

614.8
9 N21

BILL ... DANNY
University of Vermont

PUBLISHED BY THE NATIONAL SAFETY COUNCIL, INC.

NATIONAL SAFETY NEWS

SEPTEMBER

PUBLISHED IN TWO PARTS—PART 1

1932

SAFETY CARRIES ON

During the early days of the World War Great Britain adopted as an unofficial slogan, "Business as usual"

Of course, this was not realized. Business could not remain normal in a world at war. But the slogan was adopted because the daily work must go on in the same manner as before.

Every one of us must take care of our daily needs. We must produce, sell, and buy goods. In these activities, accidents continue to exact their toll of stock and commodities.

As well as

Exposition was being held in London. The spirit of the exhibition was to keep the people alive and well.

PLAINTIFF'S EXHIBIT

NSC-127

125.848

Why YOU

Should attend the 21ST ANNUAL SAFETY CONGRESS & EXPOSITION

To Learn New Operating Economies

From interesting talks and discussions you will learn how other organizations are cutting operating costs through education, engineering and enforcement of safe practices. You can meet fellow operators of your own and other industries and exchange experiences on mutual safety and production problems.

To Increase the Efficiency of Your Workers

You can examine the most modern equipment and appliances designed to increase efficiency through protection. You can bring your specific protection problems to the very source of solution, as the leading manufacturers of these products will be there to give you the benefit of their knowledge.

To Gain Knowledge on Industrial Health Measures

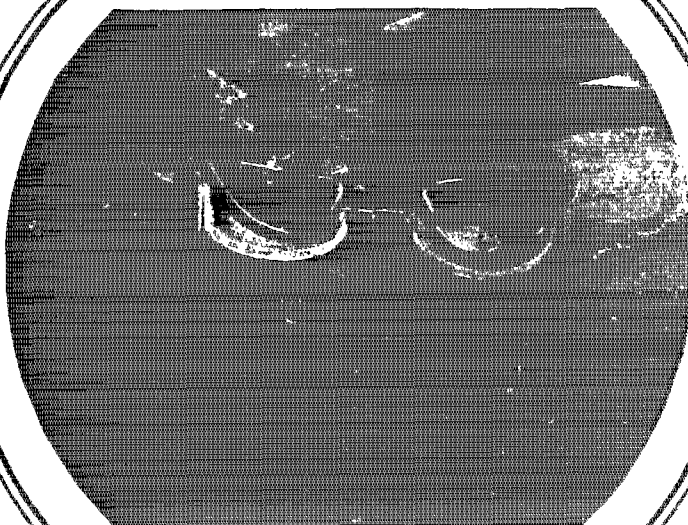
With the average wage loss through absenteeism due to sickness at \$28.00 per person per year, you should know how to curb this tremendous expense in your own company. Industrial health and first aid authorities will discuss practical information which you can apply in your own plant.

To Increase Your Value to Your Organization

You will again be inspired to tackle your job with renewed enthusiasm. You will be able to put into practice many sound experiments of other companies. You will be better equipped to carry on a result-getting safety and health program. You will broaden your understanding of management and labor welfare problems. You cannot afford to miss the 21st Annual Safety Congress and Exposition at Washington, October 3-7. Write for reduced railroad fare certificates.

NATIONAL SAFETY COUNCIL Inc.
20 N. WACKER DRIVE ~ ~ ~ CHICAGO, ILL.

WILLSON



LJ50

—tested under actual working conditions.

There is no trade requiring eye protection where LJ50 has not been "shop tested" under actual working conditions; no hazardous operation in any production process which has not tried and found advantages in this light weight, comfortable safety goggle that workmen like and wear religiously.

LJ50 may appeal to a locomotive fireman because of the snug face contact which keeps out flying cinders; to a steel billet chipper because of its light weight for comfortable long-period wearing; to a machine shop mechanic because he obtains full, clear, undistorted vision without eye-strain or headache through Willson Super-tough lenses.

Workmen in many trades prefer LJ50 for various reasons. Workmen in all trades obtain full advantage of the unusual features built in

this Willson all-purpose goggle to meet specific requirements of certain trades.

If you are not familiar with the LJ50, order a pair or two from the Willson distributor near you—we will be glad to tell you where he is located. A trial will prove the following claims to be true:

Wide Undistorted Vision

... thru 50 mm. (2" diameter) Willson Super-tough lenses

Cushioned Comfort

... shallow cups edged with Willson sweat-proof padding

Anatomically Shaped

... to conform to the bone structure of the face

Well Ventilated

... to prevent fogging lenses at most any job

Light Weight

... yet strong enough to withstand unusual impact

Economical

... all parts easily replaceable. Price: \$1.65 each, f.o.b. shipping point.

Willson also manufactures a complete line of composition cup and spectacle type goggles, welding masks and respirators.

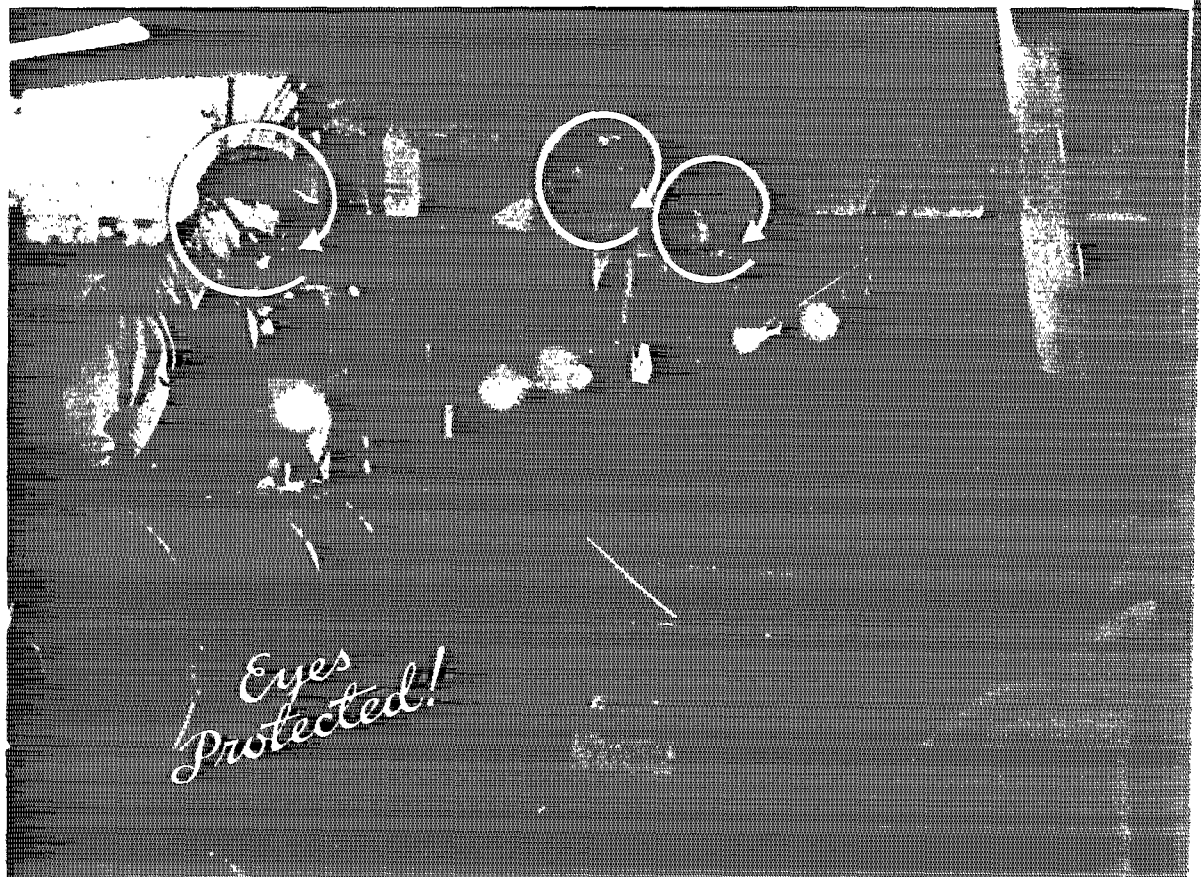
"There's a Willson goggle and respirator for every need."

WILLSON PRODUCTS, INC., READING, PA.

The NATIONAL SAFETY NEWS is published monthly by the National Safety Council, 20 North Wacker Drive, Chicago, Ill. Yearly subscription Price, \$4.00. Volume XXVI, Number 3. Entered as second class matter June 1, 1921, at the postoffice at Chicago, Ill., under the Act of March 3, 1879.

SEPTEMBER, 1932

You **C**AN'T *forget*

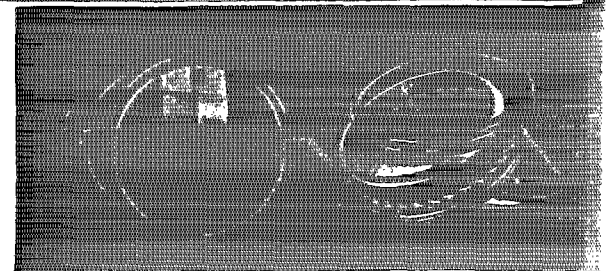


★ General Electric Company is representative of the leading industries who today insist upon eye protection as a means of eliminating waste. The picture shows American Optical Eye Protection in a General Electric Grinding Room

American

1438

**Duralite-“50”
Goggles**



NATIONAL SAFETY N

a picture like *THIS* . . .



EVERY workman's eyes are protected with efficient Safety goggles—the *most effective* step any company can take to eliminate eye injuries. You can't forget the facts—300,000 eye injuries annually cost industry \$50,000,000.

Put your 1932 Safety Program in line with good management. There's no money to waste on accidents. Yet it's no time to be penny wise and pound foolish—be sure your eye protection is adequate—modern goggles, in good repair. A small initial investment in Eye Protection produces large savings—"We spent \$300 for goggles, saved \$30,000 in compensation!" says a machine tool industry.



These goggles are Duralite-"50's"

In this division of the General Electric plant at Fort Wayne, Indiana, each man's eyes are thoroughly protected by Duralite-"50" Goggles. Wherever these goggles are provided men like them. They are cool and comfortable: do not fog and do not

cause goggle headache. You and your men, who know good machine work, who appreciate a well-made tool, for instance, will sense the superior quality of Duralite-"50". See how easily Duralite-"50" goggles can be obtained through the AO Branches listed below.

(Patented)

Optical Company

S O U T H B R I D G E , M A S S A C H U S E T T S

SAFETY BRANCHES

ALTOONA
AMARILLO
ATLANTA
BALTIMORE
BIRMINGHAM
BOSTON
BUFFALO
BUTTE
CHICAGO
CHATTANOOGA

CINCINNATI
CLARKSBURG
CLEVELAND
COLUMBUS
DALLAS
DAVENPORT
DES MOINES
DETROIT
DENVER
DUBUQUE

ENID, Okla.
ERIE, Pa.
EVANSVILLE
FORT DODGE
HARTFORD
HOUSTON
HUTCHINSON
INDIANAPOLIS
IOWA CITY
KANSAS CITY
LINCOLN
LOS ANGELES

LOUISVILLE
MASON CITY
MEMPHIS
MILWAUKEE
MOBILE
MUSKOGEE
NASHVILLE
NEW HAVEN
NEW ORLEANS
NEW YORK
OKLAHOMA CITY
OMAHA

PHILADELPHIA
PITTSBURGH
PORTLAND, Ore.
PROVIDENCE
RICHMOND
SALINA
SAN ANTONIO
SAN FRANCISCO
SEATTLE
SHREVEPORT
SIOUX CITY
SPOKANE

SPRINGFIELD, Mass.
SPRINGFIELD, Mo.
ST. JOSEPH
ST. LOUIS
ST. PAUL
SYRACUSE
TERRE HAUTE
TOPEKA
TULSA
WICHITA
WICHITA FALLS
YOUNGSTOWN

WARDMAN PARK HOTEL

extends a most cordial welcome to the
members and friends of the
NATIONAL SAFETY COUNCIL



WARDMAN PARK HOTEL
(Washington's Largest Hotel)

Headquarters for the
21st Annual Safety Congress and Exposition
October 3-7, 1932

Although only ten minutes from the White House, this magnificent establishment located on the outskirts of the city, surrounded by acres of private wooded land, possesses all of the best features of city and country, with none of the disadvantages of either urban or rural environment.

Wardman Park Hotel feels highly honored at being selected as the headquarters for the 1932 Congress of the National Safety Council, and the Management assures the Officers and Delegates of a sincere welcome and every cooperation.

A SAFETY ANNOUNCEMENT OF UNUSUAL IMPORTANCE

THE INTERNATIONAL SHOE COMPANY now manufactures a complete line of Safety Shoes—a fact of significant importance to buyers of this type of footwear.

The International Shoe Company owns and operates 5 sole leather tanneries and 9 upper leather tanneries devoted exclusively to the production of the high-grade leathers that go into International Shoes. It produces its own rubber heels and composition soles in a special plant producing as high as 135,000 pairs of heels and 35,000 pairs of soles a day. Its own cotton mill, which makes the fabric linings for International Shoes, has a capacity of seven million yards per year. In forty-four specialty shoe plants, each making one particular type or grade, International Shoes are built to definite, unvarying standards of quality. Fifty-nine auxiliary plants producing welting, dyes, chemicals, boxes, cartons, etc., supply the supplementary materials required for the manufacture and marketing of shoes.

Now, from this organization comes the new line—Hy-Test Safety Shoes. Shoes specially designed and better fitted to the requirements of real safety. Obviously the quality is higher. Naturally the price is lower.

Regardless of the safety requirements involved, every Safety Director will find real interest in this new line of Safety Shoes. Without any obligation to you, we will gladly forward more complete details on request. Samples will be sent to responsible parties. Just address as below.



FEATURES

Models for every safety requirement, including a special shoe for Electricians. No metal is used in this shoe and the soles are heavily insulated.

Hy-Test Safety Shoes are available with either steel or special composition box toes. The composition box toe is non-explosive. Its strength is unaffected by water, steam, oil, perspiration, etc. It is a non-conductor of electricity.

Hy-Test Safety Shoes are built over lasts that are comfortable and give perfect foot freedom. Special tannage provides a higher degree of resistance to moisture, acids and heat.

Hy-Test Safety Shoes are made of the very highest quality materials throughout—priced below the average only because of the resources and facilities of the organization behind them.

All models carried in-stock for immediate shipment.

The complete line of Hy-Test Safety Shoes will be on display at the National Safety Congress, Oct. 3rd to Oct. 7th, Booth 38, Wardman-Park Hotel, Washington, D. C.

HY-TEST SAFETY SHOES

DESIGNED AND MANUFACTURED EXCLUSIVELY BY
INTERNATIONAL SHOE COMPANY
ST. LOUIS, MO.

NATIONAL SAFETY NEWS

PUBLISHED MONTHLY IN THE INTEREST OF ACCIDENT
PREVENTION AND THE HEALTH OF INDUSTRIAL WORKERS



SEPTEMBER, 1932

VOL. XXVI, No. 3

Leading Articles

The Army Enlists in the Safety Movement— <i>J. V. Scott</i>	11
Codes Aid Control of Dust Explosions— <i>David J. Price</i>	14
How ARMCO Trains Men— <i>Charles H. Murray</i>	17
What Do We Mean by "Accident Prone"?— <i>Carl B. Auel</i>	19
Have We Forgotten the "Three C's"?— <i>Benjamin G. Eynon</i>	21
Giving the Rural Pedestrian a Break— <i>Stanley Owens</i>	23
Building Safety Into the Machine— <i>G. M. Briggs</i>	24
How Accidents Affect Taxpayers— <i>A. M. Northrup, M. D.</i>	28
Helping the Foreman to Help Himself— <i>Marion W. Smith</i>	30
The Safety Spirit of '32—Illustrated Congress Section.....	33
The Plant Physician's Big Job— <i>Loyal A. Shoudy, M. D.</i>	42
Delinquency or Disease?— <i>Nels A. Nelson, M. D.</i>	46
Health Topics at the Congress.....	62
Irritate Them If You Want Their Attention— <i>A. Cyril Daldy</i>	66

Regular Departments

Editorial	9	Personals	68
The Managing Director's Page.....	10	The Safety Library.....	70
The Bulletin Board.....	48	The Honor Roll.....	81
The Safety Exchange.....	56	Coming Events	82
Industrial Health	58	With the Manufacturer.....	84
The Accident Barometer.....	64	The Buyers' Service.....	88

CARMAN T. FISH, Editor
G. M. BRIGGS, Associate Editor

STANLEY H. KERSHAW, Poster Editor
C. H. MILLER, Advertising Manager

Copyright 1932 by National Safety Council, Inc. Printed in U. S. A. Published monthly.
Entered as second-class matter June 1, 1921, at the Post Office at Chicago, Ill., under the act
of March 3, 1879.

The subscription price to members for extra copies of the NATIONAL SAFETY NEWS
is \$4.00 per year. Single copies, 40 cents. Reduced quantity prices for yearly subscriptions
and single copies on request.

Subscriptions are available only to members of the National Safety Council.

Member Audit Bureau of Circulation.

This magazine is indexed in the Industrial Arts Index.

NATIONAL SAFETY COUNCIL INCORPORATED

(Cooperative—Non-Commercial—Non-Political—Non-Sectarian)

20 North Wacker Drive, Chicago, U. S. A.

New York Office, 9 East 41st Street

Office of the Education Division, 1 Park Ave., New York City

National Safety Council Officers, 1931-1932

Carl W. Bergquist, President
J. I. Banash, Vice-President for Finance
J. E. Culliney, Vice-President for Engineering
Edward Dana, Vice-President for Public
Safety
Howard B. Fonda, Vice-President for Mem-
bership
G. T. Hellmuth, Vice-President for Business
Administration
John E. Long, Vice-President for Safety
Councils
Arthur M. Tode, Vice-President for Industrial
Safety
Albert W. Whitney, Vice-President for Edu-
cation
Dr. C.-E. A. Winslow, Vice-President for
Health
Will Cooper, Treasurer
W. H. Cameron, Managing Director and Sec-
retary

Executive Committee

Members at Large

J. I. Banash, Consulting Engineer
Ernest W. Beck, United States Rubber Co.
Carl W. Bergquist, Western Electric Co.
W. H. Cameron
E. I. Catlin, Aetna Life Insurance Co.
Charles L. Close, United States Steel Corp.
Will Cooper, The Stevens Hotel
J. E. Culliney, Bethlehem Steel Corp.
Edward Dana, Boston Elevated Railway Co.
Howard B. Fonda, Burroughs Wellcome & Co.
(U.S.A.) Inc.
Harry Guilbert, The Pullman Co.
G. T. Hellmuth, Chicago North Shore & Mil-
waukee Railroad Co.
Frank J. Lanhahan, Port Pitt Malleable Iron
Co.
John E. Long, The Delaware & Hudson Rail-
road Corp.
George E. Sanford, General Electric Co.
Zenas A. Scott, Superintendent of Schools,
Springfield, Mass.
Lester D. Seymour, United Air Lines
Arthur M. Tode, Consulting Engineer.
Dr. Cassius H. Watson, American Telephone
& Telegraph Co., New York City
Albert W. Whitney, National Bureau of
Casualty & Surety Underwriters
Dr. C.-E. A. Winslow, Yale Medical School

Representing Safety Councils

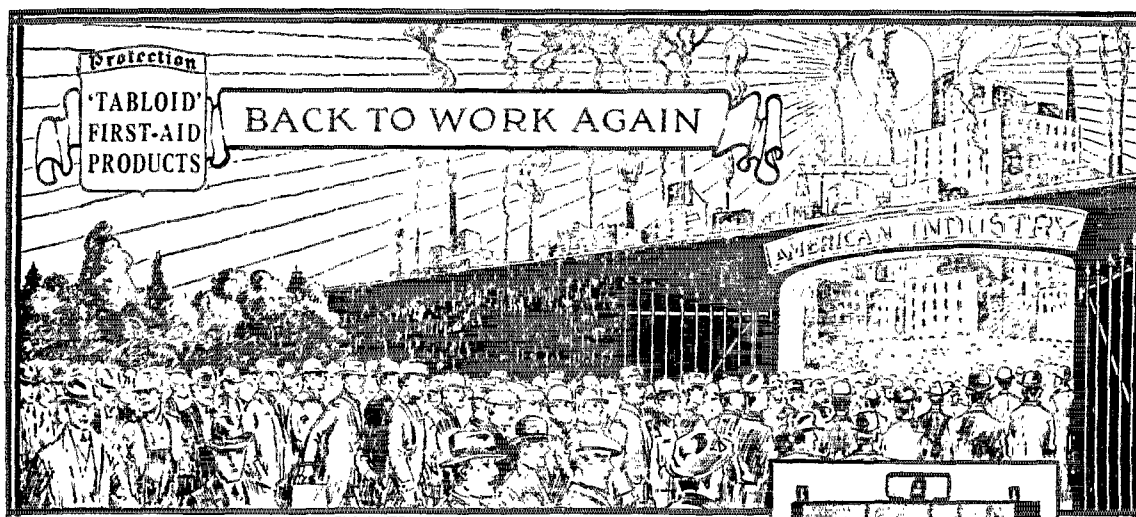
M. S. Ackerman, Lehigh Valley
William F. Ardern, Milwaukee
G. E. Cross, Mason City, Ia.
H. W. Lormor, Cleveland
Ernest L. Simonds, New Haven
John H. Taylor, Birmingham
Merle E. Towner, Baltimore

Representing Sections

G. A. Doeller, Public Utilities
Frank A. Leuerman, Metals
Dr. M. G. Lloyd, ASSE-Engineering
John Russell, Jr., Construction
John S. Shaw, Chemical
Vincent Wakefield, Refrigeration
George H. Warfel, Steam Railroad

Past Presidents

Robert W. Campbell
Arthur T. Moray
Law R. Palmer
David Van Schaack*
Ralph C. Richards*
Charles F. Tolman
Arthur H. Young
Marous A. Dow
Lewis A. DeBleis
Carl B. Auel
Charles B. Scott
Walter S. King
Homer E. Meas*
Lieut.-Col. Henry A. Keninger
G. Eugene Pettibone
*Deceased



Increased Activity Means Increased Hazards

Even though the optimistic hopes for an upward turn in business activity are not entirely realized, the return from vacation and the seasonal increase in business activity are certain to call for the protection of

TRADE MARK **'TABLOID' BRAND FIRST-AID**

In times like these every smallest item of conservation is important—and the elimination of possible serious results from minor casualties is well worth consideration. In protecting your forces you likewise protect your interest.

BURROUGHS WELLCOME & CO., (U.S.A.) INC.
9 & 11 EAST FORTY-FIRST STREET, NEW YORK CITY

Associated Houses:

LONDON (ENG.) MONTREAL SYDNEY CAPE TOWN MILAN
BOMBAY SHANGHAI BUENOS AIRES

"Keep your 'Tabloid' First-Aid complete by maintaining a reserve supply of refills."



TRADE MARK **'TABLOID' BRAND FIRST-AID**
(NO. 744)
Measurements: 15 1/4 x 12 x 2 1/4 in.

STANDARD LIST OF CONTENTS

- | | |
|--|--|
| 1—2 oz. Aromatic Spirit of Ammonia | 1—Package of 6 Wooden Applicators, wound with Cotton |
| 1—2 oz. Tincture of Iodine (half strength) | 3—2 oz. Tubes of Petrolatum and Bicarbonate of Soda (3%) |
| 1—2 oz. Boric Acid Solution (4%) | 1—Tourniquet |
| 1—2 oz. Castor Oil | 1—Package of 6 Splints |
| 4—'Tabloid' Pleated Compressed Bandages, 1 in. x 6 yd. | 1—Glass Tube, containing 3 Camel-Hair Brushes |
| 4—'Tabloid' Pleated Compressed Bandages, 2 1/4 in. x 6 yd. | 1—Triangular Bandage |
| 4—'Tabloid' Pleated Compressed Bandages, 3 in. x 6 yd. | 3—'Tabloid' Compressed Absorbent Cotton (1/2 oz.) |
| 1—Spool Zinc Oxide Adhesive Plaster, 1 in. x 5 yd. | 3—'Tabloid' Pleated Compressed Absorbent Gauze, 1 yd. |
| 1—Package of 6 Wooden Tongue Depressors. | 1—Thumb Forceps |
| | 1—Pair of Scissors |
| | 1—Paper of Safety-Pins |
| | 1—Medicine Glass |

List Price . . . \$14.00
Subject to Trade Discounts

Please send me B. W. & CO. booklet "SHIELD FROM DANGER"

Firm Name

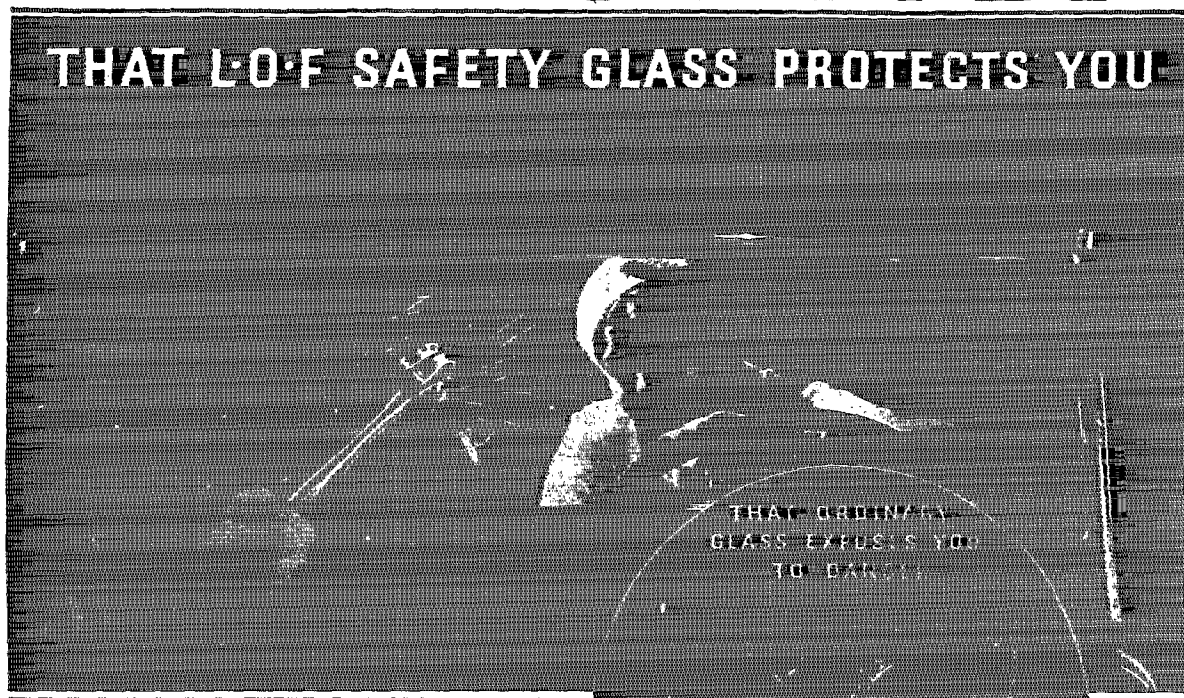
Address

Individual's Name

Official Capacity

this test **PROVES**

THAT L·O·F SAFETY GLASS PROTECTS YOU



We used a hammer to draw this dramatic contrast between regular plate glass and Libbey-Owens-Ford Safety Glass. When we hit that Safety Glass windshield, the young lady watched with interest, quite unconcerned about her safety... for she knew she *was* safe. Nothing happened but a cobweb of fine lines about the point of impact. But when we hit the other windshield... well, you can see the great, gaping hole from which razor-edged daggers flew in all directions, showering the car with sharp fragments.

Libbey-Owens-Ford is conducting these tests and telling about them through national advertising to impress upon the public the fact that Safety Glass is essential in *modern* motor cars. No one who reads this page can doubt its protective value. No one who gives the matter one moment's clear, unbiased consideration, can deny that it is thoughtless, even reckless, to drive a car without it. Most automobile manufacturers are lending their sincere cooperation in this search for greater safety. Many offer Safety Glass *absolutely free* as standard equip-

ment. Almost all the rest make it available optionally. If everyone concerned with public safety actively endorses and supports the wider use of Safety Glass, it will not be long before the hazard of broken, flying glass is removed from the highways.

WARNING It doesn't pay to take a chance when statistics prove that 45% of the motorists injured in automobile accidents are cut by broken glass. *Be Safe* behind Libbey-Owens-Ford Safety Glass in your new car. It is used by Packard, Graham, Studebaker, Franklin, Reo, Willys, Willys-Knight, Ford, Cadillac, LaSalle, Lincoln and Nash.

LIBBEY · OWENS · FORD

SAFETY GLASS

LIBBEY-OWENS-FORD GLASS COMPANY, TOLEDO, O., manufacturers of Highest Quality Flat Drawn Window Glass, Polished Plate Glass and Safety Glass; also distributors of Figured and Wire Glass manufactured by the Blue Ridge Glass Corp. of Kingsport, Tenn.

NATIONAL SAFETY NEWS

NATIONAL SAFETY NEWS

PUBLISHED BY NATIONAL SAFETY COUNCIL, INC.

VOLUME XXVI

SEPTEMBER, 1932

NUMBER 3

A Professor's Views

MORE than two thousand years ago Plato described the ideal state in his immortal "Republic." In the succeeding centuries we have built up a highly complex civilization, magnificent but ruthless, yet we seem to have made little progress toward the ideal of a well ordered state. Human passions and weaknesses have blocked every attempt to establish a Utopia.

The mass mind is a curious mixture of callousness and mawkish sentimentality. It shudders at the guillotine of revolutionary France, but refuses to get excited about this year's accident toll. The most vicious criminal on trial for his life is the object of something akin to hero worship. Apparently blood shocks the public only when shed according to judicial processes.

But our accident toll does shock the thoughtful. In an interview published in the *Chicago Tribune*, Professor Paul Shorey of the University of Chicago expressed indignation at the state of affairs which permitted such a toll of casualties. The venerable professor said in part:

"How incredibly monstrous is the way we permit the killing of people in Chicago by the auto. A thousand victims a year! Any measures to stop it would be justifiable. It is incredibly callous, especially in contrast to the reluctance we show to punish murderers. We sentimentalize over them and yet butcher a thousand innocents a year on our streets. It is the shame of Chicago. Plato's sense of justice and his ideal of a well ordered society would be outraged by it."

Pessimism

PERHAPS the depression of the past three years was not due entirely to psychological causes, but there can be little doubt regarding the influence of mental factors in aggravating its evils. In 1929 people seemed to have forgotten the axiom that "what goes up must come down." That applies equally to stock and commodity prices and people's spirits. Deflation was undoubtedly needed, but the mental state of many people caused much unnecessary hardship.

Those who had previously boasted of their profits began to compete with each other in exchanging hard luck stories. Gloom prevailed in conversation at the bridge table, the sewing circle, the first tee and the nineteenth hole. As usual, those who had been least affected often wailed the loudest. Purchases were postponed. Rumors wrecked many a bank that was fundamentally sound. Confidence, the basis of our commercial and industrial life, was seriously weakened. It must be re-established before prosperity can return.

The pessimist was ignored in the days of easy money; in the lean years that followed he held the center of

the stage. Like many another quality, pessimism can be either a virtue or a vice. Recently it has been a vice. But the pessimism that prevents borrowing too heavily on the future, that takes the necessary precautions against physical and financial mishaps, should not be forgotten in the years to come.

In This Issue

DECORATION for valor has long been a military custom. Now several units of the United States Army have adopted the plan of awarding medals to motor vehicle operators who operate a year without accident. This method of maintaining interest and recognizing meritorious service is proving just as helpful in reducing accidents in the army as it is among civilian operators. Most of us have regarded the army as being interested solely in preparation for war, but the leading article of this issue presents it in a different light.

Dust explosions are an ever-present menace in many industries, but their causes and methods of control are now better understood. Dr. David J. Price, who has been a leader in research work on dust explosions for many years, tells of the progress that has been made in formulating safety codes for industries which have this hazard. (Page 14.)

The American Rolling Mill Company is widely known for its employee training program. Charles H. Murray describes the origin and development of the program and its relation to accident prevention. (Page 15.)

C. B. Auel objects to the indiscriminate use of the term "accident prone" in referring to the employee who has more than the average number of accidents. Just now the expression is enjoying considerable popularity and there is danger of its suffering from overwork—like "carelessness." (Page 19.)

Observance is better than enforcement, says Benjamin G. Eynon, one of the foremost motor vehicle administrators in the United States, who makes a plea for more attention to the "Three C's." (Page 21.)

Some progress has been made in incorporating safety into machine design. In the second article of a series G. M. Briggs points out several examples of safety features which have been developed by manufacturers. (Page 24.)

Industrial accidents impose a heavy burden on the state, which, of course, must be shouldered by the taxpayers. Dr. A. M. Northrup, secretary of Labor and Industry for Pennsylvania, points out how much of a state's activities are devoted to the promotion of safer and more hygienic working conditions, and the administration of compensation and rehabilitation.

The first edition of the Annual Congress Program is being published as Part II of this issue of the News. This change effected substantial savings in printing and mailing costs.

SEPTEMBER, 1932

THE MANAGING DIRECTOR'S PAGE

Is The Safety Congress Really Necessary?

WHAT is the fundamental, the great gift that industrialism has made to the world? This is a trite question, I suppose, and certainly the answer is a commonplace. It is transportation. But ever more wonderful does modern transportation become as we contemplate it. It has changed not only our costumes and our customs—it has changed us!

The ancient civilizations were notable largely because of their roads, their caravan routes, and their shipping. The dark ages were dark because the roads were destroyed, the routes blocked and the shipping abandoned.

Now, once more, mankind moves about. And once more he has achieved that which he can call civilization.

Why could not this have been done without transportation? Because man learns from man. An idea perceived by one, is developed by a second, and perfected by a third. Instead of only three men, however, the process may require the life work of thousands—widely separated over the earth. One builds on the foundations laid by his predecessors.

This fundamental is the reason that the leaders of all great movements meet together periodically. It is the reason for the Annual Safety Congress.

Especially when a movement is young must those working for it meet as the members of a fraternal order to renew acquaintance, review experiences, learn of accomplishments, and return home re-inspired and re-educated.

Safety is an infant among the major movements of the world. Methods are in the making. Today's practices are crude and represent the flint lock musket stage of development. Fifty years from now the principle of protection will be so well accepted that millions of accident causes will have been eliminated. Even then the work of the movement will not have been completed.

There is a danger, which we must recognize, that in this period of de-

pression not only industries but cities and schools will jettison the methods of accident prevention which have been developed through two decades of painstaking work—to slip back into the obsolete, costly, retrogressive practices of the past. This is what the safety men of the nation must fight with every ounce of their strength.

This is why the Washington Congress, October 3-7, will be one of the most important in the history of organized safety. We must, in a great mass gathering, impress upon the world that the safety movement is here to stay, that it has a tremendous job to do, that it knows how to do that job, and that it can and will do it.

NEWS OF THE MONTH

Hygeia Magazine, with a popular circulation of 40,000, gave a prominent position in its August issue to an article on vacation hazards by Curtis Billings of the National Safety Council staff.

An industrial corporation in Wisconsin plans to demonstrate its public interest in safety by distributing the 1933 Safety Calendar to every Boy Scout Troop in the city in which it is located. This is a constructive way to build good-will and to teach safety to an impressionable group of developing citizens.

222 cities and 25 states reported motor vehicle fatalities for listing in the August issue of *Public Safety Magazine*. This is a new high record for direct accident reporting.

Twelve million people residing in 47 cities are already committed to participation in the September Law Enforcement Month Campaign.

In July, for the first time, reports on all classes of accident fatalities from states and cities having no Community Councils were included in the Council's monthly tabulations. This is a significant beginning of a nation-wide effort to get accurate and direct reports on accident occurrence in other than industrial and motor vehicle fields.

Six thousand copies of the Council's 64-page booklet, "Accident Facts—1932 edition" have been distributed to members, newspapers, magazines, libraries and other interested agencies. This complete analytical story of the accident situation is an outstanding accomplishment. Many organizations have ordered extra quantities for special uses and distribution.

Do You Know Your Council?

SURVEYS have been made at various times to determine whether the majority of Council members are familiar with the wide variety of services available to them. The results have been interesting. Surprising as it may seem to some of the older members and to individuals who have given active service on Council committees, there are literally hundreds of members aware of only the so-called "automatic" services. These consist of the NATIONAL SAFETY NEWS, Sectional News-Letters, posters and the annual Congress Transactions. It is not less surprising to find that many members know nothing of the practical uses of the consultation service.

It is obvious that one of the real and continuing problems of the Council is the education of its members in the use of the services provided. There is conclusive evidence that the plant with a superficial interest in accident prevention methods does a superficial job of accident prevention. It has been reiterated time and time again that the Council's organization functions as a clearing house for the exchange of information and experience. The alert member can benefit from his affiliation in direct proportion to his understanding of this function.

In February of this year a 24-page booklet, "Guide to the National Safety Council's Services" was distributed to all members as Part II of the NATIONAL SAFETY NEWS. This pamphlet summarized the Council's service structure and principles—detailed the membership classifications—gave an explanation of the use of the Council's service and also individual descriptions of each of these services. Separate announcements of new services and activities have been made since then in a program to keep all the members informed of their privileges. A regular review of the "Service Guide" might suggest many ideas for the safety program.

