.

Many public liability claims have been the result of accidents due to falls through improper guarding of lubrication pits.



"No smoking, please!" The salesman explains that flammable vapor may be present when the tank is being filled and that it is unsafe to light a cigaret.



Customers should not attempt to service their own cars. Attendants have been trained to do it safely.

Lubrication Hazards

Greasing and lubricating motor vehicles has been the source of many serious accidents and claims for damage. Most of such accidents are in the avoidable class. These hazards have been thoroughly discussed by Mr. H. N. Blakeslee of the American Petroleum Institute, Accident Prevention Department, in his paper, "Lubrication Hazards," published in the January, 1935, *National Petroleum News*.

1. Lubricating Hoist or Lift: Regardless of all the rules you may make, there will be some men who raise lifts with customers in their cars. Many people for some reason or other desire to remain in their cars while on lifts. Such customers present a perplexing problem for service station attendants and salesmen. Hardly a year goes by during which some customer, not realizing that the lift has left the ground, backs out of his car and falls from two to four feet. Some of these falls have resulted in death. Many marketing organizations have issued printed instructions to their service station employees similar to the following:

Under no circumstances are you to allow anyone in or near the car while it is being raised or lowered.

Most accidents involving lifts are the result of the lift carriages being carelessly lowered upon the feet of employees or customers. Such injuries may be reduced on lifts where the runway channels rest directly on the ground by riveting an angle leg on the inside edge of the channel. This will hold the channel about two and a half or three inches

above the ground. A greater clearance than this might cause difficulty to cars driving on and off the lifts. Much can be accomplished, however, if supervisors train their service station employees to make sure that customers and fellow employees are clear of descending lifts.

2. Lubrication Guns: Last August the Committee on Accident Prevention of the American Petroleum Institute sent out a special letter calling attention to two unusual accidents resulting from the use of lubrication guns. In order to forestall accidents of this nature to service station men, definite instructions on the safe operation of lubricating guns should be issued as soon as possible.

It is believed that when using power grease guns the flexible hose should be permanently attached, using the adapter when it is necessary to lubricate points equipped with Zerk fittings. When guns are equipped with the new needle-point fittings for adapters, the men should be cautioned that at no time, even if holding a rag, are they to "shoot" the grease into their hands if the adapter becomes clogged with dirt or refuses to supply grease when the trigger is pulled.

3 Tools Slipping: The slipping of tools causes many injuries, usually merely skinned hands and knuckles. These minor injuries frequently result in infections because proper care is not given to the wounds. Many accidents due to wrenches slipping off plugs when removing them from crankcase pans have caused injuries to hands. Wrenches slip for four principal reasons: (a) use of improper wrench, (b) improper use of wrench, (c) defective wrench, and (d) defective nut, bolt or fitting.

Properly trained and experienced men will use the correct wrench in the right way. Accidents so caused are often due to greasy hands, greasy tools, and greasy nuts, bolts and fittings. The use of wiping cloths will prevent trouble from this source. It is also advisable to wash wrenches and other hand tools with kerosene at the close of the day or before tools are used.

Tire and Air Service Hazards

Since the selling of tires at service stations is a comparatively recent development, there have been many accidents because men did not know how to handle, hoist and repair the tires in a safe manner. Most of the tire accidents come from tire repairs. Tires are sometimes removed from the rim without proper deflation. As the man pries the tire off or breaks the rim at its designated

opening, the rim flies out and hits him in the face.

As has already been pointed out, station men are subject to strain when handling large tires and rims. Slipping tools or the improper use of improper or defective tools is also a source of injury. The Accident Prevention Manual on Service Stations of the American Petroleum Institute recommends these precautions:

Many serious accidents have occurred from the explosion of tires during inflation. Service station salesmen should pay particular attention to the position of their bodies and heads during this process. The most serious accidents have occurred to the eyes. If the car has stopped at a point where the valve stem of the tire being inflated is at or near the top of the wheel, the operator should take a position in front or in the rear of the tire and bend over from the waist only, thus keeping the fender between his head and shoulders and the tire. If the outer rim should blow off, the greater part of the operator's body will be protected and will not receive the full force of the blow. Also, if the lower part of the tire blows out, the rock and gravel in the driveway will not be blown into the eyes and face.

However, if the valve stem stops at the bottom of the tire, another method should be used. Squat down to one side, partially turning the back, and keep the head away from the side of the tire. If a blowout of the rim or the tire itself should occur when the service man is in this position, his face and eyes are fully protected, and the force of the blow will generally be taken on the fleshy part of his arm. Whatever method is used, he should never squat down facing the tire. Extra precaution should be used in filling badly-worn tires.

Service station salesmen should be especially cautious in filling giant pneumatic truck tires. They carry high pressure; and, if they blow out in filling, they are more dangerous than the smaller tires.

Children should not be allowed to play with the air hose or around the air stand, lifts or pits. Parents should be requested to keep their

(Please turn to page 58)



The fender protects the face and eyes should a blowout occur.

The Exciting Year of 1935

The Annual Report of the Managing Director,
National Safety Council

By WILLIAM H. CAMERON



THERE were probably more words written and printed about accident prevention during 1935 than in any previous year. *Editor & Publisher* is authority for the statement that motor vehicle accidents commanded more news and editorial space in the press of the country than did any other subject, including the Lindbergh murder trial and the Italian-Ethiopian war. Public indignation, long simmering, finally boiled over and for the first time in the history of the National Safety Council accidents became featured news.

This was due in part to the appalling number of fatalities on our highways, yet also it was the natural fruition of the intensive and continuous educational work carried on for twenty-two years. There seems to be more concern everywhere that "something must be done about it" and it is most encouraging to note, as we start off on the New Year's work, that something is being done about it. If we can continue to keep this excitement and interest directed into constructive safety measures, it will mark a new era in the safety movement.

There must be concern and definite interest before people will spend money to correct the hazardous conditions that lead to accidents. Safety is not simply a gesture of good will. It involves discipline and self-control and making the conditions for physical life safe everywhere.

To tell the story briefly of even one year's activities of the Council is a difficult task of analysis and condensation. To say that many thousands of employers and employees have maintained their safety activities in a remarkable degree; that our states, cities and towns have taken an increasing interest in street and highway, school and home safety, is not to paint the complete picture in its true colors. At best it must be "sketchy." Accident prevention is typical of the ceaseless struggles of human beings to achieve some measure of comfort without pain and disaster, and to insure the happiness that comes with economic security.

But what really was the progress of safety during 1935? The recorded death and accident charts are one answer, but our deepest concern has been with the interests of our citizens in the problem. In a sense, any social movement depends upon prosperity because primary demands always consume attention in times of distress. It becomes clearer as the years follow one another that accidents will never be controlled until we have a systematic effort of approach—leading to the removal of the causes of unnecessary dangers. The Council's task, therefore, seems to be to emphasize these primary principles on the public mind without lessening the pressure.

A Significant Development

The really significant development during 1935 was the discovery by too many industrialists that the momentum of a safety program, in itself, would not keep accidents out of the plant. When the depression hit us, many (not all by any means) reviewed their safety department costs; slashed their budgets; with the feeling that their good records would continue, at least, until times were better. In my opinion, this was the most important contributing cause of the increase in industrial accidents during 1934.

When this increase was recognized, early in 1935, budgets and activities were increased, but alas at an unfortunately high price. These discoveries may be a blessing when the next business cycle pinches the pocket-books. At least, the depression of 1921 cut into safety programs even worse than 1930-1934. Again this confirms the fact that preventing accidents requires continuous supervision and training. Safety results depend upon the effort put into the program.

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

Without money, and without the effi-

cient and loyal leadership and staff personnel, the Council would soon pass out of existence. The Council has never had a more encouraging year. The membership has increased slightly, the budget has been balanced, and the Treasurer's statement will show the Council has maintained its credit and improvement has been made in working funds. Here are a few special services worthy of review:

1. The organization of State Safety Councils has been a significant and new major development of the year. When it is remembered that our industrial and community life is pretty largely controlled by state laws it can be seen that eventually all persons within a given state, interested in accident prevention, must first act together to accomplish big objectives and then the experience and recommendations can be passed down to local communities.

2. The feature stories in the *Ladies' Home Journal*, *American Magazine*, *Atlantic Monthly*, *The Reader's Digest*, *Liberty* and many, many others, have brought a new national recognition to the importance of highway safety.

3. The substantial growth of the National Traffic Safety Contest, and similar activities, has taxed the resources of the Council. Our monthly publications have been increased to six. The new one, *THE INDUSTRIAL SUPERVISOR*, already enjoys a large circulation. The demand for safety posters per member has exceeded any previous year. Our statistical publications, seven industrial safety contests, the Annual Congress in Louisville, the Regional Safety Conferences, and all the usual useful and general activities of the Council were carried forward with greater intelligence and determination.

4. Among the new publications instituted in 1935 were our new booklets—"Safe at Home", now in its fourth large edition; "Too Long at the Wheel"; "One Thousand and One Safety Slogans"; "Safety Stunts"; "Safe Driv-

ing"; "Safety Pays" and the new "Service Guide."

5. The attendance at the Louisville Congress was the second largest in our history. The continuation of the depression has slowed down the rapidity with which the Council had been expanding up to the end of 1929; but if the enthusiasm, intelligence and financial support can again be secured to increase and intensify our educational activities; to expand our field services, to conduct needed research, to formulate new plans and to develop new ideas, we can save thousands of lives and conserve millions of dollars—which will otherwise be lost because of preventable accidents.

Benefits to Industry

6. Every activity undertaken by the Council benefits American industry directly or indirectly. From an industrial standpoint the increasing values of the NATIONAL SAFETY NEWS, and the SAFE WORKER, have been noteworthy. Also the twenty monthly Industrial News Letters, including that of our ASSE-Engineering Section; the Safety Calendar; the sixty-three types of safety posters distributed each month; the new and revised Safe Practices Pamphlets; the Annual Statistical Report known as "Accident Facts," much expanded and improved in its last issue; the separate statistical studies for thirty-two major industries; our Six National Trade Safety Contests, as well as our Steam Railroad Contest, with its valuable Green Book—all these programs were carried through successfully. Altogether 120 trophies and 74 certificates were awarded to the winners in these contests, and a great many medals were presented to persons saving lives through the Prone Pressure Method of Resuscitation. The Industrial Health Safety Consultation has been maintained and time given to technical research, study and publication of results. The usual work on Safety Codes has been carried on and cooperation with the American Standards Association, trade associations and engineering colleges has been maintained.

7. The alarming increase in street and highway accidents in particular has helped to bring the ready resources of the newspapers, radio and magazines to our aid, thus making it possible to conduct our Publicity activities on a more intensive and broader scale than ever before. Hundreds of special articles and stories have been welcomed by editors. Weekly radio broadcasting material has been used regularly by several hundred stations. Never before have we enjoyed

such fine and generous cooperation with the Associated Press and other leading news agencies and syndicates and the newspapers and radio generally. We are now planning to enlarge greatly our publicity activities through new and convincing methods that will have strong reader interest and appeal.

8. Because highway accidents constitute our greatest accident problem today, the Council is ever alert to its responsibility in this field. All of the general services established over years of trial and experiment have been maintained, including the regular publication and distribution of PUBLIC SAFETY. Constant attention has been given to State Driver's License legislation; essential statistics have been prepared for use in many campaigns; the Commercial Fleet Contests were promoted through hundreds of company members. The Fourth Annual National Traffic Safety Contest grew in accomplishments. Awards were made at public ceremonies in seventy cities, where prizes were given for first, second and third places in each group and certificates of honorable mention presented to others. The ceremonies were held simultaneously and joined together through a half-hour radio broadcasting hook-up. Secretary of Commerce Roper and Governor Harold G. Hoffman made interpretive speeches. Continued cooperation was given the National Conference on Street and Highway Safety. Engineering studies, street and highway traffic surveys have been conducted and attendance at State Vehicle Administrator Conferences were included in the year's work. Preliminary plans were launched for the National Safety Council's Five Year Campaign to reduce traffic accidents at least 35 per cent by the end of 1940 and the New Year found the drive under way with the pledged support of 44 governors and the mayors of nearly a thousand municipalities. Truly the wholehearted response to this appeal has been most encouraging.

High Schools Included

9. The school safety program, financed by the National Bureau of Casualty and Surety Underwriters, has continued with increasing emphasis on the high school field. Throughout the year contacts were maintained with state and city superintendents of education. The monthly magazine, SAFETY EDUCATION, with its popular poster lesson outlines was continued with increased circulation. Contacts were maintained with the National Congress of Parent and Teachers, and similar cooperating groups.

10. The Community Safety Councils have been handicapped by the continued depression, yet new Councils were organized during the year and continued services were rendered through correspondence, conferences, the consolidated report, and personal visits and contacts. The annual conference of managers, the monthly News Letter, and similar activities were carried on.

11. Since April 1, 1935, the resources of the Council's eastern office, located in New York, have been placed at the disposal of the Organization Committee of the Greater New York Safety Council. By March 1, 1936, it is expected that the Greater New York Safety Council will be launched in a big way to serve local safety interests of the Greater New York area.

Regional Conferences

12. Sixteen Regional Safety Conferences were held. Many direct services were rendered various departments of our National Government at Washington. Your Managing Director accepted the invitation of the British Safety First Association to participate in an International Safety Conference during two weeks in May, and to attend the annual convention of this Association. In addition to the hundreds of speeches by voluntary committeemen and members during the year, staff members also made many talks and were in constant attendance at various safety gatherings. Services were rendered to our Pacific Coast members through the Pacific Coast Safety Convention at San Francisco.

13. In spite of our reduction in income—still about half of 1929—we take pride in the fact that every essential activity of the Council has been carried on; that every call for service has been met promptly; that every request for cooperation has been promptly filled. The requests for safety exhibits, for sample publications, etc., coming from various parts of the world are opportunities welcomed by the Council. The Congress Transactions were edited, printed and mailed as usual.

14. I have repeated and emphasized to members in my annual report for the past twenty-two years that our future accomplishments depend largely upon having sufficient money to do our task. The latest statistical figures show 250,000 lives saved and more than 23,000,000 injuries prevented in industry alone since 1913. The Council's investment

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Electric Locomotives

Pass Tests for Safety

THE Pennsylvania Railroad literally abandoned the beaten track recently in a search for further safety and efficiency in rail transportation.

Planning to develop a new streamline electric locomotive as a key to faster passenger service between New York, Philadelphia, Baltimore and Washington, the Pennsylvania was not satisfied with experimentation by trial and error. The engineering staff of the railroad developed a scientific, controlled experiment which involved the building of a special section of track into the main line for test purposes.

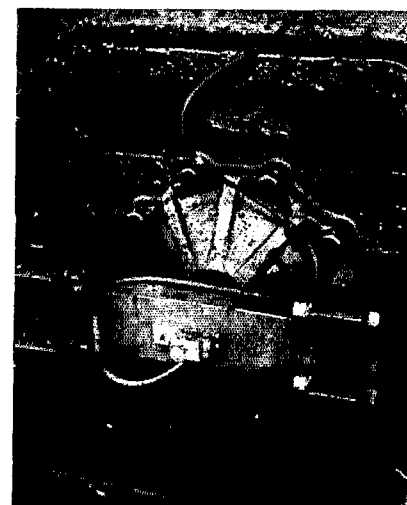
It has always been known that electric locomotives, under certain conditions, exert lateral forces or pressures against the rails, due to the swing of the locomotive produced by its movement, but no specific information has been available. The Pennsylvania railroad decided to accumulate definite data by measuring and studying these pressures, and for this purpose the special track, 440 feet long, was constructed near Claymont, Delaware, with rails laid on steel ties at the ends of which

pressure-recording instruments were placed.

These instruments were so constructed that when the wheel flanges of a passing locomotive caused side pressure on the rail, a hardened steel ball was forced against a firmly supported soft steel plate. The ball made an impression on the plate, and by measuring the depth of this impression, engineers were able to make an accurate calculation of the force which caused it.

The studies progressed over a period of more than two years. After the close of each day of testing the impressions on all plates were measured and the results charted in diagrams to present a graphic picture or "continued story" of the side swings of the locomotive wheels during each test run and of the pressure exerted against both rails at each recording tie.

After a sufficient number of tests had been made with a smooth or normal track, the test track was roughened to cause a pronounced unevenness in the surface of the rail with the intention of making the locomotive ride as roughly



Hub pressure devices in place on locomotive. The flexible cable contains conductors which carry the fluctuating electric current to the electrical and photographic measuring devices (oscillographs) in the cab.

as possible without actually being unsafe. The resultant increase in the recorded pressures assisted greatly in studying their character.

On the basis of the accumulated information important improvements were made in the construction of the type of electric locomotives then in use. These included alterations in the trucks and a re-distribution in the weight of the engine. In consequence, riding stability and efficiency of performance were increased, and wear on the track was greatly reduced.

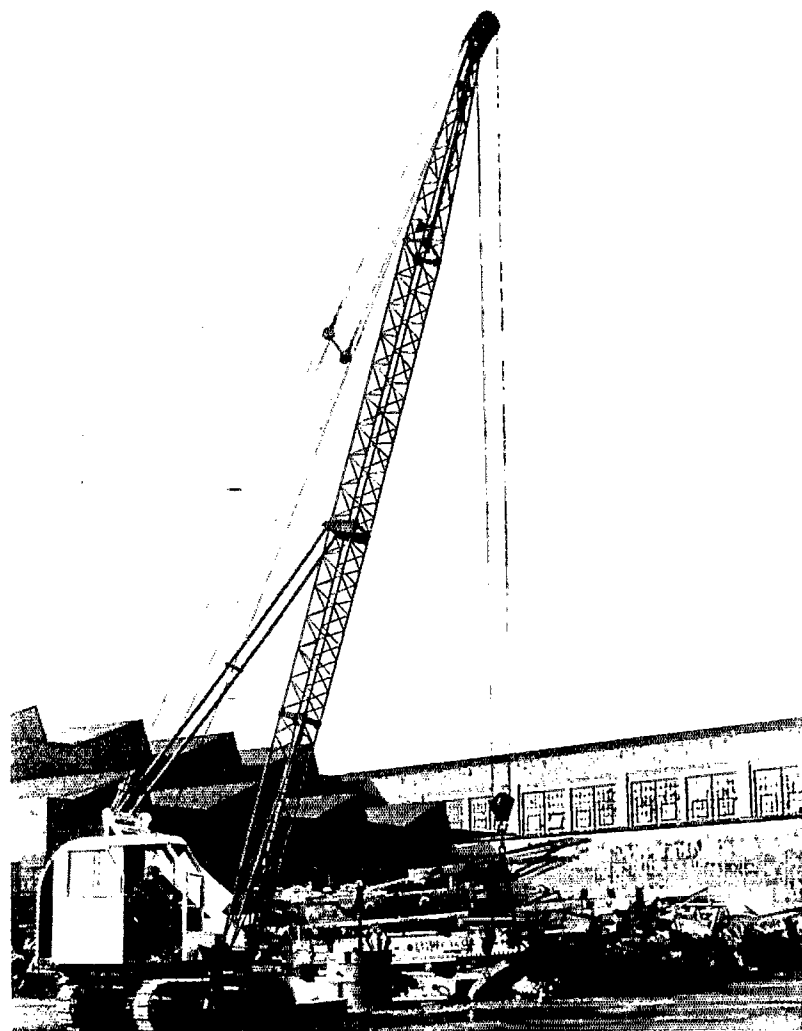
While the studies of stress on the track were in progress, another series of tests was conducted in which the locomotive itself was equipped with apparatus to measure the side forces developed at the hubs of the driving and truck wheels. These additional tests were believed to be essential because, although the instruments in the track showed correctly the highest pressure at each recording tie, they did not indicate which wheel of the locomotive caused it—a point upon which information was desired.

The hub pressure devices were operated electrically, and by means of a current carried to an ingenious apparatus within the engine cab, they caused a tiny mirror to swing back and forth. The swinging mirror reflected a needle-like beam of light upon a moving photographic film, charting upon it a complete record of the extent and frequency of the changing pressures at the wheel hubs throughout the test.

Locomotives so equipped were operated. (Please turn to page 51)



Test track at Claymont, Delaware, in normal or smooth condition, showing pressure recording devices at the ends of every alternate tie. The ties, both with and without recording apparatus, are of steel.



Courtesy Harnischfeger Corp

As Strong as the Weakest Part

Locomotive cranes will lift heavy loads safely if careful attention is given to all moving parts—including the operator

By H. J. GRIFFITH

*Superintendent, Safety and Welfare Department,
Jones & Laughlin Steel Corporation*

LIKE all other mechanical devices, the locomotive crane requires close attention in operation and periodic inspection for mechanical defects. Because of almost constant motion some of the parts will require more attention than other parts which are not so active but just as important. For instance, gears, brakes, pins and sheaves require

oiling daily, while the boom, which is one of the most essential parts, can be considered safe if it receives periodic inspection, the frequency depending upon the nature of the work.

Numerous accidents have resulted from failure of the boom, such as buckling while carrying the load. Considerable thought should therefore be given

This small crawler crane will be used in erecting oil tanks in a new refinery on the Bahrain Islands in the Persian Gulf. Light welded tube construction permits a 50-foot boom of high strength.

to the design and construction of the boom. It has been found advisable to specify the grade of steel rather than construct it of materials that may be on hand. This should also be kept in mind when making repairs. Best results have been obtained by the use of open hearth steel having an analysis between 15 and 30 carbon. The exact specification will depend upon the size of shapes from which the boom is constructed, and the size of shapes will, of course, depend upon the length of the boom.

Satisfactory booms up to 40 feet in length have been constructed by lacing two channels together. Beyond this length the weight of the channels prohibits their use. Booms more than 40 feet long are usually of a lattice type construction.

Designers of booms should be especially careful when figuring stresses. One of the most important details is to make sure that lattice bars are spaced so that unbraced lengths of members in compression do not exceed safe values. Booms that have been figured very carefully have failed because certain stresses were overlooked. Some designers feel that it is impossible to figure all stresses due to differences in operation. If the operator is careless in any boom operation, unknown stresses enter the picture, and these cannot be anticipated in the drafting room. A boom with the main members damaged or bent cannot be expected to carry the full load for which it was designed.

Cranes with booms more than 60 feet long, carrying or without load, should not be swung more than 45° from the center line of the track without the use of outriggers, and the boom should be elevated to an angle of not less than 60° with the horizontal. If it is necessary to swing a boom less than 60 feet long completely around while traveling, it should be done with the greatest of care. At no time should a boom be swung over a moving train.

When it is necessary to transfer a crane from one location to another and a boom of 70 feet or longer is being carried in the horizontal position, the

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NATIONAL SAFETY NEWS

perhaps one of the employees is receiving compensation and the foreman learns that the employee goes fishing in the afternoon. Such information, of course, will stop compensation when made known to us.

Our company wants to pay all just claims without question. Nevertheless, the management owes it to the stockholders as well as to the other employees to prevent the payment of any claims which are not justified.

The Wisconsin Workman's Compensation Law provides for a penalty of 15 per cent against the employee when his injury is due to the violation of one of the safety rules of the company. It is in the interest of safety to see that this penalty is imposed wherever justified. But unless the insurance company is fortified with the proper information, the penalty cannot be claimed. On the other hand, there is an additional 15 per cent penalty invoked against the company when the accident is due to a violation of one of the commission's rules, such as the omission of a guard. Here too the insurance company should have full information in order to prevent an undeserved penalty.

Follow-up of Accidents

We have provided that each accident shall be followed through to its final disposition. In each case an investigation must be made to determine who was at fault and the means of preventing similar accidents in the future. The man at fault is called on the carpet and cautioned against being careless or violating one of our safety rules. If we finally have to pay compensation or a claim, the employee's attention is called to the expense his carelessness has caused us.

Arrangements have been made with our insurance company to send all checks, in payment of compensation or doctor's bills, through our company so we can make a record of them and send them on to the employee. In reality we have more at stake in the payment of a claim than the insurance company, and the insurance company has agreed to consult us before settlement of any important claims.

Method of Handling Claims

There are two classifications of industrial injuries with respect to their treatment by the insurance company. The first are those where a fall or other mishap results in immediate injury and there is little question that the disability occurred as the immediate result of the

accident. The second are those where the effects develop some time after the accident.

As a rule the insurance company pays the claims of the first class without investigation. Claims of the second class, however, are always investigated thoroughly before the insurance company accepts any liability.

Since some claims are paid without investigation by the insurance company, the importance of the plant's conducting a thorough investigation of the accident in their behalf before making out the report is obvious. The way the report is worded is quite important, and the report to the insurance company should state in any case whether or not, in the employer's opinion, the employee is at fault.

Foreman's Weekly Report

For many years the foremen in our plant have each made out a report covering safety conditions in their department. These will be continued in our new set-up but will now be routed through to the president and general manager and to the safety director where they will be kept on file for ready reference and inspection by the rating bureau.

At each regular monthly meeting of the safety committee the safety director will present these reports for approval and after formal approval and the recording of such approval in the minutes of the meeting, the reports will again be placed in the safety director's file.

A general safety committee in our plant is appointed each month by the superintendent and consists essentially of all the foremen and other key men in the organization. It meets monthly, generally on the first working day of the month. The duties of the safety committee include the discussion of suggestions concerning accident prevention and the approval of the regular weekly inspection reports.

The responsibility has been placed upon the safety director to follow up all accidents, maintaining contact between the insurance company and the shop. It is his duty to get all the information to the insurance company which may help in determining whether the employee's claim is justified or not.

Our plant electrician, who has interested himself in safety work and whose duties carry him to all parts of the plant, has been appointed safety inspector. The safety inspector must make an inspection of the plant each week reporting his findings on safety form "A." This report comes forward with

the regular foreman's report, later to be present at the monthly safety meeting.

It is the further duty of the safety inspector to report at each safety meeting the progress of various projects under way (such as the installation of guards) which have been approved at previous safety meetings. The safety inspector submits at each meeting such additional recommendations concerning conditions as his investigation around the plant may develop.

The safety inspector is also required to investigate each doctor case before the report to the insurance company is made out, giving the shop office clerk details of the accident and a definite recommendation as to who or what was at fault.

Our company is not large enough to employ a full time nurse. Consequently the foreman of our machine shop has been given charge of the first aid cabinet and the title of first aid supervisor. It is his responsibility to keep the cabinet supplied with necessary materials.

All injured persons are instructed to report to the first aid supervisor who will treat scratches and minor injuries. Where the accident is severe enough to send to the doctor, the first aid supervisor makes out a doctor's slip in duplicate, introducing the injured employee to one of the five approved doctors of the plant giving one copy of the doctor's slip to the injured employee and sending the other copy to the safety supervisor.

We have been cautioned that care must be taken to use only doctor's slips provided by the insurance company. These slips are so worded that the company is only obligated for treatment under which liability exists because of the Wisconsin Workman's Compensation Act. The slips provided by most of the doctors are not so carefully worded and in fact request that the patient be given "necessary medical treatment." Such slips, of course, would obligate the company for doctor's treatment for any ailment the employee might have regardless of whether it was contracted in our plant or not.

The safety supervisor is required to keep a list of all accidents treated, whether minor injuries or doctor cases, and each month this tabulation is sent to the statistician for summarization.

Monthly Inspections

On the first meeting of the month the shop committee, consisting of the president, general manager, superintendent,

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Find the Causes; Apply the Remedies

By HAROLD L. MINER

Manager, Safety and Fire Protection Division,
E. I. du Pont de Nemours & Co.

Encouraged by an interplant contest, du Pont employees turned in 55,836 recommendations covering unsafe practices and conditions. Most of these were found practical and corrected immediately.

IF ACCIDENTS to industrial employees are to be prevented, two fundamentals must be embodied in our safety activities:

1. Adequate safeguards must be provided, including both mechanical and personal equipment.

2. Employees must understand that they are required to work safely and they must be taught and encouraged to do so.

Prior to the last decade more emphasis was directed toward the safeguarding of mechanical equipment. This has reduced injuries to a remarkable degree, but far too many accidents can still be traced to the second fundamental—lack of employee education and competent supervision.

A strict ruling might be established that employees must obey safety regulations to the same extent that they are required to follow operating instructions if they are to retain their jobs. But often the simple operating steps as pointed out by the foreman may be easier to understand and follow than the prescribed safety procedure involved in carrying out such steps.

A machine can be controlled because it is not endowed with intelligence. It does what it is mechanically designed to do; but human beings can be controlled and directed only through understanding. And understanding must be coupled with the desire to cooperate, and alertness to guard against careless or unconscious action which may not only endanger the workers but sometimes the manufacturing process or the plant. Of course, management can be hard-boiled and punish willful disobedience or carelessness. Sometimes this is advisable but, generally speaking, far more can be accomplished by looking at the matter from a humanitarian standpoint, and resorting to measures to gain the employee's cooperation.

We sometimes hear the objection that "no-accident" contests have influenced supervision to encourage injured employees continuing to work when they should not do so in order to maintain an unbroken no-accident record.

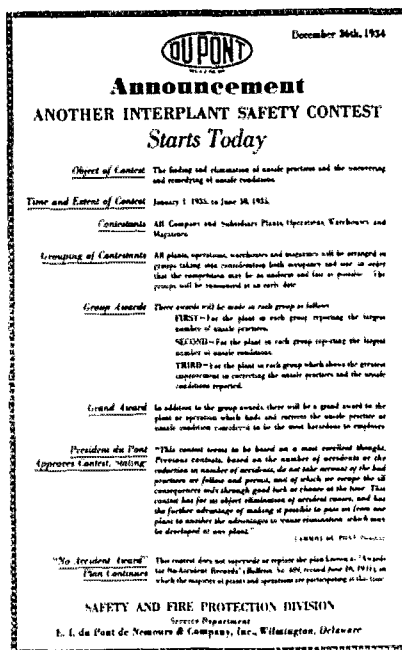
While the competitive spirit may be strong, one can hardly believe that plant management or supervision would be so lacking in human compassion, and surely no accredited physician would sanction such a procedure. On one occasion we felt the implied criticism so keenly that 45 plants were queried to find out how they handled what might be termed border-line cases. Thirty-seven plants replied that the decision as to the ability



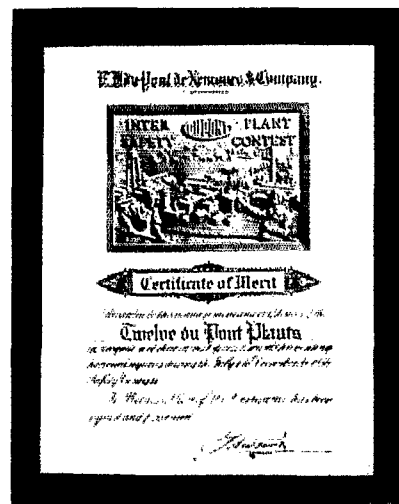
Bronze plaque awarded to group winners and plants with perfect scores.

of an injured employee to continue to do gainful work at the plant without delaying recovery was left entirely to the physician, and eight plants advised that the decision was a joint one made by plant management and the physician. Therefore, while not underestimating the graveness of the objection, the benefits resulting from safety contests are thought to far outweigh the possible disadvantages.

Early in the last decade, various du Pont plants and departments began to have long "no-accident" records and Mr. Irene du Pont, then president, agreed to recognize personally any record made by a plant of the company which equalled or bettered a rather remarkable one which a certain plant had accomplished. This recognition, known as the



This poster, carrying the endorsement of President du Pont, announced the interplant safety contest.



This certificate of merit was awarded to twelve plants which made a splendid effort but came short of having perfect records.



A home-made poster which aroused so much interest that a series of "What's Wrong in This Picture" posters was issued.

"President's No-Accident" award, consisted of small prizes for each employee, or a single group prize for the plant as a whole, depending upon the wishes of the employees. The goals for these prizes were based upon plants, laboratories or construction jobs operating certain definite periods without a tabulatable major injury. The classifications were determined by number of exposure hours per month, each class being required to operate a certain number of calendar days without a tabulatable major injury. The goals established were thought at that time to be so high that they would be difficult to attain. This award plan went into effect on April 1, 1923, and between that time and 1928, 19 plants equalled or bettered the so-called outstanding "no-accident" record.

During the latter part of 1927, it was necessary to revise this particular plan in order to provide additional goals, so that the employees' interest might be retained after they had won the single prize. The plan then became known as "Awards for No-Accident Records," and three prizes were offered—a "General Manager's Prize," a "President's Prize," and a "Board of Directors' Prize" which the plants could win in succession by extending their record. If the records were broken after winning either of the first two prizes, the next prize could be won if the plant operated the required length of time for that prize.

Under the new plan between January 1, 1928, and June 30, 1935, 29 plants have won the General Manager's Prize (making a total of 48 plants which, since 1923 have met the requirements of the original President's No-Accident plan) while 26 plants have won the President's Prize under the new plan, and seven plants have won the Board of Directors' Prize once. Furthermore, two of the seven plants have won the Board of Directors' Prize the second time, and many of the no-accident records are still unbroken. The accompanying table shows some very remarkable records established by this plan.