H. J. Ameron

NATIONAL SAFETY NEWS



The Fifty-Second U. S. Coast Artillery (Railway) Regiment in formation at the Parade and Review held for the presentation of *No-Accident Driver Awards* to ten drivers of the First Motor Repair Section at Fort Hancock. Inset: Colonel J. C. Johnson, Commandant of Sandy Hook Harbor Defenses, congratulates Private Howard Johnson of Rochester, N. Y., upon his Award. Captain W. C. Thee assisting.



The Army Enlists in the Safety Movement

By J. V. SCOTT

THE organized safety movement has the appreciation and active support of the United States Army. This interest is shown by the participation of Army transportation units in the national fleet safety program of the Delivery, Taxicab and Bus Section of the National Safety Council.

The attention of commanders of motorized units at all posts and stations has been directed to the Council's program by the office of the Quartermaster General and a number of units have become members of the Council. According to the *Army and Navy Register*, automobiles are the greatest cause of accidental death in the service, reflecting the experience in civilian life. A low rate is enjoyed, however, for according to Brigadier General A. E. Williams, Q. M. C., Chief of Transportation, the War Department's 6,500 motor vehicles are "all operated under regulations which appear to guarantee the maximum safety."

The general expresses the belief that the small number of accidents in which these vehicles are involved, and the extremely low percentage of cases in which War Department drivers are responsible, "are the result of the Army's careful selection and training of drivers, and regulations governing

the care and operation of motor vehicles."

It is gratifying to the National Safety Council to have the active cooperation of various fleet units of the Army, and the participation of motor transport officers in the Council's fleet activities. It bespeaks an alert interest in safety and a spirit of progress on the part of the commanders desiring to improve further an already excellent general record. For example, the first fleet to become a member of the Council—the First Motor Repair Section of Fort Hancock—presented 10 No - Accident Driver Awards to members of the organization who operated without accident during 1931.

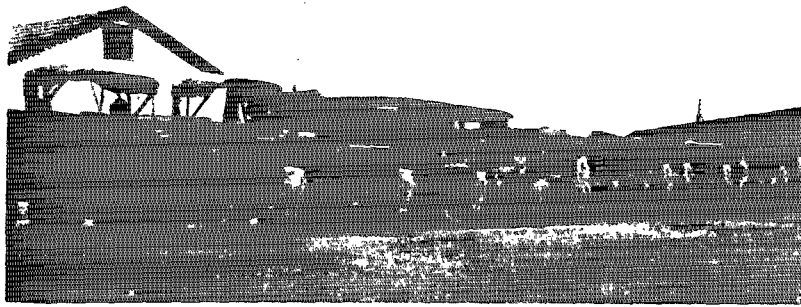
The presentation of No-Accident Driver Awards to drivers of three of the Army fleet members has attracted considerable interest both in and out

of the service. The attitude of the Army leaders toward safety and the recognition of no-accident drivers was summed up by Colonel A. S. Cowan, Commanding Officer at Fort Monmouth at the decoration there, July 26, of eight drivers. He said:

"The National Safety Council gives to drivers who qualify with a year's driving without an accident of any description, the No-Accident Driver Award. This medal has little intrinsic value, but its significance is great. Not so many years ago, our nation was engaged in a mighty conflict that brought many deeds of heroism. Our government rewarded these deeds with little medals—the D. S. C., the Medal of Honor—and these were emblems without any particular cash value; nevertheless wearers of these medals were recognized as national heroes. Now this No-Accident Driver Award, which is being sought by thousands of drivers throughout the nation, indicates a different type of ability. Yet in comparison with war medals, it seems greater to me in some ways. I submit that it is far nobler to save a life than take one!"

The first drivers to receive the Council's Award were four enlisted men of the First Motor Transport Company, Q. M. C., stationed at Fort

In the army, as in civilian life, automobile accidents are the outstanding cause of accidental death. The prevention of these accidents is receiving increasing attention from military authorities



The truck fleet of the Motor Transport Pool at Fort Monmouth.

Jay on Governor's Island in New York City harbor.

A parade and review of the 16th Infantry Regiment was held June 16, and the post commandant, Colonel W. W. McCammon, pinned the emblems on the drivers. Colin K. Cameron, writing in the *U. S. Army Recruiting News*, gives the following interesting comments on the presentation and the award winners:

"Through the maelstrom of downtown New York traffic—than which there is none worse—and through the helter-skelter throngs of rural road-racers, these Army drivers handled their vehicles carefully, efficiently and safely, passing through the entire calendar year of 1931 without a scratch. When it is remembered that any kind of scratch on the machine would disqualify the driver for the Council award, and that these men were not always driving up-to-date equipment, but handling some vehicles that are veterans of the World War—trucks and cars that did their bit along the muddy roads of France and with the Army of Occupation on the Rhine—it is understood why the four men are justly proud of their emblems representing a combined total mileage for the year of 53,000 miles." The story gives the following interesting data on the first four Award winners who appear (from left to right) in the illustration with this article:

Sergeant Henry A. Johnson, 847 Park Street, Butte, Montana. Now in seventh year of service. Frequently acts as chauffeur for Major General Dennis E. Nolan, commander of Second Corps Area. Covered 20,000 miles without accident in the metropolitan New York City area, along the highways of New York, New Jersey and Delaware, and on the island roads of Porto Rico.

Private First Class Nicholas Volbert, 601 Thirty-seventh Street, Woodcliff, Mon-

tana. On sixth year of service and former Field Artilleryman. Handled all manner of government vehicles from motorcycles to Liberty trucks, covering 10,000 miles without a mishap.

Private Harry Berman, 3521 Neptune Avenue, Coney Island, New York. A doughboy veteran of World War now in thirteenth year of service, achieved 8,000 no-accident miles operating the Governor's Island baggage truck from freight yards to ferry landings and from steamboat docks to storage houses.

Private Eck B. Rorer, 2318 West Grand Boulevard, Detroit. In second enlistment, most of first three years being spent as motorcycleist in Panama Canal Department. Drove every type of vehicle in Governor's Island motor transport fleet a total of 15,000 miles last year without an accident.

First Lieutenant Bruno W. Brooks commands the First Motor Transport

Company and personally supervises the safety program.

Another impressive presentation ceremony was conducted at Fort Hancock at Sandy Hook, New Jersey, July 15, when ten soldier chauffeurs of the First Motor Repair Section received No-Accident Driver Awards. The First Motor Repair Section furnishes part of the personnel for the Second Corps Area Motor Repair Shops in time of peace and the maintenance of motor vehicles of the First Division in time of war or emergency.

At a review of troops of the Fifty-Second Coast Artillery Regiment (Railway) Colonel Jacob C. Johnson, Commanding Officer, Harbor Defenses of Sandy Hook, decorated the ten Award winners, who were:

Technical Sergeant Walter G. Osborn, Sturgis, Ky.

Private First Class Edward W. Baldwin, New York City.

Private First Class A. A. Ludwikowski, Utica, N. Y.

Private First Class Gus Lacovitch, Fort Hancock, N. J.

Private First Class Howard R. Johnson, Rochester, N. Y.

Private First Class Earl H. Painter, Jeanette, Pa.

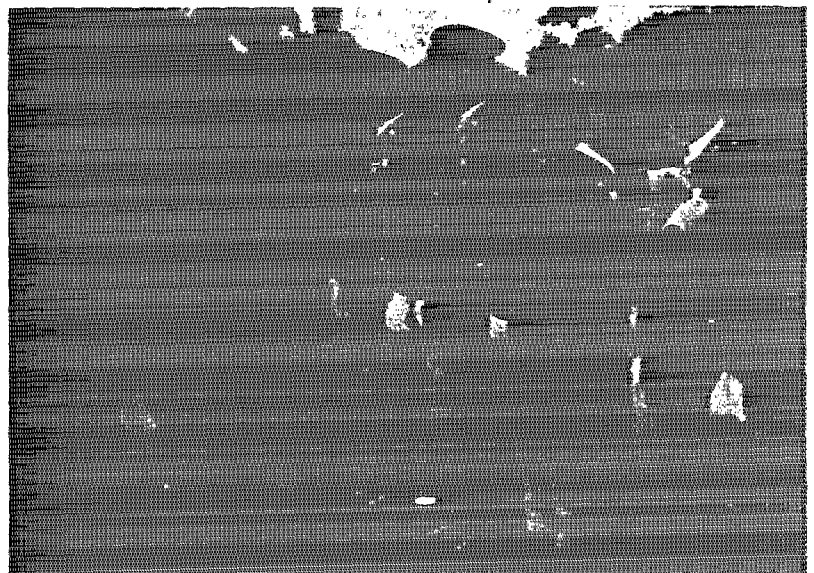
Private John J. Roach, Chester, Pa.

Private Peter Mitchell, Newark, N. J.

Private Leo A. Hughes, Keyport, Ky.

Private Charles F. Wright, Paulishoro, N. J.

Captain Thee, in commenting upon the presentation, praised the Coun-



The first four Army drivers to receive No-Accident Driver Awards being decorated by Colonel W. W. McCammon, commandant of Fort Jay at Parade and Review of Sixteenth U. S. Infantry. Lieutenant B. W. Brooks, commander of the First Motor Transport Company, is standing at the left.

NATIONAL SAFETY NEWS



Capt. S. H. Sherrill, Executive Officer, Fort Monmouth, congratulates Sergeant Dumcke. Adjutant C. W. Clarke, steps forward with the No-Accident Driver Awards for eight drivers decorated at the parade for their perfect records.

oil's policy of recognition and reward. "The policy of rewarding the good for doing good rather than punishing those who have been involved in accidents," he declared, "is *educational* and *corrective* and much better than meting out punishment after the damage is done." Captain Thee believes, however, that precaution always should be taken through proper training to prevent the recurrence of accidents.

"Conceivably there may be such a thing as an unavoidable traffic accident," the captain asserted, "but an overwhelming percentage of these mishaps are caused solely by human carelessness or stupidity. Sometimes the fault belongs to a single individual against whose recklessness the careful driver cannot protect himself. Frequently the blame is justly divided between two or more. But with exercise of reasonable care and ordinary consideration and common sense all around, I dare say 999 out of every 1,000 of the so-called unavoidable accidents would never occur."

Captain Thee, who takes a keen interest in the Council's activities, will appear on the program of the Twenty-first Annual Safety Congress at Washington in October. He will address the Delivery, Taxicab and Bus Section and explain the methods used in the Army to encourage safe practices among both drivers and industrial employees, discussing the application of these measures to the training of workers in commercial occupations.

SEPTEMBER, 1932

A third presentation of No-Accident Driver Awards took place at Fort Monmouth, New Jersey, July 26. Emblems were awarded to eight drivers. Sergeant T. C. Dumcke, Corporals Lawrence Jones and Samuel Rosensteel, Privates First Class W. W. Robinson, Joe Harrington and M. G. Durik, and Privates A. E. Crosby and W. G. McConnell.

Colonel A. S. Cowan, Commandant of Fort Monmouth, presented the Awards at a Retreat Parade. The eight drivers operate trucks in the Motor Transport Pool at Fort Monmouth which supplies vehicles to four organizations there. First Lieutenant R. V. Thomas, Q. M. C., is in charge of the fleet and personally supervises the safety program.

A Reprimand Should Always Be Constructive

THE reprimand is one of the most important implements in the executive's toolkit. It is a device in constant and universal use by supervisors, teachers, parents, and traffic policemen. Often it is used wrongly.

Properly used, the reprimand is a constructive and powerful device in the training, control, and direction of human efforts. Errors in its use fall into three classes: Some executives use it too much, some use it too little, and a great many use it badly even when the occasion is right. As a be-

ginning toward a profitable introspective analysis, ask yourself five questions:

1. When you are rebuking a subordinate, do you experience a pleasing sense of your own power, position, or judgment?

The supervisor who cannot refrain from self-glorification at the expense of his subordinates is, of course, sadly lacking in one of the primary qualities of an executive.

2. Do you aim to make the erring employee feel "small?"

There is only one justifiable reason for reprimanding, and that is a constructive reason—to help the individual reprimanded and, through him, to help the business. Breaking down a worker's self respect and morale can scarcely be regarded as a constructive pursuit. What the reprimand should do is to awaken a desire on the part of the worker to improve his conduct.

3. Do you reprimand more severely when you are feeling grouchy or tired?

When a supervisor allows the personal equation to enter the rebuke he is merely engaging in an undignified controversy in which he has everything to lose and nothing to gain. Always make the employee feel that your criticism is a company affair, rather than a personal matter.

4. Do you hesitate to reprimand for fear it will make you disliked?

Disciplining those who need such attention does not detract from the respect with which you are regarded. Perhaps you will discover that the contrary is true. We know that the boss who is an easy mark does not get maximum production. Nothing is more unfair to subordinates, particularly if they are young people, than to allow them to persist in a fault instead of attempting to correct it.

5. Do you tend to store up resentment over repeated infractions until you "boil over" and then rebuke sharply and in anger?

The worker, feeling the injustice of such a policy, thinks, bitterly: "Why didn't he speak to me about these things before?" The correction of each offense as it occurs will prevent explosion due to pent-up emotions. The employee who is reproved more severely than the effort warrants develops a conviction that the boss is unfair.

—Management Methods.



After an explosion of flour dust. Damage was confined largely to the upper floors on account of the window glass area which provided effective venting.

ONE of the principal contributions in the control and prevention of dust explosions in industrial plants has been the development of representative safety codes by the Dust Explosion Hazards Committee of the National Fire Protection Association. This committee, composed of representatives from the industries directly concerned, and from insurance and safety organizations, State and Federal officials, also construction and equipment engineers, works under the leadership of the Chemical Engineering Division of the Bureau of Chemistry and Soils. The engineer in charge of the dust explosion studies in the bureau has been chairman of the Dust Explosion Hazards Committee since its origin in 1922.

The committee has prepared the following safety codes, which have been adopted by the National Board of Fire Underwriters, and by the American Standards Association:

1. Flour and Feed Mills.
2. Sugar and Cocoa Pulverizing.

*Principal Engineer in Charge Chemical Engineering Division, Bureau of Chemistry and Soils, U. S. Department of Agriculture, Washington, D. C. (Abstract from addresses delivered before the Western Pennsylvania Chapter of Safety Engineers, Pittsburgh, Pa., and combined meeting of Baltimore Safety Engineers and Engineers Club, Baltimore, Md.)

Codes Aid Control of Dust Explosions

By DAVID J. PRICE*

• Losses from dust explosions and fires have been materially reduced by application of the preventive measures of nine safety codes

3. Pulverized Fuel Installations.
4. Terminal Grain Elevators.
5. Starch Factories.
6. Coal Pneumatic Cleaning Plants.
7. Wood Flour Manufacturing Establishments.
8. Spice Grinding Plants.
9. Use of Inert Gas for Fire and Explosion Prevention.

These safety codes, which have been instrumental in reducing losses from dust explosions and fires, have been published by the Bureau of Labor Statistics of the U. S. Department of Labor as Bulletin No. 562, entitled, "Safety Codes for the Prevention of Dust Explosions."

Safety Code for Starch Factories

The cooperation with the starch industry is a splendid example of the desire on the part of an industry where the dust explosion hazard is well recognized to develop and adopt control measures. The safety code for the prevention of dust explosions in starch factories was prepared by a subcommittee under the leadership of A. H. Nuckolls, of the Underwriters' Laboratories, Chicago, and composed of engineers from the industry itself, as well as fire insurance, State and Federal agencies.

The dust explosion hazard in the starch factory exists in three distinct departments: (1) in the corn receiving and storage departments in the form of grain elevator dusts; (2) in the dust arising from the milling and storage of the so-called gluten feed, and (3) in the starch dust in drying, grinding, packing, and similar operations.

The safety code for the prevention of dust explosions in grain elevators covers the first hazard referred to, the second is provided for in the regulations for flour and feed mills. The code for starch factories, therefore, relates specifically to the hazard in the handling of dried starch. This hazard is present first at the starch drying kilns and follows all processes involving the handling of the starch from the kilns up to and including the packing operation. It is now generally accepted that any kind of starch dry enough to float in air is dry enough to contribute to an explosion, even though the department may be one in which the air is humid.

The safety code provides for: (1) construction and arrangement of buildings covering the operations of starch drying; (2) construction and arrangement of kilns; (3) dry starch grinding and grading; (4) pearl and powdered starch bulk packing; (5) lump starch cooking, pressing, grading and packing; (6) control and removal of suspended dust; (7) removal of static dust; (8) prevention of ignition; (9) mechanical precautions, and (10) housekeeping.

Pulverized Fuel Systems

The Dust Explosion Hazards Committee made a distinct departure in dealing with the installation of pulverized fuel systems, in that this safety code was prepared in anticipation of possible dust explosion hazards rather than waiting for disastrous dust explosions to occur before safety work was undertaken. It was recognized that, although pulverized fuel systems are of various

NATIONAL SAFETY NEWS

types, all involve the hazard incident to the creation and possible liberation of combustible dusts unless properly designed, constructed and operated. This code was prepared under the general direction of H. E. Newell, engineer, National Board of Fire Underwriters, New York.

In general, pulverized fuel systems may be arranged in three classes:

(1) *Class A System:* Indirect, or those in which the fuel is intimately mixed with air at the point or points where used and which have storage bins at points of consumption.

(2) *Class B Systems:* Direct, or those in which the pulverized fuel is fed to a fan by which it is blown as a combustible mixture through large pipes to furnaces or other points of consumption. In the case of circulating systems of this class, the unused fuel is returned to the initial point to be blown again through the line. In systems of this class the pulverizers are located remote from points of consumption.

(3) *Unit Systems:* Those in which the fuel is pulverized at or near the point or points of use, and delivered directly from the pulverizer into the furnace by means of fan or blower, which may be an integral part of the apparatus; the air being admitted in the apparatus or in conjunction with the fuel. Systems of this type do not employ bins.

The safety code requirements for all classes cover: (1) location of pulverizing system; (2) construction of pulverizing buildings; (3) ventilation and dust collection; (4) operation of pulverizers; (5) installation of magnetic separators; (6) electricity for light and power; (7) grounding of machinery; (8) dust collectors; (9) safety relief vents; (10) installation of blower systems for handling fuel in suspension; (11) drier design; (12) specifications for construction of transport pipe lines.

This safety code also includes recommendations covering the storing of pulverized or dried crushed coal and also a recommended procedure for the extinguishment of fires in pulverized fuel conveyors, pipes, ducts, collectors, and bins.

Coal Pneumatic Cleaning Plants

The safety code for coal pneumatic cleaning plants also was prepared in anticipation of possible dust explosion hazards under the leadership of George S. Rice, chief mining engineer of the U. S. Bureau of Mines, Washington, D. C. The coal pneumatic cleaning systems covered in this safety code employ air pressure and evacuation, and are subject to the hazard incident to the creation and distribution of explosive coal dust. The code covers: (1) types of pneumatic coal cleaning systems; (2)



Damage to reinforced concrete bin from an explosion of grain dust. Two men were injured and property damage amounted to about \$60,000.

potential dust-producing hazards; (3) location of pneumatic cleaning machinery and apparatus; (4) construction of buildings; (5) screen room arrangement; (6) arrangement of jig or table room; (7) window arrangement and construction; (8) ventilation and dust collection systems; (9) construction of dust collectors; (10) safety relief vents; (11) design and construction of coal driers; (12) location of storage bins; (13) electricity for light, heat, and power; (14) general requirements for fire and explosion protection.

The other safety codes covering (1) flour and feed mills, (2) sugar and cocoa pulverizing systems, (3) terminal grain elevators, (4) spice grinding plants, and (5) wood flour manufacturing establishments are available for practical use, but space will not permit a detailed reference to the specific requirements of these various codes.

Safety Code for Use of Inert Gas

It is desired, however, to call specific attention to the safety code for the use of inert gas for fire and explosion prevention. The code was prepared under the direction of Hylton R. Brown of the Chemical Engineering Division of the Bureau of Chemistry and Soils, Washington, D. C., in cooperation with the Committee on Manufacturing Risks and Special Hazards of the National Fire Protection Association. Carbon dioxide or other inert gases, when mixed with air, reduce the oxygen percentage of the atmosphere below



The introduction of an electric extension cord with an unguarded bulb in a flour bin caused this explosion which resulted in the death of one workman and injuries to five others.



In this recent explosion of feed dust one workman was killed, five were injured, and property loss amounted to \$150,000.

the combustion limit and can be used successfully in providing protection against fires and explosions in certain hazards. This code indicates a standard method of using carbon dioxide or other inert gases for the prevention of explosions and fires where the hazards are of such a nature as to make this form of protection necessary or desirable.

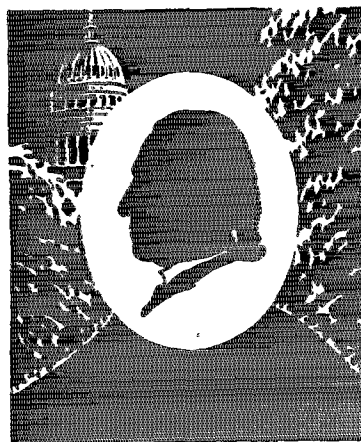
Examples of equipment and apparatus in which inert gas protection may be used include ovens, driers, grinders or pulverizers, special machinery and apparatus involving the use or handling of flammable liquids, vapors or dusts within an enclosure, tanks used for storage of flammable liquids, and bins, vaults or other inclosures containing material through which gas can permeate and where it is necessary for anyone to enter the inclosure at frequent intervals.

The reduction of the oxygen content of the air (normally 21 per cent) necessary to prevent explosions and fires naturally must vary with the different materials being handled. Detailed information concerning the oxygen reduction necessary is given under a special section in this code, entitled "Determining the Amount of Inert Gas Required." This section includes a table listing the permissible percentage of oxygen based on the addition of carbon dioxide. This table gives percentages of oxygen ranging from 16 per cent for Pittsburgh coal dust, and 14 per cent for

wheat, corn, or oat elevator dust to 5.9 per cent for hydrogen gas.

The code covers: (1) sources of inert gas supply; (2) gas conditioning equipment; (3) gas distributing system; (4) analyzing, indicating, and recording equipment. It also includes a diagram outlining the application of inert gas to a grinding system.

In view of the extensive research work that has been done on industrial plant dust explosion prevention it is not necessary to wait until a dust explosion occurs, with costly results, to demonstrate forcibly that the dust in any particular plant is explosive. It must be recognized that practically all



SHOW THE SAFETY "SPIRIT OF '32" AT WASHINGTON •• OCTOBER 3-7

combustible dusts will explode when mixed in the proper concentration with air and ignited. It will be in order, therefore, to recommend a plan of action for safety engineers in dealing with industrial plant dust explosion hazards.

1. The degree of explosibility of any dust created during operating processes should be determined. The Bureau of Chemistry and Soils has equipment for testing samples of industrial dusts and will be glad to cooperate in the making of tests of this character if desired. The bureau can advise also as to what methods might be employed in conducting tests at the plant. There are a number of simple methods which require very little time and effort for determining definitely the possibility of dust ignition.

2. The bureau will be glad to suggest control methods for dust explosion prevention. It is frequently found that a control method which has proved effective in one branch of industry will be of value in another. The engineers of the bureau are continually assisting industrial companies in the installation of improved equipment and control methods.

3. The plant safety committee should pay special attention to dust accumulations throughout the plant. The efficiency of dust-collecting systems also should be observed. The employers should be fully acquainted with the dust explosion hazard and the subject be brought to their attention at special safety meetings, or at other opportune times.

4. The safety measures recommended in the safety codes for dust explosion prevention in industrial plants should be adopted and applied in all plants subject to the hazard.

5. In order to secure the benefit of engineering experience, dust explosions and resulting fires in industrial plants should be promptly reported to the Chemical Engineering Division of the Bureau of Chemistry and Soils. It is important to report the circumstances under which the minor explosions occur, no matter how small the loss. The investigation of a large number of dust explosions has definitely shown that in many instances more valuable data can be secured when the explosion was of a minor nature than when the destruction was of large proportions, involving large loss of life and extensive property damage.

NATIONAL SAFETY NEWS

How ARMCO Trains Men

By CHARLES H. MURRAY*

The best way to avoid mistakes in manufacturing is to train every individual so that there will be a minimum of costly errors. The training program of the American Rolling Mills Company has effected a steady reduction in accidents and economy in operation

WE ARE kept busy at ARMCO attempting to train every individual to do his job better. With 10,000 employees in our normal working group, the difference between this number of men working effectively and safely or doing a haphazard job, represents very nearly the margin in times like these between an operating profit and a loss.

It is, of course, one problem to train 10,000 people in a single locality, and quite another to do this in half a dozen communities, as our plants are located. It is also one problem to manufacture commodity products and quite another to manufacture a specialty product to meet thousands of different specifications. In our industry the problem indicates a need for a comprehensive training program.

Back in 1911 we began to recognize the need for organized work in combating accidents. We went through the various stages in guarding machinery. Later, we had camp meetings and evangelists, we had campaigns, we had parades and snow storms of safety signs and slogans; meantime, our accident records showed that we were making real progress. However, most of these programs were based on an appeal to the emotions, and naturally the reaction came quickly.

While we were having this experience with safety we were having a similar experience with employee training efforts. Under academic

*Director, Personal Service, American Rolling Mill Company. (Abstract of an address before the Metropolitan Chapter, American Society of Safety Engineers—Engineering Section, National Safety Council.)



Job training is given to cover every typical job in the ARMCO plants, including many minor operations.

leadership we modeled our efforts after those of the schoolroom. We had lectures and oratory on topics such as psychology, leadership, morale, and the like. Attendance was voluntary, and while many signed up in the early fall, comparatively few were left at the end of the season.

Many who needed training most failed to enlist in the classes. We also developed many training addicts who enrolled in every course and did most of the loud talking. Usually those who were the best orators in the classroom were the poorest "doers" in the mill. However, this experience, like our safety work, gave us a background that prepared for future progress.

Low Costs with Safety

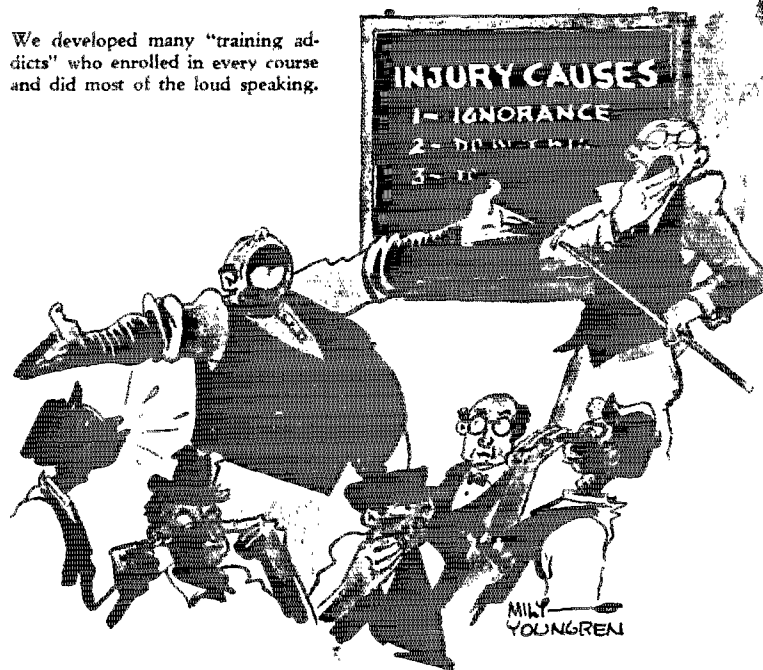
In short, we became dissatisfied with both our safety and our training programs as individual functions because they were not effective in the mill where our major problems existed. We fully realized that these functions had a definite place in our organization, but they must be utilized more effectively for the prevention of accidents, the reduction of costs, and the improvement of quality.

For years we had considered our safety statistics as a barometer of the effectiveness of our manufacturing organization. When good safety records were made in a department, they were usually accompanied by good cost and production records.

After a study of the problem, it seemed apparent that our safety department, rather than our training department, was more nearly approaching our ideas of what should be done. For example, our safety supervisor was visiting each of our plants and observing the departments to determine where unsafe practices were in effect. He was then instituting corrective measures to combat the accidents. This seemed an idea worth developing. Another important point was that our safety program had been thoroughly sold to our organization and all plant managers were solidly behind it because they believed they were getting tangible results.

Early in 1929 the two departments were combined, the safety supervisor being given the responsibility for both activities; with the understanding, however, that our safety problem was now entirely one of training. The only reason for not dropping the word

We developed many "training addicts" who enrolled in every course and did most of the loud speaking.



"safety" altogether was because of the adverse psychological effect it would have on the organization.

Our job was two-fold: first, that of training supervisors; and second, training the worker in the technique of his job. Our first responsibility was to our supervisory group, and when we analyzed their jobs we found their functions to be largely managerial, so that we immediately inaugurated our foreman-manager training program.

This program was designed to give every supervisor a proper and comprehensive view of his responsibilities. For the average foreman's conception of his job was that of handling either skilled or common labor, and he gave comparatively little thought to the broader managerial functions of his work. In other words, he did not consider that he was in business for himself and that he was responsible for costs, quality, tons per hour, and morale.

Our program was planned to cover a three-year period, and we are just now finishing the third season. In 1929-30 the major subject of the course was "Conservation." In 1930-31 it was "Prime Yield;" and in 1931-32 it was "Prime Output per Hour." Each season's work was of six months duration; the remaining six months gave the supervisors an opportunity to train their men.

Each season's work is broken down

into the six most important contributing factors, and a full month is devoted to the study of each. The fourth week of every month is always spent in studying the cost aspect of the subject. The week's work is the measuring stick.

Our Personal Service Staff prepares the weekly outlines and mails them to the plants. Each subject is introduced according to a standard plan, the plant manager calling together his entire supervisory force and advisory committeemen at the beginning of each month. The new subject is introduced and the accomplishments of the preceding month discussed. The general superintendent also convenes his departmental superintendents in a weekly meeting, and the fundamentals are there applied to department problems. The individual department superintendent follows up with a meeting of his foremen, where the outlines are localized to department problems.

Synchronized Programs

All departments in all plants study the same subject at the same time. As the program is thus synchronized, a spirit of friendly competition is developed in the inauguration of new ideas on management.

In the beginning we found that some of our department superintendents, although excellent operating men, had only a slight understanding

of costs. Since these men, according to the training plan, were placed in the position of explaining costs to their own group, they were in danger of having to confess their ignorance. They quickly secured the necessary information and so preserved their prestige as well as making themselves more valuable to the company.

Another important benefit was that the plan offered the ambitious foreman an opportunity to advance himself. Many of our foremen have demonstrated what they could do and have already advanced to better jobs. As an example of the interest shown, I have checked the March attendance, which showed 186 foreman-manager training meetings in all plants, with an attendance in excess of 3,000.

Job training, the second part of the program, is not at all complex. Formerly a man made a mistake which might cost the company considerable money before the foreman discovered his tendency to failures. He reprimanded the man severely and either fired him or warned him. In many cases the man had not been taught how to do the job properly. It was merely an accident that came to light.

Trained Men Are Safe

The first job training class was organized in an attempt to prevent numerous accidents that were occurring on our roller-leveling machines. When a man does a job properly, he does it safely. Job training classes are always held in the mill on the particular job on which a man works and on his own time.

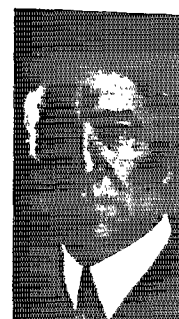
All job training classes are organized alike, the foreman leading the instruction, assisted by the maintenance foreman and the safety and training advisor. Staff men are brought in for consultation as they may be needed.

In the beginning, job training was used as a "trouble shooter." When a department had an accident or spoiled iron, or had any difficulty which was attributable to the organization, the men in that department were immediately job trained. Today our job training is on schedule, organized so that as changes in practice or equipment occur, the men will be given training in the new method.

Job training has now been given to cover every typical job in our plants, and it has also been extended to include many minor operations, such as operating an emery wheel or oxygen (Please turn to Page 86)

What Do We Mean by "Accident Prone"?

By CARL B. AUEL*



* Sometimes the employee who seems to have more than his share of accidents is merely an untrained employee. Or perhaps he has been placed without regard to his abilities

WE HAVE been hearing a great deal during the past few years about the accident-prone employee. Let us see, if possible, just what is meant when we speak of such an individual.

He has been classed as one who has more accidents than his fellows—a high-accident man. He has been called one who becomes conspicuous by numerous accidents, or even by two accidents if occurring in a short period of time, or by a single serious accident. In one utility men with more than one accident of any kind per 1000 car-miles are considered in this class. In a certain trucking concern he is defined as a driver who has more than one accident within thirty days.

In short, look where we may, it seems impossible to find a satisfactory definition of "accident-prone."

The Travelers Insurance Company has sponsored the statement that for every major or lost-time accident there will be found to have occurred 330 practice performances; in other words, an operation can be wrongly done 330 times, during which there will have been 300 near accidents and 29 minor accidents before a real lost-time accident occurs as a result of all the faulty performances.

On this basis, every man who has a single accident must be considered a high-accident risk. But if our goal is really "no accidents," then I am inclined to go still farther and say that, on this basis, all workers are actually accident-prone, although some are luckier than others, perhaps because their 330th faulty performance (which would have resulted in an ac-

cident) has not been reached by the time they retire from service.

I recognize the fact, of course, that no two individuals are exactly alike; conditions of body and mind vary, and so their performances must differ. Carelessness, ill-health, fatigue, worry, and many other factors all have their effect. Situations will therefore arise, due sometimes to the individual, sometimes to external causes, which may be said to constitute hazards for certain individuals but which are no hazards at all for others.

Why should there not, therefore, be individuals more prone to accident than others?

We know, for example, that young persons are more prone to accident when working at milling machines than at machines of most other kinds.

We know that foreign born workmen employed under a boss whose language they do not understand are more prone to accident than when working under a boss they can understand.

We know also that men are more prone to accident at times of peak load—say, 10 a. m. to 3 p. m.—than at other times.

The U. S. Government found some years ago that accidents occurred more frequently in the steel industry

on night turn than on day turn; and the Travelers Insurance Company, as a result of a study of 95,000 accidents, stated that the great majority occurred during the winter months and on the night turn.

Moreover, it is common experience that workers younger from the standpoint of service or experience are more prone to accident than those older in years or in experience. In our own plant we have found employees more prone to accident on Saturday than on other days of the week.

If, by these examples, is meant "accident-proneness," then it must be admitted that there not only are individual employees prone to accident, but whole classes of them; and further, that even safe workers are also actually prone to accident at times.

Who Is More Responsible?

But I ask you next, who is the more responsible for these situations which arise, the employee or the employer? I believe that the employer is the more responsible, because, although knowing the possibilities, more intensive accident prevention measures may not have been taken and more careful job selections made.

Formerly it was believed that accidents occurred largely owing to the want of mechanical safeguards; but it is now known that, notwithstanding all kinds of guards, accidents continue to occur; and it is recognized that other things also have an important place in the work of accident prevention. Among these important additional factors are the following:

- Minimum labor turnover
- Good health and contentment
- Good lighting
- Cleanliness and neatness
- A measured pace—absence of hurry
- Prohibition
- Education
- Intelligence, skill and carefulness
- English language



*Manager, Employees' Service Department, Westinghouse Electric & Manufacturing Company, East Pittsburgh, Pa.

These are fundamentals, although not named necessarily in the order of their importance; the want of them will certainly tend to produce accident-proneness (if you use the term) among employees.

But again I ask where the fault mainly lies if, due to the absence of these requisites to safety, accidents occur? Some fault lies, of course, with the employee, but far more with the employer.

Few Are Incurable

In a careful study of accidents by several utility companies, they considered that about 70 per cent of their motormen were satisfactory. Of the remainder, however, over 26 per cent, thought to be unsatisfactory at first, became satisfactory after further training or other treatment, while only 3.6 to 3.75 per cent finally were judged incurable and dismissed.

A large manufacturing corporation, in a period of 30 months, recorded 936 accidents, but found that only eight men had had two accidents each and none more than that number. Our own plant experience, over a somewhat longer period and involving more than 3,000 accidents, is much the same.

If these examples are typical (and the fact may be proved), then it would seem to indicate that the bugbear of so-called accident-proneness in employees may be dismissed, at least as far as the majority of the industries are concerned, else the wonderful records in accident prevention that are being made would be impossible.

But why should the accident-prone employee exist in the utilities and among automobile fleets? There are at least two reasons, as I see it, for this difference: the utilities and the automobile fleets undoubtedly have more and a greater variety of unexpected hazards than the industries; and it will be acknowledged that they are not so far advanced, as a whole, in the work of accident prevention and (I dare say) of job selection, as well.

Admitting, then, that accident-prone employees do not exist to any appreciable extent in the industries, they can apparently also be almost wholly eliminated from the utilities by means of *corrective* methods (as has been demonstrated already by a number of them).

It is only fair to assume, moreover, that the utilities and the automobile fleet owners, with further experience, will gradually be able to substitute *preventive* methods more generally for their present *corrective* methods, and thus select accident-free operatives in the first place.

Be assured that I do not stand alone in feeling as I do about the so-called accident-prone employee.