Early in 1927 a draftsman at the Wilmington machine shops submitted a poster captioned "Safety First as Seen Around the Plant," illustrating an unsafe condition which might cause injury. There was a switch and rheostat installed on a building column over a sink used by the employees for washing. A bar of soap was kept in the switch enclosure. Here was a possibility of serious electrical shocks and burns. The poster was so striking that the Safety and Fire Protection Division had it lithographed and sent copies to all plants.

In the poster it was noticed that a number of unsafe practices and unsafe conditions were depicted. At that time cartoons entitled "What is Wrong in This Picture" were very popular. This poster suggested that the time was opportune for a contest to teach employees to recognize the importance of uncovering and correcting unsafe practices and unsafe conditions. In preparing the contest posters, the accident records of the company were analyzed to determine the predominating causes of accidents, and plant inspection reports were reviewed to determine common unsatisfactory conditions. This analysis produced 104 practices or conditions unsatisfactory from the standpoint of accident prevention, fire prevention or good house-keeping, and these were portrayed in posters showing six typical plant scenes.

The contest was limited to the payroll employees of all du Pont plants and subsidiary companies, only the supervisory staff and employees on special duties being ineligible.

The method of replying to the contest posters was made very simple. A miniature poster was given each employee with the instructions, "Draw a circle around each of the things you think is wrong in this picture and explain why you think so on the back." Of the approximate 15,000 employees who were eligible, 11,000 actually did take part. The contest plan provided for the award of cash prizes on each plant, the amount ranging from \$85 on the smallest plant, (1st prize, \$50; 2nd prize, \$25; 3rd prize, \$10) to \$300 on the largest plants, (1st prize, \$50; 2nd prize, \$40; 3rd prize, \$30; 4th prize, \$20; 5th prize, \$10) and 30 prizes of \$5 each.

Answers of those who won plant prizes were sent to the Safety and Fire Protection Division, Wilmington, Delaware, to compete in the Safety and Fire Protection Division Interplant Contest, for which the following prizes were given: 1st prize, \$50; 2nd, \$40; 3rd, \$30; 4th, \$20; 5th, \$10; and 20 prizes of \$5 each.

Committees were appointed at each plant to examine and grade the contest replies. Thus not only were the workmen educated to recognize unsafe practices and unsafe conditions and their remedy, but the plant supervisory staff also became thoroughly schooled. There was some criticism of the posters themselves, some employees finding several times the number of items which were actually intended. These additional items were of a questionable nature and a few were due to minor technical errors

49,000 HAZARDS WERE CORRECTED

	Unsafe Practices Uncovered	Unsafe Practices Corrected	Unsafe Conditions Uncovered	Unsafe Conditions Corrected
Group 1	6,008	5,830	20,279	17,540
Group 2	1,467	1,462	6,342	5,780
Group 3	684	575	2,691	2,198
Group 4	850	794	4,319	3,586
Group 5	515	513	2,067	1,967
Group 6	30	30	156	149
Group 7	375	375	397	397
Group 8	71	68	449	441
Group 9	371	358	956	900
Group 10	1,129	1,081	5,648	4,167
Group 11	56	56	180	177
Group 12	107	104	399	318
Group 14	14	1	8	3
Group 15	8	8	50	36
TOTAL	11,655	11,255	44,151	37,759
			Reported	Corrected
Total Unsafe Practices			11,655	11,255
Total Unsafe Conditions			44,151	37,759
GRAND TOTAL			55,836	49,014

in the drawings. It must be recognized that the greatest supervision should be given the drawing of such posters, and if the du Pont company were to undertake another contest of this character, no doubt even closer supervision would be given this matter. However, the criticisms did not react unfavorably to the contest, and probably in some cases reacted favorably because the men derived benefit from discussing even the technical errors in the posters.

Following the safety poster contest, several other plans for educating the employee in safety were discussed, and it was decided in 1929 to conduct a "No-Accident Month" Campaign during the month of August. The result of this campaign was so satisfactory that it was repeated yearly thereafter, until June, 1934, when the campaign was changed to a "Three Month Interplant Safety Contest", starting June 1 and continuing until September 30, 1934. Every year, except 1933, the number of injuries during the campaign month was substantially lower than the average for the previous months of that year and with one exception, the same year, remained at a lower level than the previous months' average.

In the campaign month June, 1933—the number of employees increased approximately 4,000 over the average number for the first five months of the year. The increase in the average number of injuries for the last six months is due principally to an increase in injuries in two plants, and but for these injuries, the frequency rate would be much lower, or 1.70 instead of 2.83. In fact, following this particular contest, there was a general improvement throughout the plants as a whole.

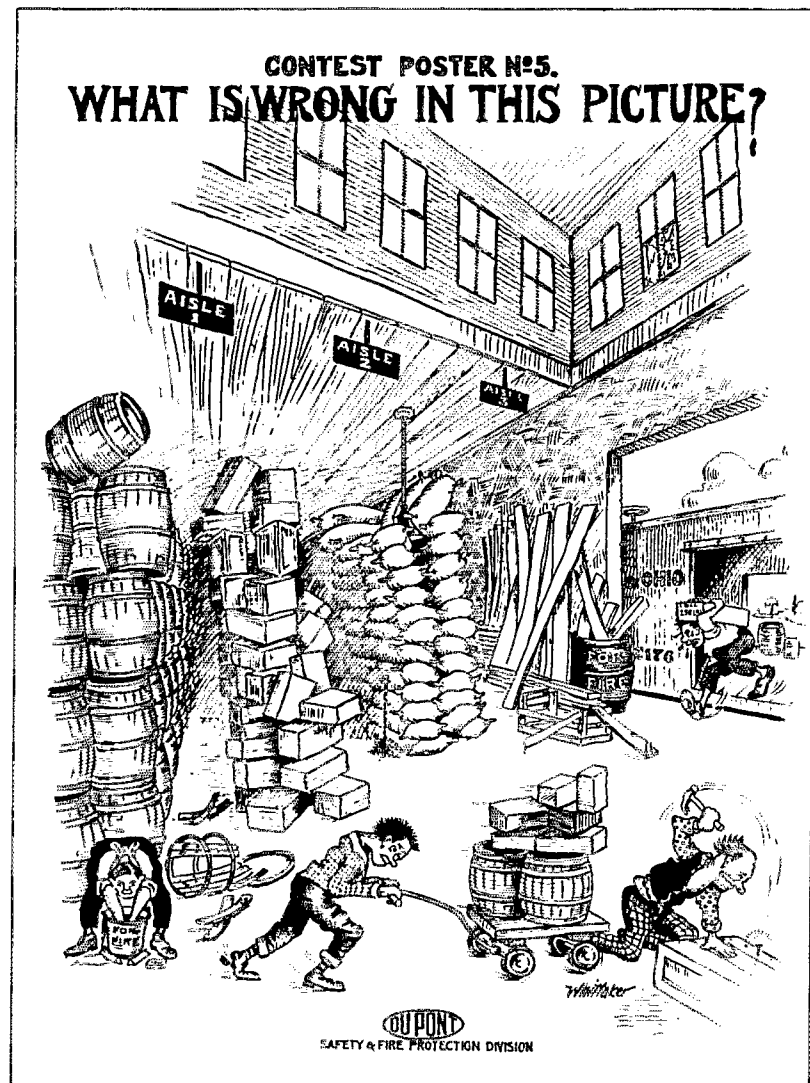
Early in 1935 the question was again considered: May we expect an increase in accidents when new employees are hired or old employees are re-employed? To determine what was actually taking place a careful analysis was made of our accident experience for the year 1934, inasmuch as between December, 1933, and December, 1934, there was an increase of about 65 per cent in employment.

It was found that 24 per cent of the injuries occurred to employees with six months' or less service; 14 per cent to employees on our payrolls from six months to one year; 9 per cent to employees with from one to two years' service; and 53 per cent to employees with two years or over length of service. In other words, 38 per cent of the injuries during 1934 occurred to employees

with one year or less service, while 62 per cent occurred to those having records of from one to 44 years.

This indicated that the problem of preventing accidents extends to all employees, whether new or old, and that the new employee is not any more likely to experience injuries than the old, possibly not as much so, considering the specific instructions and supervision which he receives.

The above experience may be an exception to what might be expected in the average plant, and is probably due to plant supervision and the older employees looking out for the new employee to prevent injuries which would terminate an unbroken no-accident record which they had labored so earnestly to establish and maintain.



(One of a series of contest posters which started thousands of du Pont employees looking for hazards and applying the lessons to their own work places. After trying your own powers of observation, check the result with the answers on page 62.)

ACCIDENT RECORD OF CONTEST MONTHS

Year	Average Freq. Rate for Months Previous to Contest	Contest Month	Frequency Rate	No. Plants Having No Major Injuries	Average Freq. Rate for Remainder of year
1929	4.05	August	1.93	65	4.41
1930	3.99	June	2.50	67	2.59
1931	2.05	June	.99	77	1.43
1932	2.25	June	.87	79	2.01
1933	2.50	June	3.69	63	2.83**

**The slight increase in the frequency rate is due principally to increase in injuries in two plants only.

FEBRUARY, 1936



Cooperation was responsible for the results obtained in accident reduction.

When considering safety contests and campaigns it is well to include measures to interest the employees after the goal has been reached to guard against a let-down in safety effort. This need has been met in our contests by the "Awards for No-Accidents Records" plan, which is automatically continued regardless of whether special "no-accident contests" or similar plant or interplant activities.

In 1934, the "Three Months' No-Accident" contest was established and an Interplant Contest idea was introduced, the contest extending from July 1 to September 30. The plants were divided into nine groups and awards were offered for the plant effecting the lowest frequency rate in each group.

During this contest 59 plants out of 84 operated the entire three months without experiencing major injuries, establishing perfect "no-accident" scores. These plants operated 9,029,596 man-hours without experiencing major injuries, while their accumulated accident-free man-hours since their last tabulatable major injury up to the end of the contest totalled 36,132,701 hours. On October 29, 1934, a month later, only three of the 59 records had been broken. Bronze plaques were awarded to group winners and to those plants with perfect scores.

At the request of several of the larger plants which failed to establish "no-accident" records during this three months' period, the "Interplant Contest" was continued from October 1 to December 31. In this latter contest, 45 plants out of the 84 continued their "accident-free" period until the end, operating six months without major injuries. The

accident-free man-hours from July 1 to December 31, 1934, established by the 45 plants amounted to 8,079,832 hours, while the accident-free period from the date of the last injury experienced by these plants totalled 31,286,330 exposure hours. Thirteen of the plants having experienced major injuries during the first contest were successful in preventing injuries during the second period. These plants during the three months' contest from October 1, to December 31, 1934, operated a total of 4,737,606 man-hours without injuries and a total accident-free man-hours since their last major injury of 7,160,162 hours. As a result, 58 plants of the 84 established perfect records.

Additional bronze plaques were awarded to the new winners, and a Certificate of Merit was given to the twelve plants which, while making a splendid effort, were unfortunate and experienced injuries.

In the material prepared and sent out to the plants during these campaigns and contests, we attempted to impress upon the employees the importance of working safely, and at the same time obtain their cooperation in uncovering and eliminating unsafe practices and unsafe conditions.

The campaigns and contests which have thus far been described, had as a primary object reduction in personal injuries. During and following these contests, a number of the plants made some effort to have their employees report to supervision any unsafe practices or unsafe conditions which were noted. Employee inspection blanks were prepared by the Safety and Fire Protection Division and each employee was requested to fill them out weekly and give them to his foreman or supervisor. But with few possible exceptions, no coordinated plan was put into effect to systematically report and correct the unsafe practices and unsafe conditions. It was, therefore, decided to plan an interplant contest which would forcefully direct the



This poster reminded employees of the importance played by personal protective equipment in preventing injuries.

attention of all employees to the uncovering and elimination of accident causes, leaving out of the contest any apparent attempt toward reducing the number of accidents. A contest plan with this object in view was drafted and sent to the plants with a contest announcement poster during December, 1934.

This contest for "the finding and eliminating of unsafe practices and the uncovering and remedying of unsafe conditions" extended from January 1 to June 30, 1935, and included all of the du Pont company and subsidiary plants, operations, laboratories, warehouses, magazines, etc. The units were divided into 15 groups, taking into consideration as far as practicable both occupancy and size, in order that the competition might be as equitable as possible.

Three group awards were offered in the announcement poster.

1. For the plant in each group reporting the largest number of unsafe practices.

(Please turn to page 63)

"NO-OCCIDENT" RECORDS ESTABLISHED TO JUNE 30, 1935

Exposure Hours	Number of Records	Cumulative No. of Records Established Above Minimum of Range
7,500,000 to 10,000,000	1	1
5,000,000 to 7,500,000	1	2
4,000,000 to 5,000,000	2	4
3,000,000 to 4,000,000	3	7
2,500,000 to 3,000,000	4	12
2,000,000 to 2,500,000	8	20
1,500,000 to 2,000,000	9	29
1,000,000 to 1,500,000	9	38
750,000 to 1,000,000	7	45
500,000 to 750,000	10	55
250,000 to 500,000	13	68
Below 250,000	5	73

The Driver's Physical Inventory

By WILLIAM J. SWIFT, M.D.

Examiner of Applicants, Greyhound Lines, Chicago

Motor coach operation calls for drivers of the highest type—physically and mentally. Other branches of commercial driving, however, would profit by closer medical supervision

MOTOR coach operators must not only be physically and mentally fit but must be imbued with the proper esprit de corps. Men who do not show personal interest have no place in the organization. Records show that motor coach companies who have their operators examined carefully, not only before employment but at least twice a year afterwards, show a marked reduction in personal injuries and property damage.

The responsibility carried by a motor coach operator may well be compared to the pilot of a passenger airplane, the engineer of a train, or the captain of an ocean liner. All of them have lives and property entrusted to them. The coach operator, however, has no one to grab the wheel if he becomes incapacitated. Hence, it is important to have applicants examined by a physician who not only has the training and experience in making examinations but also the intestinal fortitude to reject those who are not physically and mentally fit. He can not be a good fellow, nor can he short cut the examinations.

My procedure in making an examination has one object in view: to determine whether or not the applicant is mentally and physically fit to operate a motor coach.

The examination begins when the application is first filed with the regional director. The man's past history should be investigated. Next, a personal interview should be held with an applicant to observe his general appearance, intelligence, education, height, weight, development, deformities, etc.

We follow the policy that each appli-

cant should be 5 feet 9 inches tall and weigh at least 165 pounds. Of course, he should not carry too much weight. An applicant who cannot pass the regional director should not be sent to the physician.

When the applicant enters my office, I try to make him feel at ease. Ordinarily, I first test the eyes and ears. The Snellin test is made. The applicant stands 20 feet from a well illuminated chart. There are several strips of various colors and he is asked to identify these various colors. Colored yarns are placed on the desk and he is asked to match the colors and call their names. This is a much better test than the test chart.

In making the vision test, care must be taken that the applicant has not memorized the chart. If doubt exists, I use a cardboard with a small opening so that it can be moved from letter to letter and the applicant can see but one letter at a time.

In the eye examination additional tests should be made for:

1. Previous attacks of inflammation, injuries, scars, etc.
2. Infections.
3. Ocular palsy or squints.
4. Previous use of glasses and why.

The pupils are examined for size, shape, equality, and for light and accommodation. The eyes are tested as to their mobility and their sensitiveness. In questionable cases, the man can be referred to an eye specialist, but I have seldom found this necessary.

Standards of Vision

To fix a definite figure of vision, I would say that if an applicant cannot read at least 20/30ths, he should not be passed. I am not in favor of passing a man who requires glasses to drive. You can readily see what would happen if the glasses were broken or lost.

His family history is then checked for strokes, heart trouble, epilepsy, brain diseases, insanity, kidney trouble, and other diseases that are more or less inherited. He is quizzed as to his past

history and I observe his demeanor during the questioning. His medical history is checked. We would not want a typhoid carrier in our employ. Height and weight are next recorded.

For identification purposes we record the applicant's complexion, color of eyes, and color of hair.

Hearing is tested by the watch test, and by occasionally dropping the voice in conversation. The ears are also examined with a speculum which enables the examiner to see the condition of the external ear and the ear drum. One should also examine the mastoid bones. Men with defects of hearing, discharge from the internal ear, defect in the drum, or involvement of the mastoid bones should be rejected. Such men may become dizzy and imperil the passengers.

The reinforced Rhomberg test should be made for equilibrium. The applicant is asked to stand with his feet placed parallel and close together. He is asked to extend his arms and in turn bring the tip of each index finger to the tip of the nose, first with the eyes open and then with the eyes closed. Marked swaying is a cause for rejection.

The Driver's Appearance

The motor branches of the cranial nerves are easily tested. Minor defects are not grounds for rejection unless they have a serious pathological basis. For example, facial paralysis with the mouth drawn much to one side would be a cause for rejection. Disfiguring scars would likewise mean rejection. He might be a good driver but his appearance would be objectionable to the passengers. For the same reason, any marked skin disease is cause for rejection. Infected teeth should call for postponement of the application until the condition has been corrected. A man who has suffered concussion of the brain should not pass, not only because of the injury but because claims might be made on the basis of aggravation of such a pre-existing injury.

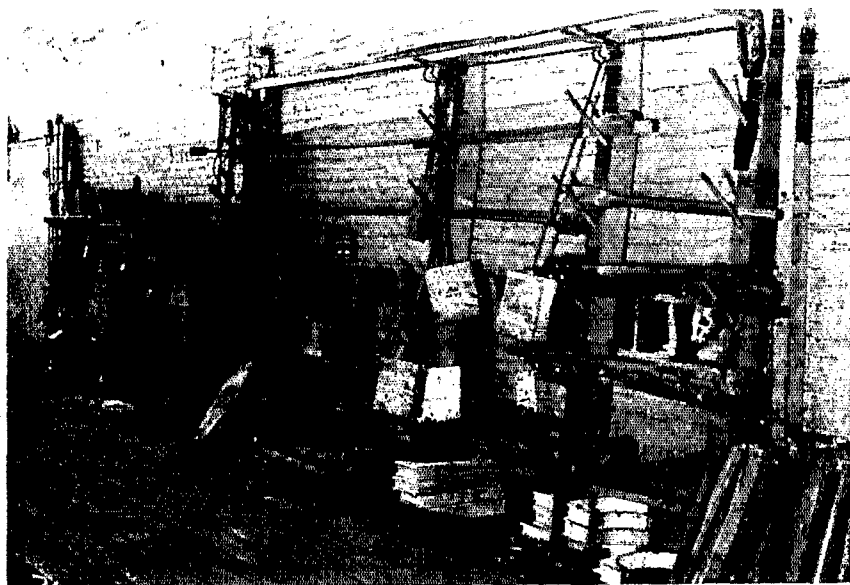
Next the expansion of the chest is taken. A minimum of three inches should be the standard. The abdominal measurement should be less than the chest on inspiration. The lungs should be carefully examined by percussion and auscultation to determine the presence of tubercular cavities, former lung involvement, or other lung pathology.

The examination of the heart, and with this the taking of blood pressure is closely related, is of great importance. An applicant with a leakage of any valve of the heart should be rejected. The

(Please turn to page 70)

THE SAFETY EXCHANGE

"A ROUND TABLE IN PRINT"



A Convenient Rack for Tools and Appliances

To aid safety and good housekeeping this rack was built in the car department of the Chicago and North Western

Railway. It is used to hold bottom rods, turn buckles, levers, reservoir blocks and bands, hand brake chains, etc. Dope buckets and oil cans are stored on the substantial shelf at the extreme left.

"Old Man Accident" Tags the Unsafe Spots

At a safety meeting of the Lone Star Cement Company New York, Inc., an employee appeared as "Old Man Acci-

dent." His acting and make-up was so gruesome that the entire audience had a chill. A photograph was taken of him, enlarged, colored, and placed on a portable stand finished in bright red and shellaced.

When an unsafe spot was found around the plant, particularly with regard to housekeeping, "Old Man Accident" popped up. Members of the Safety Committee had the right to place him, but he could not be removed until the particular hazard had been removed. No reason was given for his appearance, but it didn't take long for the members of a department to find the reason and remove it. "You would be surprised to know how that picture was hated and how conditions in the plant were improved."

Rubber Band Prevents Loss of Flashlight

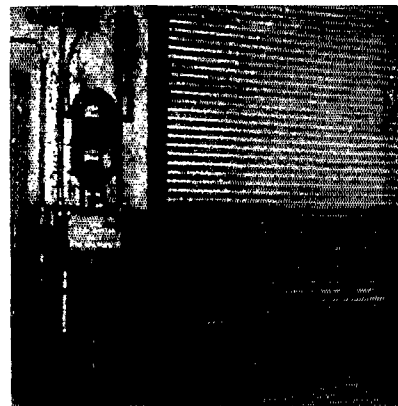
Many a man working on unfamiliar ground in the dark has been put in an awkward situation by dropping his flash-

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

light. To avoid this, cut two half-inch bands from an old inner tube, loop them together, loop one band snugly around the flashlight, and with your wrist through the other, grasp the light. If the light is dropped in an emergency, it will not be lost or broken. If climbing or carrying makes it necessary to use both hands, the light can be carried conveniently while leaving the hands free. This suggestion appeared originally in *The Explosives Engineer*.

Protect Vehicles Against Partially Open Doors

These signals consisting of one red and one green light are used by the Philadelphia Co., Pittsburgh, Pa. The red



light shows unless the garage door (roller type) is entirely open. The green light shows only when the door is entirely open. Control buttons are located under the lights for emergency operating of the door.



Wire Mesh for Temporary Man Hole Cover

In constructing a ship it is necessary to leave hatches and man holes open until the ship is practically finished. To



guard these openings, the Bath Iron Works, Bath, Maine, uses temporary covers made of heavy wire mesh. These covers have a cross-braced flat bar frame supported on short legs to give clearance for hose and cables. The back of the cover is hinged and welded to the deck. The entire unit is electric welded and is sufficiently strong to bear the weight of two men.

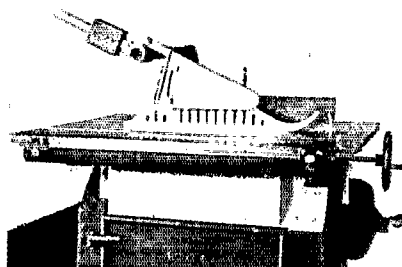
Solid Carbon Dioxide In a New Role

What might have been a serious accident, or waste of valuable material, was prevented by the use of solid carbon dioxide (dry ice). The valve in a one-ton tank of liquid chlorine had become so badly stuck that it was feared the tank might be damaged by an effort to force it open. The hazard of a break was so great that throwing the whole thing into Lake Michigan was seriously

considered. The procedure, which may be used with safety with any volatile substance, was simply to pack solid carbon dioxide around the cylinder until it was sufficiently cooled to permit opening it.—Ind. Eng. Chem., June 20, 1931 (News Edition) p. 197.

Rip Saw Guard Is Always in Place

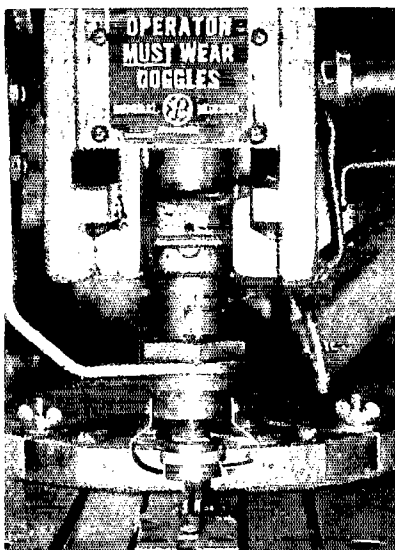
This photograph shows a full automatic rip saw guard sent in by the Employers Mutual Liability Company,



Wausau, Wis. Its sturdy construction gives good protection and offers little obstruction to the work being done. It can take various thicknesses of wood, and is counterweighted so that the blade is always guarded.

Spot-Welding Electrode Has Spark Guard

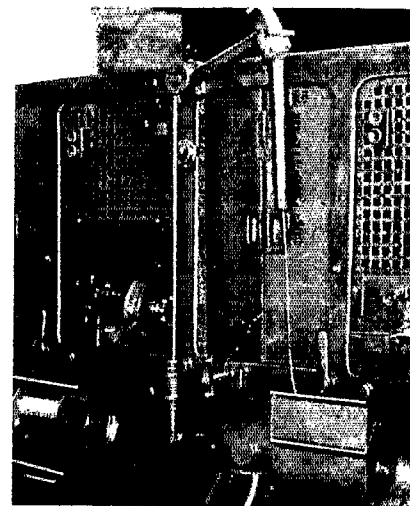
This spark guard on a spot welding electrode consists of an asbestos collar around the electrode held in place by spring clips. When the material to be welded is in place and the electrode depressed, the guard fits tightly around the electrode, making it impossible for the spark to get out. Notice the forced draft exhaust duct at the right. The photograph was contributed by the



General Electric Company, Schenectady, N. Y.

Wire-Drawing Machine Guard Prevents Eye Injuries

This elephant trunk guard on a wire-drawing machine was designed by the



Western Electric Company to prevent eye accidents when wire breaks. At the lower left of the illustration a spool guard is shown open to permit removal of the spool. At the right the guard is shown in a closed or operating position. This guard is made of sheet metal.

Brakeman Stands in Clear With Coupling Hook

The simple hook shown in the accompanying illustration has prevented many injuries. With it the brakeman may stand in the clear and guide the coupling link into place. The coupling pin, placed as shown, falls into place when the cars bump. This item was contributed by the United States Bureau of Mines.



Annual Report of the Treasurer

National Safety Council

COMPARATIVE BALANCE SHEETS—DECEMBER 31, 1935 AND DECEMBER 31, 1934

Assets				Liabilities			
	As at Dec. 31, 1935	As at Dec. 31, 1934	Increase Decrease		As at Dec. 31, 1935	As at Dec. 31, 1934	Increase Decrease
CURRENT ASSETS:				CURRENT LIABILITIES:			
Cash	\$ 3,526.14	\$ 1,344.53	\$ 2,181.61	Notes Payable		\$ 200.00	\$ 200.00
Notes Receivable	1,203.42	1,765.50	\$ 562.08	Accounts Payable	10,200.54	4,983.87	5,216.67
Accounts Receivable (Including billings in December for January dues) less reserves for doubt- ful accounts	66,863.30	48,797.27	18,066.03	Accrued Expenses	275.00	306.00	31.00
Inventory of Supplies	22,178.83	24,722.69	2,543.86				\$ 5,216.67 \$ 231.00
			\$20,247.64 \$3,105.94				
Total Current Assets..	\$ 93,771.69	\$ 76,629.99	\$ 17,141.70	Total Current Li- abilities	\$ 10,475.54	\$ 5,489.87	\$ 4,985.67
Special Cash Fund Representing 5% of the income Cash Receipts from De- cember 1, 1934, to November 30, 1935, in Accord- ance with Resolu- tion of the Execu- tive Committee, November 19, 1934..	24,441.27	3,413.54	21,027.73	Deferred Income	9,286.07	9,235.86	50.21
National Safety Council Reserve Fund Investments —Market Value at December 31, 1935, \$62,700 and \$6,799.06 Unin- vested Cash	69,499.06	48,020.00	21,479.06	Funds Held by National Safety Council As Custodian for the Accident Prevention Equipment Manufacturers Section	3,080.62	5,290.24	2,209.62
Cash in Closed Bank		102.26	102.26	Reserve for future Service to Mem- bers — Less De- preciation on Securities	85,053.12	74,200.00	10,853.12
Office Furniture and Equipment, Less Depreciation, Car- ried at	2.00	2.00		Surplus	85,741.72	41,385.32	44,356.40
Printing Machinery, Less Depreciation	4,287.45	5,797.89	1,510.44				\$60,245.40 \$2,209.62
Deferred Charges	1,635.60	1,635.61	.01				\$193,637.07 \$135,601.29 \$58,035.78
			\$59,648.49 \$1,612.71				
	\$193,637.07	\$135,601.29	\$58,035.78		\$193,637.07	\$135,601.29	\$58,035.78

STATEMENT OF REVENUE AND EXPENDITURES For the Year Ended December 31, 1935

Revenue		Surplus Account	
Industrial Safety Division and National Safety News	\$208,073.29	Surplus, December 31, 1934	\$41,385.32
Public Safety Division	101,450.77	Add: Contributions from members to Contingency Fund	\$ 7,925.00
Poster Department	33,630.03	Excess of Revenue Over Expenditures for the Year Ended December 31, 1935....	36,533.66
Miscellaneous Sales, such as Booklets, Bulletin Boards, "Safe Worker," Calendar, etc.	155,242.95		\$44,458.66
Congress and Transactions	19,265.02		\$85,843.98
Films and Slides	797.57	Deduct: Claim Against Closed Bank Written Off	102.26
Printing Charges to Other Departments	\$34,047.52		\$85,741.72
Deduct: Expenses of Printing Department	29,405.37		
	\$ 4,642.15		
Interest—Net	2,434.82		
		Expenditures	
		Industrial Safety Division and National Safety News	\$162,298.07
		Public Safety Division	151,945.85
		Poster Department	74,184.07
		Miscellaneous Expenditures for Booklets, Bulletin Boards, "Safe Worker," Calendar, etc.	80,044.85
		Congress and Transactions	18,865.60
		Films and Slides	1,664.50
		Excess of Revenue Over Expenditures Transferred to Surplus Account	36,533.66
			\$525,536.60
			\$525,536.60

We have examined the accounts of the National Safety Council for the year ended December 31, 1935. In our opinion, based upon the examination which we have made, the above Balance Sheet as at December 31, 1935 and the accompanying Statement of Revenue and Expenditure fairly present the financial position of the National Safety Council as at December 31, 1935 and the result of its operations for the year ended on that date.
Chicago, Illinois, January 18, 1936.

ARTHUR YOUNG & COMPANY,
Certified Public Accountants.

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-oxymercuri-fluorescein-sodium)



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

Mercurochrome, H. W. & D.
(Dibrom-oxymercuri-fluorescein-sodium)

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

HYNSON, WESTCOTT & DUNNING, INC.

INDUSTRIAL HEALTH

A Non-Technical Symposium for Physicians and Laymen

Dust Concentration in Quarries

By J. WILLIAM FEHNEL

Chemist, Industrial Hygiene Laboratory, Metropolitan Life Insurance Company

NORMALLY the dust concentrations in quarry operations are dependent upon the worker. In few instances is the worker required to remain exposed to a heavy dust concentration, and then only for a short period of time. It is usually possible for him to work in a position away from the direction of the air current carrying the dust clouds. This is especially true where the drill is of the mounted type.

In case of hand jackhammer drilling, the operator is required to bear down with his full weight in order to supply the required feed to the drill. Here the rate of drilling is more or less dependent on the physical characteristics of the men. Often the contractor picks the heavier men for this work. With mounted drills, the weight applied or the feed is constant, and the rate of drilling is not only more regularly progressive but also the operator is not required to be constantly exposed to the rising dust cloud.

Tests on mucking show that the dust generated is dependent upon:

1. Fineness of the material.
2. Dryness of the material.
3. Rate and method of handling.

In recent studies in the iron mines in upper Michigan with mechanical scraping of relatively wet material, the dust in the breathing zone of the tugger operator closely approximated the general air of the mine area. In quarry and building foundation work the same conditions held, but in most instances the dust concentrations of the general air were too high for safe breathing over a period of time.

A test run recently¹ of hand shoveling in a dry mine indicated that greater dust concentrations were generated when the material was thrown from the shovel into the car. Samples taken with two men shoveling showed an average dust concentration of 83 million particles, but on applying suction to the top end of the car to entrap and remove the arising

dust, the dust concentration was reduced to 8 million particles.

Crushing operations are usually associated with quarry operations. These operations, together with screening or sizing of materials, are usually done on the dry material. Usually the crushing and screening plants are mechanical, requiring only a few employees at stations and more often only intermittent attention is necessary for the oiling of the machinery.

In some cases the screening operations are done wet and the resulting dust generated is greatly reduced over the same operation done on dry material and especially, as is common practice, with no covers over the screens.

In a survey of a silica grinding plant, the following dust concentrations were obtained:

<i>Total Count in Millions of Particles, less than 10 microns, per cu. ft. air sampled</i>	
<i>Location of Sampling</i>	<i>Sampled</i>
Crusher room	4.25
Grinding room	9.52
Bagging room	69.55

These tests were taken in the summer and there was good general ventilation with all doors and windows open. The crusher and grinding room operations were mechanical, requiring the attention of one oiler intermittently, but the bagging room had two men at the two bagging machines and two men trucking the bagged silica into a car for shipment. These four men were exposed to the highest dust concentration in the whole plant.

A similar study of a feldspar mill operating with open vibrator screens showed the following concentrations:

<i>Total Count in Millions of Particles, less than 10 microns, per cu. ft. air sampled</i>	
<i>Location of Sampling</i>	<i>Sampled</i>
At roughing roll	2,656
At roll crusher	1,859
At screens (feeder end)	1,652
At screens (take-off end)	8,885

Samples taken in a wet limestone screening plant showed 0.91 million particles as the general air dustiness. This limestone was burned to make caustic lime and samples taken at the kilns showed:

Charging floor	2.5 million particles
Bottom of kilns	1.7 million particles
(discharge of kilns)	

Summing up, our experience gained over a number of years by making surveys of varied industries, we have definitely concluded that:

1. Dust is principally produced by mechanical operations, and in the mining and quarrying industries, drilling operations are the chief dust producers.

2. Employees at other operations than drilling are often exposed to a high dust concentration due to pollution by dust generated by the drills.

It is, therefore, logical to conclude that the proper way to eliminate dust is to entrap and remove it at its source. While wet drilling may, in certain instances, be effective, the use of water offers other difficulties, especially in freezing weather.

The effectiveness of the Kelley trap has been demonstrated experimentally and its adaption to drilling operations in its first commercial use on the foundation of the Metropolitan Life Insurance Company's home office building at 24th Street and 4th Avenue, New York City² was successful.

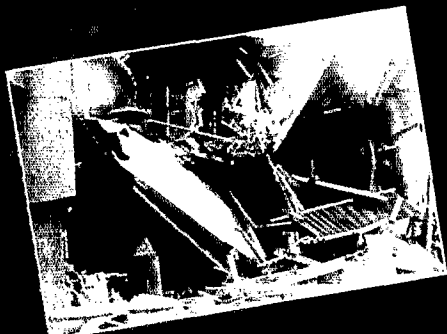
A series of later tests conducted in the Balmat mine of the St. Joseph Lead Company³ showed the practicability and efficiency of the Kelley system under severe mining conditions.

The dust health hazards of the quarry industry are such that they can readily be eliminated by efficient and economical measures.

¹The American Institute of Mining and Metallurgical Engineers, Technical Publication No. 637, Control of Dust in Mines, Feb. 1935, N. Y. C.

²Hatch, Theodore, Kelley, George S., Fehnel, J. Wm., Control of the Silicosis Hazard in the Hard Rock Industries. II. An Investigation of the Kelley Dust Trap for Use with Pneumatic Rock Drills of the "Jackhammer" Type, Journal of Industrial Hygiene, Feb. 1932.

Prevent EXPLOSIONS



BOOK

on
the Causes and
Prevention
of
PRESSURE
EXPLOSIONS

Free

To EXECUTIVES, ENGINEERS, SUPERINTENDENTS and PURCHASING AGENTS

THIS PRACTICAL ILLUSTRATED BOOK on the

Prevention of PRESSURE EXPLOSIONS

In Industrial and Chemical Plants, Refineries, Boiler Houses, Gasoline Plants, Pipe Lines, Separators, Air Receivers, Pressure Vessels of all kinds.

The terrible explosion hazard is ever present. Safety Valves too small—corroded shut—screwed down too tight. Lines clogged or frozen up. Pressures leap beyond safety point. Result—A TERRIFIC EXPLOSION—disastrous to life and property. PLAY SAFE—Back up your Safety Valves with E. S. & B. Safety Heads.



E. S. & B. SAFETY HEAD
Would Have Prevented
This Wreckage.

MAIL THIS COUPON

Black, Sivalls & Bryson, Inc.
Engineering Dept., Oklahoma City, Okla.

Please send me without obligation your book on
Prevention of Pressure Explosions.

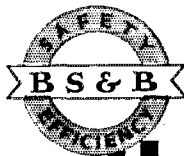
NAME.....

FIRM.....

ADDRESS.....

Export:
Continental-Emsco Co.
New York

Black, Sivalls & Bryson
(INC.)
OKLAHOMA CITY



THE ACCIDENT BAROMETER

Prepared by the Statistical Bureau, National Safety Council

ACCIDENTAL DEATHS OF ALL TYPES totalled about 8,610 in November, compared with 8,564 for the same month of 1934, an increase of 0.6 per cent. Motor vehicle deaths decreased 5 per cent, but this was offset by increases of 6 per cent in home fatalities and 4 per cent in occupational deaths. There was likewise very little change from October to November in all-accident deaths, the total declining only 150. The January-November total is now placed at 89,160, or about 3,000 under the comparable total for 1934.

OCCUPATIONAL ACCIDENTAL DEATHS occurring in November are estimated at 1,500, an increase of 100 from the total for the same month in 1934. From October to November, however, there was no change. During the eleven months there were approximately 15,000 of these fatalities, or about 300 more than occurred during the same period of 1934. This 2 per cent advance was more than balanced by increases in employment, according to available information. The inter-plant contests of community safety councils indicate that in November the accident frequency rate per million man-hours improved, dropping to 10.56 from the comparable 1934 rate of 12.27. The severity rate per thousand man-hours, however, rose from 1.11 to 1.51. During the eleven months both rates have decreased: frequency from 14.01 to 12.59; severity, from 1.13 to 1.00. In the three sectional contests conducted by the National Safety Council November frequency was a little above the previous year, but the eleven months average rate was still 8 per cent under 1934. During December accidental deaths reported to Industrial Commissions in 20 states numbered about the same as in December, 1934.

INJURIES TO THE HEAD, FACE, AND NECK (excluding eye cases), compensated in New York during 1934 numbered 4,286. This represents a decrease of 12 per cent from the average number compensated annually from July 1, 1925 to June 30, 1930. Omitting deaths and permanent total disabilities, the number of cases decreased from an average of 4,539 to 4,066, but the number of weeks awarded in these cases rose from 58,125 to 89,520. This indicates that the average award per case rose from 12.8 to 22.0 weeks, or 72 per cent. During the same period the average award for all

All Accidental Deaths

January-November

1935	89,160
1934	92,228
1933	82,487

U. S. Census Bureau totals for 1933 and 1934; National Safety Council estimate for 1935.

injuries increased only 24 per cent — from 13.0 to 16.1 weeks. The largest decreases in head, face, and neck injuries are associated with falling objects, electricity, explosives and heat, and mechanical apparatus.

MOTOR VEHICLE FATALITIES in November are estimated to have numbered 3,520, or 5.1 per cent fewer than in the same month of 1934. Judging from past experience, this improvement will be somewhat reduced when the remaining states have been heard from, but even so there will probably remain a considerable decrease from the previous November. It is not possible to say definitely just what brought about this good record, but it seems unlikely that it came from lighter traffic due to poor driving conditions. So far as the records show, the weather appears to have been as good as in November, 1934. It seems more likely that the improvement came in part from a more widespread understanding of the automobile accident problem that apparently followed the publication of such articles as "And Sudden Death." If this is true, the effect evidently has worn off, for December reports now available indicate as many deaths as in December, 1934. The eleven months' fatality total is now estimated to be 32,500, compared with 32,463 for the same months of 1934.

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.

COMMERCIAL VEHICLE FLEETS participating in the National Fleet Safety Contest averaged 1.72 accidents per 100,000 vehicle miles during November. This average covers 431 fleets operating a total of 44,640,000 miles. In November, 1934, the same fleets had a rate of 1.76. For the first five months of the present contest (July to November) the rate is only 1.63, or 8 per cent below the comparable rate for the preceding contest of 1.77. The greatest improvement for this period was made by bus fleets, with a five-months' average rate of 0.94, against 1.19 for the same months of 1934. Passenger cars made a smaller improvement (from 1.21 down to 1.11), while trucks showed little change from 1934 with a rate of 2.52 compared with 2.56.

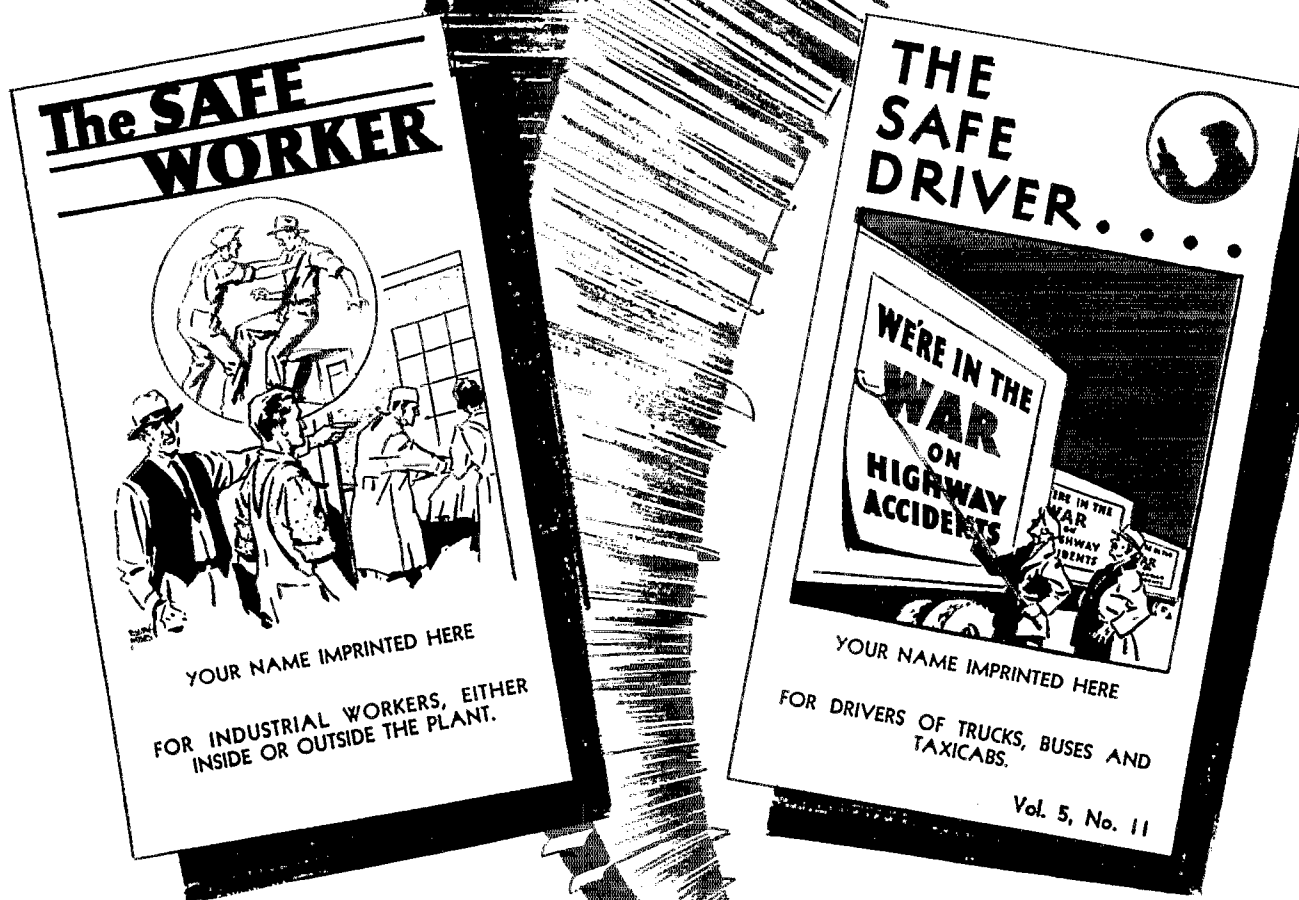
PUBLIC (NOT MOTOR VEHICLE) DEATHS totaled approximately 1,100 in November, which is the same number estimated to have occurred in November, 1934. However, this figure represents an increase of 100 fatalities over October. The advance is probably seasonal, as there are normally quite a few more fire-arms and asphyxiation deaths in November. The eleven months' total is now placed at 15,700. In the same period of 1934 there were 16,200 fatalities. The difference consists chiefly of fewer excessive heat deaths occurring in July and August of this year.

HOME ACCIDENT FATALITIES numbered about 2,800 in November, compared with 2,600 in November, 1934. This increase appears to be centered chiefly in asphyxiations and falls. Children under five years seem to have had a better experience, but all adults over 25 years of age made a poorer record than in the preceding November. With the addition of the November deaths, the cumulative total for 1935 is estimated to be 28,600, compared with 31,500 for the same months of 1934—a reduction of 2,900 fatalities, or 9 per cent.

Looking Ahead

There will be a small drop in accidental deaths from January to February. Motor vehicle fatalities and deaths from falls will decrease somewhat, but there will be at least as many fatal burns and asphyxiations as in January—probably as many as in December. Other accidental deaths also will remain about unchanged.

10,000,000 COPIES



Endless research, expert editing, acres of paper and tons of ink have gone into the making of *ten million* copies of these two unique magazinettes. Many employers have been steady subscribers every month, every year, since they were first issued. There must be a reason for their tremendous popularity.

The Safe Worker and The Safe Driver are real helpers in any safety program. They teach without preaching. They work their subtle safety influence on the employee while they entertain him. Your plans for this year should include distribution of one or both of these magazines to your workers and drivers.

Schedule of Member Prices (For either or both publications)

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25 to 100 copies	• • • • •	4c. each per month
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SAMPLES SENT UPON REQUEST
PUBLISHED BY

20 N. Wacker Drive . . . NATIONAL SAFETY COUNCIL . . . Chicago, Illinois

L I M E

Industrial Data Sheet D-Chem. 19

A. Problem

1. What are the hazards encountered in the use of lime, and what precautions should be taken against them?

B. Hazards

2. Lime under certain conditions causes fires. Lime in dust or paste form will cause eye and body burns, skin irritation and ulcerations.

C. Discussion

3. Lime (quick lime, caustic lime, calcium oxide) is a white solid formed by calcining calcium carbonate (limestone, chalk or shells of mollusks) at a bright red heat (800 to 900 degrees Centigrade, 1472 to 1652 degrees Fahrenheit). It is used in the manufacture of mortar, cement, fertilizers, soap, candles, glass and many chemicals such as calcium carbide, caustic soda and potash, ammonia, wood alcohol and magnesia; in purifying illuminating gas and sugar solutions; in dye works as a bleach; in the tanning industry to remove hair from hides; and as a disinfectant and deodorizer. Upon exposure to dampness or moisture, it forms calcium hydrate (slaked lime) and may evolve sufficient heat to ignite combustible materials in contact with it.

4. Lime has a caustic action on the body which may be caused by:

- Inhalation of or contact with the lime dust.
- Contact with paste made by mixing lime with water.
- Swallowing lime dust or lime paste.

Symptoms

5. Lime dust when inhaled causes the worker to sneeze and cough. It sets up an inflammatory condition of the respiratory passages, which occasionally may be followed by ulceration and perforation of the nasal septum. Lime dust

on the skin or nails will absorb the oil from them and cause the skin to thicken, chafe, scale and crack, and the nails to become hard and to break easily. If the skin is damp with perspiration, the heat set up by the reaction of the lime with moisture irritates and often causes severe burns which may be followed by ulcers or lesions and scars. Particles of lime dust in the eye, unless washed out at once, irritate the eye and lids and may cause severe burns which may be followed by scarring or perforation of the eyeball, impairment of vision and by a permanent turning out of the eyelids. Severe burns of the skin and eyes often result from splashes of lime paste. Swallowing lime dust or lime paste irritates and may severely burn the mouth, throat and stomach.

First Aid Treatment

6. When lime dust is inhaled, weak bicarbonate of soda water should be used as a nasal douche and as a gargle. In case lime dust or lime paste gets on the skin or in the eyes, the part affected should, without delay, be flushed with plenty of clean, fresh water. Copious flushing of the eye is of utmost importance. It may save an eye. If lime dust or lime paste has been swallowed, the patient should be given diluted lemon juice, or orange juice, or vinegar, or diluted citric, or acetic, or tartaric acid, followed by whites of eggs beaten in milk, or by linseed or olive oils. The services of a physician should be obtained without delay.

Precautions

7. The following measures are some of those recommended for the prevention of injuries from lime:

a. Lime should be stored on dry flooring in fire resistant rooms which are well

protected from the weather.

b. The raising of dust should be avoided.

c. Work tables should be provided with a down-draft exhaust ventilation. (See Note W)

d. Plenty of clean, fresh water should be available for washing off lime dust or lime paste which may be spilled on the hands, or into the eyes.

e. Workers should wear protective clothing, such as rubber gloves and boots. (See Note X)

f. Workers should be provided with and required to wear goggles and respiratory protective equipment such as respirators. (See Note Y)

g. Before beginning work, workers should coat their wrists, hands, face, arms and other exposed parts of the body with some protective substance against burns, such as lubricating oil, white mineral oil, or vaseline.

h. Food should not be kept or eaten near lime or in the workroom.

i. Bottoms of trouser legs should extend down over the tops of boots or shoes, not tucked into them.

j. Wet clothing or clothing impregnated with lime should not be worn.

k. Each person before working with lime should be given a complete physical examination for evidence of any disease which may be aggravated by the lime. (See Note Z)

NOTE W: For detailed information on exhaust systems, see Safe Practices Pamphlet No. 22, "Exhaust Systems."

NOTE X: For detailed information on suitable protective clothing, see Safe Practices Pamphlet No. 16, "Protective Clothing."

NOTE Y: For detailed information on goggles, see Safe Practices Pamphlet No. 14, "Goggles," and for information on respirators, see Safe Practices Pamphlet No. 61, "Respirators, Gas Masks, Hose Masks, and Breathing Apparatus."

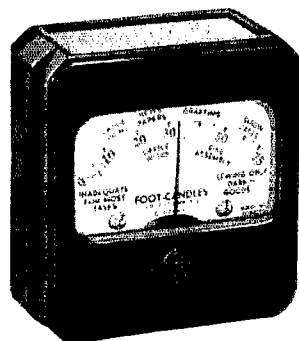
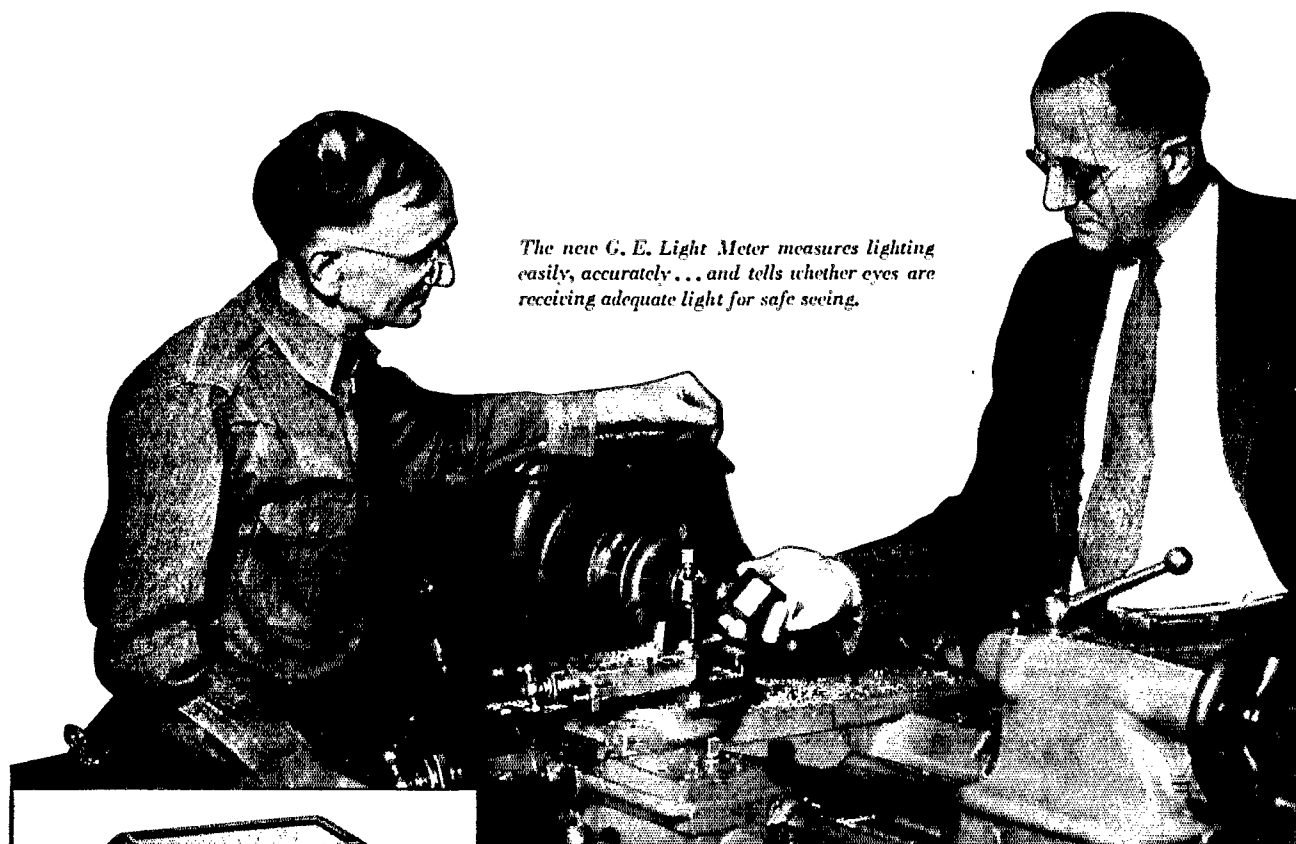
NOTE Z: Authentic information on physical examinations will be found in Health Practices Pamphlet No. 2, "Physical Examinations in Industry."

National Safety Council, Inc.

20 North Wacker Drive

Chicago, Illinois

NATIONAL SAFETY NEWS



MEASURE LIGHTING WITH NEW G. E. LIGHT METER

This new General Electric Light Meter quickly and accurately tells whether the various processes or operations in your shop or factory are adequately lighted or not. No bigger than a pack of cigarettes, it is ruggedly made and sells for only \$11.50. For more information, write to the nearest General Electric Incandescent Lamp Sales Division office.



BETTER LIGHTING

*speeds work . . . reduces spoilage
. . . increases safety*

● In many shops, factories and offices, workers do not have one-fiftieth, often not even one one-hundredth, the light they need for efficient, safe seeing. With adequate lighting, even older workers can work more efficiently, errors and spoilage are decreased, accidents are lessened.

Now it is easy to tell whether your shop, factory or office is adequately lighted for safe seeing. The new, compact, General Electric Light Meter readily measures light with accuracy. It not only shows how much light

is being received but also indicates the minimum required foot-candles for different seeing tasks.

In the interest of more efficient work and greater safety, you owe it to yourself, to your business associates, and to your employees to be sure that eyes are receiving adequate light for today's close-seeing tasks. This new Light Meter should be in the hands of every business executive.

For further information, telephone or write the nearest General Electric Incandescent Lamp Sales Division office.

GENERAL  ELECTRIC
MAZDA LAMPS

THE BULLETIN BOARD

A page for those who maintain the Show Windows of Safety

Conducted by STAN KERSHAW

Industry's Fight

THE establishment of a good safety record within the plant is only part of the battle. Accidents away from the plant may have a far more disturbing effect on production and morale through absenteeism.

A machine stands idle for hours or perhaps days because of inability to find a capable man to operate it. A shipment of goods promised for a certain date is held up indefinitely because an employee skilled in one of the special manufacturing operations is laid up in a hospital, and future business will suffer because of it. A process which requires skilful continuous manipulation over a period of days by men of long training is interrupted by the injury of one of the men in a home accident, and as a result much valuable material is spoiled.

These and many other costly interruptions can be at least partly avoided by putting up a good fight against accidents away from work. Not only is it good business, but it is also the human thing to do. Accidents on the highways are the big problem of the day. They are occurring with such frequency that one can look forward with a reasonable degree of certainty to having one strike close to home sooner or later.

Since practically everyone travels the highways in automobiles, hardly anyone escapes the threat. Thus the highway safety campaign becomes a very personal matter. Those who take part in promoting it are, consciously or unconsciously, doing it as much for self protection as for the protection of others.

There are many things that can be done in the average industrial plant to help put a stop to these accidents. Employee safe driving clubs can be organized. Instructions in safe driving can be given at noon-time meetings. Literature on safe driving can be distributed. Employees can be asked to sign safe driving pledges. And by no means least in importance, plenty of posters on safe driving can be used on the plant bulletin boards.

The Council has produced many posters

suitable for just such a drive. These can be posted on the streets and in store windows in the adjacent community as well as on the plant bulletin board.

For your convenience we are listing many of the posters most suitable for these purposes. The numbers, the sizes and the captions are given, so that there should be no difficulty in placing orders for as many as may be needed.

Number	Size	Poster Units	Caption
5441	9x12 inches	1	Faster cars on the Road Require Safer Drivers at the Wheel
5572	9x12 inches	1	Before Making Left Turn
5171	9x12 inches	1	Try the Brakes
5654	9x12 inches	1	Triple Your Care
5676	9x12 inches	1	Cut Out Cutting In
5311	9x12 inches	1	Carbon Monoxide
5365	9x12 inches	1	Drowsy Drivers
5432	9x12 inches	1	Adjust Your Speed
5617	9x12 inches	1	Do You Depend on Luck
5613	9x12 inches	-1	It Isn't How Well You Drove Last Year
5385	9x12 inches	1	When You Cut Corners
5394-B	17x23 inches	4	When It Rains, Snows, or Freezes
5093-B	17x23 inches	4	Keep Out of Traffic Accidents
5301-B	17x23 inches	4	Speed Does Take You Places
5066-B	17x23 inches	4	Driving After Drinking is Dangerous.
5065-B	17x23 inches	4	Do Your Slowing Down Here
5060-B	17x23 inches	4	Expect the Unexpected
5604-B	17x23 inches	4	How Pedestrians Are Hurt
5620-B	17x23 inches	4	The Line in the Center
5274-B	17x23 inches	4	Safety is Your Greatest Responsibility
5523-B	17x23 inches	4	Govern Your Driving by Conditions
5630-B	17x23 inches	4	Never Pass on a Hill
4357-B	17x23 inches	4	The Higher the Speed, the Worse the Accident
5502-C	25x38 inches	8	Speed Does Take You Places
5643-C	25x38 inches	8	Speed and Sudden

5607-C	25x38 inches	8	Death If You Drive Don't Drink
5655-C	25x38 inches	8	You Object to Glare
5687-C	25x38 inches	8	Stay Alert
4358-C	25x38 inches	8	The Higher the Speed, the Worse the Accident
5067-C	25x38 inches	8	Driving After Drinking is Dangerous

If the safety bulletin boards become snow-bound and draped with icicles, demonstrate to the employees the importance with which they are regarded by shoveling pathways to them and removing the icicles as soon as it stops snowing.

Calendar Contest Draws 2,000 Entries

THE 1936 Safety Calendar has not only found its way into the home but is commanding attention there.

Proof of this comes in the form of entries in the first of the monthly contests announced on the reverse side of the calendar pages. Entries for January numbered approximately 2,000. Since the contest idea in this application is new to Council members, it is expected that subsequent months will bring an increasingly large number of entries.

Almost every state is represented in the competition, as well as Canada and Alaska.

A surprise element is that the preponderance of entries is from adults, many of them women—a strong indication that the calendar is being given thorough use, both front and back.

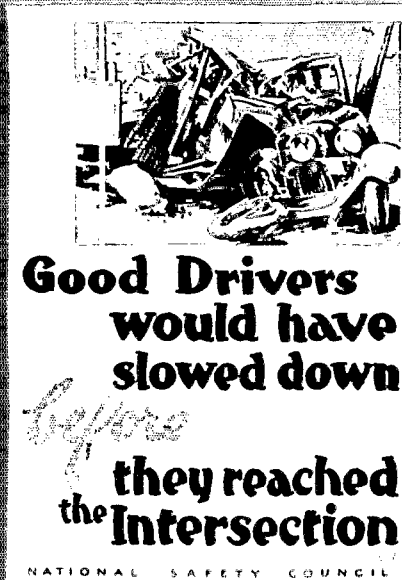
The first month's contest was a word-building competition. The reverse side of the February page offers something novel—a "scrambled word" contest.

Rules are printed beneath each contest announcement. Winners will be selected within two weeks after the contest deadline—the last day of each month. Announcement of awards will be made in the NATIONAL SAFETY NEWS.

NATIONAL SAFETY NEWS



5714-B 17x23 inches 4 units



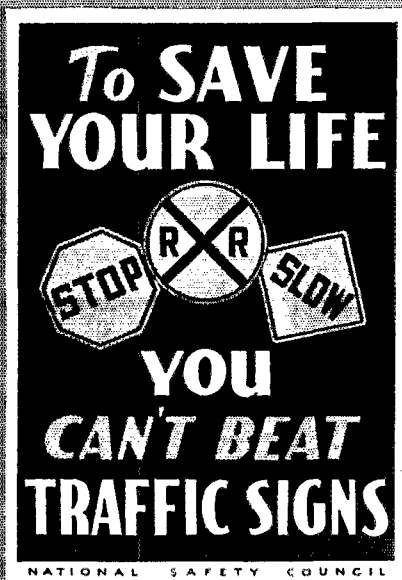
5700-B 17x23 inches 4 units



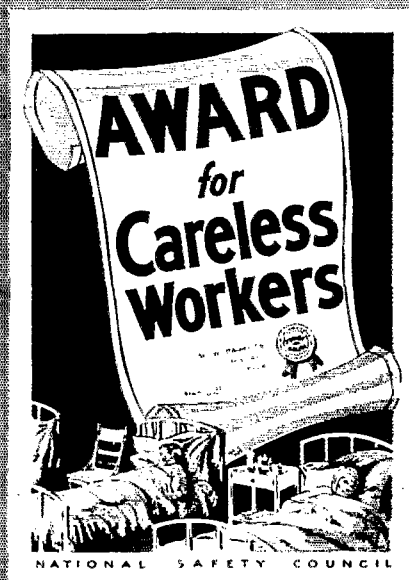
5274-B 17x23 inches 4 units



5702-B 17x23 inches 4 units



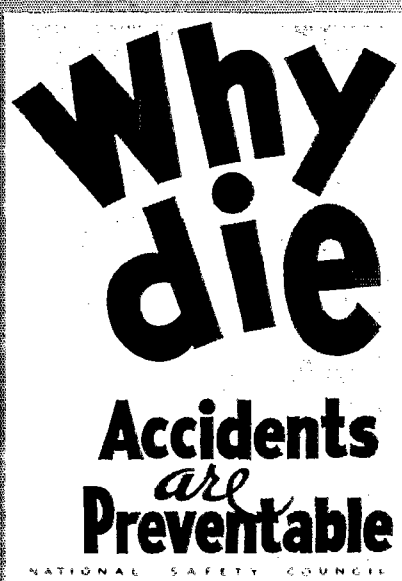
5707-C 25x38 inches 8 units



5705-B 17x23 inches 4 units



5704-B 17x23 inches 4 units



5704-B 17x23 inches 4 units



4943-B 17x23 inches 4 units



Help Little Children
Think **SAFETY**

NATIONAL SAFETY COUNCIL

5706-D 12x18 inches 2 units

A **Little more**
CARE
makes
ACCIDENTS
RARE

NATIONAL SAFETY COUNCIL

5701-B 17x23 inches 4 units

DO YOUR SLOWING DOWN
ahead of intersection
NOT IN IT - PICK UP SPEED
WHILE PASSING THROUGH



YOU'LL MAKE
BETTER TIME
with **SAFETY**

NATIONAL SAFETY COUNCIL

5342-E 17x23 inches 4 units

NO MAN
is greater
than his deeds
More generous
than his gifts
OR SAFER
THAN
HIS ACTIONS

NATIONAL SAFETY COUNCIL

4244-B 17x23 inches 4 units

SHORTY SEZ:



Safety is priceless
yet it costs you
only a thought

NATIONAL SAFETY COUNCIL

4296 9x12 inches 1 unit

EVERY DAY
IS
JUDGMENT
DAY

Use a lot
of it
to
prevent
accidents

NATIONAL SAFETY COUNCIL

4526 9x12 inches 1 unit

A WRENCH



SELDOM
SLIPS

NATIONAL SAFETY COUNCIL

2788 9x12 inches 1 unit

FAMOUS LAST WORDS

IT WAS
ONLY A
SCRATCH

GET FIRST AID

NO MATTER HOW
SLIGHT THE WOUND

NATIONAL SAFETY COUNCIL

5334 9x12 inches 1 unit



Breaking Rules
May Cause
Broken Bones

NATIONAL SAFETY COUNCIL

5320 9x12 inches 1 unit

NATIONAL SAFETY NEWS

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



NATIONAL SAFETY COUNCIL

5698

9x12 inches

1 unit

That HALF-SICK FEELING

When you're half-sick you are jittery. Such unsteadiness causes accidents. If you feel half-sick don't put off seeing your doctor.