In a talk entitled "The Selection and Training of Vehicle Operators," Dr. A. R. Lauer, associate professor of psychology at Iowa State College, at the last National Safety Congress, listed 13 tests which should be made in selecting operators. He then stated (and this is the point I wish to emphasize) that if these tests are carried out, incomplete though they may be as to comprehensiveness, they will prevent at least 50 per cent of all accidents due to personal factors.

The British magazine, *Industrial Welfare and Personnel Management*, September, 1930, contained an article by Eric Farmer on "Analyzing Accident Records." He says:

"The results already obtained show that the 25 per cent of the skilled apprentices examined, who failed in certain tests designed to measure hand and eye cooperation, had an accident rate two-and-one-half times greater than those who passed the tests. It has also been shown that the same tests tend to select those who do best at the skilled trades; so that if they were employed for the selection of candidates, a class of apprentices would be selected less liable to accidents and more proficient at their work."

Mental Tests

"These preliminary results are most encouraging and show that it is possible to measure in a simple way some of the psychological factors determining accident proneness before the candidate starts his industrial career."

(Commenting on this paper, A. R. F. Engelbach, works director of the Austin Motor Company, Ltd., says: "We do not find that a single workman has many accidents which would label him as accident-prone; if we did we should not keep him at all, as in my opinion he would be equally dangerous in any other department.")

C. K. Atkinson, factory inspector for Lever Bros., Ltd., also states:

"My experience of accident prevention work, which dates back to 1897, has convinced me that there are comparatively few employees who are definitely and consistently prone to accidents: so much depends on the general conditions obtaining in the factory or workshop that it appears inadvisable to be too positive or to generalize on the subject at this stage. The effective liaison of the welfare supervisor or safety inspector with the workers and the management is the surest means of achieving the desired object."

Unfortunate Characteristics

According to information published by the National Safety Council: "Scientific studies of motormen and drivers have shown that high-accident men have one or more of the following characteristics—poor health or physical condition, lack of skill or knowledge of driving, the wrong attitude toward safe and proper driving. A driver having any one of these unfortunate characteristics is likely to have a bad accident record. If he shows a combination of any two of them he is almost certain to appear in the accident list."

What better evidence need we have that it is possible to examine and study candidates for these positions, finding in advance those who might be prone to accident and filtering them into other positions where they will not be subject to hazard?

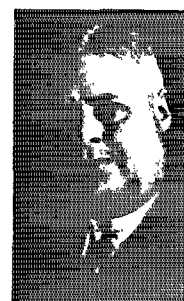
We are continually seeing recorded remarkable "no-accident" performances. In our own plant at East Pittsburgh, where a number of years ago we used to have as high as 187 accidents per month among the 20,000 employees, in recent years we have at times reduced these accidents as low as nine per month. Disregarding the occasional changes due to labor turnover, it is largely the same employees, who once might have been accident-prone, who are more nearly safe workers today.

What has taken place? Principally, it has been our increasing experience during the intervening years, both in job selection and in accident prevention work, that has enabled us to institute more effective safety measures. But was our lack of knowledge in days gone by an adequate reason why we should have called our employees accident prone, and why we should

(Please turn to page 83)

Have We Forgotten the "Three C's?"

By BENJAMIN G. EYNON



• The familiar "Three E's" of traffic safety are important but let's have more of the three C's—Courtesy, Consideration and Cooperation

ONE of the primary reasons for highway accidents is the absence of highway courtesy. It is because so many motorists have lost their inherent considerateness and civility for others that we need restrictive laws controlling traffic. Until we can educate more people to the fact that motor laws are simply a code of ethics or behavior, additional laws will be more or less worthless.

True, enforcement is one of the best safety educators, but we cannot continually "pass the buck" to the police to clear ourselves of our own obligations. Many of the provisions of our laws would be entirely unnecessary if we had not forgotten the essential elements of traffic safety—politeness, civility, consent as distinguished from right, and consideration for others.

To see how courtesy could operate to reduce accidents, let us analyze a few accident reports. "I blew my horn and proceeded, having the right-of-way." This right-of-way obsession is the answer to a large part of the accident list. "A man suddenly appeared in front of my car, and I hit him—I don't know where he came from." (Perhaps he arrived by parachute.) Let us have less horn and more brakes. A blast of the horn cannot scare others to the point of evaporation into thin air and relieve you of the obligation to press the brake pedal or twist the steering wheel.

Common courtesy on our part would give the other driver just the break he required to complete that left-hand turn. It would give the man behind just the space he required to

pass us in safety. Courtesy would enable us to heed warning signals and give a signal to our fellow driver. Courtesy would not permit us to think we had a supreme right over another in the use of the highway.

The factors in the accident situation are not complex and uncertain, but rather the contrary. Let us examine them under the following headings: (1) the highway; (2) the motor vehicle; (3) the operator; (4) the pedestrian; (5) enforcement.

The Highway

We must consider safety for the highway from the viewpoint of engineering. Curves should be super-elevated to permit present day speed. It is evident from the number of accidents occurring on curves either that the construction of the highway is not in accordance with good engineering or the car driver is taking the curve at too high a speed. A study of curves will determine proper speed limits and then suitable warning signs may be erected.

Warning signs for the convenience of those unfamiliar with the highway should be placed at dangerous points. Maintenance of the highway should include a rough surface to retard skidding. White lines and painted designations on the highway surface should guide the driver during night hours and in foggy weather. Through traffic highways should be designated, requiring vehicles to come to a full stop at their borders. Narrow, highly crowned old types of roadway should be eliminated.

In providing more positive identification of railroad crossings, particularly for night drivers, some suggest illuminated signs. These signs should

at least be placed so that the automobile lights will bring them out clearly. Narrow and so-called "one-way" bridges should be eliminated, and adequate guard rails should be erected. The building of turn-outs along highways for the use of busses in loading and unloading passengers will add considerable safety.

Each community should adopt a comprehensive and practical traffic plan, giving traffic constant study and survey. There should be uniformity in street and highway traffic signs and traffic signals throughout the country. The facts about accidents should be correlated and applied in highway construction and traffic regulation.

The Motor Vehicle

In Pennsylvania we first had a voluntary inspection of motor vehicles, the inspection covering about 50 per cent of the registration; 51 per cent of these cars were found deficient in safety of operation. Our first compulsory inspection was held in 1929, the inspection being practically 100 per cent, and of these 73 per cent were found defective. The following year, with the inspection again 100 per cent of registration, 71 per cent required adjustment or repairs. Thus there was a gain during the year of 2 per cent, or approximately 400,000 vehicle owners who had become safety conscious.

Realizing that mechanical fitness plays an important part in the reduction of highway accidents, and that approximately 10 per cent of highway accidents are due to faulty mechanical equipment, we asked for additional legislation to make the inspection more rigid. We now have a law requiring semi-annual inspections, one being held during January, February and March, the second during July, August and September. Following each of these periods, there will be three months of enforcement

*Commissioner of Motor Vehicles for Pennsylvania. (Abstract of an address before the Drivers' School of the Milwaukee Safety Commission, Milwaukee, Wis.)

by the State Highway Patrol and local police authorities.

During the earlier campaigns official inspection stations were appointed for the duration of the campaign. But under the law now effective official inspection stations are appointed permanently. Each garage applying for appointment was inspected, and out of 8,000 applications, about 6,000 were selected. To further protect the automobile owner and assure the state that stations are complying with regulations, a special group of state highway patrolmen have been trained and assigned to check the appointed stations.

Campaigns of this kind will not make our state 100 per cent accident proof, of course; but if Pennsylvania can by means of compulsory motor vehicle inspection cut down or wipe out the 10 per cent of its accidents due to faulty equipment, then it will have accomplished something. Many of the worn out, unsafe "crocks" will be driven into the garage for the last time, for they will be found not worth the expense of making the repairs necessary to secure a certificate of approval.

What we can expect when the campaign is closed is difficult to determine. Motor vehicle owners are joining in the movement willingly, but there is no alternative; the law says it must be done, and we are looking for good results.

The Automotive Industry

It is generally admitted that the automotive industry has made great strides in improving the motor vehicle, especially as to comfort, convenience and mobility. It is only within comparatively recent years that the industry has recognized that it might have a selfish interest in safety, and has been incorporating into its product those features which would tend to prevent or minimize accidents. Four-wheel brakes, safety glass, improved headlamps, additional signalling devices are a few illustrations.

The industry should not disparage the accident situation. Sometimes it appears as though it feels that too much talk or regulation in connection with safety discredits the automobile. But it seems to me that, purely from a selfish point of view, the industry should be interested in helping to keep the automobile in good repute.

Over-emphasis upon speed in advertising, and misleading statements as to power in emergencies are things to be deplored. For some years I have been inclined to believe that in motor-vehicle regulation we could substitute the element of recklessness for speed, but in viewing the accident situation, I am gradually coming to the point where I consider the high speeds frequently advertised as dangerous under any condition.

To me it seems rather ridiculous to assume that any car traveling at a speed of 70 or 80 miles per hour is under absolute control. In Pennsylvania, at least, we seem to be "hitting them harder" because, while we have during the past year experienced a decrease in total number of accidents, we have had an increase in fatalities and serious injuries.

The Operator

The question is frequently raised whether it is necessary (aside from augmenting state revenue) to license persons who drive motor vehicles, and this question is immediately followed by another, whether such a provision tends to reduce accidents? I think this argument can be disposed of with a counter question.

If operators are not licensed by the motor vehicle department, then what control can be exercised over their actions? The motor vehicle administrator grants the privilege (which is not an inherent right) and by virtue of this authority he can withdraw or withhold it.

It has been the experience in Pennsylvania and many other states that the withdrawal of the driving privilege is a most successful deterrent against reckless driving. To many people the imposition of nominal fines, periodically, means nothing. They pay the fines, and sometimes are even proud to be termed habitual violators of the law.

Upon the question of actual accident reduction, I believe that our experience in Pennsylvania is representative. Twenty-five per cent of applicants for a driver's license fail upon the first examination, and on subsequent examination 3 per cent fail entirely. We examine approximately 300,000 new operators each year. Last year 60,000 of those who thought they could drive were unable to pass a first simple test in the operation of a car and answer a few questions con-

cerning the ordinary rules of the road.

What a tragedy it would have been to let those untrained persons loose on our public highways! And the per cent who were unable to learn how to drive at all indicates that last year almost 9,000 persons were deprived of the privilege because they were found to be fundamentally incompetent.

Let us inquire what a driver's license law should do, and attempt to reason from those points as to its necessity.

First, it will provide a record of operators, and as a corollary a violation and accident experience file. It is important to know the mental and physical capacity of those to be granted the driving privilege. Violation records are important because, in an analysis of 48,888 accidents in Pennsylvania in 1931, of which 1,904 resulted fatally to 2,038 persons, there were found to be 38,604 violations of our vehicle code. Experience in many cities shows that rigid enforcement, even for so-called minor violations, is an effective means toward accident reduction.

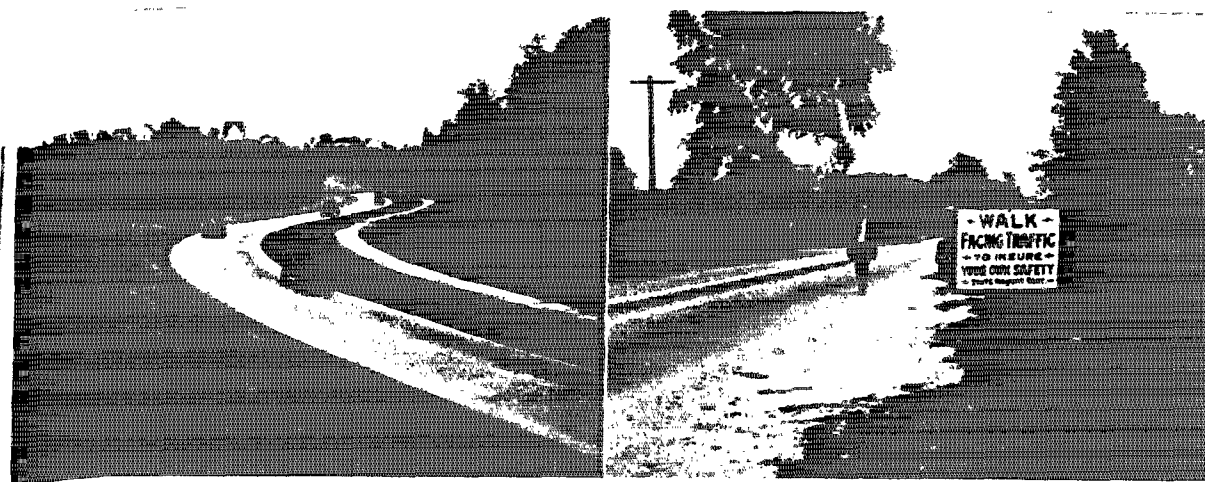
Probably the most important function of an operator's license law should be its effect in the reduction of accidents. Analysis recently made by the National Safety Council shows that driver's license law with examination of new drivers, properly administered by a centralized department, may be expected to reduce motor vehicle fatalities by about 20 per cent, this conclusion being based on the record of states having such laws.

The Pedestrian

Too often the pedestrian is lost sight of in considering highway accidents. But in Pennsylvania last year pedestrians were involved in 21 per cent of the total accidents, 47 per cent of the fatalities were pedestrians, and we had nine times as many pedestrians injured as were killed.

In considering the problems of highway accident reduction in our state, we remember that our entire population is 10,000,000 people. While we have 1,800,000 registered motor vehicles and 2,500,000 operators, all of our population at one time or another are either automobile riders or highway pedestrians. The operator of a motor vehicle of

(Please turn to page 68)



The sidewalk at the left is a convenience and safeguard to those who must walk into the city. Where pedestrian traffic does not justify sidewalks, signs should provide the needed warnings.

Giving the Rural Pedestrian a Break

By STANLEY OWENS*

ALTHOUGH the United States is generally regarded as a nation of automobile riders, the pedestrian is not yet extinct. More than half of the 33,000 persons killed in automobile accidents during 1930 were traveling on foot at the time of the accident. Among children under 15 years, 80 per cent of the fatalities and 72 per cent of the non-fatal injuries were to foot travelers.

Programs of safety education are showing results in some cities, but serious injuries on rural highways have shown a startling increase. One of the reasons is that many people must walk long or short distances along country roads, and in the great majority of cases there is no place to walk but on the road pavement, frequently crowded almost to the danger point with motor traffic.

Only in exceptional cases are the shoulders fit for walking, even in dry weather. Practically every automobile driver has had the experience while driving at night of coming suddenly upon pedestrians walking in the path of his car, making proper although dangerous use of the only walkway available.

The installation of highway sidewalks not only protects pedestrians, but it relieves the fear of motorists

and permits faster travel with safety, thereby increasing the capacity of the road. Cases are on record where pedestrians have been struck down on public highways without the automobile driver being aware that his car had been involved in the mishap. A car traveling at a relatively high speed may easily strike a person a glancing blow, which might result fatally, without any unusual shock being felt by the passengers or driver of the car.

Heretofore rural communities have neglected to offer protection to the pedestrian on the highway. The highway sidewalk offers a solution to this problem. Recently, Newcastle County, Delaware, has taken steps to protect rural pedestrians by the installation of some five miles of highway sidewalk. This has been placed along heavily traveled roads, particularly in the vicinity of rural schools, amusement parks and cemeteries, where large numbers of pedestrians have been forced to use the paved roadway.

Where Walks Are Needed

Highway sidewalks are recommended especially for locations where relatively large numbers of pedestrians are forced to use the roadways. There are four places where the highway sidewalks are especially valuable:

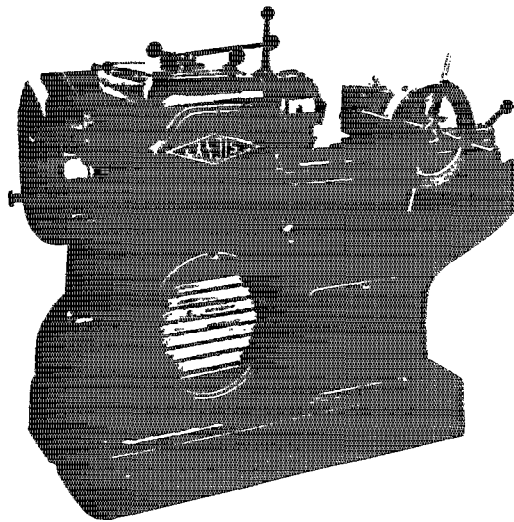
1. On bridges and culverts. The pedestrian is usually forced to use the roadways on bridges and culverts, due to the absence of a sidewalk. Fortunately, sidewalks usually can be added to small or moderate size bridges or installed at culverts at modest expense. In the case of new bridge or culvert construction, the addition of a walk would be a small factor so far as total cost is concerned.

2. Around rural schools. Sidewalks are best placed on the school side of the road and extended a reasonable distance—sometimes a half mile in either direction from the school. It is on this half mile or so nearest the school that children commonly crowd the roadways. In the parish of St. John the Baptist (Louisiana) a mile of highway sidewalk is being built adjacent to each rural school.

3. Adjoining rural resorts, road houses, amusement parks and dance halls. In these locations there are at times found large crowds of people who, in the absence of a sidewalk, are forced to step into the highway. This is also true to a considerable extent at rural cemeteries.

4. Immediately outside the city limits. Many people living a half mile or more beyond the city pavements walk to the end of the city car line or bus transportation.

*Safety Engineer, Portland Cement Association, Chicago.



Courtesy, Landis Machine Co.

Figure 1. Single head threading machine operating automatically and well guarded.

Building Safety Into the Machine

By G. M. BRIGGS

Many modern machines are excellent examples of engineering revision to secure maximum safety for the operator. But the old type machine in which no thought of safety was incorporated is still common

SAFETY enthusiasts are often disappointed as they look back over the history of the accident prevention movement. Neither in plant safeguarding, nor in employee education, nor in the redesign of machinery, they are inclined to assert, has satisfactory progress been made in safety.

It is, of course, human nature to weigh the present against what might have been. But is their pessimism fully justified? Can we forget the excellent safety achievements of some plants because the majority are still floundering in a bog of costly accidents?

A famous statesman once said that he could count himself happy and successful if he were right only fifty-one per cent of the time. The same philosophy, I think, may be applied to accident prevention effort.

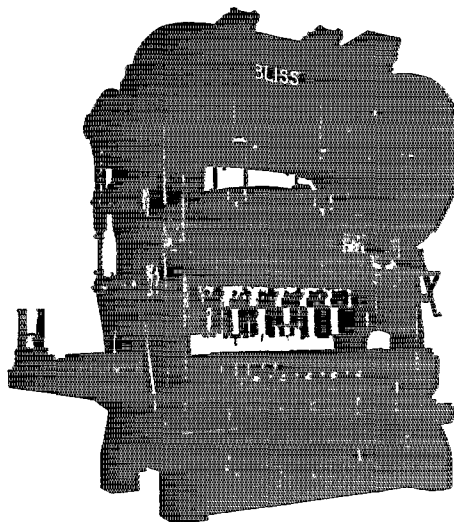
Not a few only, but a large number of industrial plants have now become safety minded. The record of lives saved and injuries prevented by all three of the fundamental methods is a long one, and the fact that the total of all accidents in industry has been reduced even a little in the face of multiplying hazards is a notable credit for

organized safety effort. Compare the mounting deaths in street and highway accidents under somewhat similar conditions.

In no phase of the safety program has pessimism been more rife than regarding engineering revision, the redesign of the machine in process of building to secure maximum safety for the operator. The fact cannot be disputed that machines originally were built with little or no thought for human safety. It is largely because the industrial plants of this country are still making use of such machines, often entirely unguarded or supplied with inadequate home-made guards, that machine accidents in

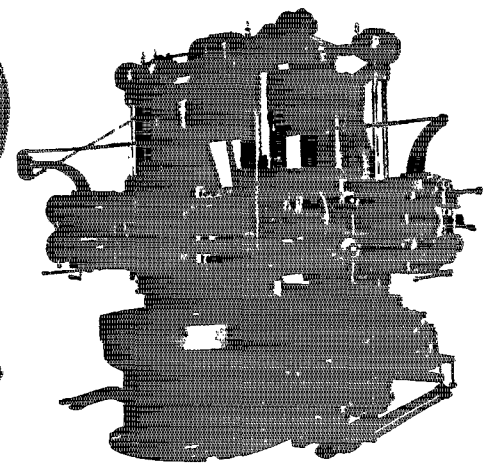
many factories continue to be common.

I have already pointed out in a previous article that responsibility for the unsatisfactory development of safety by engineering revision must be shared between the machine manufacturer and industrial management. Some manufacturers have designed and built machines that are outstanding examples of the safety ideal. But if most modern machinery continues to be built and sold with little attention paid to adequate safeguarding, it is plain that this is largely because there is no widespread and sufficient demand for thoroughly safe machines. There is, however, a powerful minor-



Courtesy, E. W. Bliss Co.

Figure 2. Maximum safety for the operator is gained by keeping his hands away from dies.



Courtesy, The King Machine Tool Co.

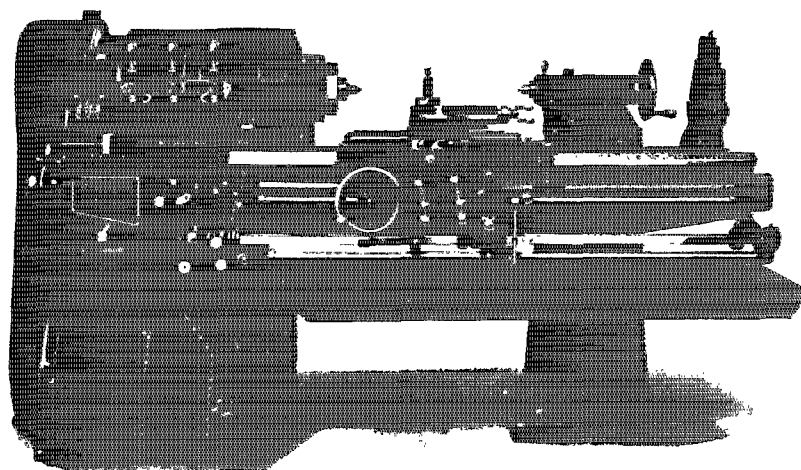
Figure 3. Front view of a boring mill where every gear, sprocket and chain is out of view.

NATIONAL SAFETY NEWS!

ity among industrial plants where safety is recognized as an essential part of the production program and where accidents are classed as costly waste. The National Safety Council counts among its membership a large number of these. Countless letters are on file describing how these plants keep in close touch with the machine manufacturer, making suggestions, providing blue prints and models of home-made safeguards, with the result that as new machines are built the old hazards are either minimized or guarded or sometimes enclosed in the process of building.

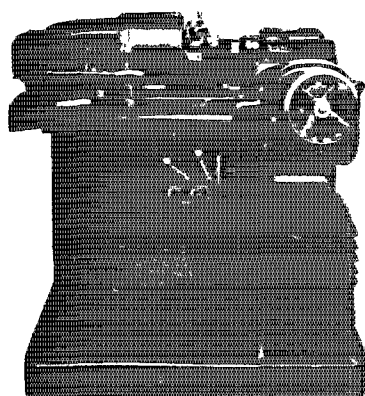
Here are some paragraphs from the letter of a man whose name would be instantly recognized as that of a leader in the safety world:

"Last week we received a new



Courtesy, The Lodge & Shipley Machine Tool Co.

Figure 6. A very modern selective head tool room lathe with motor drive in leg.



Courtesy, The Heald Machine Co.
Figure 5. Small automatic internal grinding machine of good design.

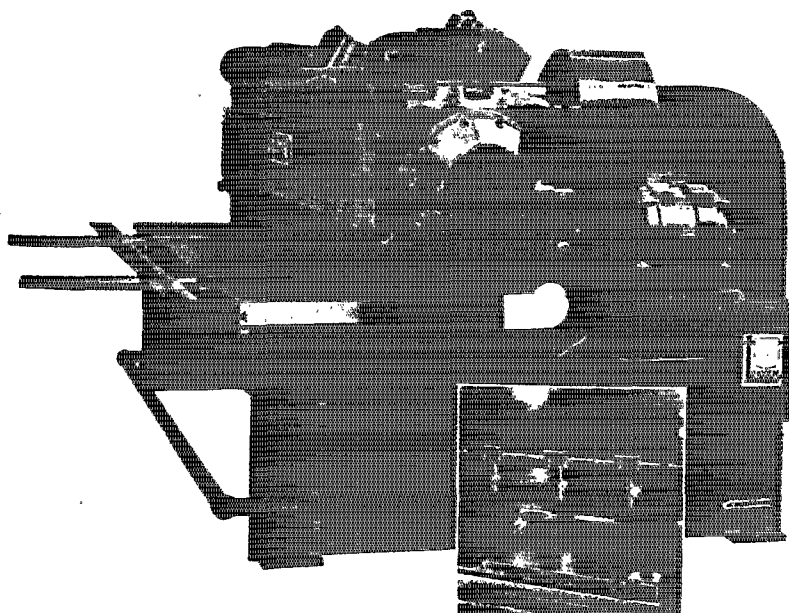
press, the most powerful we have ever purchased. When it was in position we looked it over, and there were only two moving parts visible—the ram and the flywheel. Every other part is completely covered. You cannot see a tooth in any gear, you cannot see any of the moving parts that actuate the ram or anything else. It is the finest job of guarding by the manufacturer that I have ever seen.

"And, now, get this—while the millwrights were erecting the press, our guard builder was putting up the guard around the flywheel. All of this had been done without one word from the safety man, all done just as a matter of course.

"That, I say, is the answer to machine guarding: no checking of blueprints by the safety department, no argument with the machine builder, no argument with the millwrights, no waiting until after the machine has been run for a while before putting up the guards, but all done simply and completely because it is the right way to do things.

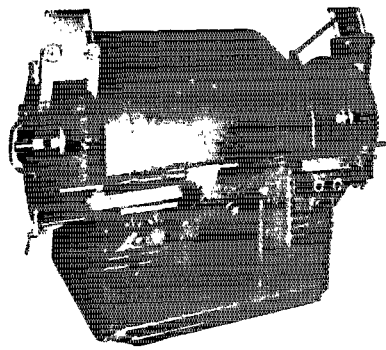
"We have both a plant standard and a local safety council standard that says: No gear is completely guarded as long as you can see one single solitary tooth. We have a rule in our shop that forbids the operation of certain machines unless they are equipped with certain types of guards. In no way is it possible for a foreman to get permission to operate those machines without those guards, and yet this never stops production. The production problem is simple. Our manager says that no machine can be operated without guards; he also says that a certain machine must be in operation by Monday. The answer is that the machine is in operation next Monday morning with all safeguards in place."

Another brief letter from the safety bureau of one of our country's largest steel companies has this interesting information: "The lost-time accidents in our company last year charged to moving machinery were eight-tenths of one per cent of the total lost-time accidents. We have been very fortunate in having been able to provide adequate guards for machinery already installed and to induce the manufacturers to equip new machinery with the proper safeguards. In



Courtesy, The Cincinnati Shaper Co.

Figure 4. A high speed squaring shear, with all moving parts, including flywheel, enclosed in guards.



Courtesy, The Safety Grinding Wheel Machine Co.
Figure 7. Modern two wheel grinder with numerous safety features.

our purchase of equipment, we follow the United States Steel Corporation standard requirements for safety and also the codes of the state in which we operate, and we are able by this means to have all new machinery very well safeguarded when it is installed."

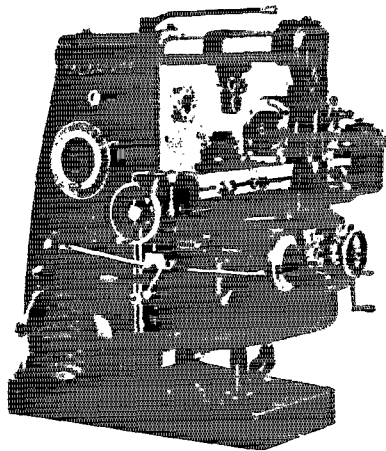
There are few things more satisfying to the safety man's eye than a shapely, smooth-bodied modern machine which has been designed to incorporate the maximum of safety features. Probably we can do no better in a "discussion of "building safety into the machine" than to present here as many pictures of these machines as the pages of our magazine will hold.

The machine shown in Figure 1 is a single head threading machine with lead screw, the work being placed in a vise and gripped by means of a balanced hand wheel. When the proper length of thread has been cut, the die head opens automatically, the lead screw disengages automatically, and this stops the forward movement of the carriage. Provision is made whereby either the die head or the lead screw can immediately be cut out of operation by hand in case of emergency. The machine is driven through a lever operated friction clutch which also permits of immediately stopping the machine without stopping the motor (or the drive belt in case the machine is belt driven).

As may be clearly seen, the lead screw gear box, chain drive and friction clutch are guarded. The guards swing open as needed. The coolant pump is built into the bed of the machine, thus eliminating all pulleys and belts; this pump is a self-contained unit, shaft driven, located directly beneath the lead screw gear box. The die head of this machine is also

guarded by a sheet metal guard which completely covers the outside diameter of the head, although this guard does not appear in the picture.

A great deal has been written about the improvement of power presses and the difficulty of preventing amputation of the unwary operator's fingers. On certain types of presses many plants have secured a very high degree of safety by means of slide feeds and various home-made safeguards. But the manufacturer has also steadily advanced in the redesign of the machine, until many of the modern presses are excellent examples of adequate safeguarding.



Courtesy, Kearney & Trucker Corp.
Figure 8. Milling machine of excellent safety design.

The greatest possible safety to the operator is accomplished, of course, by perfecting the operating conditions so that it is not necessary for him to place his hands near the dies or other moving parts. In the machine shown in Figure 2, it is only necessary to keep the magazine (shown at the left) filled with blanks; these are then automatically fed to the first operation and on through the successive operations until finally discharged into a receptacle, all without the aid of an operator. A reciprocating lateral feed carries the blank or shell to the different die stations, and after the press has made five revolutions, each subsequent stroke gives a completed article. (In this picture the guard across the front of the press at point of operation is removed.)

Another interesting machine is shown in Figure 3, a boring mill, where the motor is coupled direct to first shaft of the driving box, without the intervention of gears, sprockets,

chains or pulleys and belts, all which are common sources of danger. All gears are guarded, not one being in evidence. The handles are so arranged that they must be moved in the direction in which the part controlled by the handle functions, thus avoiding confusion on the part of the operator.

In Figure 4 the machine is a high speed squaring shear. All moving parts, gears, flywheel, motor pulley and belt guards are completely enclosed. Two control buttons operate the machine. Two slots and a wide depression in the table enable the handling of work with greater ease and safety. Another feature of the machine is the knife guard, shown in some detail in the inset picture. This guard is fastened to the stationary part of the hydraulic holddowns and fully protects the fingers. Slots are cut in this guard so as to make the work visible.

Figure 5 shows an internal grinding machine for handling small work which is fully automatic with the exception of starting, loading and unloading. It is an excellent example of a compact machine, with parts enclosed, the entire unit to be driven by one standard single end motor.

Particular attention has been given to guarding and enclosing units, mechanisms and belts. Guards that must be removed for minor adjustments or service are held with springs and can be removed without tools. The work



Courtesy, The Fellows Gear Shaper Co.
Figure 9. Helical cutter sharpening machine with complete automatic control.

is guarded against splash and leakage of coolant, the table dogs are covered, and the cross-slide feeding mechanism is enclosed and runs in oil. This mechanism has a built-in motor with built-in electrical controls, also a self-contained water tank located within the size limits of the base. The table has an automatic drive with all controls and adjustments for setting up centralized in front of the machine. Anti-friction bearings are provided for revolving members.

Seldom will you see a lathe with the shapely and attractive contours of that pictured in Figure 6. This selective head tool room lathe is arranged for belted motor drive in the leg. All moving parts at the headstock end of the machine are fully protected by gear guards and belt guard covers.

A good example of a well guarded grinding wheel is shown in Figure 7. Two other features characterize this grinder. One of them is the safety interlock which automatically cuts off the power when the grinding wheels wear to a predetermined diameter. The other is a changeable speed system which enables the correct surface speed to be re-established by increasing the r.p.m. of the spindle.

This grinder will not run under any of the following conditions: (a) when grinding wheel wears to a predetermined diameter, at which point the machine stops automatically; (b) when the operator is changing speeds, no chance therefore of getting caught; (c) when chain tension is not correct, as when the position of motor does not correspond to size of drive sprocket; (d) when size of drive sprocket and position of motor do not correspond to diameter of grinding wheel; (e) when lowest speed is not provided in mounting a new, full-sized wheel.

The milling machine, shown in Figure 8, has been designed with a high factor of safety to protect both the operator and the work. All levers controlling any power movement are operated by pulling outward; accidentally bumping into any lever will disengage, not engage, a power movement. There is no danger from revolving handwheels; all cranks and handwheels are disengaged automatically when power movement is engaged. The cross and vertical power movements are interlocked; engaging one automatically trips out the other.

The spindle control lever is at a working height and is operated along

a horizontal plane—no stretching or straining to engage it. It is also adjustable to any position around the machine. The spindle control lever operates a brake, stopping the spindle rotation immediately when disengaged. Overflow of coolant, causing slippery floors, is unlikely owing to many large coolant return pockets and ample drain in base. The spiral change gears are completely enclosed, protecting not only the operator but others who pass the end of the machine table.

The final illustration, Figure 9, shows a helical cutter sharpening machine of excellent design. This machine is completely automatic in control and is operated electrically, the reciprocation of the table and the stopping of the reciprocation being controlled through electric switches and relays. There are three motors on this machine, all of the fully enclosed type. One, through a reduction gear which is completely enclosed in the bed of the machine, reciprocates the table; the other through an endless belt, which is guarded, drives the wheel spindle; and the third operates the pump for supplying the cooling compound to the wheel and work.

The photograph shows the guard over the wheel to protect the operator in case of wheel breakage, as well as the splash guards to prevent the compound being thrown on the floor. Little, if any, additional guarding is necessary because of the complete enclosure of the working mechanism in the bed of the machine.

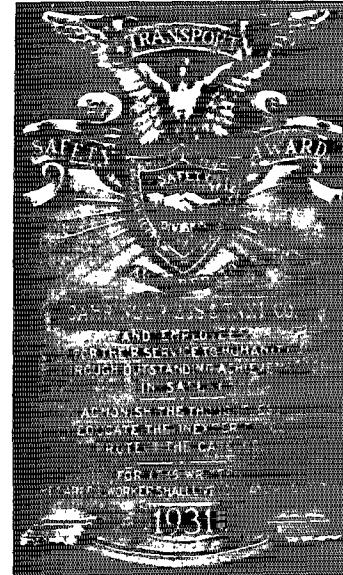
Michigan Motorbuses Are Becoming Safer

FOR years insurance companies shunned motorbus coverage. It was classed an extremely hazardous risk. Today, because of the changes in the bus industry and effort exercised, the Michigan Mutual Liability Company underwrites property damage and public liability on motorbus lines operating exclusively in the state of Michigan at a much lower rate than was thought possible a half dozen years ago. Organization of operators and drivers, and sponsoring safety meetings and contests, has helped to bring about a remarkable change.

Recently, J. A. Purdy, director of safety for the Michigan Mutual, presented to M. J. Dahringer and fifteen

drivers of the Dahringer Bus & Taxi Company of Ludington, the Michigan Mutual Class B Trophy for having established a record of over half million miles of passenger service in 1931, over some of the most difficult roads in Michigan without an accident.

The Class C Trophy will shortly be presented to the Gray Transporta-



tion Company, of Niles, for having driven nearly 200,000 miles, carrying 165,000 passengers during 1931 without an accident.

The improved standing of the motorbus industry in Michigan is the result of many contributing factors. Improved and wider road construction has eliminated many dangerous curves. Warning markers and many other safety devices, have improved conditions, but by far the most important factor has been the success of convincing the operators and drivers that buses can be operated safely, and that safety pays big dividends—not only in building up business, but also in automatically lowering insurance rates.

Military type medals are awarded to individual drivers—bronze for first and second years, silver for third and fourth, and gold for five years or more.

Meetings are now held regularly throughout the state, and driver efficiency has been raised to a very high standard. This campaign has resulted in weeding out drivers with poor records, the securing of a more intelligent type, and a phenomenal reduction in accidents and building of public "good will."

How Accidents Affect Taxpayers

By A. M. NORTHRUP, M. D.*

- * One of the indirect costs of industrial accidents to the general public is the enlargement of the state department of labor and industry to take care of plant inspection and the supervision of compensation and rehabilitation

NEVER have we needed closer cooperation between safety councils and other accident prevention agencies and the departments of state than at this time. Business is in no position at present to meet compensation burdens, nor assume additional tax expenditures as the result of accidents in industry.

At many safety meetings, I have heard discussed the mental anguish, the depression, the sorrow or suffering of the worker, as well as the anxiety and expense to employers in meeting accident claims; but in all this safety work, never yet have I heard discussed what a terrific cost accidents place upon a department of state, such as Labor and Industry.

It might be interesting to refer, briefly, to why employers of Pennsylvania attend safety meetings, by calling to their attention just what happened last year in this great industrial state.

Reported to our compensation department during 1931 were some 111,461 accidents, an average of 371 each working day, or 41 every hour, costing \$47,254 per day, or \$5,250 per hour. During the past sixteen years, compensation claims have been paid, totalling over \$196,000,000.