NATIONAL SAFETY COUNCIL

5691

9x12 inches

1 unit



Always Set the Prop
Where it will do the
MOST GOOD

NATIONAL SAFETY COUNCIL

5688

9x12 inches

1 unit

**PLAN
YOUR JOB BEFORE
YOU START IT**



**MAKE IT
SAFE**

NATIONAL SAFETY COUNCIL

4443

9x12 inches

1 unit

*your safety
means much to you
and*
EVERYTHING
to those at home

do your job
the

SAFE WAY

NATIONAL SAFETY COUNCIL

5690

9x12 inches

1 unit

**ONLY A
FINGER**



**BUT
YOU
NEED
THEM ALL**

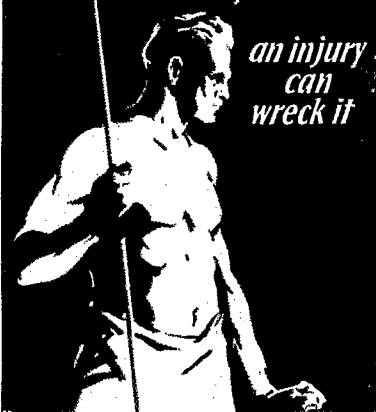
NATIONAL SAFETY COUNCIL

3011

9x12 inches

1 unit

*The HUMAN BODY is more
wonderful than any machine.*



*an injury
can
wreck it*

NATIONAL SAFETY COUNCIL

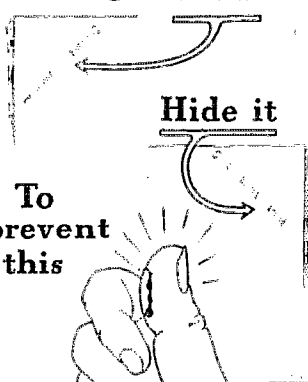
5341

9x12 inches

1 unit

FEBRUARY, 1936

**THERE'S A
REAL POINT
TO THIS**



2280

9x12 inches

1 unit

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



Reaching for
an accident

**REMOVE
PROTRUDING NAILS**

NATIONAL SAFETY COUNCIL

4525

9x12 inches

1 unit

THESE TWO FEET
MET WITH EXACTLY
THE SAME KIND
OF AN
ACCIDENT



THIS MAN
DIDN'T WEAR
SAFETY SHOES



THIS MAN
DID

NATIONAL SAFETY COUNCIL

4363 9x12 inches 1 unit 5709 9x12 inches 1 unit 2232 9x12 inches 1 unit

If you must
carry

be sure
they're the
"Strike on the Box"
—kind—

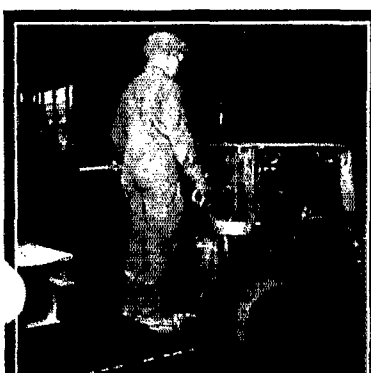
NATIONAL SAFETY COUNCIL

He's Right



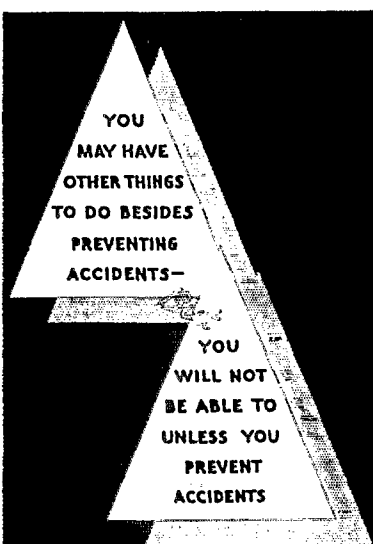
NEVER IN
FRONT

work to the
side of a
SWING SAW



LOOK BEHIND
WHEN
BACKING-UP
OR YOU MAY LOSE A
LEG

NATIONAL SAFETY COUNCIL



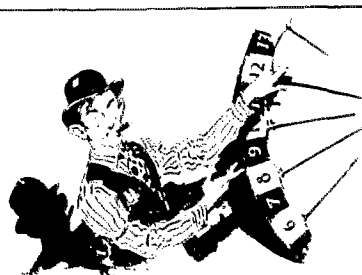
NATIONAL SAFETY COUNCIL



WEAR GLOVES
for jobs like this

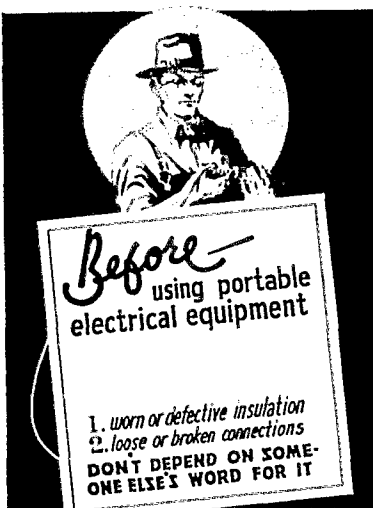
NATIONAL SAFETY COUNCIL

4290 9x12 inches 1 unit 4523 9x12 inches 1 unit 5692 9x12 inches 1 unit



"JUST BECAUSE
LIFE'S A GAMBLE
is no reason why
a feller should take
unnecessary chances"

NATIONAL SAFETY COUNCIL



NATIONAL SAFETY COUNCIL

ACCORDING TO
PREVIOUS EXPERIENCE
20,000
PERSONS
WILL BE
KILLED
THIS YEAR BY FALLING

WILL YOU
BE ONE
OF THEM?

NATIONAL SAFETY COUNCIL

5710 9x12 inches 1 unit 5694 9x12 inches 1 unit 4936 9x12 inches 1 unit

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

NATIONAL SAFETY NEWS

**SAVE
A MINUTE
AND LOSE
YOUR LIFE**

or

**LOSE
A MINUTE
AND SAVE
YOUR LIFE**

WHICH?

NATIONAL SAFETY COUNCIL

4937 9x12 inches 1 unit

LADDERS

**WON'T
STAND
FOR
THIS**

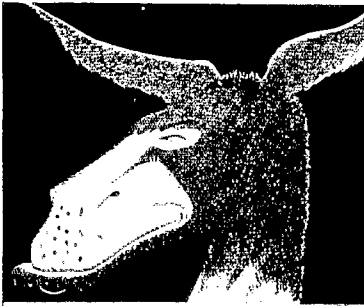


**MOVE IT OVER &
AVOID A TUMBLE**

NATIONAL SAFETY COUNCIL

4014 9x12 inches 1 unit

WHY IS IT—



**THAT ONLY
JACKASSES
TRY HORSE-PLAY**

?

NATIONAL SAFETY COUNCIL

4455 9x12 inches 1 unit

*"What a shame—
I warned Jim
about those
loose sleeves"*



OPERATING ROOM

NATIONAL SAFETY COUNCIL

5689 9x12 inches 1 unit

**AVOID INFLUENZA
GRIPPE AND COLDS**

BY OBSERVING THE FOLLOWING PRECAUTIONS

1. Avoid temperatures of over 70 degrees in your working and dressing rooms (branding men, slaughtering men, etc.). See that the humidity is between 45 and 60.
2. Avoid overeating. Include plenty of milk, orange juice, leafy vegetables, eggs and so on in your diet throughout the winter.
3. See that you get the proper amount of rest and sleep every day.
4. Avoid persons who cough and sneeze at you.
5. See that both latrines and showers are being well maintained.
6. Drink at least six glasses of water daily besides what is needed for your work.
7. Acclustom your skin to changes of temperature by dressing according to the weather and by taking your change baths every morning & evening at a temperature of 100.
8. If possible arrange to get a little exercise through the winter.
9. If you have a cold, take a responsible of taking care in a glass of water in the morning, a few drops more in the afternoon and at night.
10. If you are tired, take a nap in the middle of the day.

**IF YOU DEVELOP A FEVER
GO TO BED AND CALL YOUR DOCTOR**

A SERIOUS ILLNESS MAY THUS BE PREVENTED

Influenza Can Be Controlled by the Above Measures

NATIONAL SAFETY COUNCIL

4161 9x12 inches 1 unit

**HAVE YOU
MADE SURE
EVERYONE
IS CLEAR**



NATIONAL SAFETY COUNCIL

5696 9x12 inches 1 unit

**You Expect Your Wife
to Keep Her Workplace
Clean**



**HOW DO YOU
KEEP YOURS**

NATIONAL SAFETY COUNCIL

4567 9x12 inches 1 unit

FEBRUARY, 1936

**HE'S PROTECTED
HE USES THE BELT &
LIFE-LINE**



NATIONAL SAFETY COUNCIL

3039 9x12 inches 1 unit

YOU CAN BE TOO THIN



YOU CAN BE TOO FAT



YOU CAN BE TOO RICH



YOU CAN BE TOO POOR



**BUT—
YOU CAN'T BE TOO
CAREFUL**

NATIONAL SAFETY COUNCIL

4517 9x12 inches 1 unit

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



FALLS from scaffolds are usually serious.

Men fall from scaffolds mostly because they fail to select the lumber with care, because of old, knotty or cross grained planks, weak ropes and other defects.

BUILD SCAFFOLDS WITH CARE

NATIONAL SAFETY COUNCIL

5699 9x12 inches 1 unit

BOY ELECTROCUTED WHILE FLYING KITE
Killed Instantly when Kite Becomes Entangled In Electric Wires



FLY KITES IN OPEN PLACES
Away From Electric Wires

NATIONAL SAFETY COUNCIL

5697 9x12 inches 1 unit



DON'T DREAM IT—PRACTICE IT

NATIONAL SAFETY COUNCIL

4529 9x12 inches 1 unit

Intersections



demand Caution

NATIONAL SAFETY COUNCIL

5644 9x12 inches 1 unit

"I'm doing this because my husband was killed in an accident"



NATIONAL SAFETY COUNCIL

5695 9x12 inches 1 unit

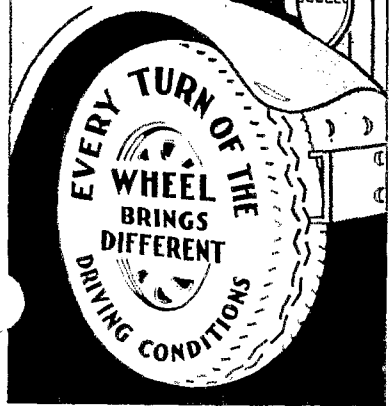


WHEN LOADING TRUCKS
keep load shoulder high and cross-tie it!!

NATIONAL SAFETY COUNCIL

4440 9x12 inches 1 unit

BE CAREFUL
EVERY INSTANT YOUR VEHICLE IS IN MOTION



NATIONAL SAFETY COUNCIL

5332 9x12 inches 1 unit

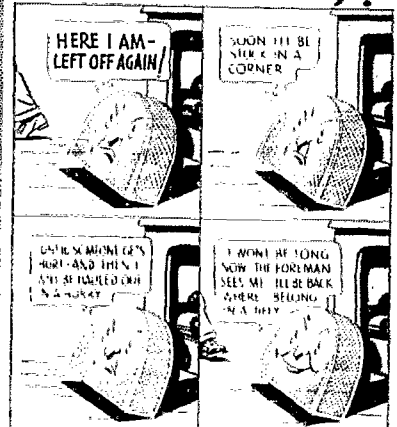
A THOUGHT FOR TODAY

IT DOESN'T TAKE MUCH EFFORT TO REMEMBER TO BE CAREFUL

NATIONAL SAFETY COUNCIL

4554 9x12 inches 1 unit

WONDER WHAT A MACHINE GUARD Would Say?



NATIONAL SAFETY COUNCIL

5335 9x12 inches 1 unit

NATIONAL SAFETY NEWS

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



**X MARKS THE SPOT
WHERE SAFETY
BEGINS**
NATIONAL SAFETY COUNCIL

4808 9x12 inches 1 unit



**Drive Courteously,
The fellow in
the other car
may be our best
CUSTOMER**
NATIONAL SAFETY COUNCIL

5234 9x12 inches 1 unit

THE SAFE WORKER'S DICTIONARY



Sneeze Broadcaster

A fellow with more cold
in his head than sense.
Big-hearted, he'll share
his last cold with you.
He hasn't covered a
sneeze since Dewey took
Manila. Popularity rating
Zero minus

NATIONAL SAFETY COUNCIL

5708 9x12 inches 1 unit

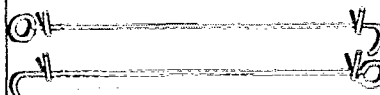
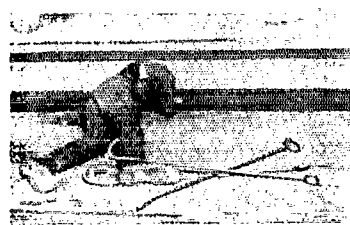
**USING His HEAD
But not
PROPERLY**



**GOGGLES BELONG
OVER the EYES**
NATIONAL SAFETY COUNCIL

4903 9x12 inches 1 unit

**Keep tools where
they belong**



NATIONAL SAFETY COUNCIL

5328 9x12 inches 1 unit

DID YOU EVER

**Try to catch a
train on crutches**

**Climb a ladder
with one foot**

**Play tennis with
a broken toe**

NATIONAL SAFETY COUNCIL

5289 9x12 inches 1 unit

**YOUR LIFE
MAY DEPEND
ON THESE**

**HELP
TO KEEP THEM
IN GOOD
CONDITION**



NATIONAL SAFETY COUNCIL

4275 9x12 inches 1 unit

FEBRUARY, 1936

CORRECT



*When Opening Valves
Aim Gauge & Reducing Valve
AWAY from YOU*

2652 9x12 inches 1 unit

Electrotypes may be purchased from the

**WHATEVER
YOU DO**

**BE
CAREFUL**

4328 9x12 inches 1 unit

National Safety Council for \$2 each

THE SAFETY LIBRARY

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

Spray Painting

SAFETY IN SPRAY PAINTING. Published by the International Labor Office, Geneva, Switzerland, 1935. Distributed in the U. S. by the World Peace Foundation, 8 West 40th St., New York City. Price \$1.00. (Pamphlet)

For hundreds of years painting has been a manual process, but lately the engineer and the chemist have studied methods and materials and introduced machinery into the painting industry. Their aim has been to make work cheap, clean, and easier for the worker, and also to achieve greater output in less time. These objectives have been attained, at least in part. But, as might be expected, the advantages have brought some undesirable consequences in the form of health hazards. The monograph, "Safety in Spray Painting," is the seventh in a series of International Labor Office studies and reports on industrial safety. The publication of a volume on this subject was approved by the Committee at its fourth session held at Geneva in December, 1930. The monograph is confined to questions bearing on accident prevention, and within this limit an excellent job has been done. The booklet is well illustrated.

—E. R. GRANNISS

Highway Crashes

COLLISIONS IN STREET AND HIGHWAY TRANSPORTATION. By Barry Mulligan. Published by Dorrance & Company, Drexel Building, Philadelphia. Price \$3.00. (Book)

Prepared much in the manner of a school text book, this discussion on street traffic is a comprehensive and simply written description of the factors involved and so forms a kind of elementary manual which will be helpful to people just becoming acquainted with the ideas and terminology of the traffic problem.

The title "Collisions in Street and Highway Transportation" is somewhat misleading, for the reader will find neither descriptions of specific collisions or any instruction as to how he may, as driver, avoid collisions. This is because the material is concerned mainly with street layout and signal systems as a method of preventing collisions.

To use the author's own words, "The advocacy of the universal use of one-way streets is the most fundamental suggestion embodied in this book." About half of the publication is devoted to promulgating this idea, either directly or with reference to other traffic problems. The plan is logically worked out with reference to street intersections of various types, city planning, and signalization; but the practical traffic engineer yearns for examples of how it has worked out in practice, and the closest Mr. Mulligan comes to these are carefully planned diagrams and photographs of model street intersections. Furthermore, a city planner is staggered by the difficulties of adapting the universal one-way street plan to an existing city layout in which bridges, railroad yards, hills, and established industries make the expense of applying this system, even to a city with a grid-iron street layout, almost insurmountable.

Several other novel traffic plans are proposed, the most practical one being to extend curbs at the corners in business districts (possible also elsewhere) in such a way that the side-walk will, at the intersection, occupy space in the parking lane as far back from the intersection as parking should be prohibited. Thus there would be, in effect, an indentation in the side-walk between intersections for the parking of cars.

No statistics are given in "Collisions in Street and Highway Transportation" regarding number and types of accidents, and no specific data are included on traffic and its movements.

J. S. BAKER

Fast Driving

IF YOU'RE GOING TO DRIVE FAST, by Ray W. Sherman. Published by Thomas Y. Crowell Co., 393 Fourth Ave., New York City. Price \$1.00. (Book)

This book is filled with good advice for all drivers, given in an interesting way. Driving instructions which are rather technical in character are presented in simple language and are easily understood.

The author does not advocate high speeds—in fact he warns against them—but he tells how to handle the car with

the greatest measure of safety at high speed if that is necessary. He places the responsibility for driving safely on the driver and emphasizes the importance of learning to drive safely at low speeds before higher speeds are attempted.

Quite unnecessarily the author takes issue with other proponents of safe driving and belittles the efficacy of rules and regulations in the first chapter of the book. The good advice he gives would undoubtedly be more effective if projected on a background of cooperation with those who are trying to reduce the toll which increased so greatly in 1934 and effectively held its gains in the year just closed.

The book is worth reading carefully. Its constructive advice is given in a way that tells the story well and appeals to the reader. If, at the beginning, the reader feels that the book is a brief for speeds in which the "sky is the limit", he should reserve his judgment and read on, for the author points out that while safety at high speeds is possible, it is most exacting of both the driver and the vehicle; that speed is devoid of the thrills most drivers expect of it; that it is an expert job for emergencies only.

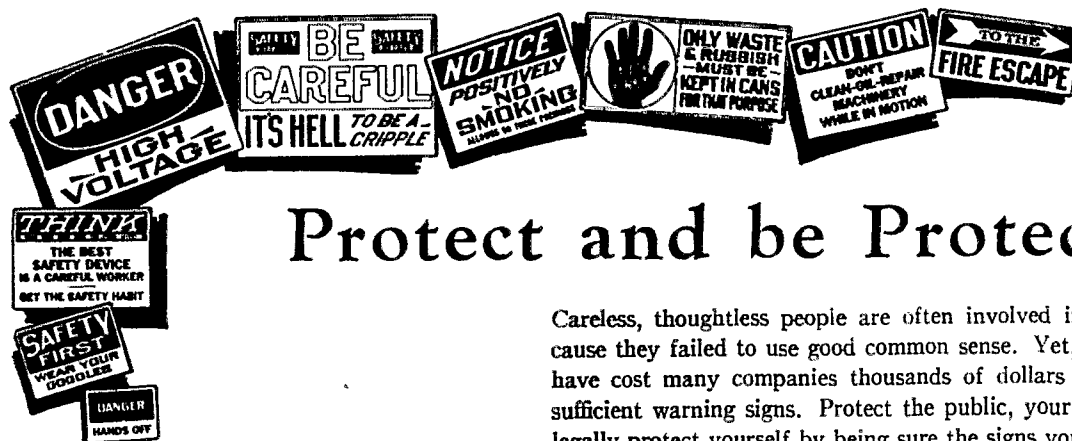
—EARL J. REEDER

Feet and Their Ailments

THE HUMAN FOOT, by Dudley J. Morton. Published by Columbia University Press, 2960 Broadway, New York City. 244 p., illus., index. Price, \$3.00.

Dr. Morton, who is associate professor of anatomy at the College of Physicians and Surgeons, Columbia University, has made some important studies in the development and physiology of the human foot which provide the background for this book. In it he has carried the knowledge of its common functional disorders from the often misleading interpretations of surface observations to a demonstrable and intimate knowledge of the disorders as they affect the internal parts.

Dr. Morton opposes the two outstanding concepts of foot trouble: namely, its origin being primarily due to weakness of the muscles and to the existence



Protect and be Protected

Careless, thoughtless people are often involved in accidents because they failed to use good common sense. Yet, such accidents have cost many companies thousands of dollars due to lack of sufficient warning signs. Protect the public, your employees and legally protect yourself by being sure the signs you post tell *what* the danger is and *how* to avoid it.

Stonehouse Signs meet all these legal requirements. Send for special bulletin No. 2021 illustrating a number of warning signs particularly valuable for legal protection.

"Signs Since 1863"

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SIGNS, INC.

Manufacturers

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Stonehouse Catalog No. 4 contains a complete line of accident prevention signs for all industrial purposes. Send for your copy today.



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



BULB VALVE TYPE NO. 4
This DUPOR respirator has a clear entrance filter aperture of 7½ sq. in. It uses special felt filter pads 5/16" thick. Extra pads 4c each. The exhalation valve takes care of moisture and enables easier breathing. Made in soft, high grade rubber with face cloth. Foldable and reversible.

Price \$18.00 per doz.

Sample postpaid \$1.50

CHIPPEWA-A

The DUPOR Respirator No. 16 has a much enlarged area of the filter chambers with the screw cap threaded clear over the edge thus saving much space; and has a THUMB REST on the side (patent applied for) making possible this light weight construction. Total weight only 4½ 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 is free from harmful gases.

BASIC PATENT NO. 2,000,064

DETAIL PATENTS PENDING AND ALLOWED

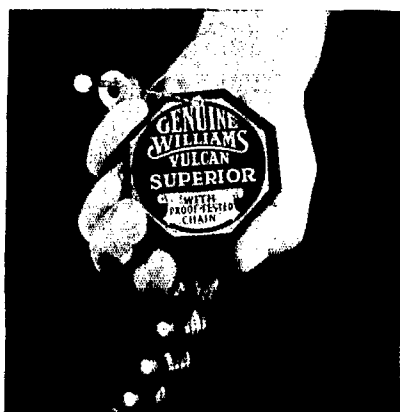
MANUFACTURED ONLY BY
H.S. COVER

BULB VALVE TYPE NO. 16
This DUPOR has enlarged adjustable filter chambers of screw cap type and the very large aperture of 16 sq. in. Extra ¼" thick pads 4c each. The exhalation valve takes care of moisture and enables easier breathing. Made of soft, high grade rubber with face cloth. Foldable and reversible.

Price \$24.00 per doz.

Sample postpaid \$2.00

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



PROOF-TESTED FOR



"VULCAN SUPERIOR"
Pipe and Fittings Tong

SAFETY

● All Williams' Flat Link Chains for every type of "Vulcan" Tongs are individually *proof-tested to two-thirds of their listed breaking strain*. Each chain is stamped after test and a certification tag attached with a leaden seal. Manufacturing imperfections are eliminated... safety becomes a certainty. For safety's sake, specify Williams' "Vulcan" Tongs... look for the identifying tag.

"NON-SPARKING" SAFETY WRENCHES



● Drop-Forged from Beryllium-Copper, non-sparking, non-magnetic, non-corrosive. A safe wrench for use in the presence of inflammable gases. Practically as strong as carbon steel. Available in single and double head patterns in a wide size range. Finished in "safety" green enamel. Sold by Safety and Mill Supply Houses.

J. H. WILLIAMS & CO.

75 Spring St., New York.

Western Warehouse and Sales Office, Chicago Works, Buffalo, N. Y.

Headquarters for: Drop-Forged Wrenches, (Carbon and Alloy) Detachable Socket Wrenches, "C" Clamps, Iathe Dogs, Tool Holders, Eye Bolts, Hoist Hooks, Thumb Nuts and Screws, Chain Pipe Tongs and Vises, etc., etc.



of an anterior transverse metatarsal arch. The X-ray, which is seldom used except to identify the possible presence of some complicating factor, is emphasized as a necessary and reliable means of diagnosis and treatment.

This book is not exclusively a medical work. It can be read profitably by laymen who have an interest in the subject.

PERIODICALS

Drivers and Driving

HOURS OF WORK AND REST PERIODS OF MOTOR VEHICLE DRIVERS. In *International Labour Review*, December, 1935, pp. 733-750.

Regulations in force in a number of countries concerning one of the most important aspects of the conditions of work of motor vehicle drivers.

Occupational Diseases

ROCK WOOL IN RELATION TO HEALTH. L. T. Fairhall and others. In *Journal of Industrial Hygiene*, November, 1935, pp. 263-275.

Chemical data obtained deny the existence of any hygienic hazard in connection with contact with commercial rock wool of the type investigated. Historical examination of lungs, liver and kidneys revealed no constant or significant pathological changes.

THE MINERALOGY OF ASBESTOS DUST. Hurlbut, C. S., and Williams, C. R.. In *Journal of Industrial Hygiene*, November, 1935, pp. 289-293.

Petrographic analyses of rafter dust from six asbestos processing plants, including molding and weaving of asbestos, disclosed that in the respirable sizes, asbestos is a relatively unimportant constituent.

INDUSTRIAL DERMATITIS. Levin, O. L. *Description; Causes; Diagnosis; Prevention; Treatment*. In *Industrial Medicine*, October, 1935, pp. 535-541.

The incidence of dermatitis is rapidly increasing because of the advance in chemistry and the introduction of new chemical materials and processes. In this article the ethiology, both local and constitutional is briefly described, and particular emphasis placed on the importance of detection of the specific excitant, in order to determine the casual reaction existing between the work and the dermatitis.

INDUSTRIAL MANGANESE POISONING. McNally, W. D. *With a Review of the Literature*. In *Industrial Medicine*, November, 1935, pp. 581-599.

Of the greatest importance in prevent-

ing this disease is the total elimination of the manganese dust. Masks should be worn, wash rooms provided, and every precaution taken as is now taken for lead poisoning.

Asked and Answered

GOGGLES FOR CARPENTERS

QUESTION: What type of goggle would you suggest for box car carpenters, who drive nails bracing cars?

ANSWER: Box car carpenters should be provided with and required to wear chippers' goggles with strength-tested lenses such as those specified on page 14 of the enclosed National Safety Code for the Protection of the Heads and Eyes of Industrial Workers, issued by the U. S. Bureau of Standards as Handbook No. 2.

FROZEN OIL

QUESTION: What is the safe way to prepare a barrel of frozen oil so that it can be drawn out of the barrel for use on the job? The oil in question is that commonly used in all parts of a steel mill.

ANSWER: The only safe way to prepare a barrel of frozen oil so that it can be drawn is first to remove the bung and second to place the barrel in a warm room to thaw.

FIRE EXTINGUISHERS

QUESTION: A fire breaks out in an unventilated building fitted with electrical equipment, such as a small motor and control room or substation. What is the safe method of extinguishing the fire?

ANSWER: Carbon tetrachloride is a good extinguisher to use under the circumstances, particularly if the fire is in the electrical equipment. Carbon tetrachloride is not a conductor of electricity. On the other hand, the fumes resulting from its application to a burning object are distinctly irritating to people. Some contend these fumes are poisonous. Thus operators should be cautioned to avoid breathing these vapors and fumes as much as possible during the actual fighting of the fire. Rooms in which carbon tetrachloride extinguishers have been used should be thoroughly ventilated before the operators return to their duties.

Soda acid extinguishers are not recommended for fires in electrical equipment since the liquid stream discharged will act as a conductor of electricity.

Similarly, the stream from a foam extinguisher is a conductor of electricity.

Carbon dioxide extinguishers are particularly well adapted for fires in electrical equipment since the extinguishing medium is not a conductor of electricity. Carbon dioxide has a further advantage in that the gas will penetrate every crevice of the burning equipment.

Further details are brought out in Safe Practices Pamphlet No. 24, "Fire Extinguishment."

Each Day for Seven Years —No Accident

THE Murray Corporation mail driver has driven on the Detroit streets each day for seven years without an accident.

On Tuesday, December 17, fifty drivers assembled to receive special copper, silver and gold medals for one year or more of driving without an accident. L. C. Hill, manufacturing manager of the Murray Corporation, presented to William Edwards a gold medal for seven years of safe driving. Mr. Edwards states that he generally catches up with the fast driver at the next red light. H. W. Boulton, industrial relations manager, arranged the dinner, and R. A. Shaw, safety engineer, presided as chairman. Walter Cary represented the Columbia Casualty Insurance Company, the donors of the medals.

Also, George Kolka who operated one of the long body trucks for seven years without an accident gets his seven year gold medal. Mr. Hill remarked how he personally was driving more carefully lately, due to the emphasis being placed on safety.

Lieut. Wesley Brown of the Safety Bureau gave an inspiring talk, and moving pictures were shown by John R.

Cross of the Detroit Police Department.

Murray drivers are going to assist in the National five year plan of reducing traffic fatalities 35 to 40 per cent.

Electric Locomotives

(Continued from page 21)

ated at high speeds not only on the test track, but over all portions of the railroad between Wilmington, Delaware, and New York. Still further tests were made during these runs with various types of measuring devices which recorded pressure and movement throughout the engine generally.

As a preliminary to making the final selection of the type of engine for the high speed through passenger service, two experimental locomotives were built. One was of the articulated type, with six driving axles. The other was built with a rigid wheel base and four driving axles. The two engines were tested exhaustively, both on the special track at Claymont and elsewhere in the electrified area. The performance of each was checked carefully against that of the other and also against the standard electric locomotives then in regular use.

Because it gave greater assurance of safety, was more economical and was

easier on the track, the articulated type of train was selected after an intensive review of the data accumulated.

Now 57 other locomotives of this type are in service. The cabs have been streamlined, and in order to produce the maximum appearance of beauty and power, as well as to simplify construction, the joints of the shielding have been welded to present a perfectly smooth exterior.

These great engines, which cost more than a quarter million dollars apiece, develop 4,620 horsepower over prolonged periods, and are capable of producing 7,000 horsepower when needed during emergencies or for short periods. They are capable of hauling the heaviest passenger trains at sustained speeds of more than 100 miles an hour.

These marvelous, glistening thunderbolts of the rails, with all the increased safety, comfort and speed they provide for passengers, would never have been possible had not the engineers of the Pennsylvania Railroad devised their own methods of accumulating accurate data. The fact that these trains are now running and are fulfilling the expectations of their builders is another illustration that careful planning is essential to safety, as well as to efficiency.

1936 is Election Year!

Vote the Straight "Safety First" Ticket



THE PLATFORM

1. To reduce toe and foot accidents
2. To reduce compensation insurance rates
3. To increase employee good will
4. To make available to every worker—at factory prices—the PROTECTION, COMFORT and LONG WEAR of Safety First Shoes with steel toe-boxes and other safety features.

USE THIS BALLOT!

MAIL IT TODAY!

With no obligation, I vote for:

- ☐ Details of merchandising plan
☐ Catalog & Prices
☐ Samples on approval

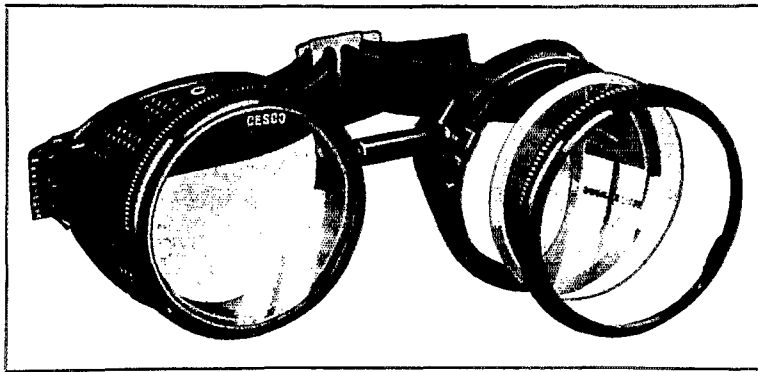
Most interested in:

- ☐ Service Shoes
☐ Dress Shoes
☐ Molders' & Welders' Shoes

MAIL TO

**SAFETY FIRST
SHOE COMPANY**
 Holliston, Massachusetts

Name Address



Cesco No. 535 LIGHT WEIGHT CHIPPERS' GOGGLE

**There is no better goggle
made than this**

Anatomically shaped right and left eye cups of bakelite and ball chain bridge for quick adjustment of width assure perfect fit.

The shallow eye cups bring the large 50 m.m. lenses closer to the eyes, materially increase range of vision.

Baffled vents and air channels in cup give cross circulation of air directly beneath surface of lens. This feature prevents fogging—makes the goggle cooler and increases wearing comfort!

If you are now using chipping goggles you will want to give the Cesco No. 535 a thorough trial and measure its usefulness on the basis of results. Write for trial pair.

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

Style No. 50
Sizes 5-12
Widths D, E and EE



An Exceptionally High Grade
Police Type

SAFETY SHOE

"You cannot Buy Better Nor Afford To Pay Less"
GET OUR SPECIAL INTRODUCTORY OFFER

Also Safety Shoes for use in:—
STEEL PLANTS, OIL REFINERIES,
R. R. SHOPS, MINES, PAPER MILLS,
CHEMICAL PLANTS, Etc.

Better Values Result in More
Safety Shoe Wearers

C. S. TURNER COMPANY
—Safety Shoes Exclusively
FRAMINGHAM, MASSACHUSETTS

Sharp Edges, High Speeds

(Continued from page 16)

ably not the best guards available because they can be pulled back and caught on the edge of the machine table. We depend on the worker and on supervision to prevent this practice.

Fixed adjustable guides are a great aid and should be used. For the machine itself, steel lips on the opening, and round heads are guarantees against trouble.

Our planers are all automatic and protected by bars to keep hands from rolls and an adequate exhaust system which removes fairly large chips. Sectional feed rolls are used. In all of the operations on these and other machines the stock is watched for imperfections which are likely to cause trouble. Also the workmen avoid pushing a machine beyond the normal cut.

Molders

We do not operate any molders. These machines should be protected by exhaust systems. Roundheads help to prevent chips clogging. Sectional feed rolls are best. If these are not used, sectional finger devices will prevent kickbacks. The rolls should be guarded by bars or strips fastened to the frame.

Sanders

Drum sanders used in our plant are of the automatic feed type, guarded and fully exhausted. Disc sanders are also guarded and equipped with an exhaust system.

With the belt sanders, the exhaust hood acts as a guard in part by covering the belt and pulleys. Sliding grips are used in most cases to force the belt down on the material. In others, a block of wood shaped for easy holding is used.

Lathes

Guarding of lathes is rather limited. Driving belts or gears can and should be covered. If care is taken to have face plates kept in good condition and the machine guarded as above, the prevention of accidents rests with the operator. Careful centering of stock goes a long way toward this end.

We recommend goggles, and our men wear them, for a number of the jobs on lathes.

Saws

I have heard a saw classed as the machine most easily used without a guard—but not used without hazards.

There is no valid excuse for a worker

NATIONAL SAFETY NEWS

using an unguarded saw for a dangerous job just because it takes only a few minutes. An accident takes less than that. Anyone desiring details on the safe use of power operated saws should make generous use of Safe Practices Pamphlet No. 20 of the National Safety Council, entitled "Woodworking Machinery and Equipment."

The provision of a well-planned exhaust system for saws, and in fact for all high-speed machinery, is an important safety factor.

We have saws of all types—band, rip, cut-off, and swing. They are guarded and used safely. The record speaks for itself. On the swing saw we use not only the counterweight to offset the rebound but also a permanently attached limit chain to prevent pulling the saw out too far.

One of the most notable mistakes in the use of the swing saw is the holding of the stock with the right hand and using the left hand on the handle to pull the saw forward. This brings the saw blade right out toward the abdomen. Hold the material with the left hand and pull the saw with the right. Should anything go wrong, the saw will be beyond the operator.

Maintenance

One of the most important factors in the use of high-speed machinery is maintenance. We divide this into three parts.

1. We require the workman to know his machine thoroughly. It prevents him from operating it when repairs or adjustments are needed, from forcing it beyond safe capacity, and from using it when the cutting tools get dull.

2. We maintain an adequate department for making cutting tools, sharpening knives, caring for saws and setting up machines.

3. A good maintenance department is nearly 100 per cent insurance that your machine will be in repair, guards kept up and new ones provided as needed—in short, proper policing of the departments.

Much could be said on housekeeping, plant lighting, electrical equipment, location of machines, safe clothing, and other details, but if the plant is guarding high-speed machines, maintaining them safely, and seeing that they are used correctly, the chances are that the other details will not be neglected.

We attribute a large share of our success to good housekeeping, maintenance by a live foreman and crew, and the careful selection of men by the employment department. Our safety man at the plant has charge of this work, thus becoming familiar with each new man and his progress.

The reason for progress in safety, to Mr. Beatty's way of thinking, is the

FEBRUARY, 1936



EAST

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

SOUTH

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

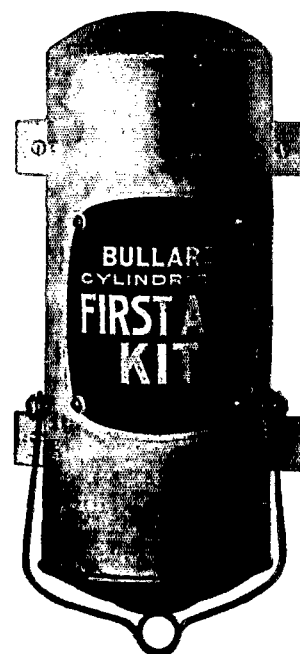
MID-WEST

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

WEST

SAN FRANCISCO
E. D. Bullard Company
275 Eighth Street
LOS ANGELES
E. D. Bullard Company
1229 South Olive St.
SALT LAKE CITY
E. D. Bullard Company
1620 Yalecrest Avenue

Everything
BULLARD
in Safety



WHAT DO YOU DO WHEN YOUR HOSPITAL IS CLOSED?

First Aid Must Be Available At *All Hours!*

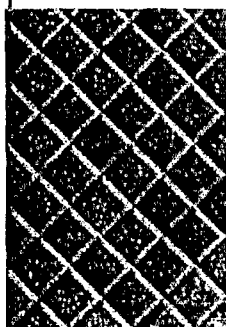
When your dispensary or emergency hospital is closed, what provisions have you made for your extra shifts, your cleaners, your watchmen?

The Bullard Cylindrical First Aid Kit fills the need for an extra-hour dispensary of first aid materials perfectly. It may be kept under lock, keys being given to foremen or workmen.

May we demonstrate?

First Aid Catalog, describing the Bullard Cylindrical First Aid Kit, unit dressings and treatments and other first aid materials will be sent on request. This kit may be inspected at any office listed here.

BULLARD



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

**PREVENT ACCIDENTS
ON STAIRS and FLOORS**

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

ALL ARE FIREPROOF

Originators and developers of Abrasive metals for
SAFE WALKWAYS

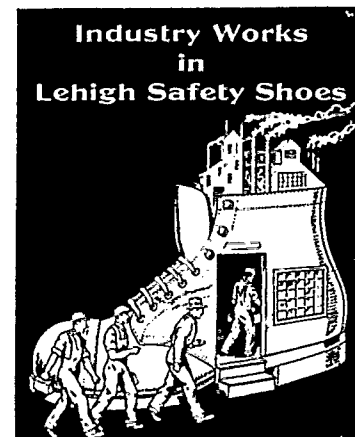
Specify Feralun and Be Sure

AMERICAN ABRASIVE METALS CO.
Irvington, New Jersey

A Foot Saved May Mean a Life Saved!

If all the feet saved by safety shoes were placed end to end they would probably cover many miles. Just how far is unimportant. What is important is the knowledge that Safety Shoes have prevented thousands of foot injuries, saved compensation and lost time costs and have been a boon to industrial workers.

Lehigh Improved Steel Box Safety Toe Shoes are built to give foot protection. Further, they are good looking, comfortable to wear and inexpensive. Let Lehigh solve your foot safety problems.



Registered U. S. Patent Office

Every Day Welt Work Shoe
No. 837—Brown Elk Blucher,
Improved Steel Box Safety Toe,
Weather Leather Sole and
Rubber Heel. Sizes 4 to 14, E
width.

No. 836—Black Elk Blucher,
Improved Steel Box Safety Toe,
Raw Cord Sole and Heel, Sizes
5 to 13, E Width.

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



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

second sense of safety that is gradually being instilled into the new generations coming to work and its inevitable absorption by the old timers. The latter now take pride not only in the quality of the product they turn out but also in the fact that they can do it just as safely, or even more so, than the new clan we are training in safety.

Our first aid room doesn't lack patrons. We have all been trained that five or ten minutes spent there may save days or weeks later.

So, if we have built safety into our operations through guards and other measures, if our men realize that the only way they can work for us is the safe way, hazards disappear, and the following observation from Mr. Beatty seems appropriate:

"New hazards? I don't believe there are any. It's just the darn fool things we do."

COMING EVENTS

Of Interest to Safety Men

Feb. 7-8, Springfield, Mass.

Safety Conference, Connecticut Valley Division, Massachusetts Safety Council, and Springfield Safety Council. (Hotel Kimball.)

March 3-5, New York

Seventh Annual Greater New York Safety Conference. (Hotel Astor.) Julien H. Harvey, Manager, New York Office, National Safety Council, 9 East 41st Street, New York City.

April 16-17, Pittsburgh, Pa.

Thirteenth Annual Safety Engineering Conference. G. E. Clarkson, manager, Western Pennsylvania Safety Council, 2409 First National Bank Building, Pittsburgh, Pa.

April 23-24, Boston

Fifteenth Annual Massachusetts Safety Conference. (Hotel Statler.) Lewis E. MacBrayne, manager, Massachusetts Safety Council, 80 Federal Street, Boston, Mass.

May 5-7, Chicago

Fourteenth Annual Midwest Safety Conference. (Stevens Hotel.) George G. Traver, manager, Chicago Safety Council, 222 North Bank Drive, Chicago.

May 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 21-22, Richmond, Va.

Virginia State-Wide Safety Conference. (Jefferson Hotel.) William M. Myers, managing director, Richmond Safety Council, 50 Allison Bldg., Richmond, Va.

PERSONALS

HURLBERT C. PHILLIPS, for the past six years personnel director for the Hoffman Beverage Company, Newark, N. J., has resigned to become director of personnel for the Schenley Products Company, Inc. The plants of this company are located at Schenley, Pa., Lawrenceburg, Ind., Covington, Frankfort and Lexington, Ky., with the home office in New York City.

HOWARD E. GRIGG, formerly personnel manager of the Long Island City plant of the Hoffman Beverage Company, has been promoted to the position made vacant by Mr. Phillips' resignation.

W. A. BECHILL, safety engineer at the Highland Park plant of the Chrysler Corporation since 1927, has been promoted to the position of personnel supervisor which was left vacant by the death of C. A. MAGEE. L. B. SAMPSON, who has had a varied experience with the company and in other industrial fields, succeeds Mr. Bechill as safety engineer.

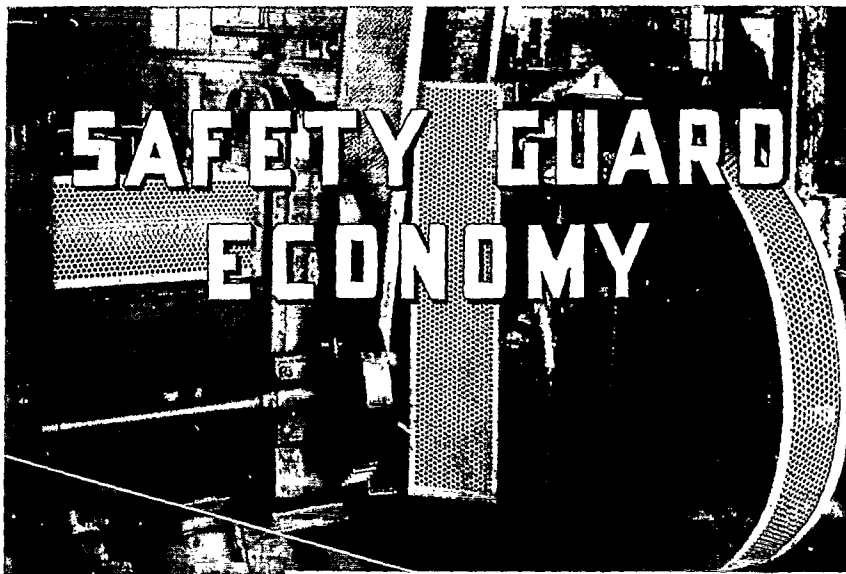
C. C. ROSENBARGER, formerly division manager of the Motor Truck Division of Markell Service, Inc., has been appointed vice-president and general manager of "G I" Service, with offices in the Insurance Exchange Building, St. Louis, Mo.

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



A Needless Gamble!

It is possible for unprotected machinery to be operated for a period of time without accidental injuries. The odds are, however, unfavorable. Why take these needless chances when you can guard these hazards so economically and effectively with H&K Guard Accessories. Further, they can be assembled in your own shop, by your own men, to your own specifications.

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

The Harrington & King
PERFORATING CO.

114 Liberty St.
NEW YORK, N. Y.

5645 Fillmore St.
CHICAGO, ILL.



No More Accidents in This Shop!

—or in any other where WIESMAN SAFETY PRESS GUARDS are installed on the power presses. The cam action operating principle assures maximum safety and in no way interferes with rapid production. Simple in construction, automatic in action, and easy to attach. Made for right or left hand stroke. Write for details.

Wiesman Mfg. Co.

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

was 58 years old and had been in poor health for some time. He is survived by his widow.

"Kep," as he was known to a host of friends in the safety movement, had been with the Pennsylvania Salt Manufacturing Company for 24 years. He was among the earliest members of the National Safety Council and served as a director from 1918 till shortly before his death. He was vice-president of the Council during 1920-21 and was one of the founders of the Chemical Section which he served four years as chairman and one as secretary.

Under Mr. Kepner's direction, the plants of the Pennsylvania Salt Manufacturing Company made some outstanding reductions in accidents. His interest in safety was not confined to his own organization and he was always ready to help in extending the work nationally.

JOHN F. H. WYSE, manager of the Ontario Safety League, and one of the founders of the safety movement in Canada died December 29, 1935, at the home of his daughter, Mrs. A. L. Fabens, in Wooster, Ohio, where he was spending the holiday season. Mr. Wyse was 73 years old and pneumonia was the cause of death. Surviving are his widow, a son, F. O. Wyse, of Milwaukee, Wis., and three daughters.

Mr. Wyse was born at Pikesville, near Baltimore. After receiving training in engineering he moved to British Columbia more than 50 years ago. He was engaged in the opening of mining territory in the northern part of the province and later entered the field of electrical engineering.

Coming to Toronto he continued in electrical installations through the consulting firm of Wyse and Middleton. During this time he began the study of safety methods in industry and his interest soon extended to public and home safety. He suggested the formation of an organization to promote these principles, and with the support of the late Sir John Eaton, the Ontario Safety League came into being January 1, 1914. In spite of the outbreak of the war, the movement continued to grow and in 1920 the Canadian National Safety League was organized. Since then, similar organizations have been formed in all of the provinces.

JOHN CAMPBELL, director of the Bureau of Inspection of the Pennsylvania Department of Labor and Industry since August, 1933, died January 3 following

NATIONAL SAFETY NEWS

a stroke. He was a member of the American Society of Mechanical Engineers and had served on numerous committees for the formulation of codes and standards.

Mr. Campbell graduated from the Massachusetts Institute of Technology in 1900 with the degree of Bachelor of Science in Mechanical and Metallurgical Engineering. Before becoming associated with the Pennsylvania Department of Labor and Industry he had many years of varied experience in industry. In 1930 he became director of the Bureau of Industrial Standards in the Department and in 1933 he also assumed the direction of the Bureau of Inspection. He had also served as secretary of the Safety Advisory Board of the Pennsylvania Department of Labor and Industry; secretary of Governor Pinchot's Commission on Compensation for Industrial Diseases; representative of the State of Pennsylvania with U. S. Public Health Service on the anthracite coal survey relative to silicosis, and director of safety for the Pennsylvania State Emergency Relief Board. For the past three years he had been lecturer on safety engineering to the graduating classes of the University of Pittsburgh and Franklin and Marshall College.

Drive 38,000,000 Miles Without a Fatality

A RECORD of 38,000,000 miles since 1927, without a fatal accident, is the outstanding achievement of drivers of vehicles for Oklahoma Gas and Electric Company in Oklahoma and Arkansas, according to the records kept by the company.

Realizing the seriousness of traffic accidents as far back as ten years ago, the company, through its Accident Prevention Department, inaugurated rigid inspection rules and a special course of training for members of the organization who drive automobiles. First, automotive equipment is maintained in the highest degree of operating efficiency. Second, periodic tests of eyesight, judgment, and driving practices are given employees. Third, an honor system was established for drivers making the best records. In addition, the company analyzes each accident and a discussion of how it could have been avoided is given before all automobile drivers.

This record made by the company is unbroken to date, and the distance traveled without fatal accidents is increasing at the rate of approximately one-third of a million miles per month.

FEBRUARY, 1936

NON-SLIP Soles AND Heels

Check the cause of accidents in your plant and you will find that an average of 1 out of 5 is caused by slipping. Many employers are meeting this problem successfully and reducing accidents by seeing to it that their employees wear shoes equipped with Non-Slip GRO-CORD and RAW-CORD Soles and Heels. These soles and heels are Non-Slip, manufactured so by a patented process which places many thousands of tightly twisted Cords-On-End in each pair of soles. The Cord Ends firmly grip smooth and slippery surfaces, and gives workers the security which permits them to put their best efforts into their work.

Shoes having GRO-CORD or RAW-CORD Soles and Heels are sold by all progressive shoe dealers.

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

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

Fully Protected by Patents—Any Infringements Will Be Prosecuted



NON-SLIP SOLES AND HEELS



BUHRKE

Collapsible Non-Metallic Buckets

The safe way to raise tools and supplies to linemen working on pole tops is via BUHRKE Safety Buckets.

Several types and sizes available from stock. All are made of heavy canvas with leather bottoms. Furnished with rope handles spliced to bag through leather reinforcements which can be equipped with special swivel snaps, if desired. Send for literature giving complete details.

R. H. BUHRKE CO.

4538 Fullerton Ave.

Chicago, Ill.

SAFETY EQUIPMENT FOR CONSTRUCTION AND MAINTENANCE

No. 1078
BUCKET
A popular model
12x12x17 inches
Built for service
and safety.



DERMA-SAN

DISINFECTANT



**NO SAFETY PROGRAM IS COMPLETE
THAT IGNORES "Oil Dermatitis"**

MANY a perfect safety record has been shattered by Oil Dermatitis. Carried from worker to worker by cutting lubricants infected during use, this serious skin disease cripples production... causes compensation payments. Guard your men against infection by using Derma-San. Just add 1 pint of Derma-San to 35 gals. of cutting lubricant, and kill dangerous pus-forming germs before they attack your workers.

Derma-San is ideal for all general plant sanitation

The HUNTINGTON LABORATORIES Inc.
DENVER HUNTINGTON, INDIANA TORONTO

Service with Safety

(Continued from page 18)

children away from service stations. The water and air hose should be coiled and hung up out of the way when not in use. If bicycle tires are to be inflated, the service station salesmen should do it.

Boiling radiators in summer and in winter when the car is frozen up have caused many serious scalds and burns. Caution must be exercised in filling the radiator of a car when the water in the radiator is extremely hot. Generally when a car comes in with a steaming radiator, the water is low and the upper part of the radiator is filled with steam. If the cap is removed suddenly, this steam will rush out with considerable force and may seriously scald the person who removes it. To avoid this, the cap should be removed slowly, thus allowing the steam to escape gradually. A large cloth should be used to protect the hands and face from the rush of steam and hot water while removing the cap. It is a safe practice, however, to wait until the boiling stops before removing the cap.

Cold water should not be poured into an overheated radiator when the water supply is low and the engine extremely hot. Under such conditions the water jacket or the motor block may crack. The proper procedure is to allow the engine to cool before adding water, and then to ask the driver to idle the motor to permit the cold water to circulate and more slowly absorb the heat. Never stand in front of the car and ask the motorist to start the motor. Step from the front of it and then have the motor started. Otherwise, if the car should be in gear, it might injure you.

Water hose and radiator cans should be kept off driveways and sidewalks to prevent people from stumbling.

Hundreds of minor cuts and scratches and a few serious injuries are caused every year during the cleaning of windshields. Cuts and scratches may be avoided while cleaning cracked or broken windshields by keeping a cloth or chammois between the hand and the glass. Wind-wings often break at the clamps, causing serious cuts if too much pressure is exerted upon them while they are being cleaned. Standing with one foot on the ground and one foot on the running board is a very unsafe practice. If the car moves while the service station salesman is in this position, he may fall or the car may roll over one of his feet.

NATIONAL SAFETY NEWS

SANKEY FOOT GUARDS

Smashed toes are costly. Avoid them. Protect your worker's feet with Sankey Foot Guards.

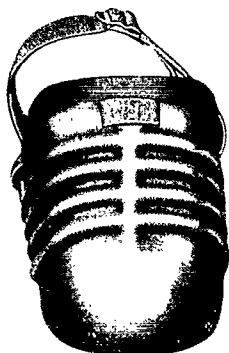
Made of 16-gauge steel, or Rigidium, an aluminum alloy. Sankey Foot Guards are light in weight, comfortable to wear and permit free and easy movement of the feet.

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

Write for Your Sample Today.

ELLWOOD SAFETY APPLIANCE CO.

Ellwood City, Pennsylvania



Many station salesmen have been injured in trying to give the windshield or a window a final wipe after the car has started or starting cleaning before the car stops.

A number of serious injuries have been caused by customers slamming the door on the fingers of salesmen who have braced themselves to reach over while cleaning the windshield. Men should never grab or brace themselves with their hands or fingers in door jambs. Great care should be observed by salesmen to avoid the passenger's hand, especially when children are in the car. If the customer opens the door, let him close it again. By so doing, many mashed fingers can be avoided, also quite a number of broken door glasses. Always bear in mind that no one knows that particular car as well as the customer does.

Customers should be discouraged from doing small "chores" to their cars when they drive into a station. By "chores" we mean filling the radiator, putting air in the tires, wiping windshields, etc. As a matter of fact, the customers are much safer when sitting in their automobiles. The one exception is when the car is on the lift or grease rack. There is only one practical way to really keep the customer in his car and that is to meet him at the pump and by beating him to the small necessary services that go along with the up-to-date retailing of gasoline and oil. If the customer is permitted to wait at the pump before being serviced it is a natural inclination to get out of the car and start tinkering on it, or wandering around the station.

Self-service might not only result in accidents, fires, and liability claims but also drives away potential customers. A large consumer of gasoline recently emphasized the hazard of self-service and stated that whenever he saw a customer attempting to service his own car that he drove on to another service station.

Safety is not something superimposed upon an organization, but an integral part of its operation. Accidents are not a necessary evil; they indicate, to a large extent, lack of planning, training, supervision or discipline. We have to conduct our business with the aid of average individuals, not paragons. They do not want accidents and there is every reason why they should wish to be and to feel safe in performing their tasks. It is the management's responsibility to provide its employees with safe equipment, safe working conditions and proper supervision and it is the employees' responsibility to observe precautions and do their work in the safest possible manner.

FEBRUARY, 1936

62% of 1935 Business from Previous Users



10 can wash at one time—sanitary running water for each—easily installed.

Of the total 1935 business, 62% of Bradley Washfountains shipped went to join other Bradleys previously installed.

This is particularly significant since Washfountains are not replacement items. In fact, Bradley Washfountains last as long as the buildings in which they are installed and 62% repeat business is accordingly convincing proof that Bradleys reduce expenses and appeal to both management and employees.

One Bradley serves 10 persons with but little more water than required by one individual basin. There is only one set of water connections instead of 10, —less maintenance.

Made in stone, marble, enameled pressed iron, porcelain and stainless steel—all described in Catalog 435 . . . Write for a copy. BRADLEY WASH-FOUNTAIN CO., 2237 W. Michigan St., Milwaukee, Wis.



Over twice as many Bradley Group Showers were installed in 1935 as in 1934. Assure maximum sanitation, minimize scalding hazard. Shipped complete—ready to connect.

BRADLEY WASHFOUNTAINS AND SHOWERS

Safeguard Your Light Bulbs Against Theft



NO BREAKING OF GLASS

Missing light bulbs may cause serious accidents.

THE NEW MODEL L-35 MULTIPLE LAMPLOCK

Insures lifelong maintenance of lamps. Stops lamp theft.

Prevents loosening of light bulbs from vibration.

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

INTERLOCKING PRODUCTS CO.
543 Fifth Ave. New York

NEW MODEL L-35



Patented

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

Satisfaction Guaranteed or Money Refunded



SAFETY

Here's a job that calls for nerves of steel—working on a fifty foot pole—pulling up on a heavy line. In equipment, too, there can be no compromise with quality. Linemen, and those responsible for the safety of linemen, know that the Klein circle on their safety straps and belts, come-alongs, spurs and pliers, sleeve twistlers, furnaces and torches, is more than just a trademark it spells SAFETY! Only Klein equipment possesses Klein quality.

Distributed through jobbers

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

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



Mathias KLEIN & Sons
Established 1859 Chicago, Ill. USA
3200 Belmont Avenue, Chicago, Illinois

The Insurance Company Needs Our Help

(Continued from page 24)

assistant superintendent and the statistician makes an inspection of some portion of the plant for cleanliness and safety. Memoranda of untidy or hazardous conditions are made and copies promptly sent to the foremen for correction.

Here is what the safety committee looks for on inspection trips:

1. Maintenance of safeguards.
2. Unsafe ladders.
3. Tripping hazards in aisles.
4. Unsafe piling of material.
5. Insufficient light for safe work.
6. Look for burred chisels and hammers.
7. Blocking of fire escapes.
8. Water or sand in the fire pails?
9. Tag fire extinguisher with date last filled.
10. Worn treads on stairs.
11. Are stairs well lighted?
12. Toe boards on working platforms.
13. Milk bottles, etc., should be kept off window sills.
14. Are goggles worn while grinding or chipping?
15. Is gasoline kept in "safety" cans always?
16. Is muriatic acid handled properly?
17. Are minor scratches and cuts getting first aid treatment promptly?
18. Are safety bulletins posted on all bulletin boards?
19. Is all electrical equipment grounded?
20. Are drop cords on extension lights in good condition?
21. Uneven flange on emery wheels.
22. Tool rests on emery wheels out of adjustment.
23. Belt guards on emery and buffing wheels.
24. Check window cleaning methods.
25. Check oiler for unsafe methods.
26. Check method of cleaning or replacing electric light globes.

The statistician makes up a summary report each month of minor injuries and doctor cases, the report for the previous month being present at each safety committee meeting. The statistician also prepares a summary of the accidents for the month, classified according to their cause and segregated by departments. This is made up on safety form "C."

These reports, after being presented at the safety committee meetings are forwarded to the general manager for inspection, after which they are maintained on file by the safety director, where they are held readily available.

A record of the doctor cases, according to the departments, is posted each month on the bulletin board on safety form "D." Only doctor cases are shown inasmuch as we try to encourage the first aid treatment of minor injuries.

Safety bulletins are posted on the bulletin boards each month. It has

been found that it is more effective to have one or two bulletins on the bulletin board at one time rather than having the entire board covered with them. Consequently we have provided that no more than two bulletins shall appear on the board at any one time. Pay envelope inserts are used once each month.

When An Accident Occurs

1. **First Aid Supervisor**—When an injury occurs of sufficient severity that the employee must be sent to the doctor, the first aid supervisor makes out an identification slip for the doctor as previously described, sending one copy to the safety director and giving the original to the injured employee. The injury is recorded on the first aid supervisor's list.

2. **Safety Inspector**—The safety inspector immediately investigates the accident, interviewing all persons who may give any clue as to who or what is at fault. A report is made up on a special form, giving all the details and a definite recommendation as to blame. This is sent to the shop office clerk.

3. **Foreman**—As a further check on the accident the foreman makes out a report on safety form "H" which is promptly forwarded to the shop office clerk giving the foreman's view on the subject.

4. **Shop Office Clerk**—The shop office clerk types up the accident report on safety form in quadruplicate. One copy is kept in the shop files, and the original and two copies are forwarded to the safety director.

5. **Safety Director**—The safety director places one copy of the accident report in his permanent files; the original and first copy of the report are placed in the call-up file set for four days after the date of the accident. All accident reports to the insurance company are held up so as to reach the insurance company's office on the fifth day after the accident for the reason that in Wisconsin a report is not sent to the industrial commission unless the employee is disabled three days. Whether or not a report has been sent to the industrial commission should be recorded on the accident report to the insurance company.

The safety director must follow-up all accidents reported to the insurance company until they are finally disposed of. If a claim reaches the commission and a summons to attend a hearing is served on us, this is promptly forwarded to the insurance company, which represents us at the hearing. But first the point at issue and the claim before the

commission is noted, and the safety director must see that a further investigation is conducted by the safety inspector or the foreman to determine if there is not some further evidence which can be transmitted to the insurance company on the point under controversy. This is necessary in order to protect our interests.

Checks in settlement of claims, when forwarded to us by the insurance company, are promptly turned over to the employee with a letter on company stationery stating that this is in settlement of his claim.

The superintendent is advised of the final disposition of all cases so he can call the employee's attention to the cost of his injury to the company and caution him against future negligence.

Wins Gold Watch for Ten Years of Safe Driving

ANTHONY SCHWARTZBACH, a truck driver for the Columbia Terminals Company of St. Louis since 1921, was presented with a gold watch and a check for \$25 by his company in recognition of his record of driving for ten consecutive years without an accident. He is the first employee of the company to turn in a consecutive ten-year safety record. During that period Schwartzbach has driven 120,000 miles through the congested district of St. Louis.

Checks for \$25 were awarded to 229 other drivers who went through 1935 without an accident. The year just ended established a new high safety record for the Columbia Terminals Company which paid its drivers a total of \$5,750 in safe driving awards. In 1934, a total of \$4,425 was awarded the 177 drivers who had no accidents that year. Only seven drivers received the award in 1926, the year the company inaugurated its safety campaign.

Total number of accidents has been steadily decreasing since Columbia Terminals started its campaign in 1926. During that year drivers of the company had 818 accidents. In 1934 the total number of accidents for a single year had dropped to 64, and for the year just

POSITION WANTED

In industrial relations work. Familiar with safety, compensation, relief, pension, welfare and sanitation problems. Age 39, nineteen years experience. Married. No preference as to location. Address Box 297, NATIONAL SAFETY NEWS.

FEBRUARY, 1936



"We use VACUUM"

That's the way to keep plants clean at low cost. It's the way to be sure you are shipping a clean product, that you are doing a 100% salvage job on waste materials and removing dangerous dusts and dirt at their source.

continuously, except Sundays"

Vacuum in Industry the Spencer Way, is not expensive. You can use Spencer Portables or the Spencer Central System—or a combination of both. One man can bring the Vacuum to the point of cleaning and perform the work quickly, without interfering with production.

He can clean the floors, walls, ceilings and pipes. He can clean your shipping containers, trucks, or cars and even the finished goods just before they are shipped.

He can reclaim elusive raw material dusts or remove bulky waste materials—and you can find a dozen special ways to use vacuum that are not common to other industries.

Let our engineers look over your plant and your production methods. Just one recommendation may save thousands of dollars.

SPENCER
HARTFORD

CENTRAL AND PORTABLE
VACUUM CLEANING SYSTEMS

THE SPENCER TURBINE COMPANY, HARTFORD, CONN.

54



SAF-T-TOP

SHOCK-PROOF
antiseptic applicator

Protected by shock-proof wooden case. No other applicator has this feature. Can be safely carried in pocket, tool kit, hand bag or first aid kit. Patented feeder tip applies solution exactly where wanted. Give every employee a Saf-T-Top to help prevent infections.



MEDICAL ACCEPTANCE

The Council on Pharmacy & Chemistry of the American Medical Assn. has accepted the Saf-T-Top dosage form of the following solutions: Iodine, Mercurochrome, Metaphen, Merthiolate, Ferric Chloride and Iso-propyl-alcohol.

FREE SAMPLE to officials interested in safety. Write today.

Robert A. Bernhard
Mfg. Chemist
153 ANDERSON AVE., ROCHESTER, N. Y.



Officially Approved By
American Gas Association

Authorized Distributors Include
Pulmosan Safety Equipment Corp.
Brooklyn, N. Y.

Protective Equipment, Inc.
Chicago, Ill.

W. P. and R. S. Mars Company

Duluth, Minn.
Keth F. Peabody
Seattle, Wash.

FOR COMPLETE DETAILS
Consult Nearest Representative

B-K life saving INHALATORS

Are Successfully Used
Resuscitation Devices

TWO TYPES AVAILABLE—The approved Standard B-K Inhalator, herewith illustrated, and the B-K Plant Emergency Inhalator, a readily portable machine for attaching to available oxygen cylinders.

B-K users include large gas and electric companies, steel and chemical plants, oil refineries, coal and metal mines, fire departments, etc.

Write for Descriptive Literature

**BISHINGER-
KOEHLER**

MANUFACTURING CO., INC.

7838 Kelly Street

Pittsburgh, Pa.

Manufacturers
OXYGEN EQUIPMENT PRODUCTS



ended a new record was established when there were only 60 accidents.

Explaining the company's success in reducing accidents, President S. J. Cashel pointed out that the Columbia Terminals Company conducts a traffic school.

"Employees involved in serious accidents," he continued, "are required to attend sessions of the school to describe the accidents. They do not describe them verbally, but graphically, by the use of miniature trucks, tractors, trailers, automobiles, railroad crossings, buildings and street intersections. In this manner they are able to reconstruct the accident and to point out how it might have been prevented.

"When our safety campaign was started we recognized the fact that in order to gain the cooperation of our drivers we must keep their equipment in good condition. To this end, a daily inspection is made and any defective equipment is spotted before it gets on the street."

Asked as to what he attributed his safety record, Schwartzbach said, "I never drive too fast for the prevailing conditions."

Both Drivers and Plant Men Reduce Accidents

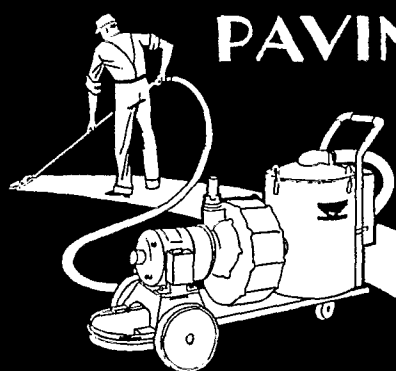
INDUSTRY'S motor vehicle accident problem can be solved if the safety movement of the Gulf Brewing Company, Houston, Texas, is any criterion. During 1934 the commercial vehicle fleet operated by the company reported 103 traffic accidents; during 1935 only 15 accidents were reported, a reduction of 85 5/7 per cent. Certificates for operating company vehicles without accidents during the year were presented to seven drivers. Only two men received these certificates in 1934.