Such matters are discussed at most regular safety gatherings, but at this time, we are going to be different and state frankly what accidents mean to the taxpayers who supply the cash to run the department of Labor and Industry in the state of Pennsylvania.

At the last session of the legislature, a trifle over two million four hundred thousand dollars was appropriated to operate our department for two years, or at the rate of about

\$100,000 per month in round numbers. Naturally, you might ask the questions—"Why do you need it? And what does it buy?" Both logical questions which every taxpayer should know.

Fifty years ago, we were an agricultural nation, busy cutting down our forests and tilling the soil to feed our population, and little attention was paid to the small factory or industrial worker. Each person looked out for himself or herself, but with the growth of our industrial centers, great mines and factories sprang into being and we began changing from a rural people into a great manufacturing nation. Young people deserted the farm for the city; immigrants began flocking to our shores, and soon far-sighted business men and intelligent labor leaders, working in harmony with our statesmen, saw the necessity of meeting these new conditions, and enacted the laws regulating industrial conditions.

This was the need that in our different states caused the Departments of Labor and Industry to be born, and answers question number one as to the necessity.

Obligations to Industry

Most tax payers are more concerned about what they get for their dollar than the necessity that demands it. In explanation, our department operates eleven bureaus and three boards in fulfilling its obligation to our industrial population. Three of these bureaus and the Compensation Board are directly related to accidents, their prevention and treatment—namely, Inspection, Rehabilitation and Compensation.

Our Bureau of Inspection, comprising some 157 workers, costs annually \$387,327; and at least two-thirds of this amount can be said to be used

each year in doing inspection and recommending safety appliances. The state is directly concerned in accident prevention, costing our taxpayers at least \$258,218.

In our Bureau of Rehabilitation we spend each year about \$40,000 and at least one-half of this amount is used in rebuilding the industrial worker fortunate with an artificial leg or arm, or giving a vocational training that will restore his or her usefulness to society, at the cost of another \$20,000 per year.

What Accidents Cost the State

Our Bureau of Compensation is the clearing house for all industrial accidents in Pennsylvania, comprising 6 clerks and 12 field adjusters, costing \$265,000. Our 14 referees with 3 clerks add another \$150,175 to the annual expense. Three compensation board members and 7 clerks with the judges and juries to pass on accidents in appeals, cost \$94,419.

The total of this expense, in the treatment or prevention of accident costs yearly \$787,812 (almost \$800,000 a year). Our appropriation for twelve months being \$1,200,000 shows that two-thirds of our total outlay is directly concerned with accidents. What a housecleaning we might have in the Department of Labor and Industry if accidents could be eliminated and this amount of money saved for our taxpayers!

With all this machinery did you ever stop to think just what our state is doing for its people? Our Inspection Bureau guards the machine where you work; teaches safety to the many employees and superintendents in our mines and mills; protects the lives of your wives and children as they go to the theaters, ride up and down the elevators of our great skyscrapers; insists on means of exit in assembly halls, or apartment where your family may be sleeping where fire might break out; tests the high-pressure boilers yearly where you toil; pulls away the poison gases in the lead, paint, or arsenic plants, so that your lungs may func-

*Secretary Labor and Industry, Pennsylvania. (Abstract of an address before the Fifth Annual Eastern Pennsylvania Safety Conference.)

Standards for Mine Timbering

tion and keep you safe and healthy to support your loved ones.

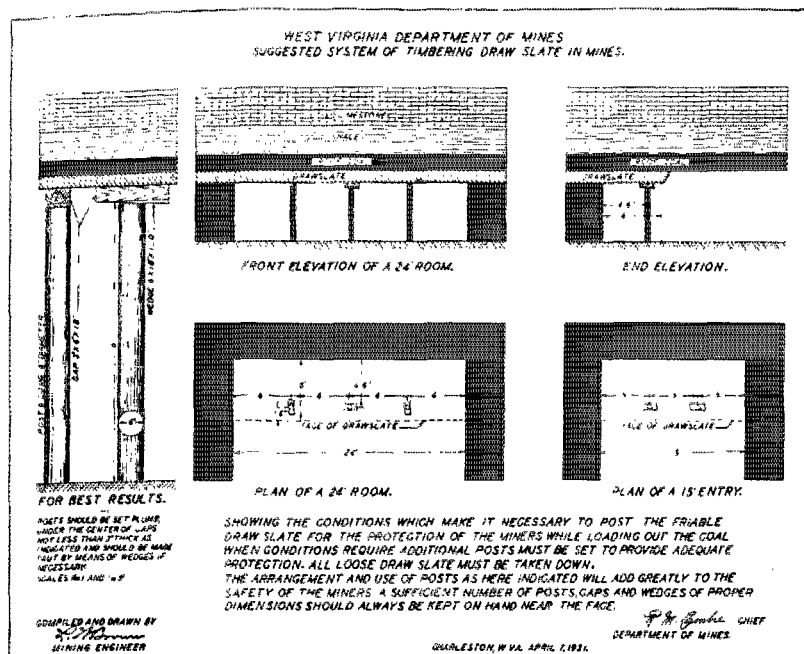
Much the same can be said about our Bureau of Compensation. After an employee is injured, this Bureau sees to it that compensation has been provided. A field adjuster calls to make the agreement with the insurance carrier, so that you may receive some remuneration while idle as result of injury; or if unable to agree, you can appear before a referee with competent medical advisors and present your case in detail; if justice cannot be obtained before a referee, you may appeal to the board for a hearing and have your case presented. A whole lot of machinery, that does a whole lot of good, where men must work for a living, even though the cost to the state is eating up the taxpayer's dollar.

The Bureau of Rehabilitation does much the same. It takes up the load where compensation leaves off, provides an artificial arm or leg, and in many cases, some vocational training at the expense of state and national government, that sets the industrial unfortunate on the highway once more where he can earn a living for himself and family.

These bureaus have all been brought into action, after much study, by statesmen, manufacturers, and intelligent labor leaders, and briefly state what you get for your dollar in either preventing accidents or treating the patients after the accidents have occurred.

In summing up, we might say that our department, with its inspection personnel, is the danger signal at the crossroads of industry, flashing its message to all workers, "Stop, look and listen! lest injury come into your midst." Like a modern physician, it believes that prevention is far better than cure. For years it has been experimenting with a serum that, injected into the veins of industry, endeavors to prevent carelessness where men work with their hands to earn a living. This serum is called "safety," and from our statistics it would appear that we were making some progress.

The Department of Labor and Industry deals with people. It rejoices in their prosperity and sympathizes with them in adversity; it measures time by heart throbs; it seeks out the unfortunate on the back streets, the tenements and back alleys; wherever men or women work for a living, it is in their midst. When adversity



RULES and standards covering systematic timbering should be established at all mines, says R. M. Lambie, chief, Department of Mines of West Virginia. These rules should cover the minimum requirements and drawings and sketches should be made to illustrate how and where timbers should be set under normal conditions.

Where this is done the men can be more easily trained to systematic effort. Of course, both men and man-

agement should constantly be on the alert to observe and protect against abnormal conditions. In such cases the foreman in charge should personally supervise and give special instructions.

Workmen should be compelled to use cap pieces over the posts. A cap piece should be no less than three inches in thickness and eighteen inches long. The chief duty of the cap piece is to act as a cushion over the post and absorb by compression the weight of the roof as it settles.

To be most effective, the cap piece should be wide enough to cover entirely the top of the post. The caps should have the faces coming in contact with the roof and the top of the post flat and parallel in order that an even bearing surface may be maintained. When it is necessary to use a wedge it also should be as wide as the post and be inserted between post and cap—never between cap and roof.

In most cases posts should be set prior to shooting down the coal, as generally the roof sags because there is too great a distance between room props and the back of cut. This is a source of many accidents and one which can easily be corrected.

All entries and airways should be carefully gone over frequently by experienced slate men, and wherever timbers are broken or decayed they should be replaced immediately.

overtakes them, it is there with its compensation to tide them over the interval; when death by accident comes into a home, it is present to take care of the doctor's bill, provide the casket, or care for minor children. It comforts the saddened widow with the thought that the orphans will receive at least a stipend until they have reached their sixteenth year. Like a bridge, it often connects a pleasant past with a hopeful future.

It is the Good Samaritan of Industry that halts by the wayside, places hope in the hand, and sends the dispirited worker on the road to self respect, self support and self confidence. It has met the industrial changes in the past, faced them squarely as they appeared, and by wise legislation of both labor and capital combined, it has made possible our present compensation machinery.

Helping the Foreman to Help Himself

By MARION W. SMITH*

- Opportunities for displaying true leadership are continually presenting themselves to the foreman. Has his training prepared him to take advantage of them

THE sympathetic interest and active leadership of those in supervisory positions must be secured if an effective safety program is to be developed. To this end the extensive use of foremen conferences has proved valuable. In these conferences foremen are encouraged to discuss problems of safety without restraint, and so determine standard and adequate safe practice.

Management will quickly realize that by means of the conference method foremen acquire the ability to teach safety very largely by training themselves. They are trained, in other words, to apply logical reasoning to the solution of safety problems, thus acquainting themselves with the theory and practice of analytical procedure involving the simple formula of cause, effect and remedy. The method invites the participation of everyone in the supervisory group, with the result that the group thinking is characterized by active mental evaluation of the factors discussed, rather than by a passive acceptance of—or perhaps resistance to—the ideas or plans of one person or official who might address the meeting.

The training of foremen to teach safety to their men suggests instruction along such lines as:

1. The philosophy of the safety movement.
2. Interpretation of company policy.
3. Technical phases of safety peculiar to the industry.
4. The mechanics of teaching.
5. Fundamentals of leadership in handling men.

No discussion of the first three seems necessary here, but some benefit may be derived from a consideration of the last two.

The foreman's job requires the discharge of both supervisory and

managerial responsibilities, including instruction. He is interested in shaping men to fit the requirements of department methods and the details of the work. If successful, he is either a good teacher himself, or he sees to it that someone equally competent takes care of the instruction. Too often foremen look at teaching as of little importance, a thing to get over as quickly as possible so that their time may be given to other duties.

It is fundamental that the success of the safety program depends very largely upon intelligent direction and the enthusiasm shown by the individuals who play a part in safety work. A single workman may often play a star part; and if the attitude of all the workmen could be so influenced that they display a personal concern similar to that of their supervisors, then the number and severity of injuries would be limited to those few accidents beyond human control.

Cooperation Misunderstood

It must be impressed upon all foremen that good will and loyalty are concomitants of cooperation. Many workmen do not understand the meaning of cooperation, which is not surprising, since their foremen seldom can offer anything but a feeble and vague definition of it. Since cooperation becomes apparent in the individual only when he renders voluntarily some additional service after the strict requirements of his job have been met, it is plain that in no case can cooperation and good will be secured by the power of authority or position. Foremen must be taught that cooperation is an attitude that must be expressed spontaneously and voluntarily, and must therefore be based upon mutual confidence, respect and friendliness. Those personal actions, mannerisms and traits of con-

duct which irritate, humiliate or arouse resentment, are certain to discourage cooperation.

The safety supervisor has a program to put over with the foremen, who in turn must put over a part of it with the men. Experience has shown that foremen as well as workmen may oppose many provisions for safe practice, and it is therefore the business of the safety supervisor, after winning over the occasional opposition of foremen, to teach them in turn how to overcome the opposition of their workmen.

Making Minor Concessions

A principle of practical applied psychology may here be used, sometimes described as that of "making minor concessions." Opposition may be disarmed by asking with apparent seriousness for requirements slightly beyond the actual needs of a situation, and then, when opposition has developed its full scope, some minor points may be conceded. The result is a sufficient satisfaction on the part of opponents to make them readily agree to the major and actually important provisions of a proposed safety program.

Human beings crave appreciation, regardless of how taciturn, domineering or positive their personalities may be. Cultivating a sympathetic attitude toward others, therefore, regarding their problems and their viewpoints will go a long way toward building up a cooperative spirit. Although enforcing strictly the requirements of safe practice, ill will and antagonism may be minimized if the supervisor will make it apparent to workmen that he appreciates their difficulties in observing safe methods which necessarily may seem awkward or inconvenient.

When training foremen in safe practice, consider their point of view; and include in their instruction an explanation that when they, in turn, try to sell a proposition to others, it will be well to consider any probable reaction to the idea in advance of its

*Supervisor, Foremanship Training, Wisconsin Vocational Schools, Appleton, Wis.

ANALYZING THE JOB FOR SAFER PRACTICE

Machine Job or operation	Hazards—Kind of injuries and how they happen.	Safe Practice—How to do the job safely.
Inspecting the sheet with the light on the line.	The platform on the line ends at the rack rail. When a wide sheet is on the machine the sheet is near the rail and does not leave much room to stand and if operator is not careful when coming through the loops, he may step off and break a leg or arm or some other injury may result.	Watch your step when coming through the loops and do not be in too big a hurry, and always look for the end of the platform.
Replacing or repairing top rack chains.	In replacing or repairing top rack chains one must use a ladder, and since ladders have a tendency to slip, serious falls may result.	A safe way to do this is to have some one to hold the ladder or to have a ladder hook rail put up all along the line on both sides and have ladders the right length with hooks on one end to hook over this rail. This last would be more safe than having some one hold the ladder, and would also save extra man for some other job.
Oiling and greasing.	Fingers and arms caught in belts, chains, gears and sprockets. Not paying attention to work. Slipping on loose things or grease or oil.	Do all unsafe work when machine is down. Never fool or look around when oiling or greasing a machine that is in operation. Never work around gears, sprockets, belts, chains, or any machinery with loose sleeves or torn clothing. Use all safeguards and be sure to put guards back in place after taking off to do any work that cannot be done without removing them.
Working in lines on chains and sprockets.	Getting fingers or foot caught by taking hold of chain too close to sprocket, or getting foot caught between sprocket and floor.	Either take hold of chain on each side of sprocket or back far enough so as not to get hands caught when putting chains on loose sprockets.
Greasing top rack drives.	Getting caught in chains or gears or sprockets. Falling off ladders by grease gun slipping off fitting, or ladder slipping when working grease gun and falling into moving parts.	Always stand in position so as not to slip into gears if anything does happen. Best way is to do this work during wash up or Sundays. This is very unsafe work. Use only safe ladders.

actual presentation. It is possible, by anticipating opposing arguments or facts that may be presented, and by stating those ideas yourself at the same time that the new plan is presented, to wholly disarm an opposition which has had no opportunity to express itself.

Abundant opportunities to display true leadership continually present themselves when establishing safe practices for employees. The true leader is far more interested in influencing and controlling the action of others than in posing as an important person claiming credit for the success of safety methods in the plant. Too much time can be spent

in proving to ourselves that we are superior to our associates. Why not make someone else feel important? The average supervisor or foreman will have a friendly and sympathetic attitude toward anyone who confirms his own private opinion that he is an important fellow in the plant.

To capitalize fully upon this very human characteristic, it will often be found advisable to arrange opportunities for others, both foremen and workmen, to achieve small successes in safety projects, and to give them the full measure of the glory. Foremen should be encouraged to apply this method with their men. The men will appreciate the compliment in be-

ing asked to assist in solving safety problems, and their ingenuity and experience may be made not only an asset, but a very satisfactory cause of growing friendliness and cooperation.

It is scarcely reasonable to expect people to become enthusiastic about something in which they have no part. Both safety engineers and foremen who wax enthusiastic over some idea or scheme—usually their own—are sometimes surprised and disappointed when others do not agree with them. Foremen should be impressed with the importance of letting the other fellow think that he has invented the idea; or at least arrange so that as many persons as possible may participate in working out the problem, and so share in the glory.

Poor Leadership

As an example of poor leadership, one foreman who was in charge of about 50 men and women urged his employees strongly to attend the local safety school which was in session. When few attended, he vented his displeasure in "razzing" every worker who suffered an injury, slight or otherwise. The workers became resentful and it is said that considerable pleasure was manifested when this foreman later suffered an accident through his own carelessness. Ridicule should never be used on employees, for it wounds not only vanity but self-respect, and creates either an active or passive opposition, either of which is detrimental to a safety program.

The experience of the Appleton Coated Paper Company, Appleton, Wisconsin, may be quoted as a fair example of the application of the principles explained here. In this plant of about 250 employees, the management decided that although their safety record was good, it could be improved. The progressive character of this company's policies is reflected in the fact that some years ago they adopted a plan of training their foremen in problems of supervision and management by the conference method.

The foremen were called together and plans discussed. All were agreed that more interest and enthusiasm on the part of the rank and file of employees should result in fewer lost-time accidents, and they approved a plan which would encourage participation in the safety program by near-

ly every worker in most of the departments.

The foremen talked to their men and asked their help in improving the already good record by analyzing for the company the hazards of every job and operation and suggesting accident causes and remedies. The workmen were willing enough, but expressed doubt of their ability to handle the work. A simple form was given to each man, with columns and headings representing operations, hazards, causes and suggested safe practice. They all understood that any suggested safe practice would be that to which the workmen would have no objection if adopted as standard practice. To a man they returned the sheets complete, some making out three or four pages of suggestions.

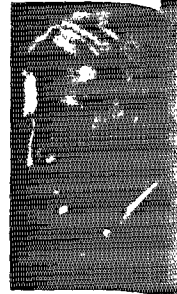
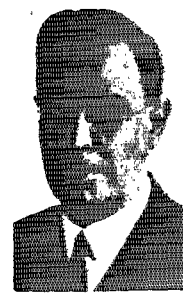
Publishing the Suggestions

Conferences were then conducted with the various groups, the data collected being evaluated and final conclusions reached which met with the approval of almost every man present. The suggestions were compiled in booklet form and distributed to workers, and the management reports that the safe practices recommended have been studied and adopted by the men in a very satisfactory manner. The foremen and management in general were very careful to give the workmen full credit for their analysis and suggestions, at the same time giving them to understand that the value of the safe practices would be tested by the consistent way in which they were followed.

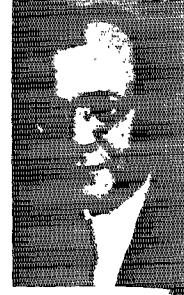
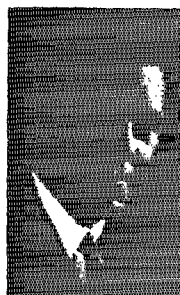
The whole work covered a period of about three months. Plenty of time was afforded each man, but to maintain a peak interest a conference was held at least once a week with some group. Two conferences were held during the survey with the foremen only, three with the coating room group, and one each with the calender department, machine shop, maintenance department, finishing room, color room, and power plant.

Discipline of a high order should always be maintained and safe practice should be made mandatory, after being announced, regardless of the source from which the procedure originated. However, less supervision is required to enforce rules suggested by the working force than similar rules made by management in which the workers have had little or no part.

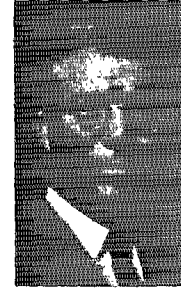
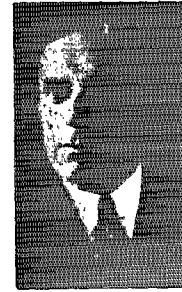
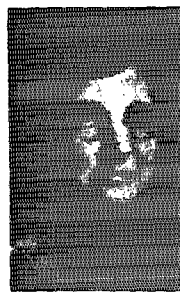
A FEW OF THE CONGRESS SPEAKERS



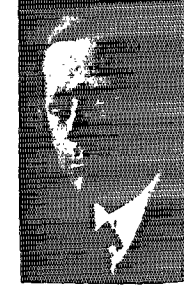
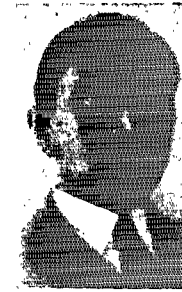
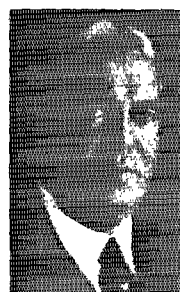
(1) E. J. Mehren, president, Portland Cement Association, Chicago. (2) Alice L. Edwards, executive secretary, American Home Economics Association. (3) William J. Cooper, Commissioner, Bureau of Education, Department of the Interior, Washington, D. C. (4) J. Hanna, president, American Electric Railway Association and Capital Traction Co.



(1) Hon. Harold G. Hoffman, Commissioner of Motor Vehicles, New Jersey. (2) Dr. Walter Clarke, American Social Hygiene Assn. (3) Dr. Charles W. Sylvester, Director of Vocational Education, Maryland Department of Education. (4) John A. Kratz, Chief, Vocational Rehabilitation, Federal Board for Vocational Education, Washington, D. C.



(1) Mary Emma Smith, R. N., Director of Nursing Activities, National Society for the Prevention of Blindness. (2) Paul Wooton, Washington Correspondent, McGraw Hill Publications. (3) Cadwallader Evans, Jr., General Manager, The Hudson Coal Co., Scranton, Pa. (4) T. Z. Franklin, Manager, Special Hazard Dept., The Automobile Insurance Co., Hartford, Conn.



(1) Dr. Robert Arthur Elwood, Founder-Pastor, the Boardwalk Church, Atlantic City, N. J. (2) E. P. Prezanno, Vice-president, Westchester Lighting Co. (3) W. O. LeBer, Canadian National Railways, Montreal, Que. (4) J. C. Wilson, Vice-president, Lumbermen's Mutual Casualty Co., Chicago.

NATIONAL SAFETY NEWS



© Harris & Ewing

The Safety Spirit of '32

Will Be Shown at Washington, October 3—7

THE Twenty-first Annual Safety Congress will be held because it fills a real need in the continuous campaign for the prevention of accidents. The economic difficulties which have confronted both corporations and individuals have not lessened the need for concentrated safety effort. With the Congress two months in the future, hundreds have shown the "safety spirit of '32" by writing to Council headquarters for reduced fare certificates and by making hotel reservations through the Greater National Capital Committee in Washington.

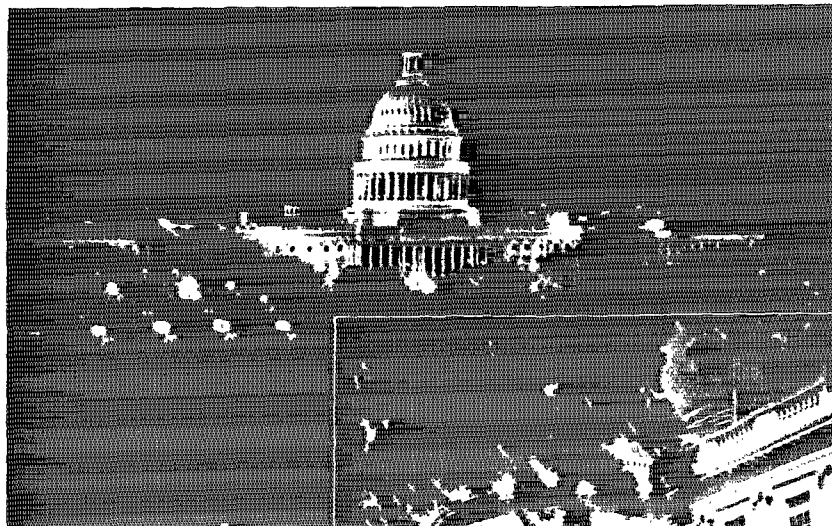
Many who have long had a desire to visit the nation's capital have postponed their vacations until Congress time when business and pleasure can be so agreeably combined. The two hundredth anniversary of the birth of George Washington this

year is attracting thousands of tourists to the capital to visit the national shrines associated with the first president.

Never before has such an attractive setting been arranged for an annual Safety Congress. The Wardman Park and Shoreham hotels, located at Woodley Road and Connecticut Avenue, Northwest, overlook a beautiful panorama of parks, boulevards, government buildings, and the Potomac River. Here, remote from the noise of street traffic yet only a few minutes from the business center of Washington, the delegate will find adequate accommodations for the business side of the Congress and plenty of opportunities for enjoyment and relaxation between sessions. Golf, tennis, swimming and riding are available for those who enjoy these sports, while those

© Underwood & Underwood

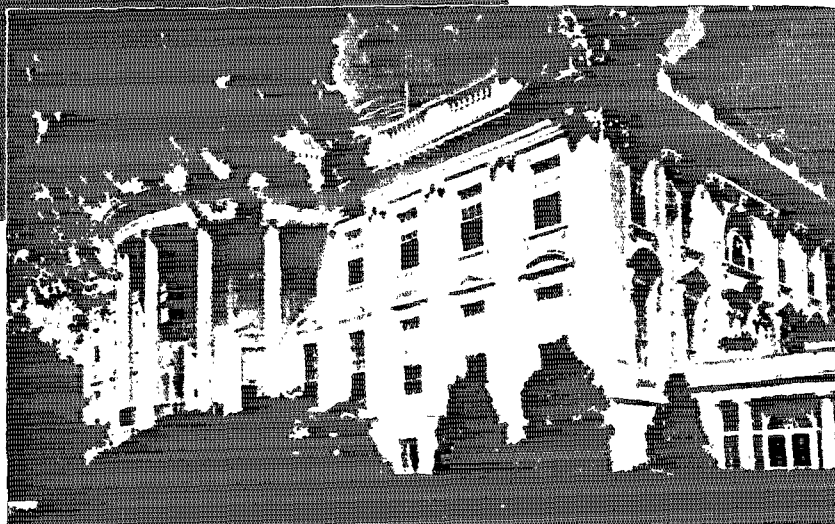




By night or by day the Capitol is a most imposing sight.

© Underwood & Underwood

The White House, the home of the President, is visited by thousands of tourists each year.



who merely wish to rest will find the quiet, club-like atmosphere of the headquarters hotels conducive to relaxation.

The Congress program, the preliminary edition of which is published as Part II of this issue of the NATIONAL SAFETY NEWS, lists 41 general and sectional programs with a total of 120 sessions. General sessions will be held Monday morning and afternoon and Wednesday afternoon. As usual, the Congress will open with the Annual Meeting of Members, followed by the All-Congress luncheon. Afternoon sessions are General Round Table, Industrial Health, and Street and Highway Traffic.

On Wednesday afternoon the following sessions will be held: Advanced Safety Engineering, Industrial Health, Fire Prevention, and Street and Highway Traffic.

Evening events scheduled include the traditional President's Reception and Dance, Monday; a technical session of the A.S.S.E.-Engineering Section, Tuesday; the Annual Banquet, Wednesday, and the "Frolic Party" Thursday. The feature this year will be held as a dinner dance in true cabaret style at the Wardman Park Hotel. The dinner will be served at regular evening prices without cover charge.

The principal speaker at the Annual Banquet will be Dr. Robert Arthur Elwood, founder-pastor

of the Boardwalk Church, Atlantic City, N. J. Dr. Elwood has gained a wide reputation as an inspirational speaker.

Details of the general and sectional programs will be found in Part II of this issue. Of more than ordinary importance is the series of lectures on safety in foremanship to be held Tuesday, Wednesday, Thursday and Friday mornings at 8:30. M. J. Kane, plant training engineer for the American Telephone and Telegraph Company, will conduct the classes. Another unusual feature will be a demonstration of dust explosions at the government testing station at Arlington, Va., on Tuesday afternoon, October 4. This demonstration, planned originally as part of the Food Section program, has been opened to all who are interested.

Trophies will be awarded to winners of accident prevention contests in the Marine, Metals, Paper and Pulp, Petroleum, Public Utilities, Rubber and Fleet Owners' Sections. The trophies will be unveiled at the Annual Meeting of Members and presented at sectional meetings.

Those who have not yet written to Council headquarters for reduced fare certificates, are urged to do so promptly. These certificates, which are good for a return trip at one and one-half fare, are good starting September 23 to October 5, with a 30-day return limit. Stop-over privileges can be arranged with the local agent.

NATIONAL SAFETY NEWS

The Wonders of Washington

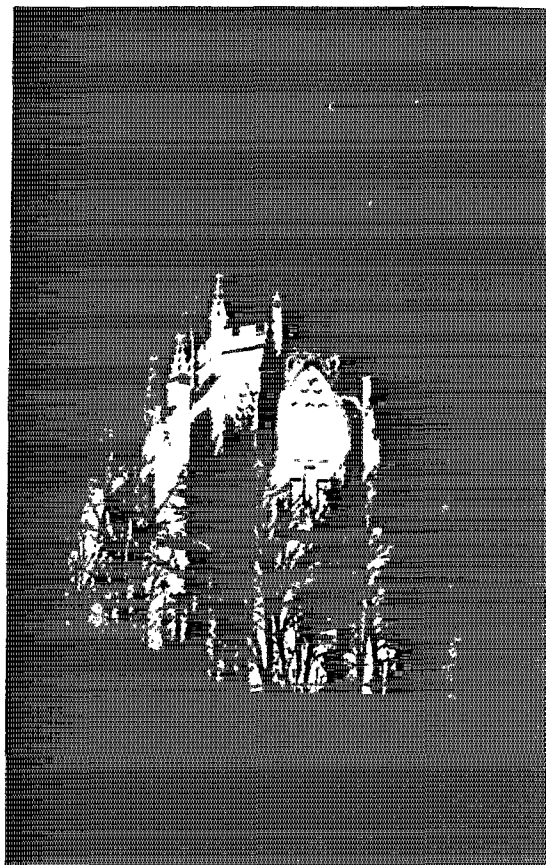
There is always a glamour surrounding a national capitol. Here is the seat of government with its magnificent public buildings; here is the center of a colorful social and diplomatic life which is intriguing to the outsider.

Washington has all of these fascinations for the outsider. It differs from most capitals in that it was planned while others just grew. Many of the old world capitals were centers of government when mythology began to develop into history but Washington was built to house the government of a new nation. In most European countries the capital is also the metropolis, the center of financial and commercial activity for the nation. In Washington, however, the principal business is that of government and other activities are incidental.

Washington has less to interest the antiquarian than many cities. Boston and Philadelphia are richer in historic lore of the more picturesque periods of American history. But in looking over the relics of the barbarous past which have been preserved in the old world one is likely to come to the conclusion that a country is just as well off without too much history.

Washington, however, has seen plenty of history since the beginning of the nineteenth century. The capital was still young when it experienced the ravages of war. Fifty years later hostile forces again threatened the city but it escaped capture. Within the memory of thousands now living, Pennsylvania Avenue has seen the triumphant parades of the veterans of three wars.

Memories of Lincoln abound in Washington. On the site of Ford's Theater, the scene of his assassination, now stands a museum with a large and interesting collection of relics of Lincoln and the Civil War period. And across the Potomac are Alexandria and Mount Vernon with their memories of the first president. Arlington, with its classic amphitheater, the national cemetery and the tomb of the unknown soldier, is also the object

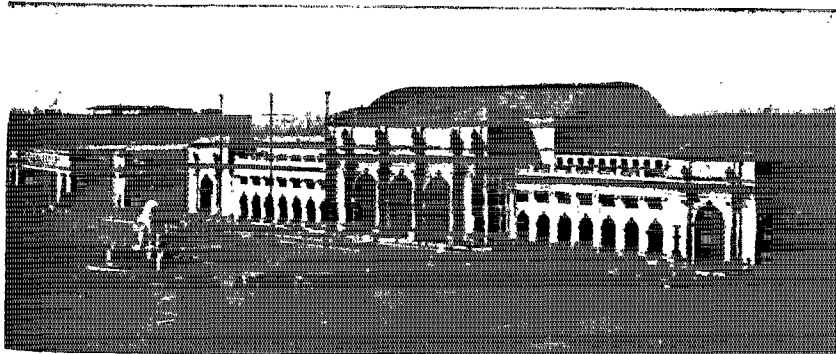


© Harris & Ewing

Located on Mount Saint Alban, the most commanding elevation in the District of Columbia, is Washington Cathedral.

of many a patriotic pilgrimage. Going deeper into Virginia we find Fredericksburg, with more mementos of Washington and of the Civil War, the Wilderness battlefield, and Richmond, the capital of the Confederacy.

Nature provided a site of more than ordinary scenic beauty and man has taken full advantage of it. On the bank of the Potomac has grown a city more magnificent than Washington and Pierre L'Enfant ever visioned. The statesman



The Union Station and Plaza. The visitor's first view of Washington on leaving the station is most impressive.



© Underwood & Underwood

The Wardman Park Hotel where most of the Congress sessions will be held. The Shoreham, the other headquarters hotel, is across the street at the right.

and the architect were a century ahead of their time in their ambitions for the new capital. The broad avenues they laid out were in marked contrast to the narrow thoroughfares of other cities of that day. Yet it is doubtful whether Washington or L'Enfant foresaw the motor age.

And the public buildings! They range from the commanding majesty of the capital and the venerable dignity of the White House to the practical but pleasing modernism of the Department of Commerce building. Among the public buildings is

There are a hundred libraries in Washington but the Congressional Library stands at the top.

one recognized architectural blunder, the State, War and Navy building, an over-ornate survival of a dark age of architecture.

Washington puts her best foot forward. The visitor's first view of the city is inspiring. The Union Station itself is a noble structure in keeping with the architectural standards of the city. Leaving the vast concourse the visitor sees framed between the pillars of the facade the familiar

© Harris & Ewing



Scenic beauty and historic associations combine to make Mount Vernon one of the nation's greatest shrines.

dome of the Capitol—an unforgettable sight. The Union Station Plaza development, not yet completed, is an important part of the city beautiful.

Space does not permit a detailed description of the many sights of Washington. Guide books are readily obtainable and there will be ample opportunities for sightseeing, both for private parties and for the regular tours. However, a few of the outstanding features of the capital might be mentioned here.

Outstanding among the sights of Washington is the U. S. Capitol. Picture post-cards and periodical illustrations have made it the best known building in the United States. Its location on Capitol Hill is superb; it is undoubtedly the most impressive building in Washington, and it is one of the outstanding capitol buildings of the world. The grounds, 60 acres in extent, deserve as much attention as the building itself.

Almost equal to the capitol in importance and interest is the White House. At first designed as the president's home, it has come to be the executive offices of the government. Its history as a governmental building dates back to 1800 when the government was moved from Philadelphia. At that time there were little more than one hundred government employees. Today there are half a million.

A third sight always associated with the capital is the Washington monument. This impressive

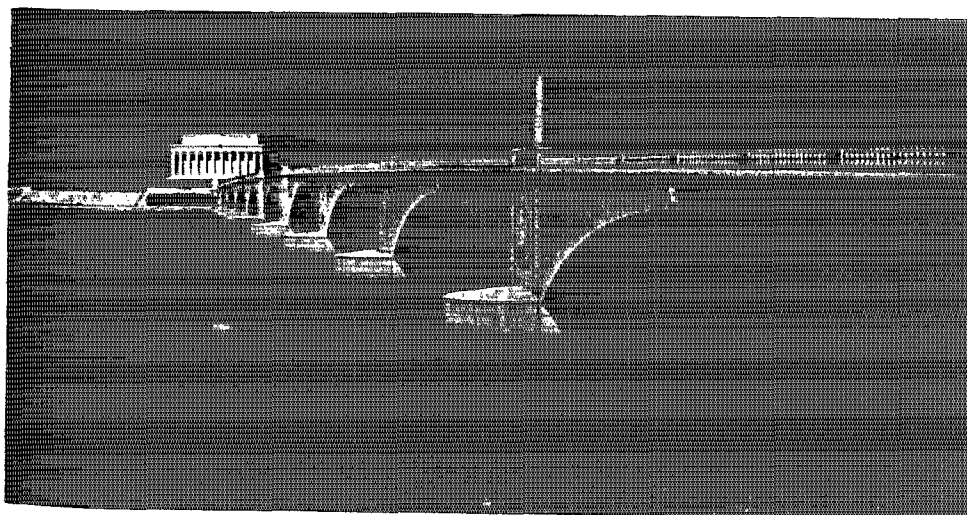


© Underwood & Underwood

obelisk, which may be observed from points miles away, is set in a beautiful park known as Sylvan Theater. The monument rises to a height of 555½ feet and may be ascended either by elevator or by stairway.

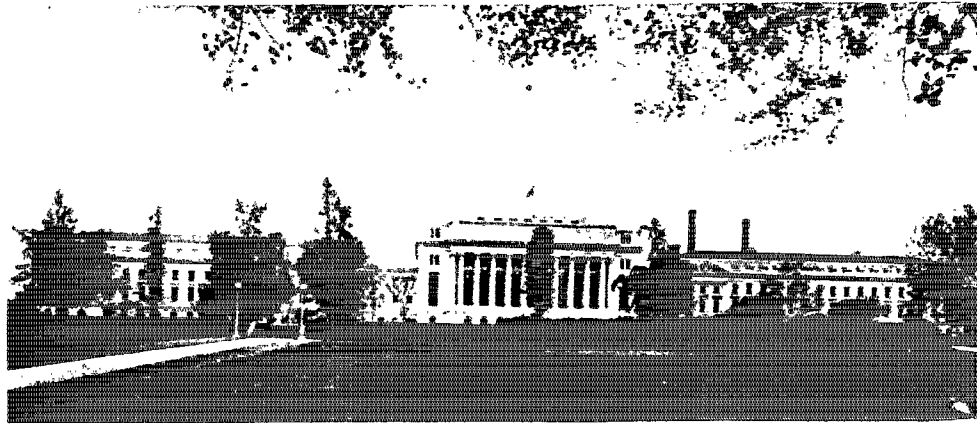
Many departments of the United States government have made important contributions to accident prevention. The safety service of the Bureau of Mines to the mining industry is well known. Its personnel, scattered throughout the country at numerous stations, has been instrumental in saving many lives in mine disasters. Even more important has been its teaching of first aid and mine rescue work in the industry.