Personal injury records for the firm's employees have also improved. In 1934 there were 32 clinical cases with 9 lost-time accidents; in 1935 there were 29 clinical cases with 6 lost-time cases. There have been no lost-time accidents in the plant since May 17, 1935 — an accident-free period of more than six months.

Key to Hazards in Contest Poster (Shown on page 27)

1. Barrels not properly piled.
2. Boxes not properly piled.
3. Bags not properly piled.
4. Lumber not properly piled.
5. Electric light extending into pile of bags.
6. Broken crate on floor.
7. Upturned nails.
8. Broken barrel on floor.
9. Material spilling out of bag.
10. Man washing in fire pail.
11. Lumber in fire barrel.
12. Broken glass in window over door.
13. Man carrying box which is too heavy.
14. Shoe of man carrying box in poor condition.
15. No gangplank between car and warehouse.
16. Truck in foreground not loaded safely.
17. Employee pushing truck not watching where he is going.
18. Man pushing truck wearing shoe in poor condition.

NATIONAL SAFETY NEWS



PAVING THE WAY FOR GREATER SAFETY

Vacuum-cleaned plants are more orderly. The vacuum cleaner is an automatic policeman, preventing litter, dirt, and dust from accumulating. An INVINCIBLE PORTABLE VACUUM CLEANER actually pays its way by reducing cleaning costs, but even if it did not, its importance to your safety program would still make it a sound investment....

MAY WE SEND YOU FACTS, FIGURES, AND COSTS?

INVINCIBLE VACUUM CLEANER MFG. CO.

2302 DAVIS ST.

EST. 1905

DOVER-OHIO

Find the Causes

(Continued from page 28)

2. For the plant in each group reporting the largest number of unsafe conditions.

3. For the plant in each group showing the greatest improvement in correcting the unsafe practices and conditions which were found and reported.

In setting up this interplant contest and establishing requirements, careful consideration was given to the basis of the contest. Several fundamentals were kept in mind:

1. That the contest should reach every employee on all plants and operations of the company.

2. To prevent any particular plant concentrating either upon unsafe practices or unsafe conditions awards were offered for each classification. (Employee recognition.)

3. The uncovering and reporting of these two items, aside from the education feature, would not bring about the results desired unless they were corrected. (Managerial recognition.)

Therefore, a third prize was offered for the plant or operation which showed the greatest progress in eliminating both unsafe practices and unsafe conditions after they were uncovered and reported by the employees, this award being made in recognition of managerial interest.

In order to encourage contestants to look for major accident causes, as well as those of a minor character, a "Grand Award" was offered, to be given to the plant or operation which found and corrected the unsafe practice or unsafe condition considered to be the most hazardous to employees.

At the end of the second month of the contest the 15 groups had sent in 1,892 unsafe practices and 6,910 unsafe conditions, or a total of 8,800 unsafe practices and unsafe conditions. A review of these items indicated that they could be grouped according to the "classification of injuries," i. e.—falls of persons, stepping on or striking objects, falling objects, flying objects, burns and scalds, etc.

It is interesting to note that with one or two exceptions the unsafe practices and unsafe conditions reported as possible causes of accidents very closely parallel the causes of accidents for the previous five years. This was strikingly indicative of the probable success of the contest for it was apparent that the employees were recognizing and reporting those things which were causing the majority of our major injuries.

During the contest 55,836 unsafe practices and unsafe conditions were reported. Of these 11,685 were unsafe practices and 44,151 unsafe conditions.

FEBRUARY, 1936

At the end of the contest all of the unsafe practices were reported as eliminated and all but 6,500 of the unsafe conditions were corrected. In other words, 88 per cent of the unsafe practices and unsafe conditions were either eliminated, corrected or safeguarded, and it is presumed that the majority of those remaining have been corrected since that time.

Individual employee awards Nos. 1 and 2 were won by 19 plants—embracing nearly 10,000 employees—while award No. 3 was won by 13 plants, involving over 7,000 employees, so that the efforts of over 17,000 employees or nearly 50 per cent of those participating in the contest were definitely rewarded. The individual employee prizes for either group awards Nos. 1 and 2 averaged about \$1.50 per employee, while employees on plants winning both awards were permitted to select a prize valued at \$3. Prizes consisted of toilet sets, cutlery, pen and pencil sets, wallets, brief cases, bridge sets, jewel cases, cigaret boxes, tobacco pouches and pipes, aluminum kitchen utensils, ladies compacts, handbags, belts, brushes, key cases, picture frames, miniature tool sets, manicure sets, magnifiers, reading glasses, telescopes, drawing instruments, cameras, pocket secretary notebooks, etc. Over 60 per cent of the articles selected were aluminum kitchen utensils, and the second largest selection was carving sets and kitchen cutlery sets. This demonstrated that the employees were discussing the contest and its success with their families and that the families were helping them to select the prize.

While the interplant contest did not specifically embrace the question of reduction in the number of accidents, the major injuries were reduced nearly 50 per cent as compared with the same period of the previous year. The two interplant safety contests during the latter part of 1934 resulted in a fewer number of major injuries as compared to the first six months of that year. However, as of September 30 of this year, the number of major injuries has been reduced 43 per cent as compared with the first nine months of 1934.

It is sometimes more difficult to prevent the recurrence of an unsafe practice and in some instances unsafe conditions than it is to remedy them when first uncovered. Recognizing this the poster announcing the winners of the

DEPENDABLE PROTECTION



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

HEAD:

Hats — Hoods — Helmets

EYE & NOSE:

Goggles — Masks — Respirators

HAND & ARM:

Armlets — Finger Cots — Gloves
Mittens — Sleeves — Hand Pads

BODY:

Aprons — Clothing, etc.
Acid — Asbestos — Duck
Leather — Rubber

LEG & FOOT:

Leggings — Spats — Shoes

GENERAL:

Blankets — Gas Masks — Signs
Ladders — Ladder Shoes

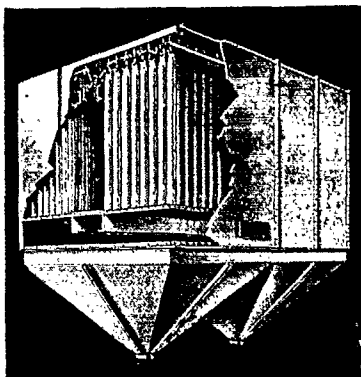
WELDING PROTECTION:

Helmets — Hand Shields
Goggles — Gloves — Curtains

THE
SAFETY CLOTHING CO.

Manufacturers
3804 Payne Ave. Cleveland, Ohio

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Your Policy Is Folder No. 222

Industrial diseases peculiar to the processing of chemicals, rock products, cotton goods and other products, having circulation of dust as a health hazard to employees, can be suppressed with the American Dustube Dust Collector.

For full particulars write for Folder No. 222.

**The American Foundry
Equipment Co.**

637 Byrkit Street
MISHAWAKA, INDIANA

DUSTUBE COLLECTORS

contest which was sent to all of the contestants states:

Preventing the recurrence of the unsafe practices which this contest eliminated and the unsafe conditions which were corrected is the problem which now confronts all of us.

At the end of the contest 45 of the larger plants were surveyed to ascertain: (1) If they considered a contest of this character basically sound; (2) If the idea of the contest could not and should not be included as a part of the regular operating procedure.

Forty-three plants replied affirmatively and at the present time many of the larger plants are continuing the contest on an inter-departmental plant basis. As of November 1, 1935, the records show that since the contest ended over 40 plants and operations have continued to follow the contest plan, and since June 30 have reported 2,331 unsafe practices and 17,332 unsafe conditions, in addition to those sent in during the contest, which have been uncovered and received attention.

It is recommended that everyone give consideration to including in plant and operating procedure the practice of encouraging employees to report all unsafe practices and conditions which they recognize and that when reported the items receive immediate attention.

* * *

From the 56,000 items turned in by employees during the contest the following will give some idea of the development on the part of employees in safety thinking and ability to recognize accident hazards in both physical plant conditions and working practices.

Examples of Unsafe Practices Found and Corrected

1. In tightening an angle valve, an operator had both feet on the wrench instead of on the floor.
2. Employees were observed separating the two sections of an extension ladder and using the top section which does not have approved type ladder shoes.
3. Operator was trying to take elevator away from another operator.
4. Brakemen adjusting automatic couplers with their feet about the time the coupling is to be made.
5. The practice of cutting glass tubing on emery wheel should be discontinued to overcome the hazard of glass cuts and flying particles.
6. A mechanic was seen lighting a cigaret with a welding torch.
7. Employee removed and washed rubber gloves which had been used when pouring formic acid. Should have washed gloves while yet on his hands.
8. Painters use strips of window glass as paint stirrers.
9. Foreman instructed to keep a careful watch on the teamsters who furnish their own equipment to see that they have their chains and other equipment in good repair.
10. One fireman has a bad habit of roaming around leaving the boilers for a short time when not busy. He was instructed to remain in his department.

11. Rubber gloves should not be washed over drinking fountain.

12. A supervisor was noticed standing on a three-wheel truck to operate an overhead valve.

13. Girl jumping on elevator while in motion.

14. One instance found of ladder being used at an incorrect angle. The man in this instance was spoken to and instructions were given.

15. Pipefitters were noticed using scrapers made of files for cleaning gaskets. These scrapers were not equipped with handles on the pointed end of the file.

16. While a committee was investigating loading platform for tank cars, a swinging platform was lowered onto a sulphuric tank which stood on the tracks but this committee did not remember to have a blue flag placed to protect themselves while they were walking back and forth from car to platform. The sulphuric pump operator noticed the situation and placed a blue flag to protect these men.

17. Using part of a lift truck as a "scooter."

18. A workman was observed using an adz on small work without work being rigidly fastened, subjecting himself to possible injury in the event adz was deflected due to shifting of work he was cutting.

19. Children of tenants in company's houses in village found flying kites over high tension electric lines.

20. Man handling carboys on packing dock and eating sandwich at same time.

21. Although steps are provided to be used for crossing roller conveyor when it is in position for use, it has been observed that few persons avail themselves of this equipment, but step over or straddle the conveyor. In this same connection it is necessary that approach to steps be kept clear.

22. Man found on top of stepladder with two or three blocks under the legs on one side.

23. Men often working aloft without wearing safety belts and sometimes without securing safety line to belt.

24. Standing on the head of a barrel while making overhead repairs.

25. Change House—Men after shaving are sometimes careless about leaving razor blades around where other men may get cut. A box has been provided for used blades and a sign posted directing them to use it. If this fails, shaving will be prohibited.

26. The truck platforms for transporting material about the shops should have rounded corners instead of square. This causes abrasions and bruises to limbs when coming in contact with them.

27. A man was observed standing upon a roller bearing conveyor.

28. Caps being left off oxygen and acetylene tanks. If some heavy object should fall and strike the valve on these tanks there is a possibility of the tank exploding. This practice was corrected by rigid rules. When the tanks are in use the cap is wired to the tank. When the tanks are not in use the cap must be replaced immediately by the employee using the tank.

29. Slapping workmen on the head while drinking from a fountain.

30. Carpenter ran sliver of wood in hand and was seen removing it with his pocket knife. When told about it he remarked it was his finger and his splinter.

31. Skids used for rolling barrels had bolts loose. Condition corrected by tightening bolts.

32. An employee was using a stevedore truck that had only one handle. There was danger of the truck upsetting and the material hitting someone because of the unbalanced lift.

33. Operators roll barrels instead of using the barrel truck provided.

34. Men operating Logan hoist make a practice of putting head in the shaftway

to speak to man above. Suggest a speaking tube be installed.

35. The practice of two choppers limbing trees side by side has been stopped. Now the choppers start their limbing at each end of the tree and when meeting at the middle one chopper leaves to get the next tree ready to fall. This reduces the hazard of cutting each other in case their axe should slip.

36. A mixer operator was using a cradle hoist to raise a barrel of stock. In doing so he stepped beneath the raised barrel several times, thus exposing himself to severe injury had the hoist or cradle collapsed at any time.

37. An employee in the Power House was cleaning a fire box. He neglected to wear a hard hat, thus exposing his head to concussion from falling material.

38. An inexperienced employee was allowed to operate an electric tractor.

39. An employee was watching an acetylene burning operation without goggles.

Examples of Unsafe Conditions Found and Corrected

1. Ring embedded in concrete walk.
2. Telephone cords on the stenographer's desk are loose on the floor. The telephone has been knocked off the desk several times due to persons catching their feet in the cords.
3. A shadow is cast over bottom step in staircase, which might cause someone to fall. It is suggested that light be changed.
4. The new sheet piling that has been driven alongside of the road is difficult to see when the weather is foggy as the piling is about the same color as the road.
5. Jagged and sharp edges resulting from opening metal containers with hatchet.
6. Flighty, nervous mule—sold.
7. The screw conveyor is built in four sections, each of which is equipped with loose covers. It was recommended that the covers be bolted to the conveyor to prevent an injury. The cover has been properly secured.
8. Several lugs are broken on filter.
9. Material lying in front of first aid fire fighting equipment.
10. When water is flushed in toilet of change house, the cold water stops running in the wash basin.
11. Bridge crossing ditch has no cleats on deck making it difficult for mules crossing with a heavy load in wet weather to keep their feet.
12. An employee wanted to secure safety goggles at the plant storeroom but the supply was exhausted.
13. An emergency quick closing gate valve on a gas feed line has a badly worn pull cord. Worn cord has been ordered replaced with a steel tiller cord.
14. Two men lifting lead roll which should be handled with crane.
15. Rough chairs are not only damaging the ladies' stockings but are liable to cause injuries.
16. "Stop" signs at the contact crossing were removed for painting. It is suggested that we should have placed some temporary signs while these were down and it has also been suggested that we adopt a standard "stop" sign as used by the Highway Department.
17. It is recommended that separate control switches be installed for the small drill and press in this room. At present both machines must be started in order to have one running.
18. Stakes on side of automobile truck so loose that they bounce out of stake holders.
19. Three-ton chain block needs repairing as the worm gear is worn and chain slips.
20. Employees are careless in spilling oil on the floor in the oil house. This causes a fire hazard as well as danger of slipping.
21. It is necessary in a certain process to carry acid in buckets up a flight of stairs. To eliminate this, a small tank should be installed over the operation.

FEBRUARY, 1936

M & M RAIL CLAMPS

SAFETY WITH-

Easily and Quickly Removed Guaranteed Against Breakage

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

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



Style A—\$15. each

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

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

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SEVERAL HUNDRED SAFETY ITEMS ILLUSTRATED WITH RECOMMENDED USES.

INDUSTRIAL PRODUCTS COMPANY

Accident Prevention Equipment

800 W. SOMERSET ST.

PHILADELPHIA, PENNA.

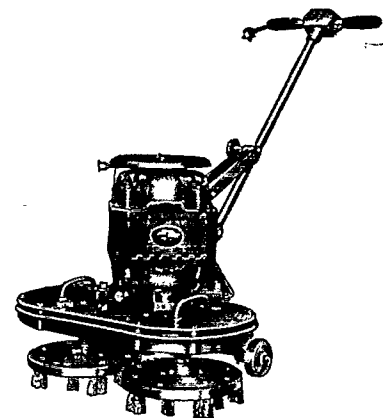


The LINCOLN Twin Disc SCRUBS - WAXES - POLISHES



FOR floor maintenance problems use a Lincoln Twin Disc Floor Cleaning and Polishing Machine. They will perform the job to your complete satisfaction. These valuable aids to good housekeeping programs make it easy to keep factory floors clean and healthy. They do away with accident hazards caused by dirty, greasy, untidy floors. Then, too, they cut floor cleaning costs as they are economical to operate and cover large areas in a much shorter time than can be done by other methods.

Twelve models to choose from. Each one especially designed to better perform its particular type of work. A trial can be arranged on your own floors without any obligation. A card or letter will bring complete information.



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

LINCOLN-SCHLUETER FLOOR-MACHINERY CO., Inc.

237 West Grand Avenue

Chicago, Ill.

Well-Designed and Well-Made SAFETY APPAREL Is Inexpensive!



The employer always pays the bill for accidents, and it is a big bill. Even well-designed, well-made safety equipment is relatively inexpensive. Its cost is small in comparison to that of a serious injury.

The above is a quotation and is not of our own composition.

But how true it is and how often you hear it, especially when a life has been sacrificed because of improper protective devices.

Proper protection requires quality—
tainly . . . but even more important is service.

Let us have a STEEL-GRIP representative call to make a safety inspection of your plant When he is through he probably will make recommendations to spend some of your money—true . . . but his recommendations will save someone's life sometime and will also save you some future compensation bill.

When an employee is hurt, two pay—the man and yourself.

LET US SERVE YOU!



INDUSTRIAL GLOVES CORPORATION

725 GARFIELD BLVD.
DANVILLE, ILL.

Chicago Philadelphia Detroit

22. Life preserver on the dock has a short rotted rope. This rope was replaced immediately.

23. During the recent unloading of fluorospar from steamship one of the lifting cables was noticed to have become frayed above the shackle holding the hook. The protruding wires were a hazard to the face of the man changing the hook from one bucket to another.

24. Airplane warning light needed on top of stack.

25. A dead limb is broken off near mechanical office and is now lying across two trees high in the air. Suggest all trees in the plant be inspected and dead limbs removed.

26. Electric light line in village down low.

27. It is unsafe for the girl employees to use the large fire door between the shipping room and the textile area due to its weight.

28. There was an unsafe scaffold being used by bricklayers at the northeast corner of this building.

29. Table at roast cook's station should have rounded corners as sharp edges tear clothing.

30. Elevator gates in the central elevators are too low for safety. It is possible to lean over the gate when it is closed.

31. Steel plates used for bridging when loading trucks should have rings to facilitate handling. Pulling hooks are apt to slip from present holes.

32. A dead tree near the office should be removed to prevent falling on someone.

33. A light pole located on street in the village is rotten at the ground level.

34. Have bucket containing cyanide of potassium used for hardening in blacksmith shop kept in a secluded place or out of reach where it cannot be used for any other purpose.

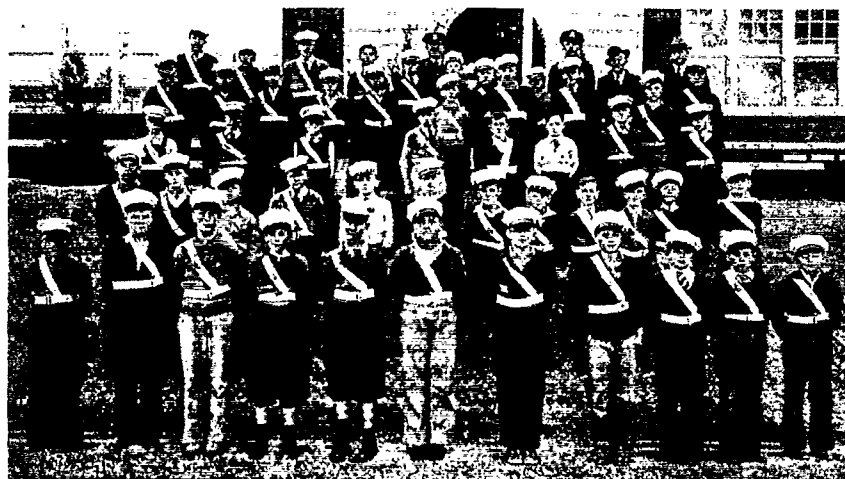
35. Rigger transferred to us found to have less than one-tenth normal eyesight.

36. When necessary to operate the valves on the discharge slide solution pump in the power house, it has been necessary for operators to stand on boxes or waste cans.

37. Mechanics, electricians, etc., tear up flooring, cut holes in roofs and walls to install pipes, etc. When finished they have left these places in an unsafe condition. In estimating a job the replacing of the torn up places should be included.

38. Light switch in front of the elevator in the basement should be moved so that it can be operated from the elevator. There is a hazard in walking from the elevator landing to the present switch in the dark.

Oil Company Sponsors School Safety Patrols



One of the school safety patrol groups sponsored by the Continental Oil Company.

TO SAFEGUARD Ponca City, Oklahoma, school children and to give motorists a constant living reminder of their public responsibility at the wheel, the Continental Oil Company of that city suggested the organization of a corps of junior police officers, recruited from schools of the community. The safety and sanitation division of Continental, with the cooperation of the police department, school supervisors, and parent-teacher associations, worked out plans for a test patrol. So successful was the experiment that patrols were organized in all primary schools in the city.

The junior officers are given special training and are empowered to direct traffic to a limited extent in the vicinity of schools. If motorists wilfully violate traffic or parking rules and refuse to cooperate with the junior police, the latter make a notation of the license number of the offending car and turn it over to the police department for official action.

The townfolk, however, have shown an enthusiasm for the activities of the corps, and Ponca City has added a valuable factor in its traffic safety program. The only cost is the small expense of white caps, Sam Browne belts and red flags for the youthful officers.

NATIONAL SAFETY NEWS

As Strong as the Weakest Part

(Continued from page 22)

boom should be supported on a flat car or by another crane. Also, when cranes are traveling throughout the plant, the end of the boom should not be carried higher than the top of the crane cab. When so traveling, cranes must not, under any circumstances, be allowed to drift or coast out of gear. Before going down grade, brakes should be tested.

The angle at which the boom should be worked is also important. Most crane manufacturers have compiled tables showing the load that can be lifted safely at a given radius. These instructions also state when outriggers should be used. Neglecting to use outriggers when making heavy lifts has been the cause of numerous crane accidents.

In the operation of the boom numerous mishaps can happen. In some instances, the breaking of the bolt through the friction which operates the lowering of the boom will place the crane out of control. Throwing the clutch out with steam on the engine will cause the boom to drop. Cables pulling from the sockets are another hazard. This is usually due to poor material or workmanship in babbitting.

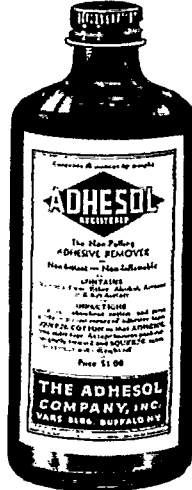
In many instances, particularly during construction work, it is advisable to use wedge type sockets. This socket is similar to the regular socket, but instead of the wires on the cable being bent inside the socket and babbitted, the cable is placed over the wedge. As the cable is tightened, the wedge and the cable pull into place. It is then impossible to pull the cable clear of the socket.

Boom pins to which hog rods are attached should be inspected daily. If the hog rods are attached to the same pin upon which the boom sheave operates, it might be advisable to use two pins. One should be on the sheave at the top of the boom and one a little lower to take care of the hog rods. What is said of the hog rod pins on booms might be recommended for pins supporting hog rods on "A" frames. They should be inspected daily.

Nothing will cause a crane to upset quicker than a poor road bed. Somebody in a supervisory capacity should check the gage of the track on which the crane is to work. A spread rail will permit the wheels to drop off the track. When this happens the operator cannot cut his load in time to prevent the crane turning over. Tracks laid on new fill are the most dangerous and require care-

Here's the NEW Painless WAY to Remove Adhesive Tape and Plaster ADHESOL

QUICK! *Adhesol* acts instantly because it is scientifically prepared to dissolve adhesive compound. Saves minutes of the doctor's or nurse's time. Ends discomfort to the patient.



EFFICIENT! All types of tape and plasters lift off gently and painlessly with *Adhesol*. Ends the danger of tearing the skin and opening new sources of infection. *Adhesol* is positively non-irritant and non-explosive. Has pleasant odor that quickly disappears.

ECONOMICAL! *Adhesol* goes farther and costs less than any other non-offensive solvent. **TRIAL BOTTLE ONLY \$1.00.** Satisfaction guaranteed. If your dealer cannot supply you, write enclosing one dollar to:

THE ADHESOL CO., INC.
351 Delaware Ave. Buffalo, N. Y.

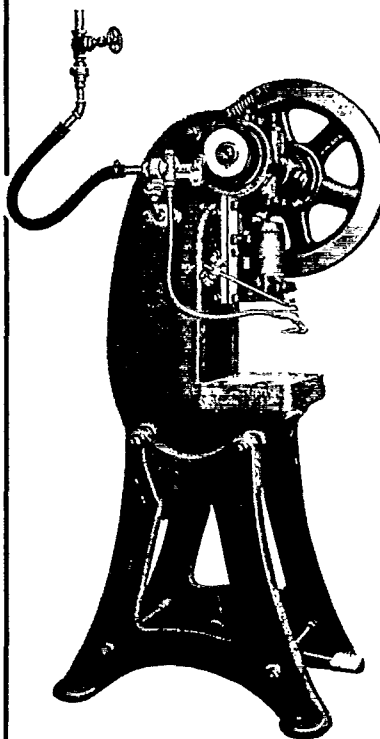


Figure 1.
Littell Air Blast Valve. Hose and Nozzle mounted on side of Press, as used for hand feeding.
Patent applied for.

AIR SAVES FINGERS

Safety When the Littell Air Blast Valve is used on punch presses, the operator's fingers need never be between the punch and die when the stamping is being removed, as the air automatically blows the pieces out of the die as soon as the operation is completed.

Savings Littell Air Valves and Universal Air Nozzles increase production 50% to 100% over hand ejection of the work.

Design 1. The Littell Air Valve is of large capacity. Fifty pounds pressure will blow five ounce pieces. One hundred pounds pressure will blow two pound pieces.

2. The Valve is operated by a cam from the crankshaft so that it never has to be changed when the press slide is adjusted for various dies.

3. The Universal Air Nozzle can be clamped so as to allow the air to be blown in any direction by merely turning a wing nut. No wrenches are required.

4. The cam, support brackets, fittings, screws, and nuts are furnished ready for mounting on any size or make of punch press.

Write today for circular No. 9

F. J. LITTELL MACHINE CO.
4127 Ravenswood Avenue Chicago
Mfr's of Punch Press Feeds & Reels

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, 14 gallons.

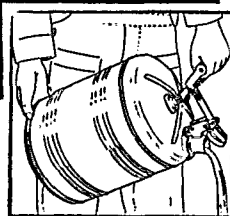
Opens with Foot
Closes automatically

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

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

LESSENS INSURANCE RATES

Protect your plant—your employees—lower your insurance rate premiums—by installing the latest improved and approved JUSTRITE Safety Devices TODAY. See your dealers or write us for interesting prices and literature.



Justrite

TRADE MARK

Justrite Mfg. Co. 2057 Southport Avenue
CHICAGO, ILLINOIS

Good News!

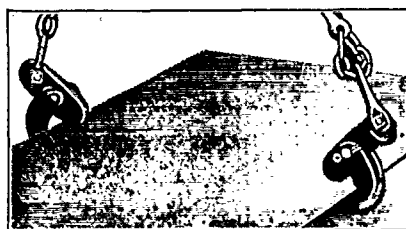


"SAY, OSCAR . . . here's a simple little device that's used in thousands of factories, schools, hospitals, and power houses. I'll bet you don't know what it is."

"I certainly do, boss! It's a Johnson Ladder Shoe. My brother got a pair after he broke his leg."

Price \$1.65 per pair

Johnson Ladder Shoe Co.
Eau Claire, Wisconsin



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.

ful inspection before starting operations.

When making special lifts care must be taken to see that the crane is clamped to the rails and that outriggers are extended and blocked.

It is essential that the reeving of cables be checked to make certain that reeving to lift two tons is not used to lift a greater load. This may mean that the reeving will have to be changed several times during the day, but this is necessary for safe operation. It should be the duty of the crane operator or his foreman to check the size and strength of chain or cable and inspect cable clamps before work is started.

Possibly the safest way to lower a load is to leave the hoist friction engaged and open the cylinder cock, which allows the engine to back the load down. This applies only to single action engines. When it is necessary to make adjustments to hoisting friction for lifting heavy loads, it is important after making the lift, that the friction be reset to the former position and check to prevent wear or friction. Care should be taken to see that the friction does not drag but has full release after disengagement. It is the ground man's duty to see that men are in the clear when the lift is being made. Only in an emergency should a man be allowed to walk under the boom.

When cranes are working along the main line of a railroad they should be adequately protected. Operators and helpers should receive instruction from the railroad department so that they will be familiar with railroad signals. In addition, the crane crew should protect themselves by the use of flags by day and lights by night. When a locomotive crane must be moved after sunset or when visibility is lowered by fog or other causes, a white light should be placed in front of the car and a red light at the rear. Also the crane conductor or operator must consult with the railroad trainmaster or dispatcher about securing right of way and block signals. Should an accident delay the crane in getting over the railroad's tracks after securing the right of way, the crew should notify the dispatcher immediately. Under no circumstances should the crane conductor or operator use main tracks without permission from the dispatcher. After permission has been received and the crane has reached its destination, the conductor or operator should report back to the dispatcher that the crane is in the clear. No yard movement should be made without first getting permission from the yardmaster.

NATIONAL SAFETY NEWS

It is the duty of the crane crew to be continually on the alert for conditions that may confront them. They must watch the position of switches, make sure that cars are in the clear on tracks running from leads, and have a man stationed at all times to protect the crane movement.

Locomotive cranes should be equipped with blue, red and white lanterns, also red and blue flags. Flags of the correct color should be used by day and lamps at night and when signals cannot be seen because of fog or other causes. The crew should be familiar with the meaning of these colors. Red means "stop;" green, "proceed;" yellow, "proceed with caution." Blue is a signal to be used by the crane inspector, also at points where men are working on tracks or on cars loading or unloading material.

Only the crane operator and his helper should be permitted to ride on the crane. All employees should be prohibited from riding, sitting or standing on the car body of the crane. Where possible, riding steps should be avoided and steps should never be placed on cranes where the cab overrides the deck.

Another practice which should be forbidden is that of carrying bars, hooks and other tools on the deck underneath the cab. There is always the possibility of an employee receiving hand, arm or other injuries where this practice is permitted.

Many accidents are caused by a misunderstanding of signals. This can be prevented by appointing one person to give signals. Instructions should be given to the operator not to operate the crane unless the authorized person gives the signal.

While oiling is being done, equipment should be inspected for loose bolts and nuts. Inspection should also be made of brake bands, pins and other parts which wear rapidly through constant use. Operators should inspect their cranes at the beginning of each turn and be responsible for seeing that the crane is in safe operating condition.

Riding on crane hooks, loads or magnets is a highly unsafe practice. If for any reason it should be necessary, permission should be obtained from the supervisor in charge of the operation and the work carried on under the closest supervision. Operators should not carry loads over men and should sound the alarm before moving the crane.

Some plants rule that operators should not move more than two loaded cars or three empty cars at one time, although the practice varies with operating con-

ditions. Often locomotive cranes are shifted to various departments and when this is done, the crews should become acquainted with the rules and hazards of the departments in which they are to work. The operating foreman should be responsible for the instruction of the crew.

When the operation of the crane is likely to interfere with the regular routine of the department, the foreman of the department should be consulted and safe procedure agreed upon. Before starting work at any location, the man in charge of the crane should assure himself that the crane is in no danger of being struck by cars on the same or adjacent tracks. If the crane is on a side track it should be protected with a blue flag by day and a blue light by night. The flag should be placed at the connecting end or ends of the track. Before standing or operating on a running track, permission must be secured from the trainmaster, and red flags by day and red lights at night placed at an ample distance on each side of the crane.

If the cranes are not equipped with automatic couplers and it is necessary to couple cranes to cars with link and pin, a stick, pin or hook should be used to guide the link or shackle in place. Coupling by hand should be strictly forbidden.

Before blowing down the boiler, the operator should first make sure that no person is near. Neglect of this precaution has resulted in many a serious burn.

The final responsibility for the safe and efficient operation of a locomotive crane rests with the man at the throttle—the crane operator.

Kreml Honored for Work in Traffic Safety

LIEUT. Franklin M. Kreml, director of the Accident Prevention Bureau of the Evanston, Illinois, Police Department, will receive the distinguished service award of the Chicago Junior Association of Commerce. The service awarded is presented annually to men between the ages of 21 and 35 who are considered to have contributed the most to public welfare during the year.

Lieut. Kreml is nationally known in the field of public safety for his work in connection with the Accident Prevention Bureau which has aided Evanston in maintaining a consistently low traffic death rate for several years. At present, Lieut. Kreml is on a year's leave of absence to head the Public Safety Institute at Purdue University.



**LOOK OUT FOR
PAINT-SHOP FIRES**
*They spread
like the wind—*

ALL paint processes are highly hazardous... difficult blazes for most extinguishers. Water or soda-and-acid units spread flames. Chemical extinguishers, including foam, act too slowly, damage paints and materials in process. However, the LUX Extinguisher adequately protects these hazards.

LUX carbon-dioxide snow-and-gas blankets the blaze. It is the fastest known extinguishing agent... yet harmless to both man and materials.