The Bureau of Standards, with its unequalled facilities for making tests, has helped to establish safety standards for many materials and safety codes for many industries. The Department of Agriculture has for many years cooperated with



The Arlington Memorial Bridge, with the Lincoln Memorial in the background.

© Harris & Ewing



*The Department
of Agriculture.*

industry in studying the causes of dust explosions and has aided in the development of safety codes for industries confronted with this hazard. In the development of safer transportation, the Interstate Commerce Commission has played a conspicuous part.

The Congressional Library ranks among the great libraries of the world. No library surpasses it in the size of building or in the number of books. Some of the finest mural paintings in the world are to be found in its corridors. It is patronized by persons from all parts of the country who come to Washington to carry on research work, and by many visitors from other countries.

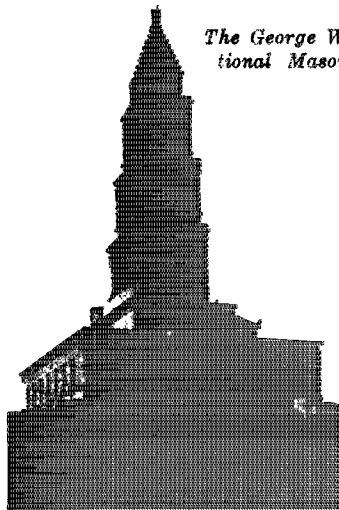
Another important institution in the intellectual life of the capital and of the nation is the Smithsonian Institution group. This group in itself is a vast field for study and research. The buildings of this group are the Smithsonian Institution

proper, the National Museum of Natural History building, the National Museum of Arts and Industries, the Aircraft Building, and the Freer Gallery of Art.

The Lincoln Memorial at Potomac Park with its beautiful grounds and remarkable reflecting pools form one of the great sights of the capital. The Memorial is a classic Grecian structure with a main hall sixty by seventy feet with a colossal statue of Lincoln seated in a chair.

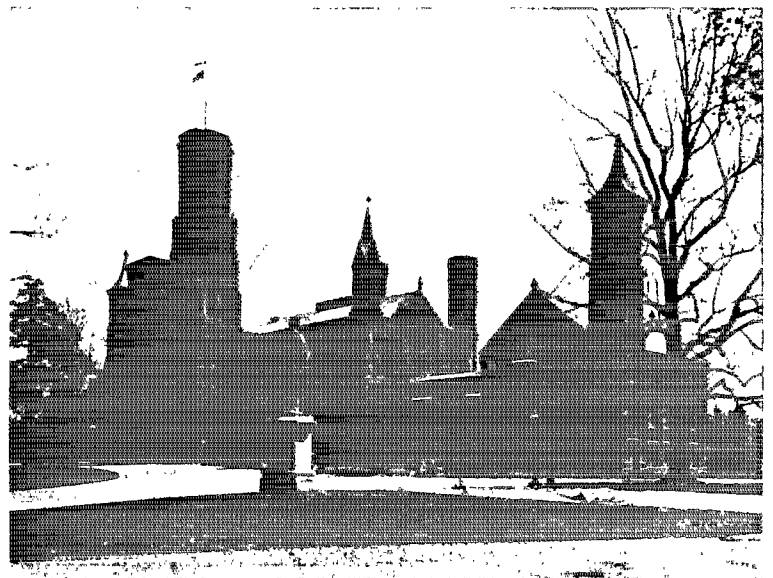
Another of the sights of Potomac Park is the Speedway, one of the most interesting drives in the entire country. From the Speedway the motorist has a view of three thousand cherry trees bordering the Tidal Basin.

Connecting the capital with historic spots in Virginia is the Arlington Bridge, 90 feet wide and 2,150 feet long. Within a few minutes drive is the city of Alexandria which has preserved much of the atmosphere of the past. George



*The George Washington Na-
tional Masonic Memorial.*

The Smithsonian Institution group provides unusual opportunities for research in the arts and sciences. Even a brief visit will add to any person's educational background.



© Underwood & Underwood

The Bureau of Engraving and Printing. Here are printed the postage stamps, currency, passports and government bonds.

Washington's life was thoroughly identified with the life of Alexandria. Here was the church at which he worshipped and the Masonic lodge of which he became the first worshipful master. Many of the old landmarks of revolutionary days have been preserved, and to see the town is to get a glimpse of the early history of the country.

To see the George Washington National Masonic Memorial has been declared by many to be well worth a trip to Washington. Its tower rises more than 300 feet in the air and its beacon light may be seen for many miles.

No trip to Washington is complete without a visit to Mount Vernon. The personality of George Washington still lingers in the buildings and grounds of Mount Vernon. Few locations provide more attractive natural scenery than the view of the river from the porch. Many of the original furnishings have been preserved in the historic mansion. In the side of the hill, overlooking the great sweep of the Potomac, is the last resting place of George and Martha Washington.

The side trip into Virginia will include, of course, a visit to Arlington. In the national cemetery are buried thousands of the nation's dead, men of all ranks whose resting places are marked by simple white headstones to show that they

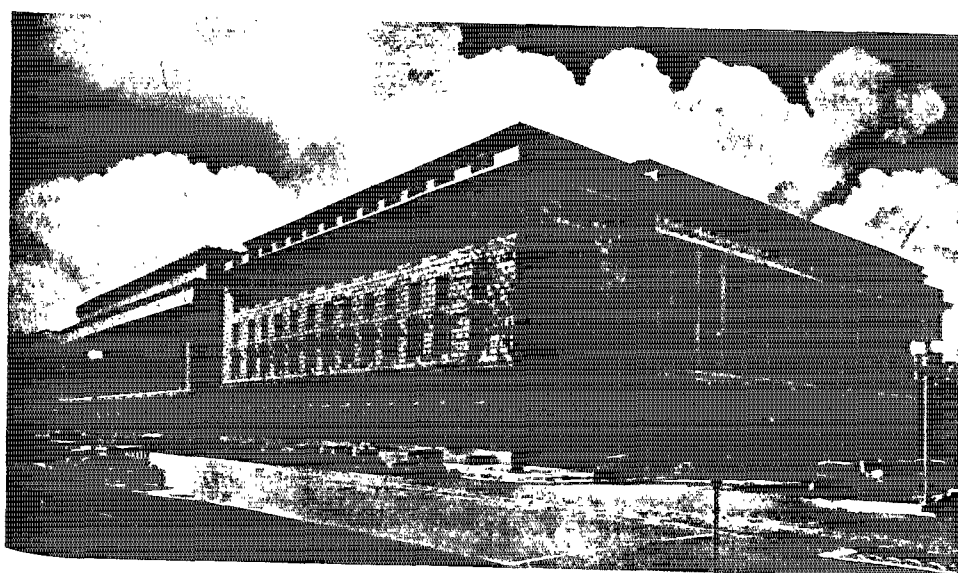


© Harris & Ewing

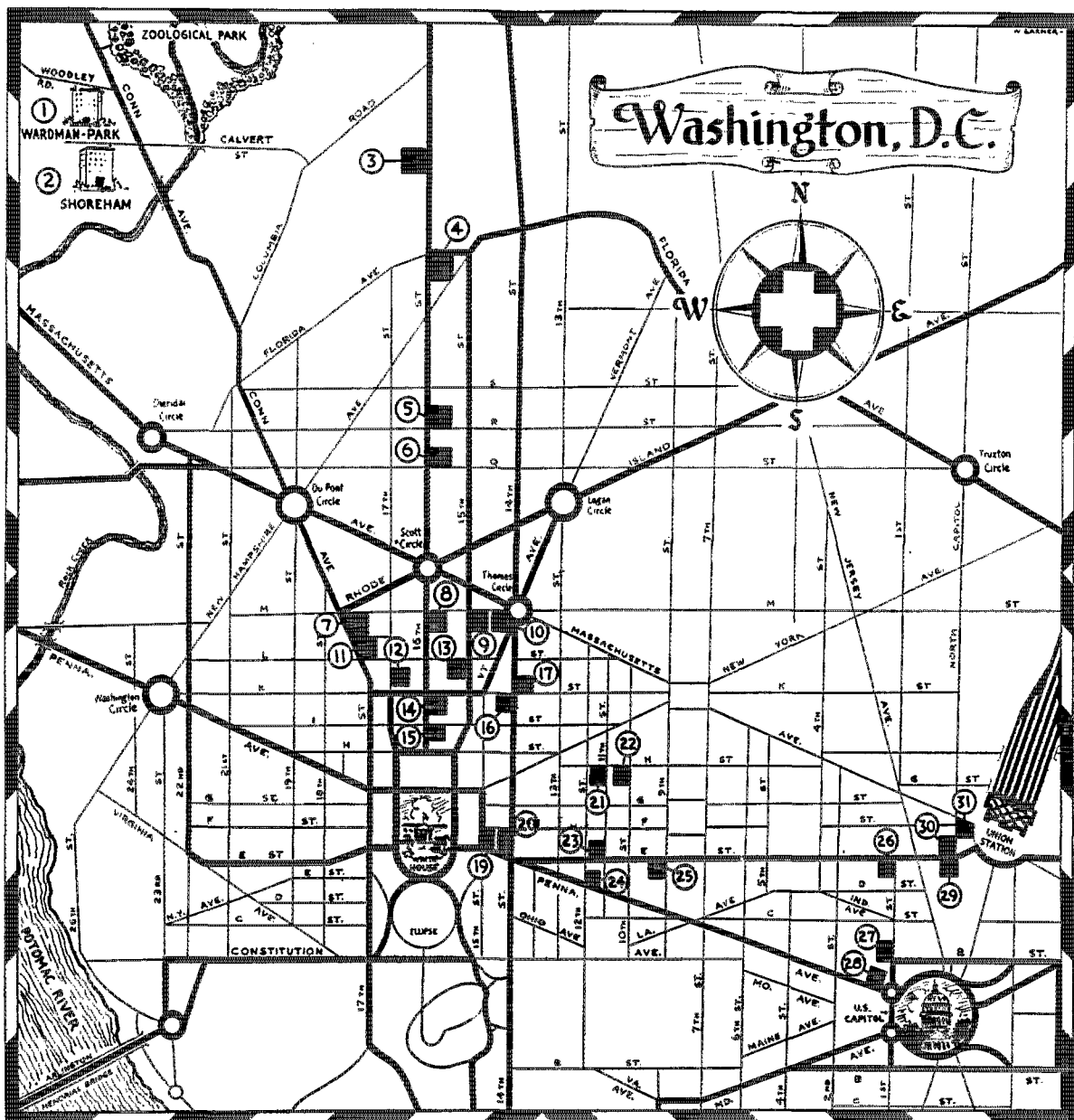
have served their country. On the platform of the majestic amphitheater is the tomb of the unknown soldier which receives the homage of visitors from every country in the world.

The trip back to Washington from Alexandria and Arlington by Fairfax and Great Falls is one of intense interest. Here in Fairfax is the historic old court house of the days of George Washington, and here was the meeting place of the leaders of the revolution. Great Falls is a miniature Niagara in the Potomac River, and its cascades and beautiful park attract thousands annually.

Washington is a city of superlatives. To see it is an important addition to any person's education.



The Department of Commerce Building — the world's largest office building.



HOTELS AND RATES

Rooms with bath only. Numbers refer to the above map.

No.	HOTEL	Single	Double			
1.	Wardman Park	\$4.00	\$6.00	16.	Ambassador	3.50 5.00
2.	Shoreham	4.00	6.00	17.	Hamilton	3.00- 3.50 5.00
3.	Meridian Mansions	4.00	6.00	18.	Powhatan	3.50 6.00
4.	Roosevelt	3.00	4.00	19.	Washington	4.00- 5.00 6.00- 8.00
5.	Chastieton	2.50	4.00	20.	Willard	4.00- 6.00 6.00- 7.00
6.	Cairo		5.00	21.	Annapolis	3.00 5.00
7.	Grafton		6.00	22.	Ebbitt	2.50- 3.00 4.00- 5.00
8.	Martinique	2.50- 3.50	4.00- 5.00	23.	Harrington	2.50- 4.00 3.50- 5.00
9.	Colonial (New)	3.00- 3.50	4.00- 5.00	24.	Raleigh	3.00 4.50
10.	Burlington	3.50	5.00	25.	Houston	2.50- 3.00 4.00- 7.00
11.	Mayflower	4.00- 5.00	6.00- 7.00	26.	Dodge	3.50- 5.00 5.00- 7.00
12.	Blackstone	3.00- 3.50	5.00- 6.00	27.	Driscoll	3.00 5.00
13.	Lee House	3.50	5.00	28.	Winston	3.50 5.00
14.	Carlton	4.00	6.00	29.	Continental	2.50- 3.00 4.00- 5.00
15.	Lafayette	4.00	5.00	30.	Capitol Park	2.50- 3.00 4.00- 5.00
				31.	Commodore	2.50- 4.00 4.00- 6.00

NATIONAL SAFETY NEWS

Head Protection Pays



ANOTHER SERIOUS HEAD INJURY AVERTED!

This miner was caught under a heavy fall of roof which knocked him violently to the ground but his DOUGHBOY HAT saved his head from injury.

M-S-A PROTECTIVE HATS and CAPS Are Reducing Head Injuries

Many of our friends have informed us of unusual instances where the use of M-S-A PROTECTIVE HATS and CAPS have averted serious head injuries . . . No matter what the job may be, if it in any way involves the possibilities of head injuries, we strongly recommend that Adequate Head Protection be provided before work is started.

M-S-A PROTECTIVE HATS and CAPS are available in seven different models. Write for descriptive literature and details.

BE SURE TO SEE THE M-S-A DISPLAY
At the Washington Congress and Exposition

Mine Safety  *Appliances Co.*
Braddock, Thomas and Meade Sts., Pittsburgh, Pa.

"EVERYTHING for MINE and INDUSTRIAL SAFETY"

SEPTEMBER, 1932

Three of the Seven Models of M-S-A Protective Hats and Caps



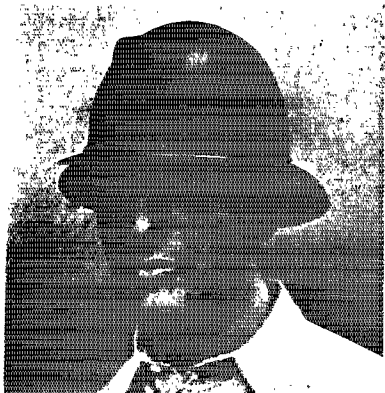
DOUGHBOY HAT

For use in metal mines, in oil field derrick work, for relining refinery stills and construction work in general.



TYPE "B" SKULLGARD

A new, light-weight protective cap developed especially for the coal mining industry.



TYPE "C" SKULLGARD

A new light-weight protective cap, with flexible brim, especially adaptable to metal mining operations.

The Plant Physician's Big Job

By LOYAL A. SHOUDY, M. D.*

Industrial medical supervision means more than the maintenance of plant clinics and the bandaging of cuts and bruises. It means the balancing of the industry, and the physician should be the weighmaster of all human material

THERE is a wide range of opinion concerning the scope of activities of an industrial medical department. Some organizations seem to feel that the doctor's work should be confined to the small clinic which he conducts during the day. Others feel that he should go out into the plant and see what is being done and how it is being done.

I firmly believe that the doctor should go out into the plant. He should know the plant and the requirements of the various operations involved in turning out the final product.

Medical supervision of any industry does not mean merely the maintenance of plant clinics and the bandaging of cuts and bruises. Today it means the balancing of the industry, and the physician should be the master weighman of all human material used in the plant.

Let the medical department be responsible for:

1. Plant sanitation and hygiene (advisory).
2. Physical examination before employment and placement of men from the standpoint of physical fitness.
3. Health committee (determination of fitness for work and education in personal hygiene).
4. Hospitals.
5. Visiting nurses.

The relation of plant sanitation and hygiene to accidents is the relation of direct proportion. Under hygiene, I class preventable diseases. We are aware that sickness causes more lost-time from the average plant than accidents, and I feel that in a great many cases sickness, like accident, could be prevented.

*Chief of Medical Service, Bethlehem Steel Corporation. (Abstract of an address before the Metropolitan Chapter, American Society of Safety Engineers—Engineering Section, National Safety Council.)

The cost of preventable illness is appalling. According to the U. S. Commission of Industrial Relations, the average worker loses about nine days each year by sickness alone. The loss to thirty million workers, then, figuring wages at only \$2 per day, plus \$1 for medical attention, amounts to over ninety million dollars annually. To this add the effect of the illness upon the man's vigor and efficiency, upon the welfare of his family, and upon the efficiency of the industry in which he is engaged. These figures point out, more or less, the loss in dollars and cents, but to be properly understood you must put it all in terms of human suffering.

The human scrap heap cannot be melted over and turned into a new form. Human scrap must remain a by-product of the industry. Have not these men who give their daily toil to the industry some call upon that industry to give them safe working conditions?

Four Supervision Factors

Medical supervision of plant sanitation and hygiene should look after:

1. The occupational hazards of disease.
 - (a) Workers in harmful substances;
 - (b) Workers under harmful conditions.
2. Irregularity of employment.
3. Unhealthful working conditions.
4. Mental working conditions.

Scarcely any line of work in modern manufacturing is entirely free from the danger of industrial poisoning. If the shop is filled with fumes or gases, or the air laden with dust, or the mental attitude of the boss is wrong, is it right that men should be compelled to work in these places and cause accidents to their health? If the craneman, perched high above where the rising smoke and fumes fill

his cage and stifle him, should start his crane too soon and injure some one below, is he the cause of the accident? Can a man give his best when working under these conditions—or when his boss drives and cusses him? If a man breathes fumes and dust for six hours, is it any wonder that accidents occur?

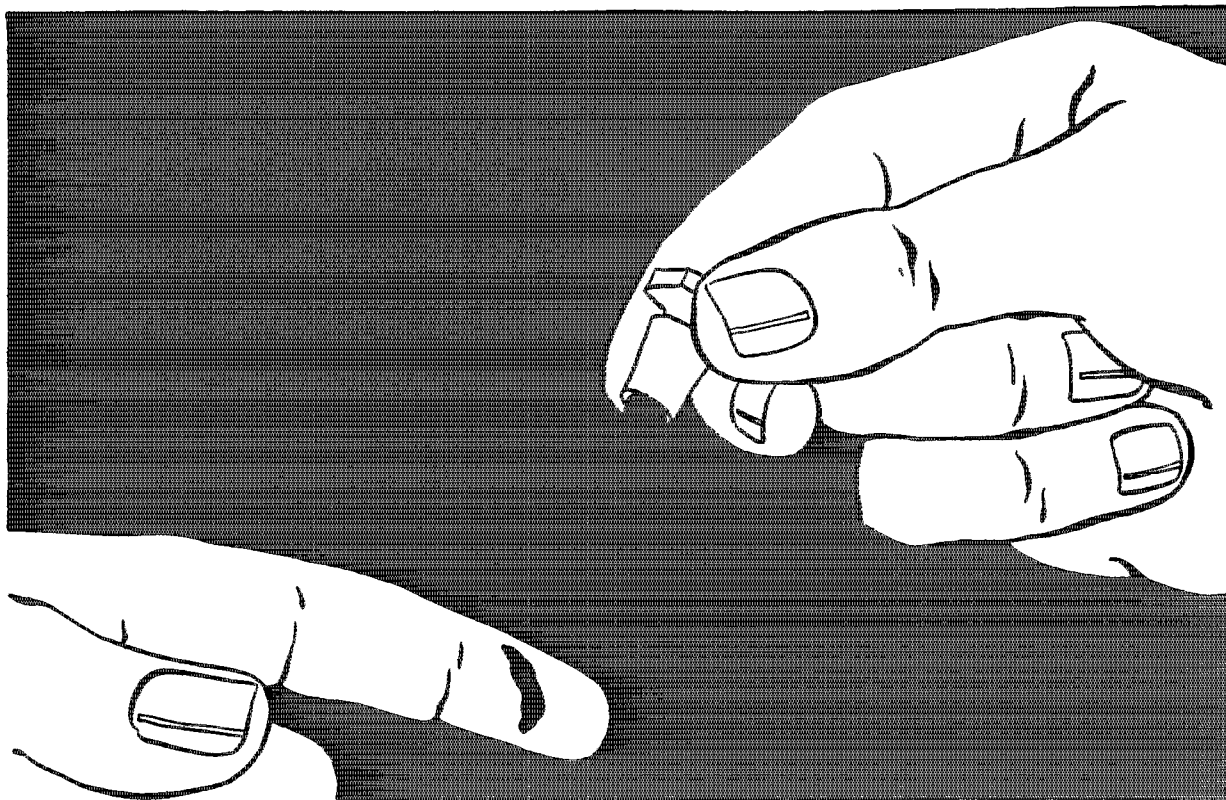
These Lead to Accidents

How can we prevent all this? By proper supervision. The results will be direct. Proper supervision will cut down the list of these conditions. It will remove dust and fumes from the worker at the first signs of danger, and will place all known methods of protection around him.

Harmful conditions—bad ventilation, eye strain, muscle strain, nerve strain—these all bear directly on accidents. For example, a worker, overheated, passes out into the cold of a winter day and develops pneumonia. On recovery he is anxious to return, and does so too soon. His heart and lungs are not in condition to withstand the needs of the body. He becomes fatigued, falls and strikes his head on the floor or some object. The result—a fractured skull, an industrial accident; and in direct relation to medical supervision, because if medical supervision is complete, such a man will not return to work after sickness without a permit from the plant physician.

Fatigue is an important factor in industrial accidents. It may be caused by long hours, poor ventilation, noise, or excessive effort. Trying to maintain too fast a pace for long periods produces body waste products more rapidly than they can be removed, followed by exhaustion of the poisoned body cells. Then comes lack of physiological function—and accidents. It is always a question, of course, just how far medical supervision can go in seeing that conditions of work do not endanger employees.

Foremen often want to push the worker to faster speed, or hold him on for an extra shift, failing to realize



First Aid To The Injured—Mercurochrome!

A FEW drops of red prevention (Mercurochrome) will safeguard scratches, minor cuts and skin abrasions from dangerous infections and provide an effective prophylactic treatment. Mercurochrome is for general use as an efficient antiseptic.

Mercurochrome does not burn, irritate or injure tissue in open wounds. The stain shows clearly where the germicide has been applied and also fixes the bactericidal agent in the field for a relatively permanent period.

We shall be glad to send a free sample of Mercurochrome in the handy applicator bottle. Use will convince you of its superior quality.

HYNSON, WESTCOTT & DUNNING

Incorporated
BALTIMORE, MARYLAND

HYNSON, WESTCOTT & DUNNING, Inc.
Dept. S, Baltimore, Md.

Gentlemen: Please send me free Mercurochrome Applicator Bottle for personal use.

Name
Company
Address

that there is a limit to a man's working capacity. It is hard for the doctor to stop such practice, but he can, by working through the safety director, prevent this and other injurious customs. If the doctor has talked over such situations with the safety director, it will seldom happen that, when men are working in pairs, a heavy and a light man will be put together, or that boys are doing men's work.

Hazards May Be Lessened

Granted that many of these evils are bound to exist, then the relation of medical supervision must be to the end that the best adjustments possible shall be obtained. In places where dust and fumes are necessarily present, medical supervision should provide proper coverage for the mouth and nose, or remove or lessen the hazard. A study of the available statistics on the effects of dust and fumes is convincing, that if you will provide the proper protection you will lessen the accidents and loss of life in this field.

One of the most serious problems bearing directly on health and accidents in the plant is the hiring and firing of men. This is an expensive business, bad alike for the industry and the worker. Industry should investigate the labor turnover and ascertain whether it really costs as much or more under the present system to fire as to hire men. Find out if it is not better business to fit the man to the job than the job to the man.

Employment and medical supervision as to physical examination go hand in hand. Under the usual system of employment, when a man applies for a job, if he can answer a few questions about previous experience, he is hired and placed at work. What is the result? He may prove physically fit and survive, or he may not. In some cases, too, this man may have been discharged the previous day from some other department in the same large plant, and for good reason. Suppose this applicant has a slight enlargement indicative of hernia, but is placed on a job where heavy lifting is required. The result is an accident—hernia. With medical supervision, physical examination would have prevented this.

Again, the applicant applies and is given the once-over by the employ-

ment bureau and passes on to the shop, perhaps as crane man. No one asks about eyesight or knows that his vision is far below normal. Perhaps he does not realize this himself. He goes on the job, and through his poor vision his crane goes too far, or not far enough, so that men below are struck. A good system of medical supervision and physical examination would have prevented this.

Again, a man with a cardiac condition is looked over, the usual questions asked, and he is passed on to the shop. The foreman needs men; true, but he needs efficient men, suited for the job. The cardiac applicant goes to work, and in his desire to make good, overdoes himself, falls. There is a regrettable accident.

Physical examination in relation to employment will:

1. Prevent new employees from bringing contagious diseases into the factory.
2. Keep out grossly defective men whose defects make them unfit for any job.
3. Point out defects to the new man and help him to remedy them and to increase his efficiency.
4. Fit the man to the job.

This question of physical examination has been much discussed, and rightly so. It is really the man's introduction to his job; and here, with the right physician doing the examination, much of the health work and much of the accident prevention work can be put across.

Labor Turnover Diminished

Medical examinations are of value in reducing labor turnover which is particularly high in hazardous occupations. I have found that when you provide medical examination and watch for signs that point to industrial hazards—removing workers who may be exposed to lead poisoning, for example, to other departments upon their showing signs of blood disturbances such as anemia, and not waiting for the occurrence of marks and unmistakable trouble—labor turnover is diminished. Employees come to know and appreciate that they are watched over with medical foresight. But, above all, medical examination throws light upon factory conditions that menace health and safety.

The idea of pre-employment physical examinations is spreading from the larger industrial groups into those

with relatively small personnel. This is true in spite of the difficulty of determining standard physical requirements. Such standards will vary according to requirements of the several industries and even the jobs within the industry. The impairments of any particular individual at the time of examination may be grouped, for simplicity, under two headings:

1. Minor impairments (correctable and non-correctable).
2. Major impairments (correctable and non-correctable).

Difficult Social Problems

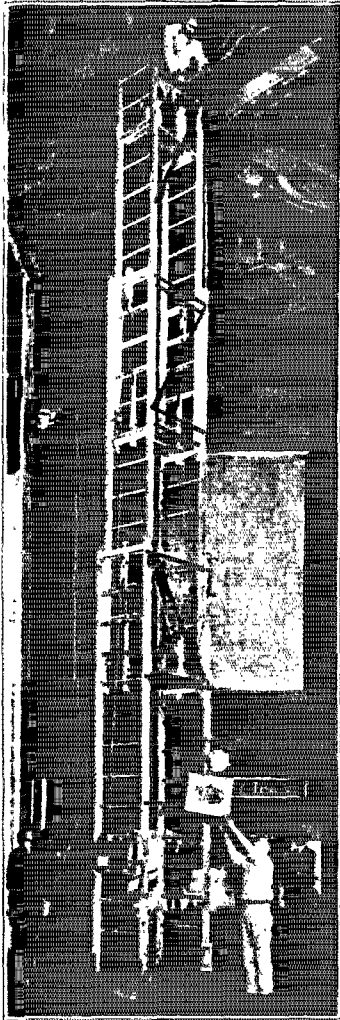
It is a general rule in the course of pre-employment examinations, when physical or mental conditions are found indicating the person to be a menace to himself or others, to property or service, that employment should not be recommended. But there may be another answer to this, where the interruption or modification of the employment due to infirmities would not involve other employees, property or service. The decision not to recommend employment is really one of the hardest social problems we have, and industry must realize that a part of the community burden of idleness must be industrially borne.

You may find that the single pre-employment examination is only a part of the answer to physical questions concerning the employee. This is particularly evident through consideration of the group of major impairments. I am fully convinced that the physical examination for employment is of greater value when you have also the so-called periodical examination and a check on the man, both from his standpoint and that of the industry.

The part played by the plant clinic and the first-aid work depends very much upon the ability of the personnel. The right doctor and the right nurse can go far in helping the safety department in its accident prevention program. Render skillful treatment in any accidents that occur, and then impress upon the man to be careful that the thing does not happen again. Treatment should be such and the lesson be put over in such a way that he will not allow small wounds to become infected and that he will keep small accidents small. The clinic presents the doctor with many opportunities for safety teaching, both as to mechanical and physical conditions.

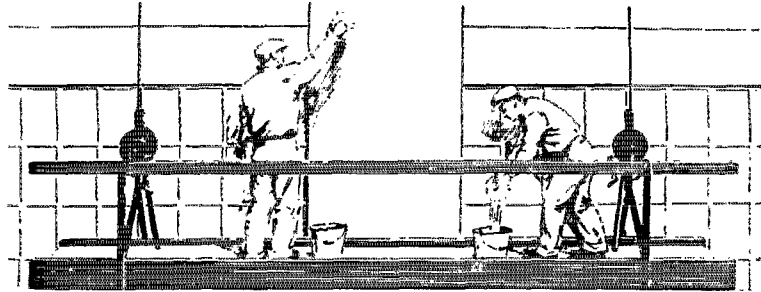
(Please turn to page 75.)

SAFE FOOTING



by VERTICAL
EXTENSION

Gold Medal
Portable
Telescoping
Tower

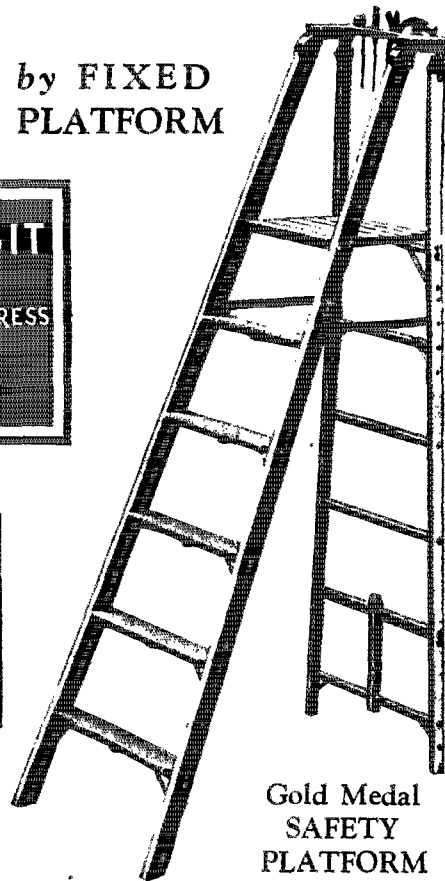
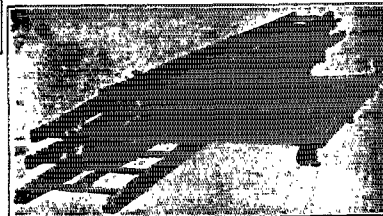


by SUSPENSION from Galvanized Steel Cables

Gold Medal Junior
Swinging Scaffold

by FIXED
PLATFORM

SEE OUR EXHIBIT
AT THE
NATIONAL SAFETY CONGRESS
BOOTH 51



Gold Medal
SAFETY
PLATFORM
LADDER

Gold Medal
Safe Ladders and Scaffolding for Every Purpose

THE PATENT SCAFFOLDING COMPANY

Chicago
1550 Dayton St.

Long Island City, N. Y.
3821 Sherman Street

Boston

Philadelphia

Atlanta

Pittsburgh

St. Louis

Delinquency or Disease?

By NELS A. NELSON, M. D.*

Those who suffer from venereal diseases must be accepted as sick people who may be saved to industry instead of moral driftwood to be cast into discard

WHILE there is nothing definitely known concerning the prevalence of gonorrhea and syphilis in industry, and no accurate estimate in figures can be made as to what these two diseases may be costing industry, it seems perfectly sound to assume that they are responsible for enormous economic loss.

It has been attempted to estimate the cost to industry of these diseases on a basis similar to loss of time in the army due to these infections. Inasmuch, however, as discovery of infection in soldiers and their removal from their occupations until cured, whether they like it or not, can be accomplished very effectively, it is scarcely fair to apply estimates of time lost in the army to time lost in the civil industrial population, where individuals can and do easily conceal their infections and ordinarily keep on working for a long time in spite of them.

Therefore, the only practical way to judge just how prevalent syphilis and gonorrhea may be in industry must necessarily be based on statistics concerning these diseases in the general population. We know that, inadequately reported as they are, gonorrhea and syphilis are on the face of reports each more prevalent than any other communicable disease except perhaps the common cold and its complications. We know that probably one out of every ten persons in the country has syphilis and that it is believed by competent authorities that the majority of men have had, have, or will have gonorrhea at some time during their lives.

We know that about a million people are constantly at any given time under treatment for one of these diseases, and that 90 per cent of the reported cases are in the group between 15 and 40 years of age. It

must be evident that that part of the population which goes to make up the majority of employees in industry—namely, the age group between 15 and 40 years—must be suffering the most.

Knowing the disastrous results to the individual of untreated or inadequately treated venereal disease, we can appreciate the loss which must be borne by industry through these diseases in terms of turnover, time lost due to actual incapacity and decrease in efficiency. Whether or not there is a direct loss to industry in terms of compensation paid for accidents or unreasonably prolonged illness due to these infections, cannot be determined until industry, through its insurance companies, will compile available statistics.

The most important first step in doing something about this problem must be the creation of a new attitude toward those who are afflicted. It is too generally believed that these diseases are synonymous with sin. There are, of course, innumerable examples of innocently acquired syphilis, such as congenital infections, infections of nurses, doctors and dentists in pursuit of their professions, infections through kissing, etc., and of innocent infections with both diseases that result through marriage. Consequently, it is dangerous and unfair to assume in any given case that moral delinquency has been the basis of infection.

Many industrial sick benefit agencies provide that benefits will be paid for any condition except such as arises as the result of "indiscretion" on the part of the employee. Many of our ills result from indiscretion, but this is interpreted to apply practically exclusively to syphilis or gonorrhea. So long as all venereal diseases are considered to be the result of moral delinquency and are looked upon as synonyms of immorality instead of as diseases, there will be little progress

toward any solution of the economic problem which they present.

So long as an employee is in danger of being discharged if he is discovered to have gonorrhea or syphilis, or if he applies for help to get cured, there will be no progress made by industry in any attempt to measure the cost to industry of these two diseases. As one industrial physician in a certain large organization expressed it, "the general disposition . . . to accept immediate dismissal under whatever disguising pretext as the proper method of dealing with known or suspected venereal disease is a sure means of keeping in concealment existing cases of the disease and of rendering it impossible for a health service to meet its responsibility for this particular health problem of the organization."

Thus, while we cannot measure the cost to industry of gonorrhea and syphilis, we can be certain that both diseases are widely prevalent in industry; that common sense would indicate that they are responsible for enormous economic loss; and that any approach to the solution of the problem first requires a right-about-face in attitude toward those who suffer with these diseases, and their acceptance as sick people who may be saved to industry by proper and adequate care, rather than as moral driftwood which may be tossed into the discard.

One Thousand Syracuse Youths Learn to Swim

THE annual "Learn-to-Swim" campaign conducted by the Syracuse Chamber of Commerce, Syracuse, N. Y., was recently held with its usual success and 1,059 persons were taught to swim. All were boys and girls, with the exception of 29. These campaigns have been conducted during four successive years, and it is estimated that non-swimmers of school age in the community now number less than one thousand out of a total of 40,000 school children. Syracuse enjoys an especially low drowning rate.

The girls' swimming classes during the last year far outnumbered the boys' classes, 574 girls being taught to swim as compared with 456 boys. The success of the girls' classes was due to an efficient corps of volunteer instructresses recruited from the local Y. W. C. A.

NATIONAL SAFETY NEWS

*Massachusetts Department of Health, Boston, Mass. Abstract of an address before the Engineering Section, Massachusetts Safety Council.

INLAND 4-WAY FLOOR PLATE

(PATENT APPLIED FOR)

Every Advantage of Any
Steel Plate . . . And Some
You Cannot Find Elsewhere

4-WAY SAFETY

Inland 4-Way Plate is non-skid no matter at what angle a foot strikes it. This sure-footed traction makes Inland 4-Way Plate particularly safe for working platforms, stairs, and stairway landings.