Twelve great auto plants now protect dip-tanks with automatic LUX Systems. They extinguish fires with such speed that materials are not fire-damaged... and the production line is moving again—

Any paint process needs special protection... LUX protection. Prices on portable extinguishers start at \$14, on Systems at \$60. For complete information write today to



Walter Kidde & Company
21 West Street, Bloomfield, N. J.



For All Electrical and
Flammable Liquid Fires

BARN'S

New Reinforced Electrician Gloves

YELLOW with BLACK center

Steam Cured



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

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

The Reinforcement of the Cuff:

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

Why the YELLOW with BLACK CENTER Glove?

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

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

Originated and patented by

FRANK E. BARN'S

130 North Wells Street
Chicago, Illinois

Certificates Awarded for Safe Bus Operation

THIRTY street car and bus salesmen on the Passaic Division, Public Service Corporation of New Jersey, who have had clear operating records for the past two years or more, were honored for their safety accomplishments on December 2. At a dinner meeting, Joseph E. Rutledge, manager of the Passaic Division, presented them with certificates for safe driving. Seventy-five salesmen in this division have had perfect operating records for the past twelve months. Six of the men honored at the dinner had had perfect operating records for more than three years.

Among the guest speakers at the dinner were Mayor John V. Hinchcliffe, of Paterson; Mayor Benjamin Turner, of Passaic; Sergeant John C. Doyle, New Jersey State Police; Edward B. Haines, *Paterson Evening News*, Arthur T. Warner, general manager in charge of traffic, Coordinated Transport; John M. Orts, director of safety education, and George Walsh, claim agent, Passaic Division, Public Service.

In complimenting the men of his division, Mr. Rutledge said that accidents in the Passaic Division had decreased 22 per cent during the past year. He presented gold, silver and white certificates to the men; the gold certificates were awarded to those who had operated more than three years without a chargeable accident; the silver certificates to those who had operated between two and three years without a chargeable accident, and the white certificates to those who had clear records between one and two years.

The Driver's Physical Inventory

(Continued from page 29)

heart should be examined both before and after exercise. The pulse beat should return to normal in approximately two minutes.

No man with a hernia should be accepted until operated upon and cured, and sufficient time elapsed for the healing to become firm and permanent. An existing hernia may become strangulated at any time and incapacitate the man. It may even lay the foundation for a death claim on the basis of an aggravation resulting from his occupation. Motor coach operators must handle heavy suitcases and trunks from time to time, and no man with hernia should be accepted.

The sexual organs should be carefully

checked and no man with venereal disease should be passed. I am speaking particularly of the active and contagious stages.

While the applicant is stripped, all deformities and scars should be recorded, not only for identification purposes but to prevent a claim that they were due to an accident sustained in the employ of the company.

Examination of the back, hips, shoulders, upper and lower extremities is essential.

The examination of the urine must be made, and the physician should see to it that the specimen is that of the applicant. The presence of sugar or albumin is cause for at least a postponement and in many cases for a complete rejection. Either condition may be temporary, but often this cannot be determined by a single examination. It may be necessary to have the man return for subsequent examinations. Infections of the genito-urinary tract, which includes the kidneys and bladder, often result in marked impairment of vision and other serious disabilities. Persons suffering from albumin in the urine or from diabetes are more susceptible to serious complications, such as infections in case of injury.

Since these examinations of motor coach operators were introduced there has been a marked drop in the number of accidents. A large share of the credit for this improvement is due to the rejection of applicants who are physically and mentally unfit.

Operators should be examined at least every six months. I have found that the men are glad to come in twice a year for their own personal satisfaction. Often they are given medical advice that they greatly appreciate.

Hold Regional Conferences in Massachusetts

UNDER the auspices of the Berkshire County Division of the Massachusetts Safety Council, a one-day Conference was held December 7 at the Hotel Wendell, Pittsfield. The day's program consisted of an opening session in the morning on highway safety, a luncheon meeting with an attendance of 109 persons, and afternoon sessions devoted to industrial safety, commercial vehicles, and safety education. There was a total attendance of 150.

On February 7 and 8, a similar Conference at the Hotel Kimball, Springfield, will be sponsored by the Connecticut Valley Division of the Massachusetts Safety Council, with the Springfield Safety Council cooperating.

The Fifteenth Annual Massachusetts Safety Conference will be held Thursday and Friday, April 23 and 24, at the Hotel Statler, Boston.

HONOR ROLL

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

Columbia Gas and Electric Corp.

A record of 1,826,344 man-hours without a disabling injury was recently established by the Columbus, Ohio, division of the Columbia Gas and Electric Corporation. Operating with an average of 3,474 employees, the Columbus division began its record July 27, 1935, and kept it intact until November 1, 1935. The record was broken by a new employee whose foot slipped off a spade, causing him to sprain an ankle.

Lone Star Gas Company

A safety record of 7 years' standing has been established by the Joshua Compressor Station of the Lone Star Gas Company, Dallas, Texas, and is still unbroken. The record, made by an average of 20 employees, had already reached 396,000 man-hours at the date of reporting, December 27, 1935. It began in January, 1929.

The Visking Corporation

With one safety record in excess of 400,000 man-hours broken, The Visking Corporation, Chicago, manufacturers of cellulose sausage casings, has already built up a similar record. The original record of 433,403 injury-free man-hours, began August 29, 1934, and terminated May 16, 1935. The new record of 422,400 man-hours began on May 16, 1935, and was unbroken at the date of reporting—January 8, 1936. The number of employees represented in the record is 290.

Calumet Chemical Company

The Calumet Chemical Company, Joliet, Illinois, manufacturer of baking powder chemicals, has achieved a record of 404,656.8 safe man-hours. The record began August 1, 1933. An average of 85 employees is represented.

Consolidated Paper Corporation, Ltd.

A record of 1,585,000 man-hours without a single disabling injury is reported by the Wayagamack division (Three Rivers, Quebec) of the Consolidated Paper Corporation, Ltd., Montreal, Quebec, manufacturers of chemical and mechanical pulp. The record, representing the work of 770 employees, began July 7, 1931, and terminated June 11, 1932.

Oklahoma Natural Gas Company

A four-fold safety record has been produced by district units of the Oklahoma Natural Gas Company at Tulsa. The records, all unbroken when reported December 23, 1935, are as follows:

Muskogee District, 36 employees, 259,289 man-hours since February 9, 1932, date of last accident; Ardmore District, 25 employees, 192,434 man-hours since September 21, 1932; Shawnee District, 32 employees, 475,917 man-hours since May 28, 1933; Chandler District, 10 employees, 130,515 man-hours since 1930.

FEBRUARY, 1936

Trade Publications

for your

SAFETY EQUIPMENT LIBRARY

Information You Should Have

All of these booklets contain many valuable facts on controlling accidents and promoting efficiency. Industrial executives should avail themselves of this fund of information—because along with "safe operation" goes its close friend "profitable operation." Check those you would like and mail the coupon right now!

- 1. Steel Grip Protection.** This loose-leaf catalogue contains a complete showing of all stock items for personal protection such as gloves, mittens, hand pads, arm protectors, leggings, spats, aprons and complete outfits. Industrial Gloves Corporation.
- 2. Roto-Clone Type D Dynamic Precipitator.** Bulletin No. 270-H. Illustrates and describes this unit designed for conveying and collecting process dust. Performance chart shows preferred range for each size. American Air Filter Company.
- 3. Foamite Dry Powder Systems.** This interesting booklet contains engineering data on these systems and clearly shows their use for various types of fire prevention applications. American - LaFrance and Foamite Industries, Inc.
- 4. Eyes, How Much Can You Save on Them?** This 12-page folder presents a valuable study on eye costs. Contains interesting examples of savings through the use of goggles. American Optical Company.
- 5. Proxate Fumigation Hand Book.** This study of infestation control should be a valuable addition to the reference files of all those concerned with food and grain preservation. Liquid Carbonic Corporation.
- 6. The Invisible Watchman.** This folder deals with Cellon a product for impregnating absorbent materials so as to make them fire-resisting. Applicable for many industrial purposes. American Fire Protection Company.
- 7. Hose Masks.** Bulletin No. 101. Illustrates and describes fresh air hose masks for use in a number of hazardous locations, such as tank cars, oil tanks, manholes, shipholds, etc. Bishinger-Koehler Manufacturing Company, Inc.
- 8. "Tabloid First Aid."** This splendid booklet gives many examples of what to do when first aid is needed in emergencies. Also illustrates various types of first aid kits. Burroughs-Wellcome and Company (U.S.A.) Inc.
- 9. S-H Safety Guards.** This 4-page folder illustrates and describes these guards designed for use on electric power line towers to prevent children or outsiders climbing on them. B. F. McDonald Company.
- 10. General Electric Service Cable.** Bulletin GEA-1791B. This bulletin contains valuable data on cables for installation from pole line to and into building. Overhead and underground types covered. General Electric Company.
- 11. Gold Metal Safety Scaffolding Machines.** This interesting catalogue shows in detail machines for use in erecting scaffolds for protection and efficiency in all types of building construction. Patent Scaffolding Company.
- 12. Multi-Wiring Devices and Lighting Equipment.** A loose-leaf catalogue containing many electrical fixtures for industrial uses. Vapor and weather-proof reflectors and hand lamps included. Multi-Electrical Manufacturing Company.

NATIONAL SAFETY NEWS

20 North Wacker Drive
Chicago, Ill.

February, 1936

Please have sent to me the publications I have checked:

Name.....
Title.....
Company.....
Address.....

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

Detector for Hydrogen Sulphide

Mine Safety Appliances Company, Braddock, Thomas and Meade Streets, Pittsburgh, Pa., announce the development in its Research Laboratories of a hand-operated instrument for quick accurate detection and measurement of low but dangerous concentrations of hydrogen sulphide in air. They state the instrument permits



direct readings of toxic gas in concentrations from 0 to .04 per cent, and can be operated by the ordinary workman.

The detector consists essentially of an aspirator bulb, a detector tube, and a movable scale graduated to read directly in per cent of hydrogen sulphide. The actual mechanics of operation are simple, consisting of aspirating the bulb a given number of times, thus drawing the gas sample through the detector tube into the rubber bulb and forcing the spent sample out of the other end of the bulb. They further state the chemical substance used in the detector tubes is a special composition, selected for its sensitivity to hydrogen sulphide, its reliability, and its freedom from channeling. Its accuracy is not affected by the temperature of the sample, or by the presence of other common gases or moisture.

Dupor Respirator No. 16

H. S. Cover, Station A, South Bend, Ind., announces this new respirator that gets its name from the fact that it has a clear entrance filter aperture of 16 square inches. The manufacturer states it can be worn with comfort, is light weight, has low breathing resistance and as small dead air space as possible.

It is claimed the screw caps on the filter chambers are of very thin construction, threaded clear over the edge to give a



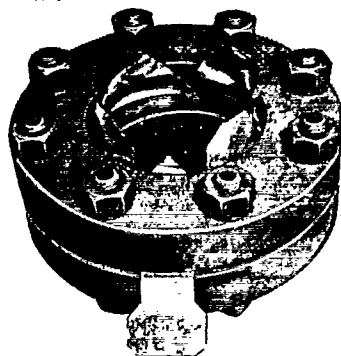
vibrationless grip on the filter pad. The screw caps are easily removed through virtue of a patented thumb rest device which gives the wearer ample leverage for removing the screw caps. The construction is compact and efficient to provide comfort for the wearer without handicapping his work. Other features listed by

the manufacturer are the new designed and patented face cloth, the respirator's reversibility and collapsibility and consequent portability in the pocket or box.

Safety Head to Prevent Pressure Explosions

A safety head to protect pressure systems as fuses protect electrical circuits has been developed and is now finding its way into general use in industrial plants and wherever hazardous pressures must be handled. Each safety head constitutes a carefully designed pressure fuse which will blow up safely and at just the right time. The safety head consists of a set of special flanges, which can be attached to any pressure vessel, pipe line, boiler, pump, separator, or other pressure equipment. Between the flanges is clamped a spheroidal diaphragm or safety emergency relief disk made of copper, aluminum, monel metal, or stainless steel as required to protect against corrosion and chemical reaction. This device is the result of several years of research and laboratory and field tests by the engineering department of Black, Sivalls & Bryson, Inc., Kansas City, Mo., and Oklahoma City, Okla.

The diaphragms are tested for required bursting pressures and guaranteed by the

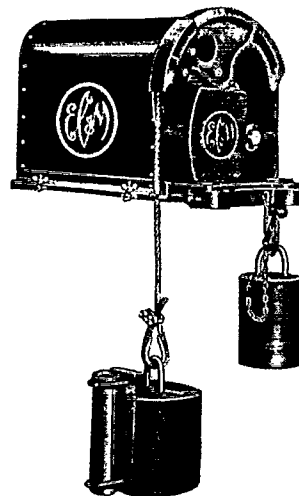


manufacturers to burst within 5 per cent of the pressure stamped on them. The diaphragms are inexpensive and can be replaced like changing fuse cartridges. Only the diaphragm blows out, leaving the flanges and pressure vessels intact.

Safety Limit Stops

For use as a safety device in preventing over-hoisting accidents on overhead traveling cranes and other applications where protection against overtravel is essential, the Electric Controller and Manufacturing Company, 2735 E. 79th Street, Cleveland, Ohio, announce an improved Youngstown Safety Limit Stop. This limit stop is of the main motor circuit type, handling motor currents directly without the aid of additional equipment. When the limit stop is tripped, it not only disconnects the motor from the power line but it also brings the motor to rest quickly with minimum drift.

The manufacturer further claims the improvement in this limit stop consists of (1) the use of needle-type roller bearings to provide almost frictionless operation, elimination of bearing wear, and infrequent lubrication, (2) a new heavier gage,

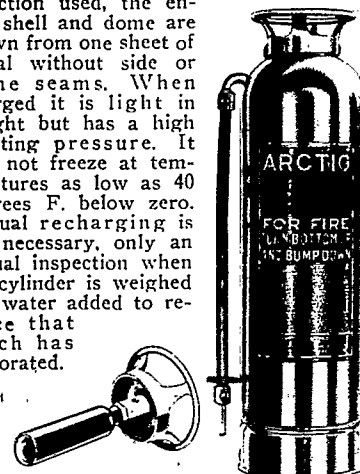


gasketed cover which is bolted down tightly against shoulders now supplied on the enclosing case, providing a splash-proof and dustproof design and rigid, injury resisting construction capable of safely withstanding the weight of an average man.

Anti-Freeze Fire Extinguisher

The Arctic Anti-Freeze Fire Extinguisher announced by the American-LaFrance and Foamite Corporation, Elmira, N. Y., has a novel method of controlling the gas which expels the anti-freeze liquid. According to the manufacturers, when the extinguisher is inverted and bumped, carbon dioxide gas is released from a steel cylinder and expels the liquid. The rate of discharge from the expelling cylinder is regulated automatically. When the pressure is high, as in the early part of the discharge, the outlet is small. When the pressure is low, during the latter part of the discharge, the orifice is larger. This close regulation is made possible because the carbon dioxide is released in the gaseous form.

The self expelling feature makes for efficiency as the operator can move around freely and give strict attention to the fire. In the new monotype extinguisher construction used, the entire shell and dome are drawn from one sheet of metal without side or dome seams. When charged it is light in weight but has a high bursting pressure. It will not freeze at temperatures as low as 40 degrees F. below zero. Annual recharging is not necessary, only an annual inspection when the cylinder is weighed and water added to replace that which has evaporated.



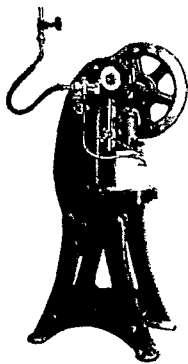
Littell Air Blast Valve for Punch Presses

This new valve announced by the F. J. Littell Machine Company, 4127 Ravenswood Avenue, Chicago, is designed to blow out pieces weighing up to 5 ounces.

It is recommended especially for blow out second and third operation work, reducing the chances of injury when picking is done by hand.

The valve is constructed so it can be easily and quickly attached to any punch press. The air nozzle has a universal mounting so it can be adjusted and locked solidly without a wrench. They further state features of operation include

a cam on the crankshaft that operates the valve and consequently is not affected by adjustment or slide of the press. The air does not blow when the press is stopped. The valve can be furnished for hand fed punch presses or for those using automatic feeds. The illustration shows hand fed installation.



Kinnear Steel Rolling Grille

To meet the demand for a protective device for all types of door and window openings in commercial, industrial, and residential buildings, the Kinnear Manufacturing Company, Columbus, Ohio, announces a new steel rolling grille. They state that without the sacrifice of air, light or vision, the new grille provides a reliable safeguard against trespassing, burglary, and kidnapping. Permanently installed and accurately counterbalanced, it can be securely locked.

The grille proper is composed of round steel bars connected by ornamental pressed steel links. The apertures in the grille are made small enough to prevent the admittance of a man's hand or projectiles. It coils on a heavy barrel above the lintel



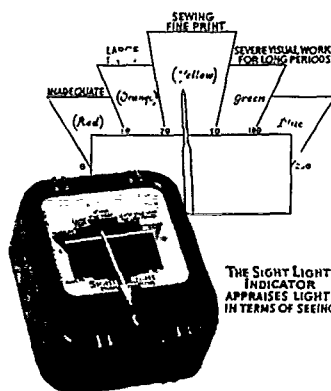
and is locked in and travels in guides mounted on the sides of the opening. Helical springs enclosed in the barrel provides accurate counterbalance. Coiling above the opening in a small space, the grille may be either installed on the face of the wall or in reveals which are provided at the time the building is constructed. It may be built in practically any size, the size of the bars and the links depending upon the size of the grille. The manufacturers further state it can be operated manually, by means of crank or operating chain, or electrically.

The illustration shows a special application of the face-of-the-wall type. A small opening in the center of the grille permits trucks to be loaded at the end of the conveyor, without allowing anyone to

enter the building. These openings are also provided with steel interlocking slat rolling doors for closing the opening at night.

Sight Light Indicator

This instrument designed to measure light in terms of seeing is announced by The Sight Light Corporation, 342 Madison Avenue, New York. It is a small pocket size device weighing but seven ounces. It incorporates the important features of the Sight Meter, but is lower in price and makes it possible for everybody to determine the amount of light available in a given area, and whether it is adequate for comfortable seeing.



No batteries or outside current supply is required for operation. It will measure light up to 250 foot candles without the use of multiplying accessories.

Oil-Resisting Pneumatic Hose

A new air hose, designed especially to overcome the deteriorating effects of hot oil from air compressors, is announced by the Republic Rubber Company, Youngstown, Ohio. The manufacturers claim the tube is made from a compound similar to that used in oil conducting hose and can actually be saturated with oil for long



periods of time without affecting its serviceability. In addition, it is said, the hose has great resistance to heat, high pressures, abrasion, the cutting effect of sharp rock and exposure to sun and weather. It is recommended for mines, quarries, rock industries, road work, contracting and general industrial use where service is exceptionally severe.

Strength has been obtained, without impairing flexibility, by constructing the plies from a specially twisted cord which is thoroughly impregnated with a new tenacious rubber compound. This also increases the bursting and working pressures and results in greater resistance to shock and abuse. All construction details of the new hose have been so balanced and engineered as to result in strength without excess bulk or useless weight.

Respirator for Lead Dusts

A new type of respirator with approved high efficiency, having passed the U. S. Bureau of Mines tests for lead and type A dusts, is announced by Willson Products, Inc., Second and Washington Streets, Reading, Pa. The respirator has a filter bag through which breathing close to normal is permitted because of very large filtering area of 40 square inches. The face mask is made of rubber and is adjustable to any shape of face by bending

a wire forming spring which constitutes a part of the lower mask edge.



The filter bag is assembled on the mask by means of a screw ring inside of which is the intake valve assembly including moisture baffle, serrations to prevent air lock and a flexible intake diaphragm. Air is drawn in through the filter bag at the front and exhausted through the valve assembly below the face mask. Filter bag is cleanable and in most cases lasts as long as the respirator itself. The complete respirator weighs only 5 1/4 ounces.

Adhesive Tape and Plaster Remover

The Adhesol Company, Inc., Vars Building, Buffalo, N. Y., announce a product called Adhesol that was developed to easily and quickly remove adhesive tape. They state this solution instantly dissolves the adhesive compound, prevents pulling off the skin or hair and leaves the skin clean, soft and free of gum or stickiness.

It is claimed Adhesol is non-irritating and non-explosive, and that it has a pleasant odor that quickly disappears. It contains no chloroform, ether, benzene, gasoline, acetone, ethyl acetate. Designed specifically for all types of tape and plaster removal.



NEWS ITEMS

Benjamin C. Bradford, who has been district sales manager of Inland Steel Company's St. Paul, Minnesota Office for the past 32 years, is retiring early in January. The company announces the appointment of Ervin J. Sanne as his successor. Mr. Sanne has been associated with Joseph T. Ryerson & Son, Inc., since 1917, and has been in the sales department of that company, handling certain territories in the Chicago district, since 1921.

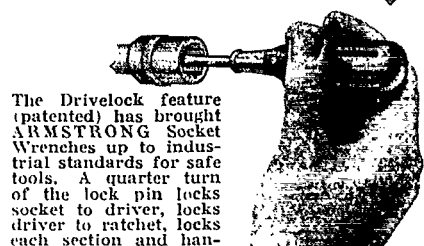
The Liquid Carbonic Corporation, Chicago, announce the promotion of R. H. Crane to the position of assistant general sales manager. He was formerly advertising and sales promotion manager and will still retain control over all sales promotion and advertising activities of the company. George T. Jahnke has been advanced to the title of advertising manager.

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

ARMSTRONG

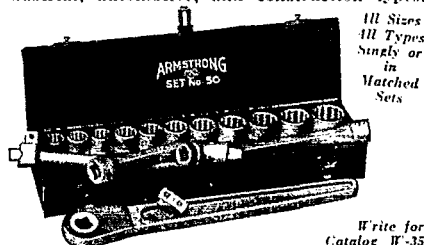
SOCKET WRENCHES

with the safe
Drivelock



The Drivelock feature (patented) has brought ARMSTRONG Socket Wrenches up to industrial standards for safe tools. A quarter turn of the lock pin locks socket to driver, locks driver to ratchet, locks each section and handle; makes of the complete assembly a safe, rigid tool. Socket cannot pry or knock off, extensions will not separate.

ARMSTRONG Sockets are made of Chrome Vanadium Tool Steel, chrome plated, sizes from 5/16" Miniatures to great 5" bridge wrench sockets. Ratchets (improved design) and handles are drop-forged. All standard industrial, automotive, and construction types.



All Sizes
All Types
Singly or
in
Matched
Sets

Write for
Catalog W-35

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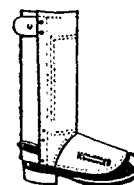
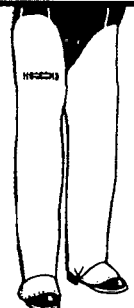
Armstrong Bros. Tool Co.

"The Tool Holder People"

339 N. Francisco Ave.

CHICAGO

HOLCOMB PROTECTION



THE Holcomb trade mark on a safety garment is your assurance of the finest clothing that can be purchased today. For over 20 YEARS we have constantly striven to make our products better from the standpoint of safety and service. Today, too, we consult with many safety engineers for the purpose of making improvements.

The new Holcomb Safety Garment Catalog No. 100 contains a complete line of safety clothing. Send for your copy today, it will be promptly mailed.

HOLCOMB
SAFETY GARMENT CO., Inc.
Manufacturers
118 N. JEFFERSON ST
CHICAGO

The Exciting Year of 1935

(Continued from page 20)

in each one of these lives saved is just about \$32 per life! And still we find it difficult to get these extra thirty-two dollars for other lives that are destined to be lost through accidents unless adequate protection can be provided.

15. In the changing leadership and sponsorship of the Council there were several deaths during the year which will mean a distinct loss to the safety movement for years to come. Among these should be mentioned: Ira V. Kepner; Dr. Lucian W. Chaney; Ralph W. Emerson; Major Robert E. Lee and William W. Hamilton.

Although we feel it our duty to remind our members that more could be done with more adequate financial support, we are constantly aware that the priceless resources of the Council are the good will, the service, the enterprise and capacity of its members and cooperators. Accidents are unnecessary; their cost is terrific. They can be stopped when the public and employers make up their mind to do so.

Horns Used Less When Pedestrians Are Careful

THE pedestrian's responsibility for excessive tooting of automobile horns has been recognized by the City of Antwerp, Belgium, during a recent "Silence Week," according to *The Week's Science*.

In preparation for this week, the word "Silence" was painted in large letters in French and Flemish on the pavements at important street corners, striking posters were put up, and leaflets were distributed describing the new regulation against horn-blowing and the duties of pedestrians in making these regulations easy to obey. All available members of the city police force were trained in traffic duty and assigned to watch both motorists and pedestrians.

On the first day of the "Silence Week," offending horn-blowers were let off with warnings, but the police also warned 7,329 pedestrians who crossed the streets against the traffic lights, 3,554 who tried to cross between intersections or where no legal crossing was provided, and 2,304 who crossed intersections diagonally instead of with the traffic. Four pedestrians who refused to take the police warnings were arrested.

Through these efforts against both horn-tooters and jay-walking pedestrians who inspired the toots, the noise of traffic in Antwerp is reported to have been greatly reduced. Street accidents also decreased during the period.

Safe! SOON PAYS For Itself



At today's moderate price, a DAYTON Safety Ladder soon pays for itself, by preventing falls and promoting better and faster work.

Built of durable airplane spruce, in sizes 3 to 16 feet, it stands without wobbling or tipping. Straight back allows close work in corners and against walls.

Write Dept. NSN - 2 for details

THE DAYTON SAFETY
LADDER CO.

121-123 West 3rd St.

Cincinnati

DAYTON Safety Ladder

(Patented)

Stock carried on Pacific Coast by E. D. Bullard Co., Los Angeles and San Francisco, and by 160 other distributors from coast to coast. Made and distributed in Canada by Safety Supply Co., Toronto.

Eliminate WATCH YOUR STEP floorings from YOUR PLANT

Slippery floors, stairs and ramps make dangerous footing. Workmen are hampered. Production slows up. Costs mount. Stop these profit leaks with PLASTIC FUT-SURE. Easy to apply, economical to buy, it makes any surface positively and permanently safe. Write for folder.

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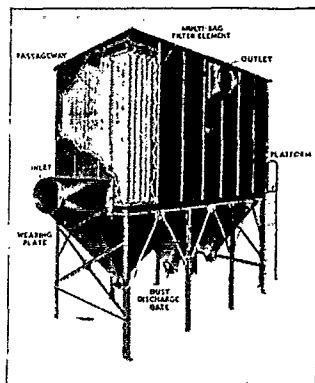
2065 College Ave.
Niagara Falls, N. Y.

PLASTIC FUT-SURE

FOR SAFER WALKING SURFACES

Is there DUST in YOUR plant?

The
NEW
DRACCO
MULTI-
BAG
FILTER



GET in TOUCH with DRACCO!!

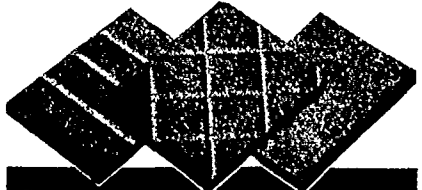
DUST takes its toll in many ways:—(1) health of employees; (2) ruins equipment; (3) decreases efficiency of plant; (4) lawsuits. If you have dust in your plant, get in touch with DRACCO Engineers who have years of Dust Control experience that can be focused on your particular problem. Dust is ALWAYS an expense. The SOONER eliminated the better.

Write for Bulletin No. 301

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Successors to The Dust Recovering & Conveying Co.
4073 E. 116th St. Cleveland, Ohio

Fluted Diamond Hatched Plain



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A CAST safety stair tread in which a carborundum or 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

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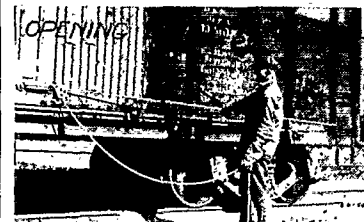
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A lot of fatal claims coming before the Industrial Commission suggest a new simile: "As remote as the connection between injury and death."

—O. I. C. Monitor.

LARGE CONCERN* ORDERS 35

*Name on request—also names of scores of other concerns standardizing on this device.



because this **CAR DOOR
OPENER AND CLOSER**
is the **SAFEST**
and **QUICKEST** method

With this device, one man can do the work of a gang thereby completely eliminating the injury hazard. A one man pull exerts a force of over 2000 lbs.! Order one on 10 DAY TRIAL—Money Back Guarantee.

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Aids remarkably in controlling friction. Often completely overcomes serious heating and fire hazard problems. Increases operating efficiency, cutting maintenance costs to a surprising degree in many cases. Not a mere "break-in" oil; by no means an abrasive.

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THIS SIGNATURE ON
EVERY CONTAINER

W. V. Kidder

THE BUYERS' SERVICE

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A

Accident Prevention Service

National Safety Council, Inc.

Abrasives

American Abrasive Metals Co.
American Foundry Equipment Co.
General Abrasive Co.

Adhesive Tape and Plaster Remover

Adhesol Company, Inc.

Alarms, Fire

Mine Safety Appliances Co.

Amponies, First Aid

Bernhard, Robert A.

Anemometers

Bullard Company, E. D.
Mine Safety Appliances Co.

Aprons

Bullard Company, E. D.
Davis Emergency Equipment Co., Inc.
Holecomb Safety Garment Co.
Industrial Gloves Corp.
Industrial Products Co.
Mine Safety Appliances Co.
Pulmonan Safety Equipment Corp.
Safety Clothing Co., The
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Safety First Supply Co.
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Arrestors, Dust

American Foundry Equip. Co.
Blaw-Knox Co.
Bullard Company, E. D.
Draco Corporation
Surtz Mfg. Co., The

Awards, Prize

Mine Safety Appliances Co.

B

Badges and Buttons

Bullard Company, E. D.
Mine Safety Appliances Co.

Bags, Tool, Linemen

Buhrke Company, R. H.
Bullard Company, E. D.
Davis Emergency Equipment Co., Inc.
Industrial Products Co.
Pulmonan Safety Equipment Corp.
Safety Equipment Service Co., The
Sallisbury & Co., W. H.
Strauss Company, The

Belts, Linemen

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Safety First Supply Co.
Standard Safety Equipment Co.
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Belts, Safety

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Industrial Products Co.
Flein & Sons, Mathias
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Pulmonan Safety Equipment Corp.
Safety Clothing Co., The
Safety Equipment Service Co., The
Safety First Supply Co.
Standard Safety Equipment Co.
Strauss Company, The

Belts, Tree Trimming

Buhrke Company, R. H.
Bullard Company, E. D.
Industrial Products Co.
Mine Safety Appliances Co.
Pulmonan Safety Equipment Corp.
Strauss Company, The

Belts, Window Cleaning

Buhrke Company, R. H.
Bullard Company, E. D.
Industrial Products Co.
Mine Safety Appliances Co.

Blowers, Hone Mank

Bullard Company, E. D.
Davis Emergency Equipment Co., Inc.

Blowers, Portable, Electric

Spencer Turbine Co.
Surtz Mfg. Co., The

Box Car Door Opener

Parade Company

Buckets, Hoisting

Bullard Company, E. D.

Safety Equipment Service

Co., The
Standard Safety Equipment Co.

Chain, Factory

American Chain Co., Inc.
McKay Company

Chairs, Safety, Boatswain

Bullard Company, E. D.
Mine Safety Appliances Co.

Davis Emergency Equipment

Co., Inc.
Holecomb Safety Garment Co.
Industrial Gloves Corp.
Industrial Products Co.
Mine Safety Appliances Co.
Pulmonan Safety Equipment Corp.
Safety Clothing Co., The
Safety Equipment Service Co., The
Safety First Supply Co.
Standard Safety Equipment Co.
Strauss Company, The

Clothing, Weatherproof

Bullard Company, E. D.
Davis Emergency Equipment Co., Inc.
Industrial Gloves Corp.
Industrial Products Co.
Mine Safety Appliances Co.
Pulmonan Safety Equipment Corp.
Safety Clothing Co., The
Safety Equipment Service Co., The
Safety First Supply Co.
Standard Safety Equipment Co.

Cloths, Wiping

Sanitary Institute of America

Collectors, Dust

American Foundry Equip. Co.
Blaw-Knox Co.
Draco Corporation
Surtz Mfg. Co., The

Compounds, Cleaning

Safety Clothing Co., The

Containers, Explosive Liquid

Bullard Company, E. D.
Davis Emergency Equipment Co., Inc.
Industrial Products Co.
Justite Mfg. Co.
Mine Safety Appliances Co.
Protectoseal Company
Pulmonan Safety Equipment Corp.
Safety Equipment Service Co., The
Strauss Company, The

D

Detectors, Gas

Bullard Company, E. D.
Davis Emergency Equipment Co., Inc.
Mine Safety Appliances Co.
Portable Lamp & Equipment Co.

Detectors, Indicators, Recorders, Carbon Monoxide

Bullard Company, E. D.
Davis Emergency Equipment Co., Inc.
Mine Safety Appliances Co.

Detectors, Pyrotannic

Mine Safety Appliances Co.

Disinfectants and Deodorants

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

When Buying Safety Equipment Not How Cheap—But How Good

Price buying is poor economy if the equipment or material purchased does not measure up to quality specifications. Safety equipment should never be bought as "bargain counter goods." It is unwise to depend on something that "may do the job" when human life is in danger. Insist that the safety products you buy be correctly designed and made. No reputable manufacturer or distributor of safety equipment will recommend or sell products that are not right in every respect.

Buy Safe for Safety's Sake.

Accident Prevention Equipment Manufacturers Section of the National Safety Council

Pulmonan Safety Equipment Corp.
Safety Clothing Co., The
Strauss Company, The

Davis Emergency Equipment Co., Inc.
Industrial Products Co.

Pulmonan Safety Equipment Corp.
Strauss Company, The

Bulletin Boards

Bullard Company, E. D.
Davis Emergency Equipment Co., Inc.
Elliott Service Co.
Mine Safety Appliances Co.
Pulmonan Safety Equipment Corp.
Safety Equipment Service Co., The
Safety First Supply Co.
Standard Safety Equipment Co.

Clamps, Rail

Industrial Products Co.
Pulmonan Safety Equipment Corp.
Safety Clothing Co.
Safety First Supply Co.

Clamps and Sockets

Never Slip Safety Clamp Co.

Cleaning Equipment, Abrasive

American Foundry Equipment Co.

Cleaning Systems, Vacuum

Immobile Vacuum Cleaner Mfg. Co.
Spencer Turbine Co.
Surtz Mfg. Co., The

Clothing for Industrial Workers—See Aprons, Gloves, Hand Leathers, Leggings, Shoes

Clothing, Acidproof

Clothing, Fireproof
Bullard Company, E. D.

Blankets, Fireproof

Bullard Company, E. D.
Davis Emergency Equipment Co., Inc.
Holecomb Safety Garment Co.
Industrial Products Co.
Mine Safety Appliances Co.
Pulmonan Safety Equipment Corp.
Safety Clothing Co., The
Safety Equipment Service Co., The
Safety First Supply Co.
Standard Safety Equipment Co.

Blockers, Mine Car

Industrial Products Co.
Mine Safety Appliances Co.
Pulmonan Safety Equipment Corp.

Blockers, Railroad Car

Bullard Company, E. D.
Industrial Products Co.
Safety Equipment Service Co., The
Safety First Supply Co.
Standard Safety Equipment Co.

Cans, Oil

Bullard Company, E. D.
Industrial Products Co.
Mine Safety Appliances Co.
Protectoseal Company
Safety Equipment Service Co., The

Cans, Waste

Bullard Company, E. D.
Davis Emergency Equipment Co., Inc.
Industrial Products Co.
Justite Mfg. Co.
Mine Safety Appliances Co.
Protectoseal Company
Pulmonan Safety Equipment Corp.

THE BUYERS' SERVICE

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Exterminator, Rodent

Extinguishers, Fire

Bullard Company, E. D.
Harker Mfg. Co.
Kidd & Co., Inc., Walter
Mine Safety Appliances Co.
Pulmonan Safety Equipment
Corp.
Pvrene Mfg. Company

F

Fans, Exhaust

American Foundry Equip. Co.
Blaw-Knox Co.
Dracoe Corporation
Surtly Mfg. Co., The

Fasteners or Lacers, Belt

Clipper Belt Lacer Co.

Films or Slides, Safety, for Rent and Sale

National Safety Council, Inc.

First Aid Equipment

Abbott Laboratories
Bauer & Black
Bernhard, Robert A.
Bishinger-Kochler Mfg. Co.,
Inc.
Bullard Company, E. D.
Burnham Laboratories
Burroughs-Wellcome Co.,
(U.S.A.) Inc.
Davis Emergency Equipment
Co., Inc.
Hynson, Westcott & Dunning,
Inc.
Industrial Products Co.
Johnson & Johnson
Merk & Company
Mine Safety Appliances Co.
Moss Laboratories, (U.S.A.)
Pulmonan Safety Equipment
Corp.
Safety Clothing Co.
Safety Equipment Service
Co., The
Safety First Supply Co.
Standard Safety Equipment Co.

Flags, Danger

Bullard Company, E. D.
Industrial Products Co.
Safety Equipment Service
Co., The
Stonehouse Signs, Inc.

Flashlights, Permissible

Bullard Company, E. D.

Floor Cleaning Machines, Electric

Lincoln-Schluter Floor Machy.
Co.

Flooring Material, Safety

American Abrasive Metals Co.
American Mason Safety Tread
Co.
General Abrasive Co.
Industrial Products Co.
Inland Steel Co.
Safety First Supply Co.
Surtly Mfg. Co., The

Footwear, Rubber

Bullard Company, E. D.
Industrial Products Co.
Lehigh Safety Shoe Co.
Mine Safety Appliances Co.
Pulmonan Safety Equipment
Corp.

Fountains, Drinking, Factory

Bradley Washfountain Co.

Fumigants

Bauer & Black

G

Germicides

Huntington Laboratories, Inc.

Germicides, Cutting Oil

American Optical Company
Bullard Company, E. D.

FEBRUARY, 1936

Chicago Eye Shield Co.
Industrial Products Co.
Libbey-Owens-Ford Glass Co.
Mine Safety Appliances Co.
Pittsburgh Plate Glass Co.
Pulmonan Safety Equipment
Corp.
Safety Clothing Co., The
Safety Equipment Service
Co., The
Standard Safety Equipment Co.
Surtly Mfg. Co., The
Willson Products, Inc.

Gloves and Mittens

Barns, Frank E.
Bullard Company, E. D.
Chicago Eye Shield Co.
Davis Emergency Equipment
Co., Inc.

Gongs, Sirens, Horns and other Signaling Devices

Bullard Company, E. D.
Industrial Products Co.
Mine Safety Appliances Co.

Gratings, Safety

Blaw-Knox Co.

Guards, Chip and Spark

Bullard Company, E. D.
Chicago Eye Shield Co.
Industrial Products Co.
Safety Clothing Co., The
Safety Equipment Service
Co., The
Standard Safety Equipment Co.

Guards, Kick Press

Surtly Mfg. Co., The

Guards, Portable Lamp

Chicago Eye Shield Co.

Guards, Power Press

Chicago Eye Shield Co.
Industrial Products Co.
Littell Machine Co., F. J.
Standard Safety Equipment Co.
Surtly Mfg. Co., The
Wiesman Mfg. Company

Guards, Safety

Bullard Company, E. D.
Davis Emergency Equipment
Co., Inc.
Harrington & King Perforating
Co.

Mine Safety Appliances Co.
Pulmonan Safety Equipment
Corp.
Safety Clothing Co., The
Safety First Supply Co.
Strauss Company, The

Heads Safety, Explosion

Black, Stralls and Bryson, Inc.

Heat Cramp Preventives

Fairway Laboratories, Inc.

Helmets, Safety

American Optical Company
Bishinger-Kochler Mfg. Co.,
Inc.
Bullard Company, E. D.
Chicago Eye Shield Co.
Davis Emergency Equipment
Co., Inc.
Industrial Products Co.
Mine Safety Appliances Co.
Pulmonan Safety Equipment
Corp.
Safety Clothing Co., The
Safety Equipment Service
Co., The
Safety First Supply Co.
Standard Safety Equipment Co.
Wheeler Mfg. Co., F. H.
Willson Products, Inc.

Hoists, Electric

Holders, Tool

Armstrong Bros. Tool Co.
Williams & Co., J. H.

Hooks, Safety Belt

Bullard Company, E. D.
Davis Emergency Equipment
Co., Inc.
Industrial Products Co.
Mine Safety Appliances Co.
Portable Lamp & Equipment
Co.
Pulmonan Safety Equipment
Corp.
Safety Equipment Service
Co., The
Strauss Company, The

Hooks, Safety, Hoisting

Industrial Products Co.

Hospital Equipment

Bullard Company, E. D.
Burroughs-Wellcome Co.,
(U.S.A.) Inc.
Davis Emergency Equipment
Co., Inc.
Industrial Products Co.
Mine Safety Appliances Co.
Safety Equipment Service
Co., The
Safety First Supply Co.

Inclinators, Carboy

Bullard Company, E. D.
Industrial Products Co.
Safety Clothing Co.
Safety Equipment Service
Co., The

Indicators, Flammable Vapor

Bullard Company, E. D.
Davis Emergency Equipment
Co., Inc.
Mine Safety Appliances Co.

Inhalators

Bishinger-Kochler Mfg. Co.,
Inc.
Bullard Company, E. D.
Davis Emergency Equipment
Co., Inc.
Mine Safety Appliances Co.

Insurance

Metropolitan Life Insurance
Co.

Interlock Systems

Union Switch & Signal Co.

J

L

Ladder Shoes or Feet

American Abrasive Metals Co.
American Mason Safety Tread
Co.
Bullard Company, E. D.
Davis Emergency Equipment
Co., Inc.
Dayton Safety Ladder Co.
Industrial Products Co.
Johnson Ladder Shoe Co.
Mine Safety Appliances Co.
Patent Seafolding Co., The
Pulmonan Safety Equipment
Corp.
Safety Clothing Co., The
Safety First Supply Co.
Surtly Mfg. Co., The

Good Fire Extinguishers Prevent Small Fires from Getting Big

The records of one fire chief in charge of a group of factories show that out of 455 fires, during a five-year period, 320 were extinguished by the use of portable fire appliances. Further, if the fires occurring in blower systems, most of which were of a nature to require hose streams, were eliminated the effectiveness is even greater. Of the 353 building fires, exclusive of blower system fires, 315 or a little over 89 per cent were extinguished by fire extinguishers without other aid.

Accident Prevention Equipment Manufacturers Section of the National Safety Council

Holcomb Safety Garment Co.
Industrial Gloves Corp.
Industrial Products Co.
Mine Safety Appliances Co.
Pulmonan Safety Equipment
Corp.
Safety Clothing Co., The
Safety Equipment Service
Co., The
Safety First Supply Co.
Salisbury & Co., W. H.
Standard Safety Equipment Co.
Wheeler Mfg. Co., F. H.

Goggles

American Optical Company
Bullard Company, E. D.
Chicago Eye Shield Co.
Cover, H. S.
Davis Emergency Equipment
Co., Inc.
Industrial Products Co.
Mine Safety Appliances Co.
Pulmonan Safety Equipment
Corp.
Safety Clothing Co., The
Safety Equipment Service
Co., The
Safety First Supply Co.
Standard Safety Equipment Co.
Willson Products, Inc.

Guards, Flywheel
Harrington & King Perforat-
ing Co.
Industrial Products Co.
Surtly Mfg. Co., The

Guards, Foot and Toe

Bullard Company, E. D.
Ellwood Safety Appliance Co.
Industrial Products Co.
Mine Safety Appliances Co.
Pulmonan Safety Equipment
Corp.
Safety Clothing Co., The
Safety Equipment Service
Co., The
Safety First Supply Co.
Standard Safety Equipment Co.
Strauss Company, The

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

Industrial Products Co.
Safety Clothing Co., The
Safety Equipment Service
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.
Surtly Mfg. Co., The

Guards, Trendle
Surtly Mfg. Co., The

H

Hand Cream

Bullard Company, E. D.
Davis Emergency Equipment
Co., Inc.
Industrial Products Co.
Mine Safety Appliances Co.
Safety Clothing Co.

Hats, Safety

Bullard Company, E. D.
Industrial Products Co.

THE BUYERS' SERVICE

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Ladders, Safety

Bullard Company, E. D.
Dayton Safety Ladder Co.
Mine Safety Appliances Co.
Patent Scaffolding Co., The
Pulmosan 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.
Holcomb Safety Garment Co.
Industrial Gloves Corp.
Industrial Products Co.
Pulmosan Safety Equipment Corp.
Safety Clothing Co., The
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.
Holcomb Safety Garment Co.
Industrial Gloves Corp.
Industrial Products Co.
Mine Safety Appliances Co.
Pulmosan Safety Equipment Corp.
Safety Clothing Co., The
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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.

Locks, Lamp

Industrial Products Co.
Interlocking Products Co.
Mine Safety Appliances Co.
Safety Equipment Service Co., The

Locks, Locker and Padlock, Keyless

Dudley Lock Corp.

Lubrication

Pyrill Company

M

Machines, Floor Cleaning, Electric

Lincoln-Schlueter Floor Mch. Co.

Markers, Traffic

Safety Equipment Service Co., The

Masks

American Optical Company
Bishinger-Koehler Mfg. Co., Inc.
Bullard Company, E. D.
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Davis Emergency Equipment Co., Inc.
Industrial Products Co.
Mine Safety Appliances Co.
Pulmosan Safety Equipment Corp.
Safety Clothing Co., The
Safety Equipment Service Co., The
Safety First Supply Co.
Standard Safety Equipment Co.
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.

Safety Equipment Service Co., The

Safety First Supply Co.

Poster Service

Elliot Service Co.
Holcomb Safety Garment 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.

Safety First Supply Co.

Salisbury & Co., W. H.
Standard Safety Equipment Co.

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

Mine Safety Appliances Co.

Rope, Wire
Macwhyo Company

S

Scaffolding, Safety

Patent Scaffolding Co., The

Screw Drivers, Non-Skid

Surtz Mfg. Co., The

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 Clothing 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.
Safety Clothing Co., The

Signs, Accident Prevention

Bullard Company, E. D.
Industrial Products Co.
Mine Safety Appliances Co.
Safety Clothing Co., The
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.

Slings, Safety, Wire Rope

Soap

Huntington Laboratories, Inc.

Soles, Shoe, Non-slip

Lima Cord Sole & Heel Co.

Sterilizing Equipment

Straps, Safety

Buhrke Company, R. H.
Bullard Company, E. D.
Davis Emergency Equipment Co., Inc.
Industrial Products Co.
Klein & Sons, Mathias

Stretcher Units

Surveys, Eye Sight

Systems, Dust Control

American Foundry Equip. Co.
Blaw-Knox Co.
Dracoe Corporation
Surtz Mfg. Co., The

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

Use First Aid Equipment Save Lives, Limbs, Money

If all states paid compensation on the same basis as New York, the total annual compensation paid on infected injuries would be between \$25,000,000 and \$35,000,000, and the total time charges annually would be about 2,000,000 weeks or 40,000 man-years.

After a wound has occurred, no matter how small, safe practice requires that the injured report immediately for first aid. Such procedure will do much to reduce suffering and economic loss.

Accident Prevention Equipment Manufacturers Section of the National Safety Council

Industrial Products Co.

Movers, Railway Car

Bullard Company, E. D.
Industrial Products Co.
Paschode Company
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.
Holcomb Safety Garment Co.
Industrial Gloves Corp.
Industrial Products Co.
Mine Safety Appliances Co.

Holcomb Safety Garment Co.
Industrial Gloves Corp.
Industrial Products Co.
Mine Safety Appliances Co.
Pulmosan Safety Equipment Corp.
Safety Clothing Co., The
Safety Equipment Service Co., The
Safety First Supply Co.
Standard Safety Equipment Co.
Strauss Company, The

Protectors, Finger

Bauer & Black
Industrial Gloves Corp.
Safety Clothing Co., The
Safety Equipment Service Co., The

Protectors for Linemen

Bullard Company, E. D.
Davis Emergency Equipment Co., Inc.
Industrial Gloves Corp.
Industrial Products Co.
Mine Safety Appliances Co.
Pulmosan Safety Equipment Corp.
Safety Equipment Service Co., The

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.
Pulmosan Safety Equipment Corp.
Safety Clothing Co., The
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.

THE BUYERS' SERVICE

See Advertisers' Index, Page 75—When writing, please mention National Safety News

Tools, Marking or Stamping

Tools, Non-sparking

Ampeo Metal, Inc.
Bullard Company, E. D.
Davis Emergency Equipment Co., Inc.
Pulmosan Safety Equipment Corp.

Torches, Blow

Klein & Sons, Mathias

Treads, Safety

American Abrasive Metals Co.
American Mason Safety Tread Co.
Industrial Products Co.
Inland Steel Co.
Surtz Mfg. Co., The

Trestles, Safety, Extension

Industrial Products Co.
Patent Scaffolding Co., The
Safety First Supply Co.

Trophies

V

Valves, Oxygen

Bishinger-Koehler Mfg. Co..
Mine Safety Appliances Co.

Vending Machines, Sanitary

Ventilating Equipment

American Foundry Equip. Co.
Blaw-Knox Co.
Draco Corporation

W

Washers, Safety for Grinding Wheels

Industrial Products Co.
Standard Safety Equipment Co.

Washroom Equipment, Industrial

Bradley Washfountain Co.

Welding Equipment

Wrenches, Hopper Car
Industrial Products Co.
Paslode Company
Safety Equipment Service Co., The

Safety First Supply Co.
Trumbull Mfg. Co., The

Wrenches, Non-sparking

Williams & Co., J. H.

Wrenches, Open End

Armstrong Bros. Tool Co.

Williams & Co., J. H.

Wrenches, Pipe

Armstrong Bros. Tool Co.

Trimont Mfg. Co.

Williams & Co., J. H.

Wrenches, Socket

Armstrong Bros. Tool Co.

Williams & Co., J. H.

The following companies are those whose names appear under the various headings contained in this Buyers' Service

Abbott Laboratories	North Chicago, Ill.	Dudley Lock Corp.	Chicago, Ill.	Mine Safety Appliances Co.	Pittsburgh, Pa.
Adhesol Company	Buffalo, N. Y.	Ellwood Safety Appliance Co.	Ellwood City, Pa.	National Safety Council, Inc.	Chicago, Ill.
American Abrasive Metals Co.	Irrington, N. Y.	Elliott Service Co.	New York, N. Y.	Never Slip Safety Clamp Co.	New York, N. Y.
American Chain Co., Inc.	New York, N. Y.	Pairway Laboratories, Inc.	Belleville, Ill.	Paslode Company	Chicago, Ill.
American Foundry Equipment Co.	Mishawaka, Ind.	General Abrasive Co.	Niagara Falls, N. Y.	Patent Scaffolding Co., The	Chicago, Ill.
American Mason Safety Tread Co.	Lowell, Mass.	General Electric Company	Cleveland, Ohio	Pittsburgh Plate Glass Co.	Pittsburgh, Pa.
American Optical Co.	Southbridge, Mass.	Harker Mfg. Co.	Dayton, Ohio	Protectoseal Co.	Chicago, Ill.
American Tel. & Tel. Co.	New York, N. Y.	Harrington & King Perforating Co.	Chicago, Ill.	Pulmosan Safety Equipment Corp.	Brooklyn, N. Y.
Ampeo Metal Inc.	Chicago, Ill.	Huntington Laboratories Co.	Huntington, Ind.	Pyrene Mfg. Co.	Newark, N. J.
Armstrong Brothers Tool Co.	Chicago, Ill.	Hynson, Westcott & Dunning, Inc.	Baltimore, Md.	Pyroil Co.	LaCrosse, Wis.
Barns, Frank E.	Chicago, Ill.	Industrial Gloves Corp.	Danville, Ill.	Safety Clothing Co., The	Cleveland, Ohio
Bauer & Black	Chicago, Ill.	Industrial Products Co.	Philadelphia, Pa.	Safety Equipment Service Co., The	Cleveland, Ohio
Benjamin Electric & Mfg. Co.	Des Plaines, Ill.	Inland Steel Co.	Chicago, Ill.	Safety First Shoe Co.	Holliston, Mass.
Bernhard, Robert A.	Rochester, N. Y.	Interlocking Products Co.	New York, N. Y.	Safety First Supply Co.	Pittsburgh, Pa.
Bishinger-Koehler Mfg. Co.	Pittsburgh, Pa.	International Shoe Co.	St. Louis, Mo.	Safety Magazine Publishing Corp.	New York, N. Y.
Black, Sivals & Bryson, Inc.	Oklahoma City, Okla.	Invisible Vacuum Cleaner Mfg. Co.	Dover, Ohio	Sallshury & Co., Inc., W. H.	Chicago, Ill.
Blaw-Knox Co.	Pittsburgh, Pa.	Johnson & Johnson	New Brunswick, N. J.	Sanitary Institute of America	Chicago, Ill.
Bradley Washfountain Co.	Milwaukee, Wis.	Johnson Ladder Shoe Co.	Eau Claire, Wis.	Spencer Turbine Co., The	Harford, Conn.
Brown Shoe Company	St. Louis, Mo.	Justite Mfg. Co.	Chicago, Ill.	Standard Safety Equipment Co.	Chicago, Ill.
Bulake Co., R. H.	Chicago, Ill.	Kiddo & Co., Inc., Walter	New York, N. Y.	Stonehouse Signs, Inc.	Denver, Colo.
Bullard Co., E. D.	San Francisco, Calif.	Klein & Sons, Mathias	Chicago, Ill.	Strauss Co., Inc.	Pittsburgh, Pa.
Burrough Laboratories	W. Medway, Mass.	Lehigh Safety Shoe Co.	Allentown, Pa.	Surb Mfg. Co., The	Chicago, Ill.
Burroughs-Welchome & Co. (U.S.A.) Inc.	New York, N. Y.	Libbey-Owens-Ford Glass Co.	Toledo, Ohio	Trimbull Mfg. Co.	Boston, Mass.
Chicago Eye Shield Co.	Chicago, Ill.	Lincoln-Schulze Floor Moly. Co.	Chicago, Ill.	Trumbull Mfg. Co., The	Warren, Ohio
Chippier Belt Lacer Co.	Grand Rapids, Mich.	Lima Cord Sole & Heel Co., The	Lima, Ohio	Union Switch & Signal Co.	Swissvale, Pa.
Cover, H. S.	South Bend, Ind.	Littell Machine Co., F. J.	Chicago, Ill.	Westinghouse Electric & Mfg. Co.	East Pittsburgh, Pa.
Davis Emergency Equipment Co., Inc.	New York, N. Y.	McKay Co.	Pittsburgh, Pa.	Westman Mfg. Company	Dayton, Ohio
Dayton Safety Ladder Co., The	Cincinnati, Ohio	Merck & Co., Inc.	New York, N. Y.	Williams & Co., J. H.	Buffalo, N. Y.
Draco Corp.	Cleveland, Ohio	Metropolitan Life Insurance Co.	New York, N. Y.	Wilson Products, Inc.	Reading, Pa.

INDUSTRIAL SAFETY MARKET

AS A SERVICE to our readers, we endeavor to maintain a complete list of the source of supply of all types of safety and allied equipment.

If you do not find what you want in the advertising pages, send in the coupon below, and we will have forwarded to you without charge, or obligation, detailed information and catalogs on material to meet your requirements.

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Please have forwarded to me from various manufacturers, without charge, prices, catalogs, etc., on the following material:

Specifications: (Be specific as to size, capacity, quantity, etc., when prices are wanted.)

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Company

Address

Your Name

Jumbo Posters Speak with Authority



An eight-sheet poster in striking colors placed at a conspicuous location on the plant grounds adds prestige to the plant's safety program. The above board is located at the gate entrance to Thomas Works of the Republic Steel Corporation at Birmingham, Ala. The board is floodlighted at night.

A PROMINENTLY displayed safety message at the entrance to an industrial plant at once identifies the company as an exponent of accident prevention, and the company at once rises in the estimation of the casual passer-by. It also impresses a safety thought on each employee at the beginning of his working shift.

The Jumbo outdoor poster service of the National Safety Council makes it possible to attain both of these desirable objectives at a minimum cost.

The idea for promoting these impressive safety displays originated with the safety directors of six of the leading steel companies who have cooperated in numerous safety projects. These companies had large billboards erected at strategic locations on their own properties and suggested that the Council furnish a special service for outdoor use.

After studying the problems of production and distribution, it was decided that such a service could be produced economically if a minimum of 100 yards could use the posters. The distribution now exceeds the minimum requirements. Each poster is made up of eight sheets. Some companies do the

posting themselves, while others make arrangements with a local bill-posting company to service the boards. Companies which do not have boards suitable for displaying these posters may obtain blueprints of their construction from the National Safety Council.

The service is provided on a twelve months' basis, the posters being delivered in time for posting on the first of each month. At first, all posters were in two

colors, but beginning with the January issue, three colors were employed, adding greatly to the appearance and impressiveness of the displays. The posters, when mounted, will measure 11 feet 8 inches wide by 9 feet 11 inches high. The price is \$2.80 per poster per month, delivered.

Other industries besides steel have shown their approval of the Jumbo poster idea and are making effective use of it.

They're Much Safer While at Work

THE safest place for the 10,000 employees of the Aliquippa Works of the Jones & Laughlin Steel Corporation in the past 21 months has been in the steel works; safer even than in their own homes, according to figures revealed by officials of the corporation.

In the period April 25, 1934 to January 10, 1936, over twenty-seven million man hours of work have been completed in this plant without a fatal accident, yet 15 employees lost their lives in accidents in their own homes and other places outside of the plant during the same period.

Of the 15 who lost their lives in activities outside the plant, two men died of accidents in their own homes, one falling down stairs and the other being struck by a flying piece of a grindstone. The other 13 met sudden death in various guises.

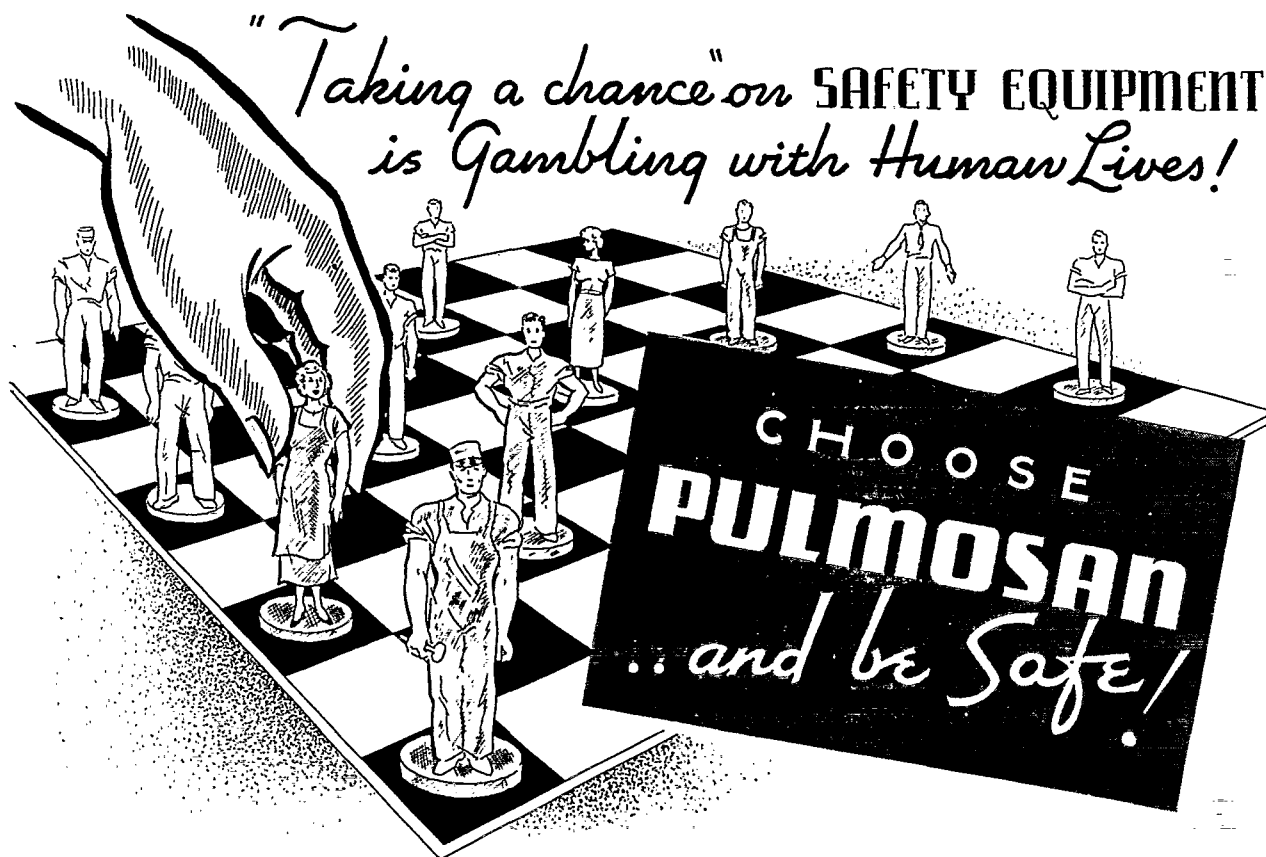
The employees are striving to better

a previous record of 28 months without a fatal accident, made in the period April 2, 1931 to August 26, 1933 when over thirty-million man hours of safe operation were completed. During this period, 18 employees lost their lives in accidents outside the plant.

This Time the Dog Shot the Man

WHEN a dog bites a man it can hardly be called news, unless the victim is unusually prominent. But when a dog shoots a man, it is a front-page item.

The Chattanooga, Tenn., office of the Commonwealth Life Insurance Company knows the dog shot the man, because they paid a double indemnity claim on the man's life, the *Weekly Underwriter* reports. While out hunting the man decided to rest. He sat down, laid his shot gun behind him, the barrel pointing toward his back. The dog began to investigate the gun and a paw got mixed up with the trigger.



THE backbone of an efficient safety program is dependable safety equipment. "Cheap" or unknown devices are expensive, if they do not provide adequate safety.

Why take chances? You can select any Pulmosan Safety Device with utmost security and assurance that it is time-tested and proven in use.

*Headquarters for everything
in Industrial Safety!*

Pulmosan's slogan, "If it's for Safety—we have it," sums up the completeness of the Pulmosan Safety Device line. It is built upon a quarter-century of specialized experience with every angle of safety, in all industries.

*Specialists on Respiratory
Problems and Devices*

The line of well-known and widely-used Pulmosan Respirators, is designed to meet any breathing hazard, whether dusts, fumes, gases, smoke or paint spray mists. Also helmets, hoods and gas masks for all needs. Expert guidance available on any respiratory problem.

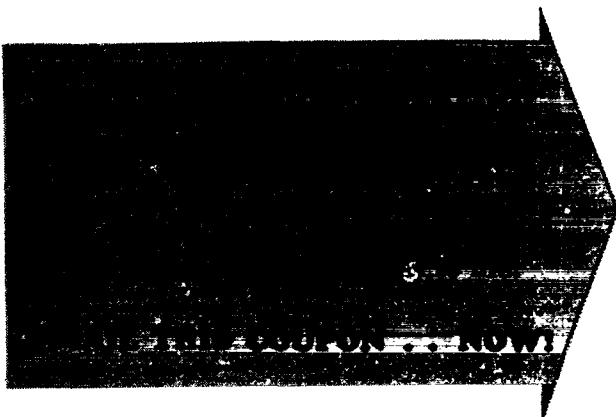
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INDUSTRIAL GOGGLES, TOO.

MUST BE MODERN

"THE AUTOMOBILE YOU BOUGHT IN 1925 MAY HAVE GIVEN GOOD SERVICE, BUT YOU WOULDN'T THINK OF BUYING ANOTHER LIKE IT TODAY BECAUSE THE MODERN AUTOMOBILE IS INFINITELY BETTER AND OF FAR GREATER VALUE."

WHILE goggles designed years ago gave comparatively good service, they cannot be compared with present models. Non-Rubber headbands, Self-Adjusting nose bridge, Deep Curve lenses and improved ventilation, which are all a part of the Super-Drednaut goggle have placed it in the forefront of MODERN Eye Protection.

GOGGLES which do not embody these improvements are rapidly going into the discard because they CAN NOT give the MAXI-

MUM service or eye protection which these new improvements insure.

TO continue to use outmoded goggles is false economy and may result in serious consequences to workmen.

SUPER-DREDNAUT Goggles embody ALL the latest improvements and are a greater value and less costly to buy now than at any time since the first model was put on the market ten years ago.



It will pay you to MODERNIZE your goggle supply.

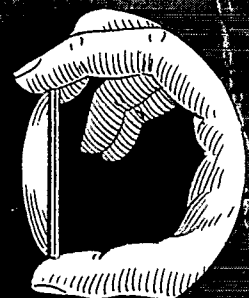
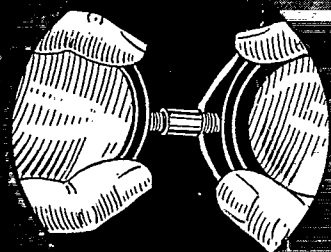
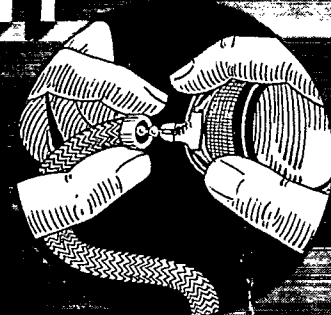
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Buell W. Nutt, President

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