4-WAY MATCHING

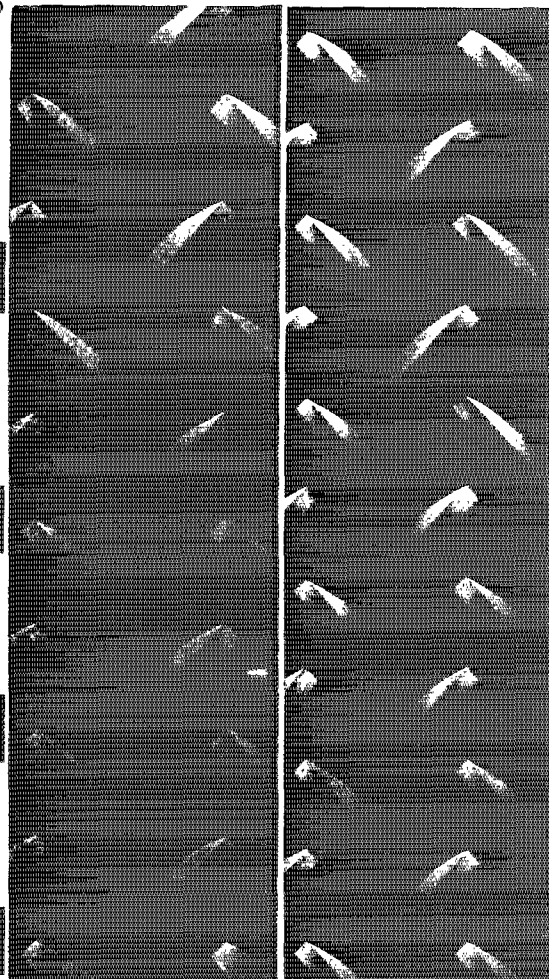
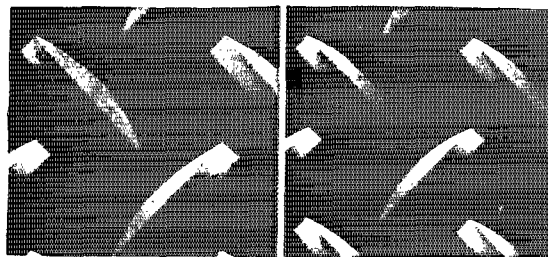
Inland 4-Way Plate matches without waste whether laid end to end—side to side—or side to end. Even small pieces can be used advantageously.

4-WAY CLEANING

Inland Plate can be quickly swept or scrubbed clean in any direction most convenient for waste disposal. It also drains readily 4-ways.

LIGHTER Per FOOT

The new and better arrangement of projections permit lighter weight per square foot of any given gage—without jeopardizing strength. And because of the quality steel used, it can be bent as required. INLAND STEEL COMPANY, 38 S. Dearborn Street, Chicago, Ill.



Inland 4-Way Floor
Plate (Large Pattern)

Thicknesses from
3/16" to 1 1/4"

Inland 4-Way Floor
Plate (Small Pattern)

Thicknesses from
No. 12 gage to 3/16"

INLAND
ABLE SERVANT OF THE CENTRAL WEST
STEEL

Sheets Strip Plates
Bands Structural Piling

Rails Track Accessories
Bars Rivets Billets

THE BULLETIN BOARD

Conducted by STAN KERSHAW

A page devoted to the problems of the men who maintain the show windows of the safety movement

The Posters This Month

IF YOU will scan the poster pages carefully you will notice several posters this month that are somewhat out of the ordinary. In some of these the basic idea is unusual while others have illustrations that set them apart from the general run.

It is interesting to watch for the unusual in the monthly posters. It is even more interesting to watch them grow as they go through the process of development, but unfortunately this opportunity is limited to the artists and photographers and an occasional visitor who might happen to stop in just at the right time.

There is no set formula by which every poster can be made a bell-ringer. Too many things enter into the process. First comes the idea, then a general interpretation of the idea into pictorial display. Following this comes the preparation of suitable copy, then a suitable illustration and after this the execution of the art or photographic work. After all this comes the work of making the engravings, and last, but far from the least in importance, is the printing.

This month your attention is particularly directed to the following:

No. 4532—A most unusual treatment of the subject of falling which as you know is among the greatest causes of accidents. The idea for this poster "popped" right out of a clear sky and immediately the remark was overheard: "Why didn't we think of that before?" It personalizes the terrifying sensation of falling through space.

No. 4530—There have been so many demands for posters covering the subject of housekeeping in a general way that it seemed desirable to produce an additional one of such a general nature that it could be used anywhere and here it is.

No. 4543—Here is a new method of dealing with the subject of nails. The poster is strong by virtue of the direct message, the unusual attention-getting photograph and the simplicity of treatment.



A suggested bulletin board display using posters 4543 and 4446. It took but a few minutes to prepare it.

No. 4545—For a long time, slippery floors have, in some places, been a difficult problem for the safety man. It has been possible to overcome some of these problems by mechanical alterations or by special housekeeping methods. However, there are still many conditions for which the answer has not yet been found. However, in this poster there is a useful suggestion, "Step Short Paces," that may be the means of preventing many a serious fall.

No. 4537—Many members have wanted to see the series of instructional first-aid posters extended so the treatment of wounds to prevent infections has been covered in concise style in this poster. This now makes three posters of this kind available. No. 2778-B on resuscitation, No. 1984-B on pressure points to stop bleeding and No. 4537 on wounds. They are particularly good to give to individual employees and to put in first-aid kits.

No. 4550—The subject of eye protection has been treated in so many different ways that it takes something unusual to stand out prominently and capture attention, but it is believed that this poster will do it. The man and dog used to illustrate it were made out of pipe cleaners. Perhaps it would be a good stunt to offer a prize for the best safety scene depicted similarly with "pipe-cleaner sculpture."

Give the Bulletin Board a Break

IF IT were possible to post an authentic notice on the bulletin board today saying there will be a general increase in pay next pay day or a hundred employees will return to work immediately it would make little difference where the board was located the news would spread through the organization with the speed of electricity.

This provides food for thought. When it is possible to disperse information so effectively and so rapidly through a bulletin board on a special occasion it is equally possible to use important announcements and news items at other times as a means of drawing employees to one or more central places to find out what is going on.

When management recognizes the principle involved in this procedure and makes such announcements and posts such news items on the bulletin boards exclusively it with certainty puts these boards in a high plane of importance in the mind of every employee and the safety posters and other educational items are given that much more of an opportunity of getting their messages across.

* * *

Parker Holden, President, Holden, McKinney & Clarke, Inc., Detroit says: "In posters, as in any other type of advertising there are four objectives:

1. To get attention
2. To get interest
3. To create desire
4. To get action.

Remember these four points the next time you issue a home-made poster.

* * *

Ever try to read a safety poster in the dark. Keep all bulletin boards well lighted.

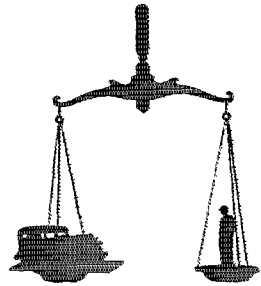
NATIONAL SAFETY NEWS

THERE IS NO MAGIC
ABOUT SAFETY
JUST COMMON SENSE



NATIONAL SAFETY COUNCIL

WHICH
IS SAFER
YOU OR
YOUR CAR

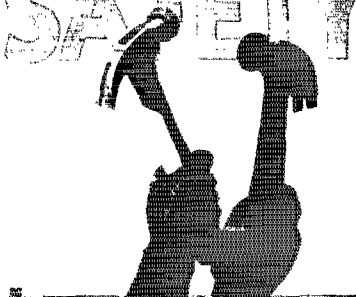


NATIONAL SAFETY COUNCIL

SAFETY
The Guardian



KEEP
HAMMERING
AWAY AT
SAFETY



NATIONAL SAFETY COUNCIL

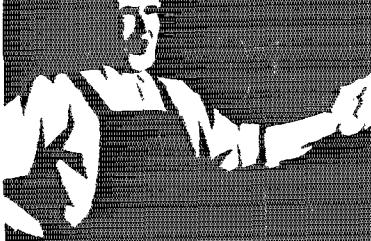
EYES



TAKE CARE OF THEM



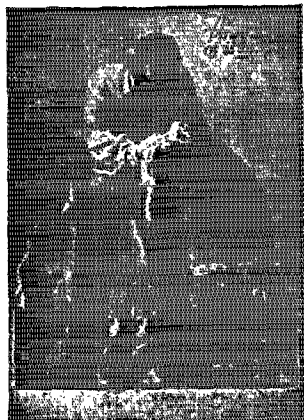
BROADCAST



WHAT YOU KNOW
about SAFETY

Large Size

No. A 21



Copyright 1934 by National Safety Council



GO SLOW



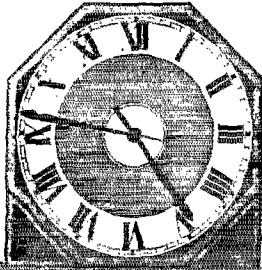
SOUND HORN
at blind corners
and
proceed cautiously



STOP
LOOK BOTH WAYS
See that a train is
not approaching
before crossing
railroad tracks

NATIONAL SAFETY COUNCIL

EVERY 24 Hours..



266 MILLION ACCIDENTS
DURING THE LAST YEAR

NATIONAL SAFETY COUNCIL

Take CARE of your CHANCES

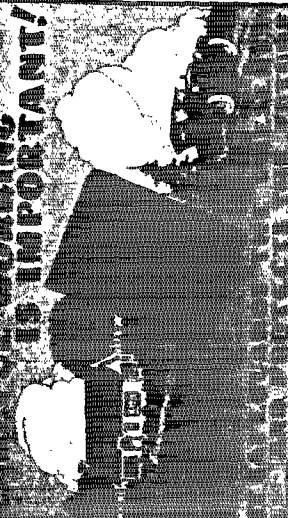


NATIONAL SAFETY COUNCIL

ANY TIME MAY BE TRAIN TIME AT A RAILROAD CROSSING

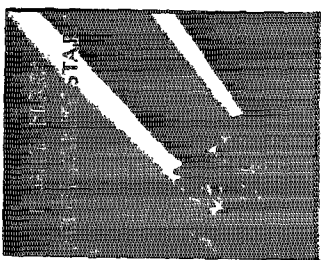
NATIONAL SAFETY COUNCIL

YOUR WORKING IS IMPORTANT!



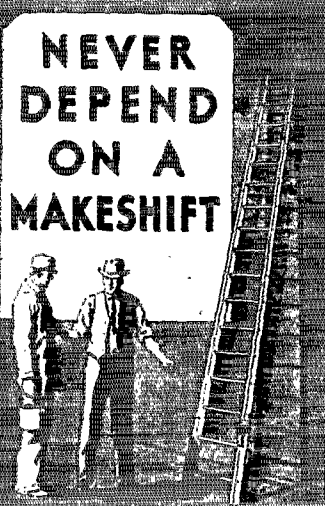
NATIONAL SAFETY COUNCIL

ACCIDENTS ARE SOMEONE'S FAULT DON'T LET THEM BE YOURS



NATIONAL SAFETY COUNCIL

NEVER DEPEND ON A MAKESHIFT



NATIONAL SAFETY COUNCIL

YOU NEED YOUR FEET



WEAR SAFETY SHOES

NATIONAL SAFETY COUNCIL

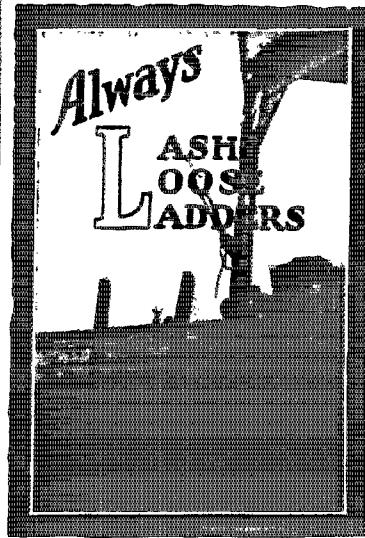
REMOVE THEM FOR WORK



NATIONAL SAFETY COUNCIL



NATIONAL SAFETY COUNCIL



Things a good mechanic does not do



Use tools with mushroomed heads

NATIONAL SAFETY COUNCIL

FIRST AID FOR WOUNDS

The following instructions must not be considered a complete course in the treatment of wounds. However, everyone should have at least a basic knowledge of what to do and what not to do when an injury occurs.

ANY break in the skin is a wound and is liable to become infected.

The best way to prevent infection is to make sure the wound is properly cared for.

First stop bleeding, then apply a sterile bandage or pad.

Never touch a wound with the fingers under any circumstances.

Let the nurse or doctor do what cleaning of the wound is necessary.

After ask your doctor for his recommendation on the kind of antibiotic to be kept on hand.

Never wrap a wound with ordinary cloth except in extreme emergency. If medical gauze is not obtainable, search some white cloth in a flame and apply.

Never put adhesive tape on a wound - it causes festering. Use it only to keep bandages or dressings in place.

Do not attempt to remove a splinter with the blade of a knife. Have the splinter removed by a nurse or a doctor.

NATIONAL SAFETY COUNCIL



YOU CAN'T EARN A LIVING IN THE RUINS



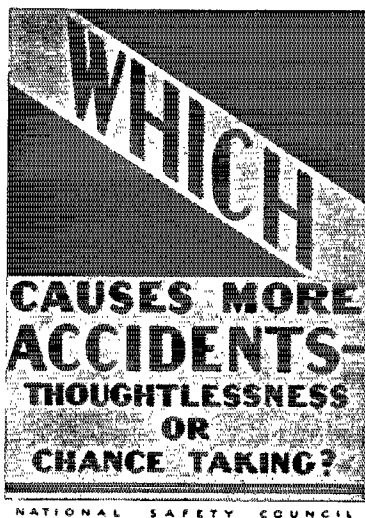
YOU CAN PREVENT FIRES

NATIONAL SAFETY COUNCIL

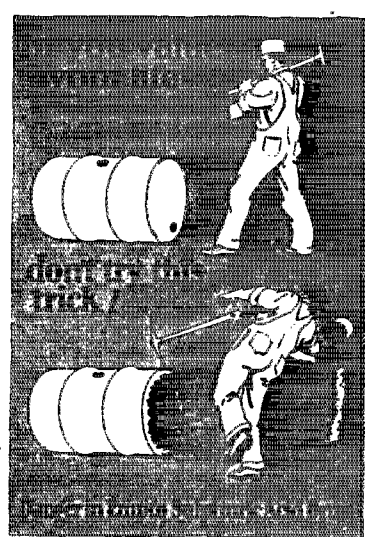
GOOD HOUSEKEEPING

Curtains waste
Saves time
Conserves health
Prevents fires
Improves morale
Promotes happiness
and
BREEDS SAFETY

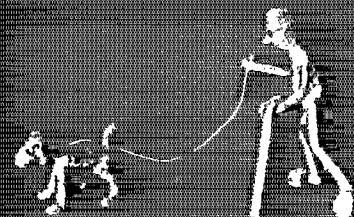
NATIONAL SAFETY COUNCIL



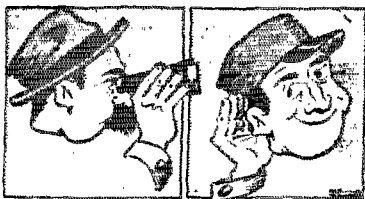
NATIONAL SAFETY COUNCIL



Goggles, he forgot to wear
And now you see his plight
A little thought - A little care
And he'd have saved his sight.

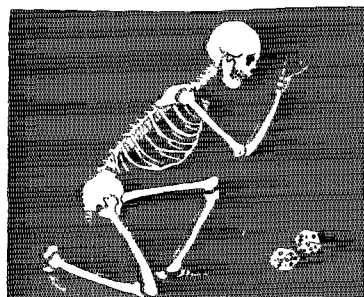


NATIONAL SAFETY COUNCIL



SEE ALL-HEAR ALL
**KNOW
ALL ABOUT
SAFETY**

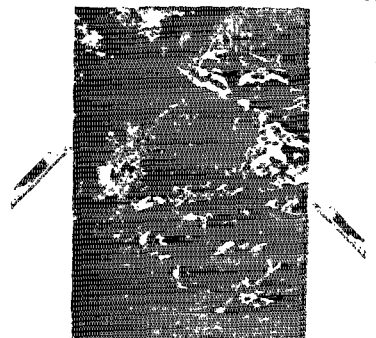
NATIONAL SAFETY COUNCIL



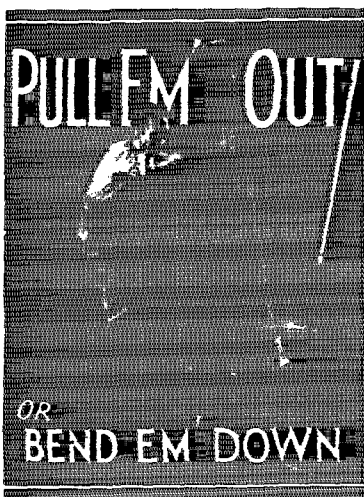
NEVER
TAKE CHANCES
WITH THIS FELLOW
HE SHOTS NATURALS

NATIONAL SAFETY COUNCIL

THE SOONER HE
GETS **OUT** FROM
UNDER THE DIPPER



THE SAFER IT WILL
BE FOR HIM



OR
BEND 'EM DOWN

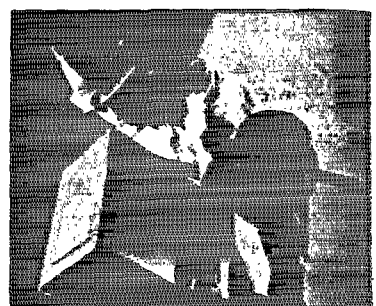
NATIONAL SAFETY COUNCIL



ONE STRIKE
AND YOU'RE
OUT

STAND TO ONE SIDE

NATIONAL SAFETY COUNCIL



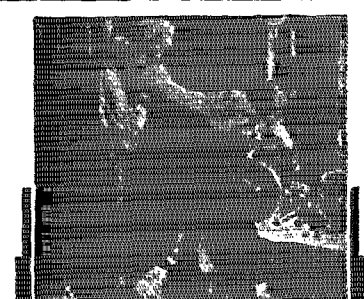
WHEN LIFTING
LIFT THE RIGHT WAY
and THE RIGHT WEIGHT
YOU KNOW HOW

NATIONAL SAFETY COUNCIL



**HEADACHES
ARE
WARNINGS
OF
SOMETHING
WRONG**
**FIND
THE
CAUSE**

NATIONAL SAFETY COUNCIL



"PULLING FOR
DEAR LIFE"
LOOSE CLOTHES
AND A REVOLVING
DRILL DID THIS

NATIONAL SAFETY COUNCIL

**CLEAN UP
FOR
SAFETY**



NATIONAL SAFETY COUNCIL

EVER DREAM YOU WERE FALLING?



BE CAREFUL
LEST YOUR DREAMS COME TRUE

NATIONAL SAFETY COUNCIL



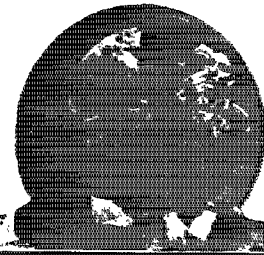
A
short cut
to the
Hospital



Riding Conveyors Often
Means Mangled Feet

"WORST AID"

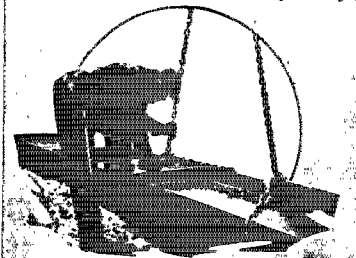
*There are surer ways of getting
your eye into trouble-but Not Many*



**NEVER TRUST EYES TO
ANYONE BUT A DOCTOR**

NATIONAL SAFETY COUNCIL

**GOOD
WORK**

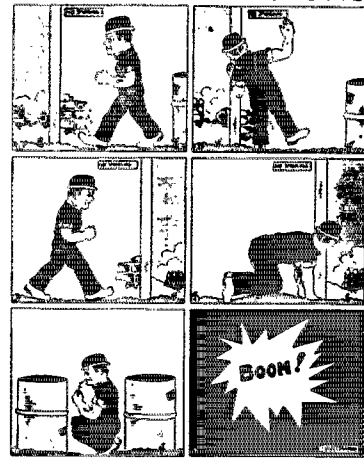


**HOOKS POINTING
OUTWARD ARE LESS
APT TO SLIP THAN IF
THEY POINT INWARD**

NATIONAL SAFETY COUNCIL



**IT'S A GOOD SIGN
TO BELIEVE IN SIGNS**



NATIONAL SAFETY COUNCIL

**WE HAVE YET TO
FIND THE MAN
WHO REGRETS
BEING CAREFUL**

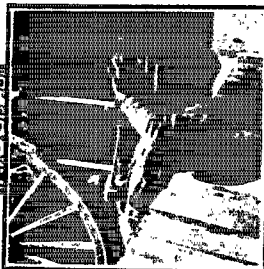


NATIONAL SAFETY COUNCIL

A TIGHT

PINCH

**NEVER GET BETWEEN
WAGON AND PLATFORM**



**MAKE
EXERCISING
CARE
ONE OF
YOUR
DAILY
DOZEN**

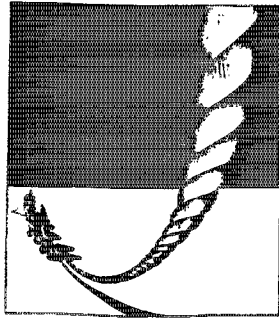


NATIONAL SAFETY COUNCIL

THE FELLOW WHO
IS DEAD FROM THE
NECK UP IS LIKELY
TO BE KILLED ALL
OVER BY AN ACCIDENT



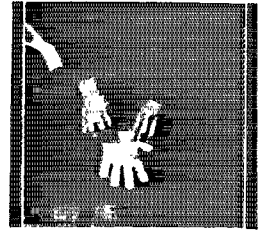
NATIONAL SAFETY COUNCIL



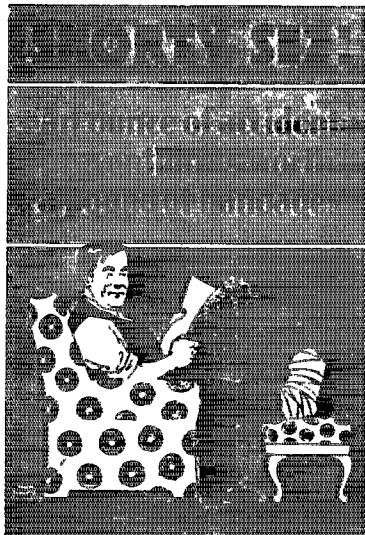
TEAMWORK
AND CARE
MAKE ANY JOB
SAFE

NATIONAL SAFETY COUNCIL

TEST RUBBER GLOVES



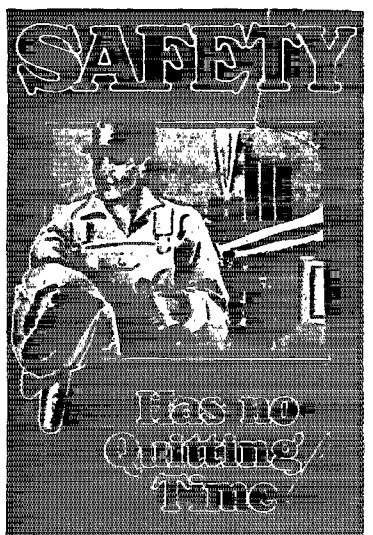
*By rolling the cuff tightly,
you can trap and compress
enough air in the glove to
see whether or not it has
a leak in it. Do not wear
leaky rubber gloves.*



Caught

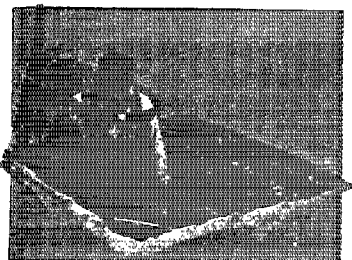
Be Careful
not to Wear
Loose Clothing

NATIONAL SAFETY COUNCIL



Has no
Quitting
Time

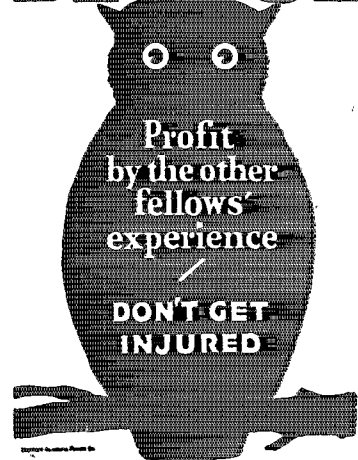
WHATEVER YOUR JOB



USE EVERY SAFEGUARD

NATIONAL SAFETY COUNCIL

BE WISE

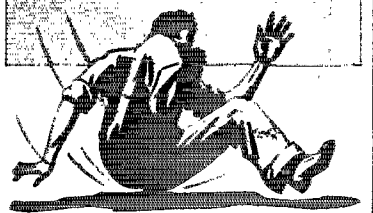


Profit
by the other
fellows'
experience

DON'T GET
INJURED

REMEMBER THIS

TAKE SHORT PACES
IN SLIPPERY PLACES



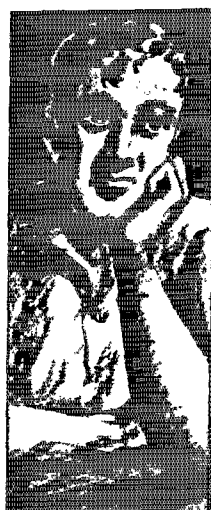
NATIONAL SAFETY COUNCIL

SCISSORS, NEEDLE AND THREAD—



**WILL CHANGE ALMOST
ANY DRESS INTO A SAFE
WORKING GARMENT.**

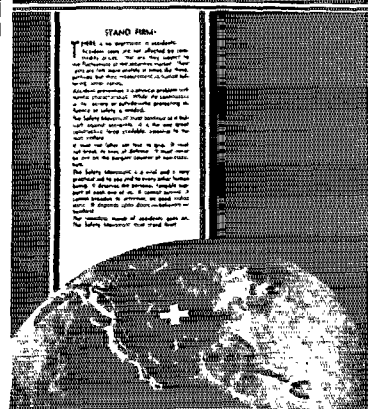
NATIONAL SAFETY COUNCIL



**HOW MUCH
TIME DO
YOU SPEND
DAY
DREAMING
OVER USELESS
OR IMPOSSIBLE
THINGS
?
MOST JOBS
REQUIRE
ALERTNESS
FOR SAFETY**

NATIONAL SAFETY COUNCIL

SAFETY CARRIES ON

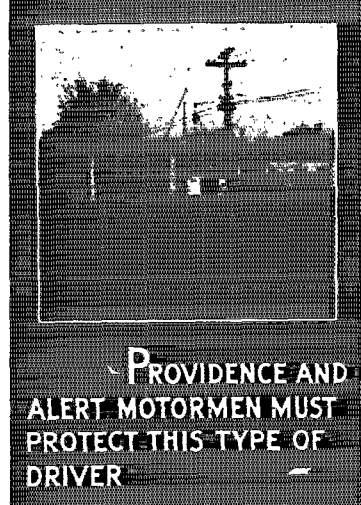


NATIONAL SAFETY COUNCIL

**A
THOUGHT
FOR
TODAY**

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

NATIONAL SAFETY COUNCIL



**PROVIDENCE AND
ALERT MOTORMEN MUST
PROTECT THIS TYPE OF
DRIVER**

NATIONAL SAFETY COUNCIL

**UNIVERSAL
SAFETY**

We

**ARE MEMBERS
OF THE
NATIONAL
SAFETY
COUNCIL**

**LET ALL OF US DO ALL
WE CAN TO PREVENT
ACCIDENTS**

NATIONAL SAFETY COUNCIL

Now He's Hurt!

**Just because he left 'Stumbling
Blocks' around his machines**



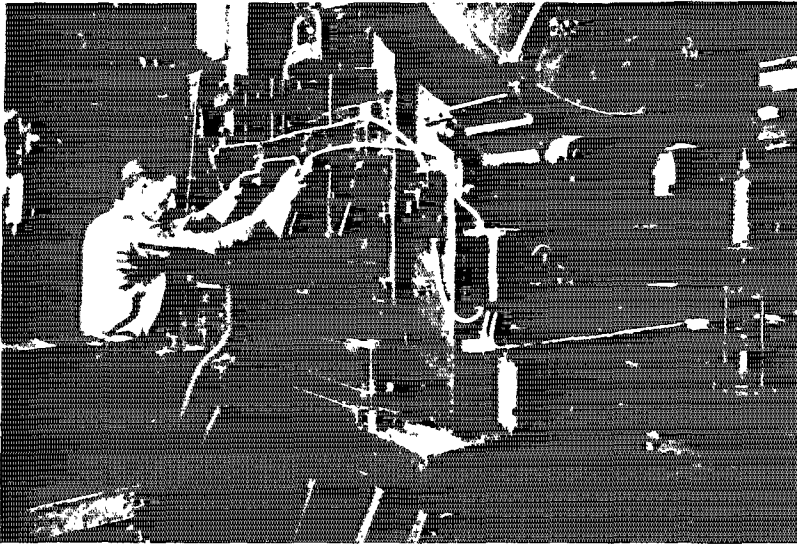
NATIONAL SAFETY COUNCIL

CRUSHED

**KEEP OFF
MOVING CRANES**

THE SAFETY EXCHANGE

"A ROUND TABLE IN PRINT"

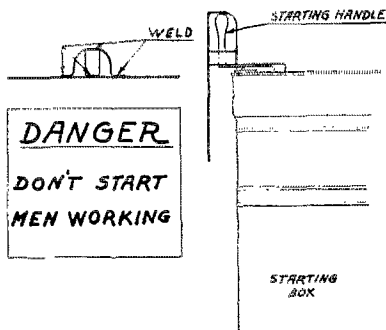


TWO PUSH BUTTONS OPERATE THIS BIG PRESS

Here is an interesting picture from the plant of the General Electric Company, Schenectady, N. Y. This 280-ton punch press is operated by two push buttons in series, making it less possible for the operator to injure his hands. Push buttons actuate the thruster, which in turn operates the clutch on the punch press. The thruster is a device for producing a straight line thrust by supplying oil under pressure to a piston from an electrically driven pump.

DANGER SIGN GUARDS ELECTRICAL STARTING BOX

To prevent the starting of electrical machinery while men are working, an interesting method is employed by the Lycoming Manufacturing Company, Williamsport, Pa. (Note the accompanying diagram.) No padlock is used, but the starting handle is placed in neutral position and the danger sign is suspended from it in the manner shown. A pipe hanger is welded to the danger sign. All maintenance men are instructed that they must



not work around machinery until the machinery is stopped and the danger sign is in place. Doubtless a slight alteration to the device would make it possible to lock it in place with a padlock.

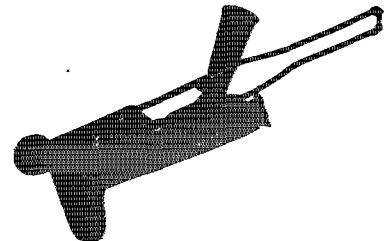


THIS CHOCK BLOCK BACK PROMOTES SAFETY

In the railway yards of any industrial plant it is important to have quickly at hand chock blocks to meet any contingency. The accompanying picture shows a scene in a German yard, as reproduced in the publication of the Association of Foundries and Rolling Mills, Berlin. A fixed frame conveniently located near the tracks holds the chock blocks. House-keeping is also promoted.



The ideas presented here have proved helpful. If you have developed a useful device or method send in a description, with sketch, blueprint or photograph, if possible

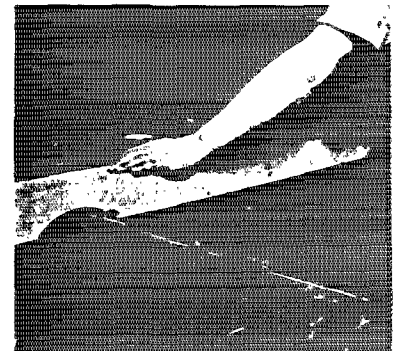


NO SPRAINED BACK FROM CARRYING THIS JACK

Wrestling with a heavy jack when trying to put it into position under a difficult load is no fun. To carry it single handed is a good way to get in line for a sprained back. All this, and more, prompted A. F. Pollard, carpenter, Toronto Transportation Commission, Toronto, Ontario, to design a small jack truck. The picture shows the general features of design. Details are as follows: framework $\frac{3}{8}$ inch pipe; axle 5.8 inch square stock; wheels 4 inches diameter; cross members $\frac{3}{4} \times \frac{1}{2}$ inch; pan at bottom $\frac{1}{4}$ inch sheet steel.

HOME MADE GUARD FOR THE JOINTER

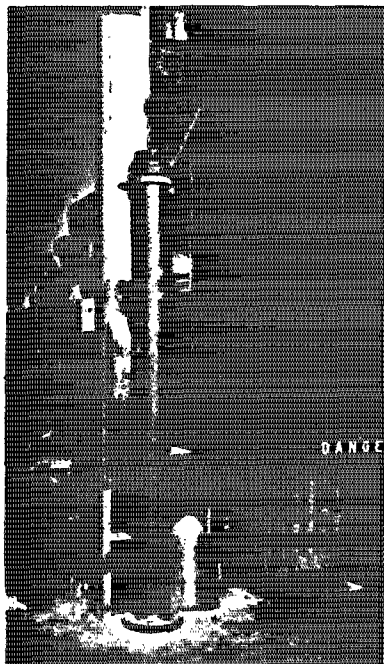
This guard for the jointer is employed in the plant of the International Harvester Company, McCormick twine mill. The details of construction are apparent. The guard is automatically adjusted to the width of the lumber. A spring holds the guard against the material. In the case of a thin piece of material the guard lifts with a lever at the left-hand side so that the material slides in under it.



NATIONAL SAFETY NEWS

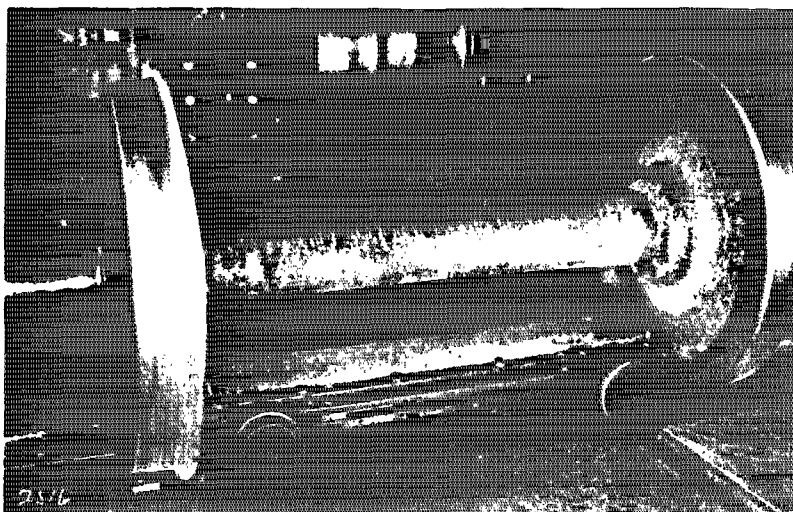
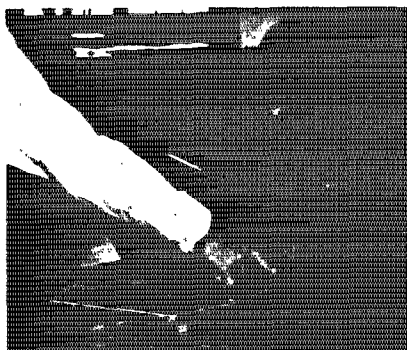
ENCLOSE THE COUNTERWEIGHT FOR GREATER SAFETY

This picture shows a counterweight arranged to assist in operating a wide freight elevator door. The weight is of large and heavy design, and before being enclosed in the perpendicular pipe was a hazard to employees as well as an objection from the housekeeping point of view. Enclosed as pictured here, however, it slides up and down as necessary with no danger whatever. The picture is from the Malden Electric Company.

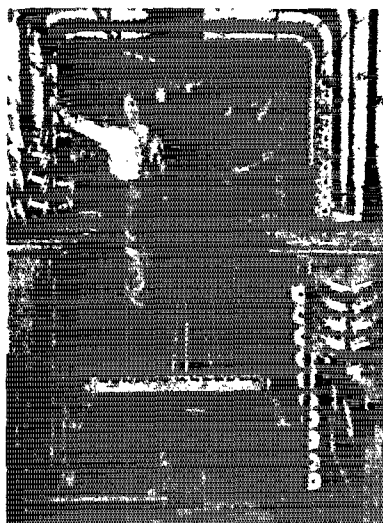


JOINTER GUARD EXCEEDS THE LAW'S REQUIREMENTS

Below are two interesting pictures from the Appleton Vocational School showing a jointer follow-up guard, automatic in action, that provides additional safety for the operator. As seen in the picture at the left, the danger spot is closed when the jointer cut is almost completed. The guard covers the knives while the standard guard leaves the cutters open near the end of the operation, and it keeps them covered until the standard guard again covers the knives and is against the fence. Then the automatic guard swings back and does not appear again until the next piece is passed over the jointer. The trigger (being pointed out in the picture on the right)

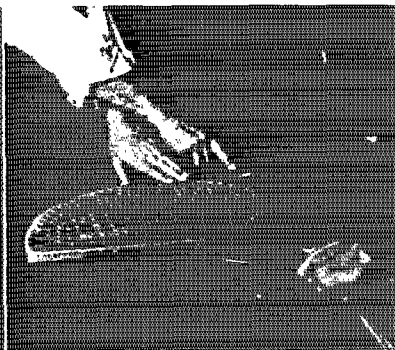


swings back when pushed by the piece of stock. This sets the guard so that it is ready for action when the jointer knives are about to be exposed.



A SAFE PLATING VAT WITH AN ADJUSTABLE PLATFORM

The plating platform before this vat is constructed to permit any droppings to fall through; it is also high enough from the floor to permit the workers to handle the work with comfort and safety. The platform is also removable for housecleaning. It is located in the plant of the Hubbard Spool Company, Chicago.



THIS DOLLY HANDLES HEAVY CAR WHEELS EASILY

Here is a handy dolly to move car wheels from the lathe to storage track. The wheels roll into a slight depression on the dolly, and then the dolly is moved to the track, is lined up and the wheels rolled off. The device is employed in the shops of the Chicago & North Western Railway Company.



Press Levermen

Are held accountable for violators of safety rules—for helpers who put their hands between the dies.

Call your Foreman

Who will give you a safe workman.

You befriend a careless worker if you cause him a Lay-off before an accident, instead of waiting until fingers or a hand is lost eventually.

— ACT NOW —

WARN THE LEVERMAN OF HIS RESPONSIBILITY

A means of reducing the accidents to helpers who had been sticking their fingers in the rear of the power press, regardless of instructions, seems to have been found by R. A. Shaw, Murray Corporation of America, Detroit. This small, red card is attached to the press close to the leverman's position, where it must be seen.

INDUSTRIAL HEALTH

A NON-TECHNICAL SYMPOSIUM FOR PHYSICIANS AND LAYMEN

By C. O. SAPPINGTON, M. D., Dr. P. H.
Director, Industrial Health Division, National Safety Council

Industrial Injury and Hospital Experience*

ALTHOUGH there have been many reports and analyses of industrial injury and hospital experience, it is wise occasionally to review extensive experiences, presenting them in tabular form, so that medical and safety personnel in industry may know what to expect.

The data herewith presented are taken from the experience of a large midwestern manufacturing plant, covering a period of eight consecutive years. The total number of injury cases was 38,854 and in every instance each injury received medical treatment.

The most striking and significant point in this study, as shown in Table I, is that 78 per cent of the total number of injuries for the consecutive period of eight years, was caused by

contusions, lacerations, and abrasions; by fractures; strains; and back strain.

Approximately 38.7 per cent of all injuries were caused by contusions, lacerations, and abrasions; the next most frequent injury being fractures comprising 16.6 per cent.

It is especially interesting to note that only 5 per cent of the cases were infections, when it is remembered that approximately 26 per cent of wounds of the hands and fingers become infected; that 80 per cent of injuries from wood splinters and 86 per cent of injuries from metal splinters eventually become infected.

Ordinarily one would also expect to find more than 5.3 per cent of eye cases in such a large series of injuries.

Both of these items speak well for the protective program of this industry.

The total number of patient days for eight consecutive years was 11,393; the average number of patient days for all cases was 14.1. Fractures, infections, and sprains all caused losses of time above the average number of patient days.

Conclusions

From the standpoint of percentage occurrence, contusions, lacerations, and abrasions; fractures; sprains and the back strain were the most important injuries.

Rated according to the patient days lost in the hospital, fractures, infections, and sprains were most important.

If this is to be taken as a typical experience, industrial physicians and safety engineers would do well to develop preventive procedures especially designed to reduce these types of injuries.

TABLE I

For 38,854 injuries, covering a period of 8 consecutive years.

Type of Injury or Disease	Total No. Cases	Average No. Per Year	Percentage of Total
1. Contusions, lacerations and abrasions	15,037	1,879	38.7
2. Fractures	6,445	805	16.6
3. Strains	5,316	664	13.7
4. Back strain	3,621	453	9.3
5. Eye cases	2,040	255	5.3
6. Infections	1,941	243	5.0
7. Burns	1,084	135	2.8
8. Hernias	981	123	2.5
9. Traumatic amputations	634	79	1.6
10. Tenosynovitis ..	615	77	1.6
11. Puncture wounds ..	500	68	1.3
12. Bursitis	129	16	0.3
13. Dislocations	117	14	0.2
14. Arthritis	112	14	0.2
15. Synovitis	80	10	..
16. Dermatitis	72	9	..
17. Myositis	49	6	..
18. Varicocele	31	4	..
19. Periostitis	29	4	..
20. Hydrocele	15	2	..
21. Neuritis	11	1	..

*Abstracted from a paper on "Industrial Medicine as a Specialty," read by Dr. Paul A. Davis, at the All-Ohio Safety Congress, 1932.

Hospital Experience

The loss of time because of serious injury or illness, measured in terms of hospital days, is an important financial consideration to any industry.

Referring to Table II, it will be seen that fractures, infections, sprains, and hernias caused the greatest loss of time, measured in terms of average patient days in the hospital.

Except for aniline poisoning, all other causes of lost time as noted, averaged over ten days per case.

TABLE II
Loss of Time in Hospital

Cause	Total Patient Days	No. of Cases	Average Patient Days
1. Fracture	3,014	150	20.0
2. Infections	1,190	74	16.0
3. Sprains	407	27	15.0
4. Hernias	2,520	180	14.0
5. Misc. operations ..	1,335	108	12.3
6. Contusions and lacerations	1,025	88	12.2
7. Burns	673	56	12.0
8. Lead poisoning ..	31	3	10.3
9. Aniline poisoning ..	2	1	2.0

QUESTION BOX

THORIUM AND MESOTHORIUM

Q.—Are there health hazards attendant in the manufacturing processes involving the production of thorium and mesothorium salts?—W.L.H.

A.—The recovery of rare earths, such as thorium, mesothorium, cerium, and neodymium is accomplished by special processes in the treatment and extraction of monazite sand. We can immediately dismiss cerium and neodymium as possible hazards, because they do not give off any radiations similar to those coming from thorium and mesothorium.

As far as radiation from thorium nitrate is concerned, it is greatly reduced in the process of refining and at the time it is finally prepared for the market, its activity is very small.

The refining of mesothorium is a far more hazardous operation, but the mere

NATIONAL SAFETY NEWS

You guard your workers against accidents ... BUT WHAT ABOUT OIL DERMATITIS?

MORE time is lost in American factories through disease than through accidents. Oil Dermatitis is one of the most prevalent industrial diseases. It costs American industry great sums each year in lost time and compensation. It costs American labor much more in destroyed health and efficiency.

● Wherever cutting oils or cutting compounds are used, workmen are menaced by Oil Dermatitis, the great shatterer of safety records. This disease is caused by pus germs carried into the pores, hair follicles and abrasions of the worker's skin by cutting oil or compounds. Germ free oil becomes infected during use. Entire departments of a plant may become infected with this disease, which may lead to blood poisoning and amputation.

● Proper disinfection of all cutting oils and cutting compounds is the only way to remove the menace of Oil Dermatitis from your workers. You can effectively control its chief causes by sterilizing all cutting oils and compounds with WESCOL, a powerful germicide (sixteen times stronger than pure carbolic acid, but harmless to human beings) which readily dissolves in either oil or compound without altering its efficiency. Just add one pint of WESCOL to each fifty gallons of cutting oil or compound.

● The use of WESCOL is inexpensive . . . yet it protects your workers from a serious industrial disease which has ruined scores of safety records. Send the coupon or write a letter for our free booklet on WESCOL and Oil Dermatitis.

W E S C O L

A PRODUCT OF THE WEST DISINFECTING CO.

16 BARN STREET,

LONG ISLAND CITY, N. Y.

BRANCHES IN 42 PRINCIPAL CITIES

WEST DISINFECTING COMPANY
16 Barn St., Long Island City, N. Y.

Gentlemen: Please send me your booklet "WESCOL — A Practical Germicide for Industrial Plants."

Mr.

Name of Company

Street..... City.....

SEPTEMBER, 1932

handling of crude mesothorium compounds is not considered as hazardous. In the refining processes, care is taken to prevent the introduction of mesothorium products into the body, by way of the lungs or the alimentary tract. If this is done, there should be no difficulty and there is an instance of twelve years' experience in refining processes in laboratory work, where there has never been a casualty.

Protective procedures, therefore, call for the use of careful handling, under well-ventilated hoods, and the application of the principles of strict personal cleanliness.

SULPHUR DIOXIDE

Q.—It is my understanding that sulphur dioxide is a respiratory irritant; are there any other effects of industrial exposure? —F.F.

A.—You are correct in saying that sulphur dioxide is essentially a respiratory irritant. Recently, other effects have been reported; these consist of a mild acidosis, causing so-called "indigestion," with formation of gas on the stomach, capricious appetite, headache, and similar characteristic symptoms of acidosis.

In this series of cases, it was found that the acidosis could be controlled by the daily use of alkaline waters or milk. Both the functional disturbances and the control of them were confirmed by animal experimentation.

The prevention of these disorders may be accomplished by the installation and arrangement of adequate exhaust ventilation, which will remove the gas at its source.

CARBON MONOXIDE AND EPILEPSY

Q.—Is it possible that epilepsy follows as a complication of carbon monoxide poisoning? —R.M.L.

A.—As far as we know, the available literature does not contain a statement to the effect that true epilepsy is a complication following carbon monoxide poisoning or gassing. There are mental and nervous symptoms accompanying carbon monoxide poisoning or following it as complications; these include several mental symptoms which might be interpreted as epilepsy.

It would be very easy to confuse convulsions with true epilepsy and it would be necessary to have the advice and consultation of one or more physicians, preferably specialists on mental and nervous diseases, before a scientific decision could be reached.

CREOSOTE BURNS

Q.—Can you give me information concerning the treatment and prevention of so-called creosote burns? —F.R.B.

A.—The following procedures have been recommended and apparently used to good effect in the treatment of creosote burns:

1. The accepted first aid measure for so-called chemical burns is immediate flushing with copious amounts of running water. Of course, there are substances that are not soluble in water, but it is plain that the mere mechanical cleansing balances the time lost in attempting to secure a neutralizing agent which may not be effective in all events.

Chrome Leather Garments Prevent Flash Burns



SEVERAL years ago, the electrical operating department of the Union Gas and Electric Company, Cincinnati, Ohio, made a test of chrome leather to be used in coats and helmets in order to relieve the electric

burn hazard resulting from a flash. The results of the tests are described as follows by R. H. Krone, director of accident prevention for the company.

"When subjected to an electric arc for five seconds, chrome leather was carbonized on the surface, although the leather was burned very slightly below the surface. Molten copper was dropped on the leather of approximately 3/16 of an inch in diameter and penetrated to a depth of about 1/32 of an inch; however the opposite side of the leather became dark at the point where the leather was burned. It is possible to make the leather burn but this was accomplished only after five or six applications of electric arc. An electric arc does not ignite the leather until it is thoroughly dried out, and even then it burns very slowly in the air.

"In instances where this equipment was worn and the wearer was subjected to an electric arc, the effect on the leather did not even cause scorching. Leather coats have been satisfactorily cleaned by the ordinary dry cleaning method. The experience of men in this company is that this is a suitable material for the purpose."

2. The use of isopropyl alcohol has been recommended, because phenol, creosote, and similar compounds are soluble in it. Isopropyl alcohol also has a high antiseptic value.

3. Persons having creosote burns should always be taken to a physician, to be sure that serious complications do not arise.

The prevention of the creosote burns may depend upon the following procedures:

1. The handling of creosoted material with tongs or by mechanical means, rather than by hand.

2. Providing employees with impermeable gloves and other clothing which will protect the parts of the body which may come in contact with creosoted wood.

HERNIA AND ACCIDENTS

Q.—Is a man with hernia more liable to have accidents than a man without hernia? —F.L.

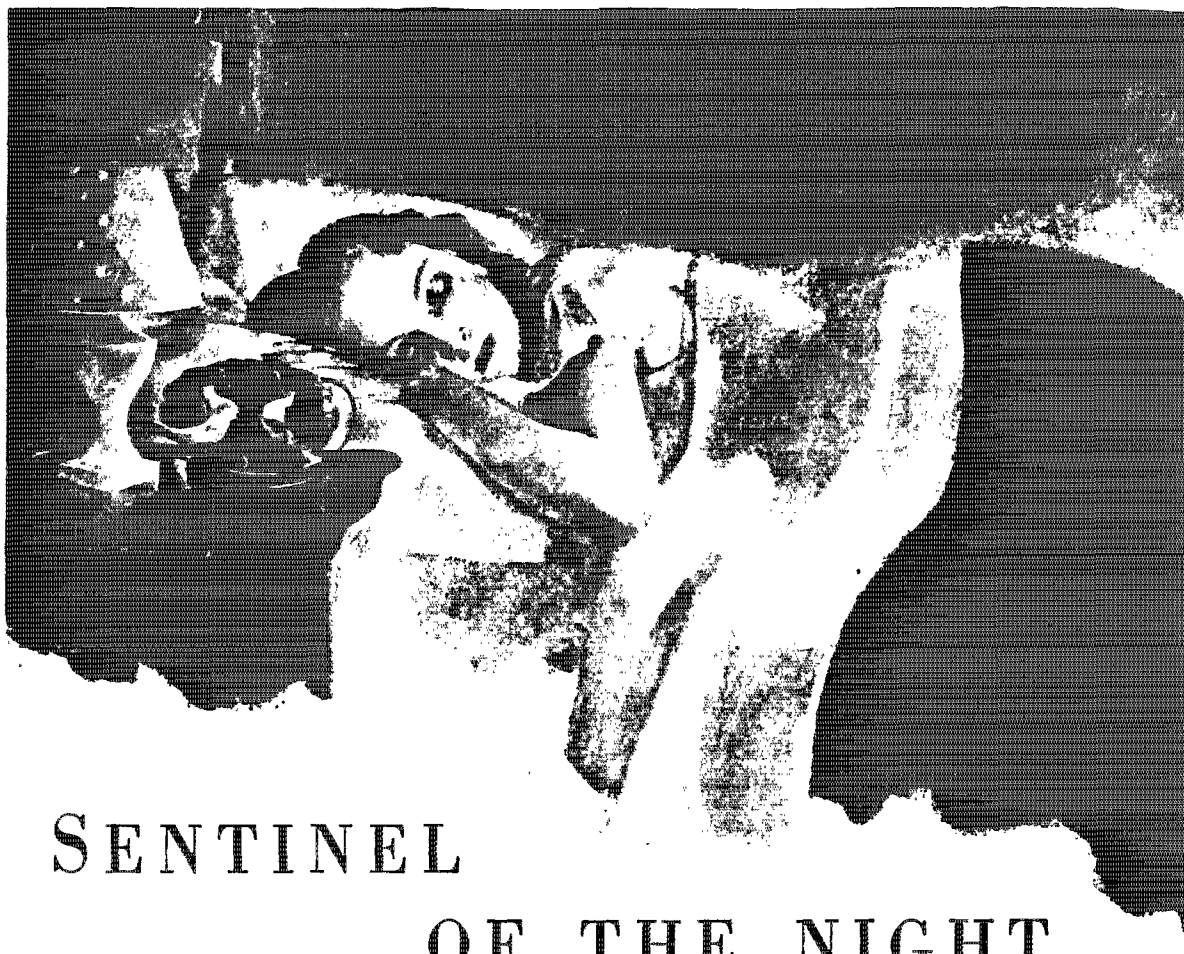
A.—It is difficult to see why he should. The very fact that he has a hernia will in a great many cases, probably make him more careful in the use of his body, which will certainly help to avoid accidents. On the other hand, others may argue that such a person will not move as fast and be as physically coordinate and, therefore, might be more liable to accidents. This is pretty much of an open question and possibly a real decision cannot be reached without more evidence than we have at present. There are no data which support the contention that hernia in any individual will either predispose to accidents or protect individuals from them.

"Watch Other Cars," Advises Veteran Safe Driver

FOR 15 years Roy Glaser has zigzagged his way about the streets of Detroit driving a commercial vehicle for the Detroit Edison Company. He is now operating his seventh truck on company business and has accumulated a mileage of over 300,000 with an unusual record for safety. His only serious accident was a head-on collision with a laundry truck whose steering apparatus failed to function.

Glaser's maximum speed on city streets is 25 miles an hour. He has discovered that in heavy traffic, and with frequent traffic lights to contend with, the time gained by speeding on short runs is negligible. While driving, he keeps a close eye on other motorists. The type of driver to be most carefully watched, he says, is the one driving a light delivery truck. Often this class of driver is a youngster who does not appreciate his responsibility and is interested chiefly in getting there and getting back as quickly as possible.

NATIONAL SAFETY NEWS



SENTINEL OF THE NIGHT

DEEP NIGHT . . . before the first grey streaks of dawn silver the eastern sky. On a table beside the bed rests a little black instrument . . . silent, unobtrusive, seemingly inert there in the stillness. It is the *telephone*, sentinel of the night.

Ready to call a policeman at the first unexplained sound . . . ready to summon the fire department at the first ominous whiff of smoke . . . primed to arouse a physician, a nurse, or a neighbor when illness intrudes.

For the wired world is at the other end, waiting for your outstretched hand and your plea: "Come quickly!"

Sentinel duty, of course, is a small part of the manifold service your telephone renders. The

incidents of every-day store orders, of friendly chats; the joy and comfort of familiar voices as though from across the room; these, too, make the telephone a valued member of the family.

Behind your telephone is the nation-wide organization of trained minds and hands whose ideal is to serve you in a manner as nearly perfect as is humanly possible. Seven hundred thousand stockholders — men and women like yourself — have invested their money in this system of the people and for the people.

The telephone is a vital link in the chain of modern living. It gives much in convenience and safety. It offers a wide range of usefulness. It serves you day and night.

AMERICAN TELEPHONE AND TELEGRAPH COMPANY



Health Topics at the Congress

THE Twenty-first Annual Safety Congress and Exposition will offer informational material which will not only be of interest to safety engineers and safety directors, but also to industrial physicians and nurses. Including the sessions on industrial health and nursing, there will be twenty-seven presentations on a wide variety of subjects.

On Monday afternoon, October 3, the preliminary program shows the following speakers and subjects, in the Industrial Health Section:

General subject: "The Presentation of Several Small Plant Pictures" of twenty minutes each, giving actual experiences.

1. Dr. Glenn S. Everts, medical secretary, Philadelphia Health Council and Tuberculosis Committee, Philadelphia.
2. Dr. Walter Clarke, director, Division of Medical Measures, The American Social Hygiene Association, New York City.
3. Wilmer H. Schulze, chief, Division of Chemical Technology, Bureau of Chemistry and Food, Health Department, Baltimore.
4. F. G. Bennett, safety director, The Buckeye Steel Castings Co., Columbus, Ohio.

On Tuesday afternoon, October 4, at 12:30 there will be an Industrial Health Section Luncheon, with an informal discussion on a subject to be announced later.

Following the luncheon, there will be a joint session of the Industrial Health Section with the Metals Section, the program to be a symposium on "The Dust Problem in Industry," with the following speakers and subjects listed:

1. "What Various Dusts Do to the Lung Tissues"—Dr. L. C. Gardner, director, Trudeau Laboratories, Saranac Lake, N. Y.
2. "The Dust Content of the Atmosphere in Various Dusty Industries"—J. J. Bloomfield, sanitary engineer, U. S. Public Health Service, Washington, D. C.
3. "Clinical and Statistical Studies in Various Dusty Trades"—Dr. A. E. Russell, U. S. Public Health Service, Washington, D. C.
4. "Methods for the Control of Dust in Industry"—Theodore Hatch, Harvard School of Public Health.
5. "Methods for Protecting the Worker Against Dust Inhalation," by Prof. Philip Drinker, Harvard School of Public Health.

This program should be of unusual interest, not only to physicians, but to industrialists and safety directors who are confronted with the problem of adequately protecting employees against the inhalation of injurious dusts.

On Wednesday morning, there will be a joint session with the Chemical Section on the general subject "Symposium of the Activities of the Chemical Industry in the Prevention of Poisoning." This subject will be developed from different viewpoints and should contain material of distinct practical value to physicians and chemists, relative to their common problems.

Wednesday afternoon will be devoted to a program on "Common Injuries," with the following subjects and speakers:

1. "Heat Effects"—Dr. R. C. Engel, service director, Corrigan, McKinney Steel Company, Cleveland.
2. "Back Injuries"—Dr. Sumner M. Roberts, Boston.
3. "Sprains, Strains, and Contusions (including Hernia)"—Dr. Henry H. Kessler, medical director, New Jersey Rehabilitation Commission, Newark.
4. "Hand Injuries"—Dr. Henry C. Marble, Boston.

On Thursday afternoon, October 6, the Industrial Health Section will have a joint meeting with the Industrial Nursing Section, a luncheon being scheduled at 12:30, after which the program will follow:

1. "What Is Public Health Nursing in Industry?"—Dorothy Deming, R. N., editor, *Public Health Nursing*, New York City.
2. "Contribution of the Nurse to the Conservation of Eyesight" (demonstration)—Mary Emma Smith, R. N., National Society for the Prevention of Blindness, New York City.
3. "How the Nurse Can Share Health Information with the Worker"—Elizabeth Winton, R. N., Edward G. Budd Manufacturing Company, Philadelphia.

The usual custom of grouping various sessions of the Congress around important and specialized industries will enable the plant physicians to listen to and take part in discussions relating to accident prevention problems and health topics in the industry with which they are associated.

For the convenience of those who wish to attend more than one session during a morning or afternoon, the following list of subjects and speakers has been abstracted from the complete preliminary program showing the subjects and physicians taking part:

"Mental Hygiene in Accidents"—Dr. Morris S. Viteles, assistant professor of psychology, University of Pennsylvania, Philadelphia. Cement Section, Tuesday afternoon, October 4.

"The Doctor in Industry"—Dr. Robert P. Hyland, chief surgeon, Public Service Corporation, St. Louis, Mo. Electric Railway Section, Tuesday afternoon, October 4.

Leading the discussion on "The Doctor in Industry"—Dr. Hart E. Fisher, chief surgeon, Chicago Rapid Transit Company, Chicago. Electric Railway Section, Tuesday afternoon, October 4.

"Medical Set-up—Where Will It Fit in Your Safety Program?"—Dr. A. P. Leeklider, medical director, Fisher Body Corporation, Detroit. Automotive and Machine Shop Section, Wednesday morning, October 5.

"Activities of the Chemical Industry in Preventing Poisoning—Viewpoint of the State"—Dr. Albert S. Gray, director, Division of Occupational Diseases, Connecticut State Department of Health, Hartford. Joint session of Chemical and Industrial Health Sections, Wednesday morning, October 5.

"Activities of the Chemical Industry in Preventing Poisoning—Viewpoint of the Federal Government"—Dr. William P. Yant, superintendent, Bureau of Mines Experiment Station, Pittsburgh, Pa. Joint session of the Chemical and Industrial Health Sections, Wednesday morning, October 5.

"Industrial Health and Its Relation to Industrial Safety"—Dr. C. O. Sappington, director, Division of Industrial Health, National Safety Council. Cement and Quarry Sections, Wednesday morning, October 5.

"Is Carbon Tetrachloride a Health Hazard as Used in the Rubber Industry?"—Dr. J. Newton Shirley, Arrow Mutual Liability Insurance Company, Watertown, Mass. Rubber Section, Wednesday morning, October 5.

An address on some phase of the dust problem in industry by Dr. Leonard Greenburg, Yale University, New Haven, Conn. Advanced Safety Engineering Session, Wednesday afternoon, October 5.

First Aid Demonstration—Dr. Eugene E. Willison, American Red Cross, Washington, D. C. Vocational School Session, Thursday afternoon, October 6.

First Aid Demonstration—Dr. Otis Marshall, American Red Cross, Washington, D. C. Home Safety Section, Friday morning, October 7.

NATIONAL SAFETY NEWS

PUT LIGHTING on your Safety Program



TEST
FOR THE
Twilight
*Zone**

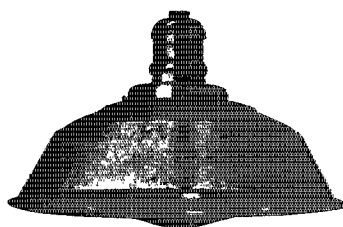
A MERICAN manufacturers lose one billion dollars annually because of industrial accidents. Insurance companies have traced \$150,000,000 of this loss directly to accidents caused by defective lighting.

Put lighting on your safety program. Bright, well-lighted plants are one of your strongest safeguards against costly accidents.

Here is a simple test for the deceptive Twilight Zone* that easily can be made a part of your safety inspection program. Carry a phone book along with you. Stop where people work. Open the book at random. Does every word stand out

sharp and clear? Can you read any name, address, or number rapidly, without effort? You should be able to do so readily—for the telephone book is scientifically designed for perfect legibility under proper light. If you can't—if you have to squint and draw the book closer to your face—you are in the dangerous Twilight Zone.

If, after making this test, you feel doubtful as to the adequacy of your lighting, call on Westinghouse lighting experience and use Westinghouse equipment to bring your plant out of the Twilight Zone—efficient lighting will repay its cost many times.



Glassteel Diffusers with Safe Change Hangers for easy cleaning have brought many plants out of the Twilight Zone.

**That deceptive half-light between obvious darkness and adequate illumination.*

Westinghouse

T 79325

Westinghouse Lighting Specialists will help you plan an effective lighting system



THE ACCIDENT BAROMETER

A Monthly Review of Significant Changes in the Accident Situation

Prepared by the

STATISTICAL BUREAU, NATIONAL SAFETY COUNCIL



Gasoline consumption throughout the country was 2.75 per cent less in the first four months of 1932 than in the same period of 1931. This means fewer miles traveled by motor vehicles this year than last, and should carry with it a reduction in motor vehicle fatalities. The following table shows that in 16 reporting states not only has this reduction occurred, but that it has been larger than the decrease in gasoline consumption. As a result the death rate on a consumption basis declined 2 per cent; the decline being shared by 12 of the 16 states.

States (in order of 1932 rates)	Deaths per 10,000,000 gallons Gasoline Consumed		Per Cent Change
	Jan.- 1932	Jan.- 1931	
1. Vermont	7.3	11.8	-38
2. Minnesota	9.3	13.1	-29
3. Rhode Island	9.5	12.5	-24
4. Massachusetts	11.6	13.1	-11
5. Connecticut	13.8	16.2	-15
6. Kansas	13.9	11.9	+17
7. Oregon	14.4	20.0	-28
8. Wisconsin	15.3	17.3	-11
9. California	16.8	16.6	+1
10. New York	18.1	15.5	+17
11. Pennsylvania	19.1	19.5	-2
12. Maryland	19.5	24.2	-19
13. Florida	20.3	23.3	-13
14. Delaware	21.5	20.6	+4
15. North Carolina	22.3	24.5	-9
16. Alabama	26.6	29.0	-8
TOTAL	16.8	17.2	-2

Sixty-nine cities, out of 107 cities on which figures are available, had fewer motor vehicle deaths in the first half of 1932 than in the same period of 1931. Thirteen of the reporting cities were over 500,000 population, and of these all but one showed improvement.

Among the larger cities, Pittsburgh and Boston showed declines of 26 per cent, St. Louis 15 per cent, Cleveland 14 per cent, Los Angeles 13 per cent, and Buffalo and Baltimore 10 per cent.

The Maryland Industrial Accident Commission reports that a total of

\$620,917 compensation was awarded during the year ending October 31, 1931. This represents a reduction of 27 per cent from the total of \$849,684 for the preceding fiscal year. The number of temporary disabilities reported dropped from 12,037 to 9,407; permanent partials from 593 to 488; and fatalities from 109 to 77. The principal decreases came in accidents classed as "cuts and lacerations," "sprains and strains," and "fractures."

Commercial vehicle accidents in 13 community safety council cities numbered 19.06 per 100,000 vehicle hours operated during June. Nineteen cities reporting in May had a rate of 17.90, and 16 reporting in June, 1931, had a rate of 23.34. The six-month rate for this year is 21.12, compared with 26.73 in 1931. In cities where records are kept on a mileage basis the June rate was 4.31 accidents per 100,000 vehicle miles, compared with 5.40 in June, 1931.

Industrial injuries during June in 17 community safety council cities numbered 10.66 per 100,000 man-hours worked—appreciably below the May rate of 11.15 and the June, 1931, rate of 11.33. Five fatalities occurred in June, however, compared with none in May, raising the severity rate from 0.31 to 0.90.

Fatal industrial accidents in Pennsylvania dropped 30.3 per cent from the first half of 1931 to the same period of 1932, according to a recent report of the State Department of Labor and Industry. There were 550 deaths reported to the department this year, compared with 789 last year. Permanent injuries showed a 25 per cent decline in the same period, dropping from 2,151 to 1,612. In this group, eye injuries dropped 30 per cent, hand injuries 28 per cent, and finger injuries 26 per cent. Compensation awards in the first 6 months of this year amounted to \$5,985,283,

compared with \$7,663,085 in the same period of 1931.

Steam railway accidents declined sharply in the first 3 months of 1932, according to a recent report of the Interstate Commerce Commission. Comparing with the first quarter of 1931, there was a 10.67 per cent drop in deaths and a 17.20 per cent decline in injuries. Deaths in grade crossing accidents dropped 21 per cent and injuries 14 per cent. Deaths and injuries to trespassers increased appreciably, as did also deaths of railway employees. An abrupt decline in operations caused an increase in the casualty rate on the basis of locomotive miles. This rate increased from 3.15 to 3.33 for deaths, and from 15.37 to 15.60 for injuries.

Accidental deaths (all types) in 12 large cities reporting to the National Safety Council are as follows:

	Jan.-		Per Cent Change
	June 1932	June 1931	
Baltimore	244	248	-1.6
Birmingham	72	80	-10.0
Boston	206	257	-19.9
Buffalo	109	144	-24.3
Cleveland	251	262	-4.2
Kansas City	102	108	-5.6
Newark	134	151	-11.3
Providence	45	51	-11.8
Rochester	32	39	-18.0
St. Louis	234	242	-3.3
St. Paul	94	93	+1.1
Toledo	56	77	-27.3

Looking ahead . . . Automobiles, falls, drowning, and railroads will be responsible for two-thirds of all accidental deaths in September, if past records are a good criterion. Drownings will be only about one-half as numerous as in August whereas falls will increase a bit. There will be more deaths from burns: in October this type will be third in the list of accidental death causes. Child traffic deaths are likely to increase in September due to the greater exposure to street hazards resulting from the opening of school.

NATIONAL SAFETY NEWS

THE DEATH RACE IS ON!



Auto Fatalities Start Now for Highest Peak of the Year

DEATH rides at the wheel during August and September. During the next sixty days motor vehicle fatalities will reach the highest peak of the year. There will be a small decline in October and November and then up once more to the second high point by the end of December!

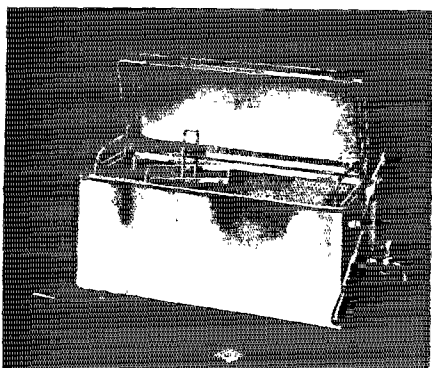
What can be done? Will **your** drivers be involved? You can meet this problem as hundreds of leading organizations are doing—not only in peak months but in **ALL** months. It will pay dividends, too—not only in human conservation but in cold hard cash, as shown in almost unbelievable reductions in insurance and repair costs:

1. Give each driver a copy of "The Safe DRIVER," acknowledged as the best little safety promoter in its particular field. Sixteen pages each month, jammed full of interesting, practical, helpful material—with fun and spice, punchy cartoons and illustrations for added measure.
2. Use the Dash Board Safety Slogans—Fifty-two thought-compelling messages. They are illustrated in colors and are furnished with metal holders. A weekly safety lesson that will not be forgotten!

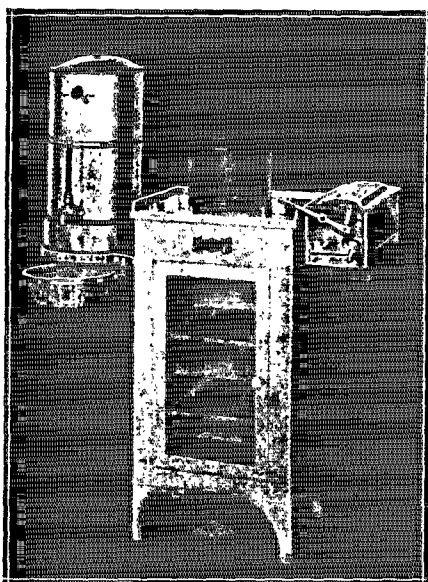
. . . and this big double service at a ridiculously low cost. The sure and quick way to convince you that here, at last, is just what you have been looking for is to write today for samples and quantity prices.

NATIONAL SAFETY COUNCIL, INC.

20 North Wacker Drive, Chicago, Ill.



Hospital Safety for your FIRST AID ROOM



Whether you are bringing your first aid room into existence or bringing it up-to-date, for safety's sake, investigate CASTLE Sterilizers. There is no factor of greater importance than safe, thorough, complete sterilization. CASTLE Sterilizers meet those requirements.

Into CASTLE Sterilizers are built every worthwhile advancement in the science of complete sterilization. Back of them stand 49 years of experience. See the CASTLE Catalog before you buy any sterilizer. A post card will bring it to your desk. Wilmot Castle Company, 1240 University Avenue Rochester, N. Y.

CASTLE STERILIZERS

Irritate Them If You Want Their Attention

By A. CYRIL DALDY

If you tell the average motorist that automobile accidents are currently resulting in more than 33,000 lost lives per year, it is quite possible that he will be genuinely appalled to think of this staggering total. Unfortunately, however, it is quite probable that five minutes later he will have forgotten all about it, and ten minutes later he may even be speeding, or otherwise endangering himself or the general public.

Is not the trouble due to the fact that the individual fails to see himself in any picture presented by nationwide statistics?

Few of the human emotions are as persistent or uncomfortable as a feeling of guilt, and if we could only arouse in the reckless driver a sense of responsibility and guilt *before* the accident instead of after it, we might take a big step forward in automobile accident prevention.

Following is a quotation (from memory) from one of George Bernard Shaw's works:

If you do not say a thing in an irritating way, you might as well not say it at all, for people will not trouble themselves about anything which does not trouble them.

We might paraphrase this in the following manner:

If you do not present accident statistics in such a way as to irritate the individual's conscience, you might as well not present them at all, for people will not trouble themselves about anything which does not trouble them.

There are about 28 million automobiles in the United States and in 1930 there were about 32,500 lives lost in automobile accidents. It is probably reasonable to assume that although more than one person may ordinarily drive each car, the greater part of the mileage over any short period is currently being covered by the same driver. Let us further assume that, on the average, a man's active driving life is from age 20 to 60 and that the average age of all drivers on the road today is 40 years.

At that rate, the average driver has

20 more years of driving life before him—the fact that some have more is counterbalanced (for the purposes of this argument) by the fact that others have less. During this period, if the current accident rate is maintained, there will occur no less than 650,000 automobile fatalities and these will have been caused by 28 million drivers.

This means that there will be one fatality for every 43 drivers on the road today.

The foregoing line of reasoning is mathematically correct to the extent that the assumptions on which it is based are correct. The fact that the number of automobiles is on the increase is probably more than offset by the fact that in spite of efforts by the National Safety Council and other organizations, the number of automobile fatalities is increasing each year.

Everyone has 43 drivers among his acquaintances — most people have many more. At the present rate, one of these, on the average, is going to be responsible for the death of another human being. The chances are only 42 to one against each individual driver on the road today killing himself or some one else at some time in the future.

It seems to me that this mode of presentation would bring the facts home to the individual better than any other and arouse him to a consciousness of his own responsibility. It is an appalling thought to anyone if realized fully. I do not know how it could best be set up briefly for purposes of propaganda, but something like this might answer the requirement:

"One motorist in every 43 is going to kill a man, woman or child in a preventable accident. Will YOU be the one?"

Applying the same line of reasoning to injuries (960,000 per year), we find that two out of every three drivers will have to carry the responsibility for hurting some one; one out of every 31 is going to hurt a child under five years of age.

NATIONAL SAFETY NEWS

Encourage the Youngsters To Speak on Safety

THE progress of safety instruction in schools owes much to the support received from industry. Not all of the impetus, however, comes from the management. In many cases individual workers have carried home the safety lessons learned in the plant, and these are frequently relayed to the school by the children.

Many industries recognize the value of the work done by these young messengers of safety and give them every possible encouragement. In many cases it has helped to strengthen the ties between the industry and the community.

An example of what one company is doing is shown by the following item which appeared in the *Midvale Safety Bulletin*, published by The Midvale Company, Philadelphia:

"Dad, I am going to give a talk on safety at our school next Wednesday."

"Yes?"

"And I want you to get me some picture posters and printed safety orders from Midvale."

So dad, when he climbs the Roberts Avenue hill, has a pocketful of Midvale's "do's and don'ts," which he later in the evening spreads out on the sitting room table and explains at some length to John or Mary or Elizabeth or Stephen, as the case may be.

How fine it would be if the children of all Midvalers were interested in giving safety talks. Such an interest would most surely be reflected in the accident experience at Midvale. That some of the children are interested in safety in connection with their school work is well evidenced by the requests that come to the W. E. R. Department for information to be used in the class rooms of our public and parochial schools. These requests often take the form of inquiries about safety shoes, types of goggles, machine guarding and other forms of safety propaganda. In most cases we are fortunately able to help the young people by giving them printed rules and posters for their school work.

Midvale fathers would do well to encourage their children in giving safety talks and poster exhibitions. Certainly any help that the W. E. R. Department can give will be gladly extended.

It is natural to expect that many of the Philadelphia young people will enter industrial concerns for their life work where they will soon come in contact with organized safety work. If they have learned something about it in their elementary school work they will be at a better advantage to themselves and their associates when they enter factories for the first time.

Ask your boys and girls to give safety talks in their school work.

SEPTEMBER, 1932



AN UNBEATABLE PAIR TO DRAW TO

● Anyone sitting in the manufacturing game will admit that Safety and Increased Efficiency are the two strongest cards in the deck.

This strong pair are furnished through the use of Alemite Industrial Lubrication Systems PLUS Alemite Special Lubricants.

The lubrication of large and small equipment under full production speed without the slightest danger to the lubricator . . .

Lubrication terminals far removed from danger on extra hazardous large units . . .

Never any dangerous leakage of oil or grease to cause bone-breaking falls . . .

Here are safety advantages alone which makes the use of Alemite Systems PLUS Alemite Lubricants well worth many times their cost.

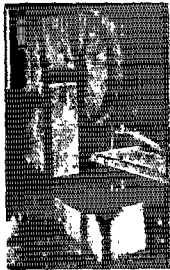
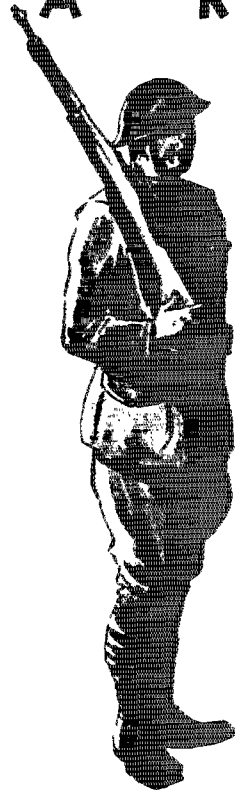
A Lubrication Safety Survey of your plant will be made by an expert for you absolutely without obligation or cost. Merely address your request to Alemite Corporation, (Division of Stewart-Warner) 2634 N. Crawford Ave., Chicago, Ill.

**I N D U S T R I A L
ALEMITE**

629

Pioneers in Specialized Lubrication for Industry

G U A R D S



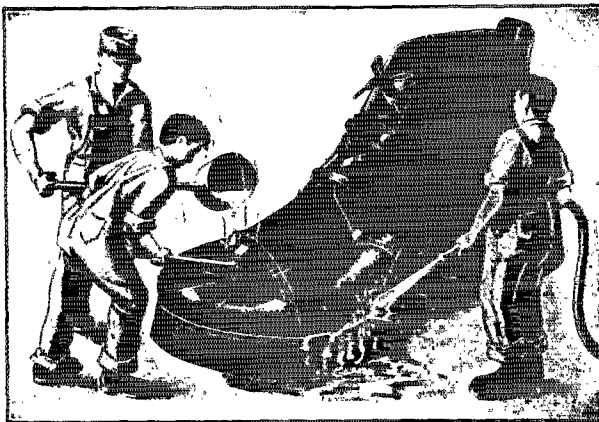
For real protection, machine guards must be strong and durable. They must also leave the guarded parts open to view. They should never be made of material that invites an accumulation of dirt, oily waste or other fire hazards.

H & K perforated sheet steel guard material meets all these qualifications. It is dependable and strong, yet sufficiently flexible to conform to any desired shape.

Now, while production is slow, is the time to make a rigid inspection of your machine guards. Have everything in readiness for the pick-up. Your own men can construct the most complicated guard from H & K perforated metal and our complete line of guard accessories.

Full instructions are given in our booklet, "Machine and Belt Guards." There is no charge or obligation for this information. Just send for it.

THE HARRINGTON & KING PERFORATING CO.
114 Liberty St., New York City 5645 Fillmore St., Chicago



**REECE'S
"STRONGTOE"
SHOE**

with E. Z. Walking
Wooden Sole guar-
antees

**TOE PROTECTION
SOLE PROTECTION
plus
HEALTHY FEET**

Stock No. 509
Catalogue No. 1

REECE

Wooden Sole Shoe
Co., Inc.,
Columbus, Neb.

PERSONALS

T. A. SCHENDEL, formerly safety director for the Caterpillar Tractor Company, Peoria, Illinois, has been appointed personnel manager for the Premier Malt Products Company, Peoria.

J. M. WOLTZ, for many years safety director for the Youngstown Sheet & Tube Company, Eastern region, at Youngstown, Ohio, resigned effective July 31. Mr. Woltz had long been active in safety work nationally and held many offices in the National Safety Council.

Have We Forgotten the "Three C's"

(Continued from page 22.)

necessity must watch the pedestrian, but likewise the pedestrian when walking in the street or on the rural highway should be alert and watch the motor vehicle operator.

Pedestrian regulation is a comparatively new thought. A few cities have tried such regulation, but I admit the difficulty in attempting to subject pedestrians to arrest and fine for violations of certain ordinances in this connection. Probably the pedestrian will always feel that he has a prior right-of-way on the highway. After all, he is only following the old rule that a straight line is the shortest distance between two points.

Not all accidents to pedestrians are the fault of motor vehicle operators, and it is equally true that they are not all the fault of the pedestrian. It resolves itself into the well-worn theory that until every person, whether he rides or walks, is thoroughly schooled in safety principles, and has a proper regard for his own safety as well as that of others, we cannot hope for much improvement.

Enforcement

The enforcement of motor laws is a vital factor in the reduction of accidents: in Pennsylvania we know that the psychological effect of a highway patrol officer in uniform driving over our highways on a motorcycle is conducive to safe driving. When the eye

NATIONAL SAFETY NEWS

of the law is watching, we are especially careful. But enforcement, as we view it in Pennsylvania, should be nine-tenths by education—that is, the warning of the operator—and one-tenth by the imposition of a penalty.

We have a specially trained force of state highway police. They are given an intensive schooling in our training school and must graduate in knowledge of motor laws, safety practice, criminal procedure as applied to motor transportation, the operation of motor vehicles, the examination of new operators, a knowledge of headlights, brakes, steering mechanism, and other safety factors of the car.

Too many people are of the opinion that laws and regulations are made primarily to annoy them. Until we have the right spirit of cooperation between the authorities and the public, and are able to humanize traffic regulations to the point where they are readily understandable, we will be unable to change that opinion. In short, through our enforcement, which should be rigid and yet fair, we must attempt to inculcate an attitude of law observance.

This can only be done by education, which is the right arm of enforcement. To paraphrase the words of the world's leading social prophet, H. G. Wells, "Traffic safety stands or falls on education."

There is a distinct difference between law enforcement and law observance. The one implies a distinctly hard-boiled attitude, with punishment for every offense and with the authorities virtually riding rough shod over motorists. The other implies a mutual cooperation to the end that those laws and regulations which have safety principles as their basis shall be thoroughly understood and obeyed and observed without question, and as a matter of course.

The whole situation seems to sum itself up into three words: *courtesy*, *consideration*, and *cooperation*. Courtesy to other users of the highways, whether they be drivers or pedestrians. Consideration for the rights and privileges of others, as well as consideration of traffic conditions. Cooperation with the authorities in whatever measures are promulgated to insure highway safety.

When a locomotive whistles for a grade crossing it is a sure sign that the locomotive is going to cross.

SEPTEMBER, 1932

Safety First Shoes

Millions of Human Toes are Protected

by these shoes

with the
Patented Safety

(Patent No. 1,823,924)

Steel Toes



THERE are Safety First Shoes of many styles, for use in every line where foot protection is needed. The patented safety toes are made of cold-rolled, heat-treated steel. They cut down both accident frequency and accident severity rates. They give the highest degree of protection, are comfortable and long-wearing. They will save you money. We show our newest dress oxford, No. 8584. They can be had in sizes 5 to 12—widths C, D and E.

See Our Full Line at the
Safety Congress and Exposition in Washington

SALES REPRESENTATIVE: Williams & Company, Inc., Cleveland... Pittsburgh
... Cincinnati—for the state of Ohio, Pennsylvania west of Harrisburg, and
northern West Virginia and Kentucky

SAFETY FIRST SHOE CO.

of Massachusetts

Framingham, Massachusetts

Please send me.....pairs of Safety First Shoes No. 8584 on memorandum, with full information about your complete line. If they will reduce foot accidents and save us money, we will gladly help our men to get them.

Send size..... Concern..... Position.....

Address..... Signed.....

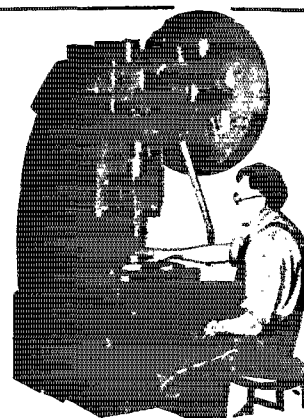
Wiesman Guards Left or Right Sweep

Both of the operator's hands are protected by the Improved Wiesman Punch Press Guard. The guard-arm sweeps the entire length of Bolster Plate in half the downward stroke of punch. Operator also protected if press repeats. Its swift action allows a production speed not found in other guards.

Try one Free for 30 days
Over 16,500 Users

WIESMAN MFG. CO.

31 South St. Clair St., Dayton, Ohio, U. S. A.



KLEINS



"Since 1857"

WHEN you are working fifty feet in the air—on wires that are hot—safety becomes increasingly important. Pliers and belts—all the lineman's equipment must be good. There can be no compromise with quality when life is at stake. Linemen know through years of experience that they can rely on their equipment when it carries the Klein trademark. Klein has represented the maximum in safety—the maximum in quality—since 1857."

A national campaign featuring safety for linemen is being conducted by Mathias Klein & Sons to assist in selling the idea of safety to linemen.

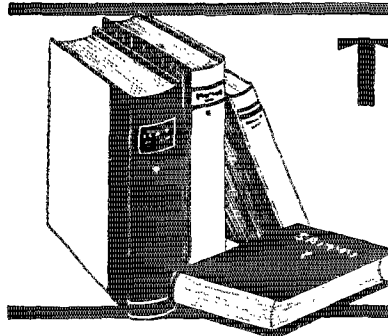
Distributed through jobbers

Four pamphlets of interest to you if you are a lineman or responsible for the safety of linemen. 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
 3200 BELMONT AVE., CHICAGO



The Safety Library

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

MEDICAL CARE

The Purchase of Medical Care Through Fixed Periodic Payments, by Pierce Williams. Cloth, 320 pages, 6x9, price \$3.00. Published 1932 by the National Bureau of Economic Research, Inc., 51 Madison Avenue, New York City.

AS THE author states, the material presented in this report was gathered chiefly by correspondence, because of limited funds which did not permit extensive field work. Certain visits were made to the industrial centers of the states of Pennsylvania, Illinois, West Virginia and Alabama, and personal interviews with railroad officials in eastern cities and in Chicago have brought out definite additional information.

Essentially the book describes plans by which individuals are assured of medical or hospital care through the payment of a fixed amount periodically to some organization, provided the incapacity is due to injury or disease not already covered by Workmen's Compensation Laws.

An interesting point mentioned is that laws in force in all states of the Union, excepting Arkansas, Florida, Mississippi and South Carolina, require employers to provide medical care to employees injured while at work.

The chapter headings include: Summary; The American Campaign for Compulsory Sickness Insurance; Fixed Payment Medical Service in the Lumber and Mining Industries of Washington, Oregon and California; Fixed Payment Medical Service in the Metal Mining Industry of the Rocky Mountain States; Fixed Payment Medical Service in the Coal Mining Industry of the Rocky Mountain States; Fixed Payment Medical Service in the Coal and Metal Mining Industries of the Central States; Fixed Payment Medical Service in the Coal Mining Industry of the Appalachian States; The Hospital Contract System in the Southern West Virginia Coal Field; Fixed Medical Payment Service for Railroad Employees; Fixed Payment Medical Service Offered by Group Clinics, Community Health Associations, Community Hospitals, and Medical Benefit Corporations; Medical and Hospital Benefits Provided under Commercial Accident and Health Insurance Policies; Industrial Establishment Mutual Benefit Associations Providing Medical and Hospital Care; and Trade Union Sick Benefit Funds Providing Medical and Hospital Care.

This volume should be of definite interest to anyone who wishes to understand the factors which are basic in applying the principle of insurance to the provision of medical care, through the many different sources now available in this country.

C. O. Sappington, M.D., Dr. P.H.

OTHER BOOKS AND PAMPHLETS

Accident Statistics:

Accident Facts, 1932. Published by the National Safety Council, Inc., 20 North Wacker Drive, Chicago, Ill., 1932. Price 25c. (Pamphlet.) (Public Safety Series No. 26.)

Fatalities. Their causes and prevention. Published by the New York State Department of Labor, 80 Centre Street, New York City, 1932. Free. (Pamphlet.) (Bulletin No. 175.)

Asbestos:

Asbestos Mining and Manufacturing. Published by the Retail Credit Co., Atlanta, Ga., 1932. (Pamphlet.) (Industry Report.)

Explosives:

U. S. Bureau of Mines. Liquid-Oxygen explosives. By G. St. J. Perrott and N. A. Tolch. Published by the U. S. Government Printing Office, Washington, D. C., 1932. Price 25c. (Pamphlet.) (Bulletin 349.)

Labor Legislation:

New York labor laws enacted at the extraordinary session of 1931 and the regular session of 1932. Published by the New York State Department of Labor, 80 Centre Street, New York City, 1932. Free. (Pamphlet.) (Special Bulletin No. 174.)

Mines and Mining:

Coal report of Illinois, 1931. Published by the State Department of Mines and Minerals, Springfield, Ill., 1932. Free. (Book.)

Petroleum Industry:

A. P. I. Manual on organization for accident prevention. Published by the American Petroleum Institute, Department of Accident Prevention, Dallas, Texas, 1932. Price 15c. (Pamphlet.)

PERIODICALS

Automobile Drivers:

Forbes, T. W., Measuring drivers' reactions. In *The Personnel Journal*, August, 1932, p. 110-119.

Electric Railways:

Dana, E., Accidents reduced by research methods. In *Transit Journal*, August, 1932, p. 352-353.

Traffic:

Tuttle, L. S. and Holmes, E. H., The design of street and highway intersections. In *Public Roads*, July, 1932, p. 73-88.

Vacations:

Billings, C., Mishaps on the tourist trail. In *Hygeia*, August, 1932, p. 689-693.

Women in Industry:

Hayes, E. G., Selecting women for shop work. In *The Personnel Journal*, August, 1932, p. 69-85.

NATIONAL SAFETY NEWS

SAFETY SERVICE

Customers say Davis Safety Equipment
offers performance beyond expectation

We invite you to inspect our exhibit—Booths **29 & 30**

AT NATIONAL SAFETY CONGRESS

Avail yourself of the prompt service
from local stocks

DAVIS SPECIALIZED PROTECTION

TO SAFEGUARD AGAINST EACH INDUSTRIAL HAZARD

First Aid Division	Gas Protection Division	Industrial Safety Equipment Division	Electrical Safety Equipment Division	Personal Protection Division
Davis Unit Dressings Davis Unit Kits Davis All-Weather Kits Davis Burn Kits Snake Bite Packet Mine First Aid New Iodine Tannoid-Burn Oint. Davis Hat Pads Contest Outfits Stretchers Splints Gauze Bandages Muslin Bandages Absorbent Gauze Adhesive Plaster Absorbent Cotton Saf-T-Top Bottles	Davis Canister Masks Davis Canisters Davis Air Line Masks Davis Electric Blower Davis Safety Belts Davis Safety Harness Davis Inhalators J. W. Gas Indicator Respirators	Bulletin Boards Fire Blankets G. E. Hand Cream Justrite Waste Cans Justrite Safety Cans Safety Ladder Fast	Davis Body Belts Davis Safety Straps Davis Tool Buckets Davis Solder Catcher Davis Spur Protector Stephens Climbers Climber Straps and Pads Pliers Rubber Blankets Blanket Canisters Protective Sleeves	Davis Saf-T-Hats Safety Leggings Safety Spats Safety Sleeves Safety Mittens Safety Helmets Safety Coats Safety Aprons

Serious thought about Protection
leads to the use of
DAVIS SAFETY EQUIPMENT

DAVIS EMERGENCY EQUIPMENT CO., INC.

CHICAGO, ILL.

NEW YORK CITY

HOUSTON TEX.

New York City 55 Van Dam Street
Buffalo, N. Y. 76 Pearl Street
Chicago, Ill. 440 W. Washington Street
Dallas, Texas 1039 Young Street
Houston, Texas 720 Leeland Avenue
San Francisco 300 Second Street
Los Angeles 1248 S. Hope Street

How ~~safe~~ clean are your floors?

You hear much about sure-footedness and safe footing as accident preventives. "Watch your step" signs are conspicuous in most plants.

Equally conspicuous should be floor cleanliness. Cleanliness is a prerequisite to safety.

Clean, bright floors influence careful practices, reduce personal accidents, lessen fire hazards. They stimulate efficient production and accurate work.

Finnell equipment gets floors clean . . . and keeps them. Scrubs . . . dry scrubs . . . waxes and polishes . . . whatever is best for the floor surface . . . and produces beautiful, sanitary and safe floors.

Write for information. It costs nothing to learn what a Finnell installation will do. A Finnell representative will be glad to come to your plant, without obligating you at all, and make a recommendation for you to consider. Why not write or wire, today? Address FINNELL SYSTEM, INC., 1009 East Street, Elkhart, Indiana.

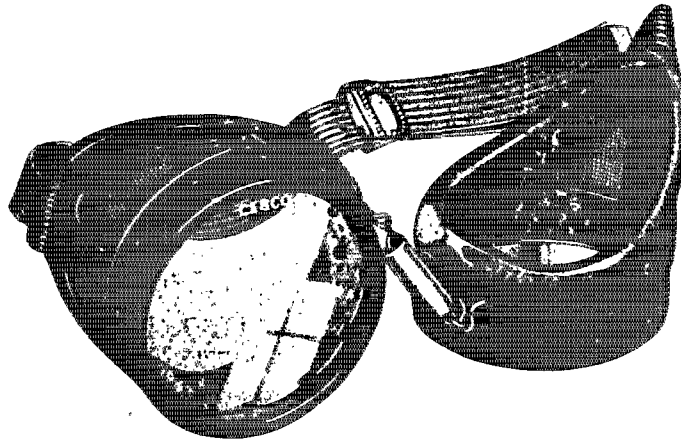
FINNELL
Est. 1906
ELECTRIC FLOOR MACHINE
SYSTEM OF FLOOR MAINTENANCE
For Scrubbing—Waxing—Polishing



Scrubs and
picks up the water
in one operation

A marvelous combination machine — Finnell No. 90. Scrubs for less than mopping cost. Other Finnells — large and small — a complete line.

Here's one way to solve an eye protection problem



THE CESCO "TROJAN" GOGGLE

One of our old customers says that they have their men use the CESCO "TROJAN" exclusively for eye protection in many parts of their plant. They like its *better ventilation* features, the *increased vision* and *unrestricted view* to be had because of the wide 50 mm. lenses. Comment has been made that the "TROJAN" is comfortable to wear, because of individual right and left eye cups that prevent severe pressures in any one spot. This customer uses the TROJAN with Super-Safety Lenses for chipping, grinding, caulking and other jobs where severe impact hazards are encountered. In the welding department their TROJANS have CESCO-Weld Lenses.

Wouldn't such a goggle be good for you? Sample goggles and literature on request. Write today.

CHICAGO EYE SHIELD CO.

2300 Warren Blvd.

CHICAGO

Machine Guards

Erdle Perforated Metal is the easy, practical and economical answer to your machine guard needs. Made in various gauges; No. 22 gauge always in stock. Sheets 36x120 inches with 1/2 inch holes.

Your handy man can make up and install any type of guard from Erdle perforated metal.

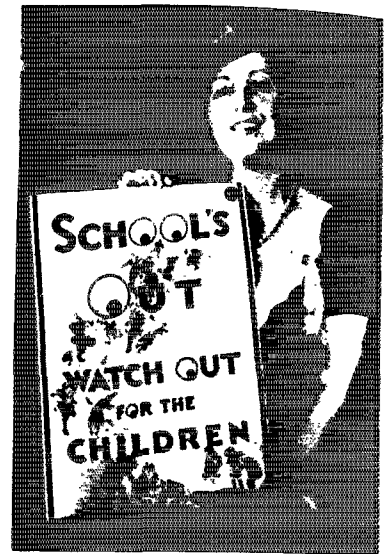
Write for samples and details

ERDLE PERFORATING COMPANY

171 York Street

Rochester, N. Y.

Radio Star Cooperates in Safety Campaign



JULIA SANDERSON, famous musical comedy favorite and star of the Bond Bakers radio program is shown with a striking safety poster of the General Baking Company. This timely poster prominently displayed in all Bond bakeries, warned more than 2,500 drivers to be extra careful during the vacation season.

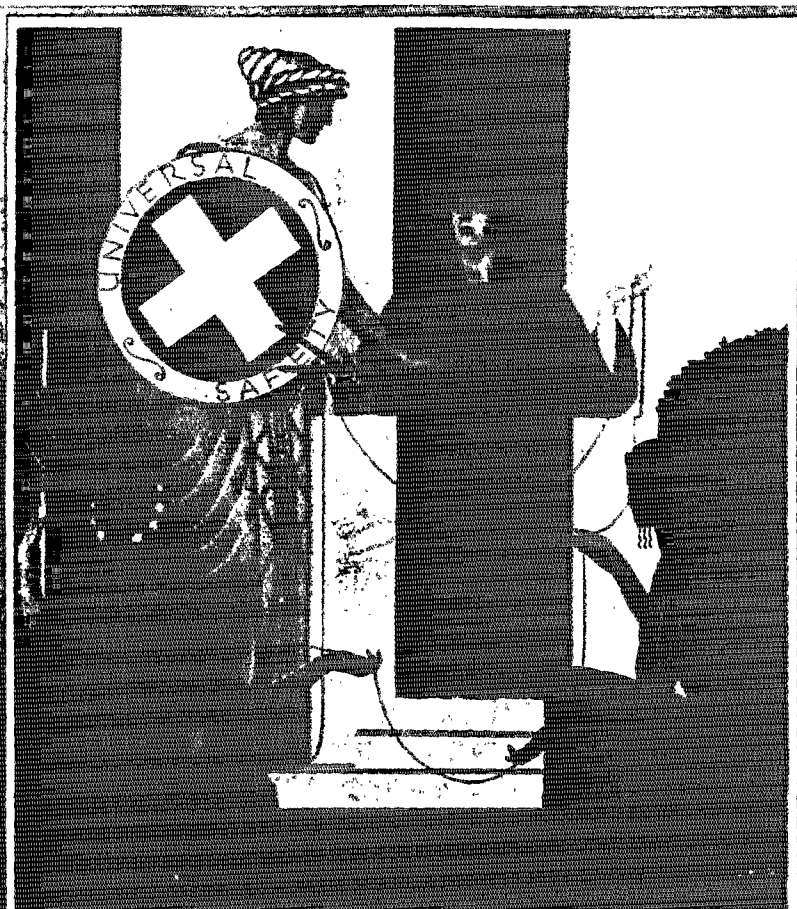
Not All Are Entitled to Insurance Benefits

ONLY those who are fit to enjoy them are entitled to participate in the benefits of insurance. The careless, who add unnecessarily to the losses, and the dishonest who are not averse to receiving a profit out of the loss rather than indemnity for the actual loss sustained, have no proper place in the insurance institution—likewise the barnacles who get something out of the insurance business without contributing anything of value to it. Only by very careful selection can these classes be kept out. —*New York Journal of Commerce.*

Notice of Annual Meeting of Members, N. S. C.

IN accordance with Article 3, Section 4 of the National Safety Council by-laws, notice is hereby given to members of the National Safety Council of the Annual Meeting of members, to take place at the Wardman Park Hotel, Washington, D. C., at 9:30 a. m., October 3, 1932.

NATIONAL SAFETY NEWS



MYTHOLOGY TELLS US OF THE THREE FATES—OF ATROPOS WHO, AT THE PORTALS OF ETERNITY, CUTS THE THREAD OF LIFE, WHILE LACHESIS MEASURES AND CLOTHO SPINS • TODAY AN ANGEL OF HUMANITY STAYS THE HAND THAT WOULD CUT THE SLENDER THREAD • MEN CALL IT SAFETY

1932 DECEMBER 1932	JANUARY							1933 FEBRUARY 1933
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31	SUN	MON	TUE	WED	THU	FRI	SAT	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28
	1	2	3	4	5	6	7	
	8	9	10	11	12	13	14	
1933	15	16	17	18	19	20	21	1933
	22	23	24	25	26	27	28	
	29	30	31	First Q-3	Full M-11	Last Q-19	New M-25	

YOUR IMPRINT HERE

OVER ➡

The 1933 SAFETY CALENDAR

Pictures the "Progress of Safety"

THE 1933 Safety Calendar takes for its basic theme the "Progress of Safety." It records in word and picture the illuminating contrast of yesterday's pioneering effort with today's accident prevention science. Here is a story of absorbing interest that constitutes a valuable contribution to the literature of safety.

With Other New Features

Eleven nationally known artists were selected to paint the twelve illustrations. They are done in oils and are reproduced in full color and in all the richness of the originals. Mr. Welsh, who has a national reputation for his treatment of allegorical themes, has given his best in the unique and beautiful frontispiece (*see this illustration reproduced in full color on the other side of this page*).

The American home comes into its own in the 1933 Calendar. More than a hundred practical household "safety kinks" and hints are offered as suggestions to the housewife. Each one is illustrated and this badly needed Code of Home Safety vies with the featured "Progress of Safety" in bringing the reader's attention to the back pages.

The new, simple yet attractive border, with a reduced calendar pad, permits larger, more detailed and more dramatic paintings. If you have not received your sample write for it today.

NATIONAL SAFETY COUNCIL
20 N. Wacker Drive Chicago

A Few of the 983
Members Who Distributed the 1932 Calendar

A. P. W. Paper Company
Aluminum Company of Canada, Ltd.
American Bridge Company
American Mutual Liability Insurance Co.
American Radiator Company
American Steel Foundries
Anaconda Copper Mining Company
Appalachian Electric Power Company
Associated Gas & Electric System
The Barber Asphalt Company
Harnedall Refractories, Inc.
Belt Railway Company of Chicago
Bemis Bros. Bag Company
Bergstrom Paper Company
Bird & Son, Inc.
The Booth-Kelly Lumber Company
Braden Copper Company
Brook & Rankin
The Brunswick-Balke-Collender Company
Bunker Hill & Sullivan Mining & Concentrating Co.
Burroughs Wellcome & Co. (USA) Inc.
Carnegie Chemical Company, Inc.
Central Hudson Gas & Electric Company
The Champion United Paper Company
The Chesapeake & Potomac Telephone Company
Chicago By-Product Coke Company
City Ice Company of Kansas City
The Connecticut Power Company
Consolidated Gas Company of New York
The Delaware & Hudson Railroad Corporation
E. I. du Pont de Nemours & Company
Duquesne Light Company
Thomas A. Edison, Inc.
Employers Reinsurance Corporation
Federal Mining & Smelting Company
The Fisk Rubber Company
General Accident Fire & Life Assurance Corp., Ltd.
General Chemical Company
General Electric Company
General Foods Corporation
General Motors Corporation
The Grasselli Chemical Company, Inc.
Great Northern Railway Company
Hazard Mutual Casualty Company
Hercules Powder Company
Hooker Electrochemical Company
Illinois Bell Telephone Company
Illinois Power & Light Corporation
International Paper Company
Iowa Mutual Liability Insurance Company
Jersey Central Power & Light Company
Spencer Kellogg & Sons, Inc.
The Koppers Company
The Lehigh & Hudson River Railway Company
Lehigh & New England Railroad Company
Lehigh Portland Cement Company
Libby, McNeill & Libby
Lumbermen's Mutual Casualty Company
The Memphis Street Railway
Mississippi Valley Structural Steel Company
New York Edison Company
Penn Central Light & Power Company
Pennsylvania Manufacturers Assn. Casualty Insurance Co.
Phelps Dodge Corporation
Philadelphia Electric Company
The Procter & Gamble Company
The Pullman Company
Royal Indemnity Company
The Solway Process Company
Standard Oil Company
Standard Steel Car Corporation
Charles H. Tenney & Company
The Texas Company
Trojan Powder Company
Union Pacific Railroad Company
Union Tank Car Company
The United States Aluminum Company
United States Rubber Company
United States Smelting & Refining Company
Vacuum Oil Company, Inc.
Westchester Lighting Company
Western Union Telegraph Company
Westinghouse Electric & Manufacturing Company
Willard Storage Battery Company
Wisconsin Power & Light Company
The Youngstown Sheet & Tube Company

Price Schedule

(All Prices F.O.B. Chicago)

Quantity	Packed flat in bulk	Enclosed in mailing tubes
Single copy		\$0.50
2 to 11	\$0.40	.42
12 to 99	.35	.37
100 to 299	.32	.32
300 to 499	.27	.29
500 to 999	.25	.27
1,000 to 4,999	.24	.26
5,000 to 9,999	.23	.25
10,000 or over	.22	.24

The Plant Physician

(Continued from page 44.)

There is no place where you come in such close contact with the working man as in the plant clinic, and it is there that the greatest lessons in health can be put over.

It used to be thought bad for the men in the plant to know when an accident occurred, and bad for other workmen to see the injured man. I do not agree with that. The injured workman is a great object lesson; I do not know any better preacher in the cause of accident prevention than the man who has lost an eye or a hand.

The big opportunity of the medical department to aid in the safety program really comes in its direct contact work with the employee. I think you will agree with me that the relation between the injured man and the plant physician should be strictly confidential. This confidential relation never should be jeopardized and no advantage should ever be taken of what a man tells or confesses to the plant doctor. The clinic doctor should not be merely one who treats bruises and other injuries, but should have a social vision and a professional interest in all the problems that come before him.

He should ask himself, "Why do I get so many injuries, and why do I have so many cases of illness?" If he finds that employees are continually complaining of headaches, especially in certain departments (as in a shoe factory), his curiosity should at once be aroused to question "Why?" And he may find that the men are exposed to an excess of one thing or another—for instance, benzine. The workman's health is his most vital possession and he must help him to conserve it.

The all-day dispensary is a great melting pot for human experiences and the right man in charge becomes both priest and physician, confessor and advisor. Sometimes a man is unhappy for psychological reasons; the relations between him and the men about him, or between him and his foreman are a constant source of irritation. The doctor knows that the right mental conditions are just as important to the welfare and efficiency of workers, have just as much to do with output and profits, as do physical conditions.

SEPTEMBER, 1932

**There you are . . .
you can't do better than use**



Protex Toe SAFETY SHOES

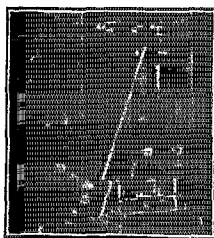
Comfortable shoes—easy to wear—neat appearing and give the wearer assurance that he's getting 100% foot protection. They'll prevent many a painful injury. Have your men wear them, make them comfortable and be on the safe side.

Protex Toe Industrial Shoes always have been and always will be well made—the materials are the best obtainable and they'll give long service under the most severe conditions. You can't find better values anywhere.

If you have never tried Protex Toe Safety Shoes, try them now and have your men enjoy the best industrial foot wear at a saving. Write for information and prices.

Complete line of safety shoes for every industrial requirement

Leon Schiff & Co.
108 West Lake St. Chicago, Illinois



Order a D. & M. Automatic Guard for 30 days FREE trial. State size and make of press and whether left to right or right to left swing is wanted.

for HIGH SPEED PRODUCTION

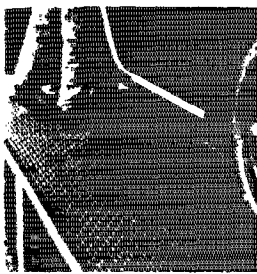
plus high grade protection

Use D. & M. Automatic punch press Guards. Always out of the way of feeding, D. & M.'s also give super protection that allows your operator to do his best work.

D. & M. Automatics fit any punch press made—are easily installed by merely drilling and tapping 2 holes—swing either right or left as desired and have an exclusive, patented shield preventing operator from reaching behind the guard. LOW IN PRICE—\$18.50 to \$28.00.

TAYLOR-SHANTZ CO.

486 ST. PAUL STREET
ROCHESTER, N. Y.

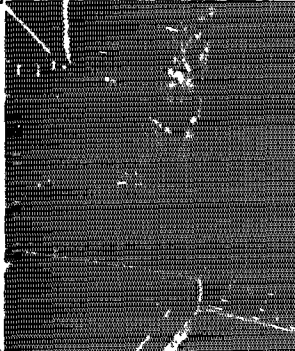


Wherever
the footing
must be sure

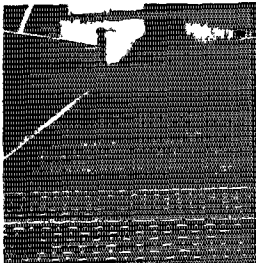


CENTRAL KNOBBY and KNOBBYETTE Non-Skid FLOOR PLATES

Made in any desired
size or weight.



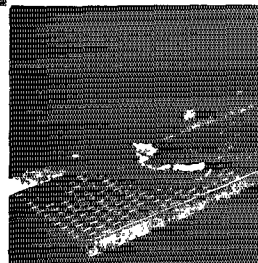
Indoors, outdoors, any
and everywhere —
Central Floor Plates
will be found guiding
the feet of humanity
along paths of never-
failing safety.



Registered in U. S. Pat. Off.
and
Underwriters and Laboratories
Inspected S. A. 443

Send for interesting booklet de-
scribing construction, application
and advantages.

CENTRAL IRON & STEEL CO.
HARRISBURG, PENNA.
Branches in Principal Cities.



Harsh words, sarcasm from a foreman or superintendent, cause the doctor his hardest job. Fears of all kinds, discontent, financial troubles, sickness and trouble at home, love affairs, bad habits and innumerable other things cause mental and physical depressions that arise daily and undermine the health of the employee. It is as essential to remove these as it is to tie up a cut finger. Sickness and injuries are both company liabilities.

What I have pointed out in relation to the workman is true also in large measure as applied to the plant executive. Men in the higher positions worry over the job until the break, and they need to be looked after now and then. They have their troubles in wielding control over a large organization. They neglect themselves and need to visit the doctor's repair shop. Their carburetors need adjusting. As a result, when we have impaired health we have inefficiency, a liability to industry, to family and to the community.

If the doctor can anticipate and remove the causes of ill health, either in the environment or in the human body, then it is plain that he is a vital part of the plant accident prevention work.



THE DOOR CHISELER

is the fellow who
takes it for granted
that "PRIVATE"
does not mean him.

But Stonehouse signs, for
this purpose, say 'stay out'
in such a way that even
the chiseler understands
and obeys it.

 **Stonehouse** **SIGNS, INC.**

Stonehouse Bldg. 9th at Larimer
DENVER COLORADO
"STONEHOUSE SIGNS SINCE 1863"



502-A

Electric Railway Teaches Public with Posters

THE trolley cars of the Northumberland County Railway Company, Sunbury, Pa., operated throughout the year 1931, traveling a total of 176,000 railway miles, without a single serious accident. Nothing in the way of an accident was suffered except very minor brushes with a few reckless automobiles.

This success of the motormen in avoiding accidents is attributed by the management to the assiduous use of safety posters and other educational material of the National Safety Council, of which the company is a member, and a steady campaign of education carried out by the company officers.

"We have a large window on the public street," writes the secretary of the trolley company, "and the posters that are general in their safety education, we paste on the glass, and it is surprising the number of people who stop to read and look them over. The Council's safety calendar is also a constant reminder of the safety campaign both in the home and to the employee himself."

NATIONAL SAFETY NEWS

Let's Change the Safety Man's Title

By FRANK MORRIS*

IN THE early days of the industrial accident prevention movement the appeal to the employer was usually made by pointing to a bucket of blood and rattling a bag of bones. But because this approach was entirely emotional, the safety program too often was allowed to lapse and the march to the hospital continued with little or no abatement.

In these more advanced days we define accident as "an interruption to production." We know that "the safe plant is the efficient plant." We have calculated that for every personal injury accident there are "100 other interruptions to production." Moreover, we perceive that "for every dollar paid in compensation for injuries the employer pays four dollars in indirect costs."

Statistics show us that "the productive time lost in minor personal injury cases is three times that lost

*Assistant Chief Engineer, Liberty Mutual Insurance Co., Boston, Mass.

in major injury cases." We know that "eight out of ten injured men are themselves largely responsible for their hurts." And we know that "at least 80 per cent of personal injury cases are within the control of supervision."

Yet there are today some so-called safety men who still carry around that proverbial "bucket of blood."

Isn't it time we advocated the abolishment of the title "Safety Director" and substituted for it that of "Assistant to the Production Manager?"

For we have made tremendous advances in knowledge of how to control personal injuries in industry. Our former approach to the problem has been thrown into the scrap heap, and now we talk chiefly about increasing production and lowering the unit costs.

This may sound unorthodox to many of the sincere men who have always used the "prevent human suffering" and "widows and orphans" pleas, with little regard for the plain "dollars and cents" arguments. But the truth is that this unlovely and unemotional approach to the so-called

humanitarian problem is sound economically, and our experience is that employers are eager to follow up such a sane procedure.

This "increase production" plan prevents more personal injuries than does the old "Always Be Careful" method, and that is the result we are all striving for.

Yellow fever interfered with building the Panama Canal, so we found the cause, eliminated it, and finished the canal. We haven't been bothered with yellow fever since.

Let's dispose of that old misnomer "safety director."

Unfit Operator Surrenders His License

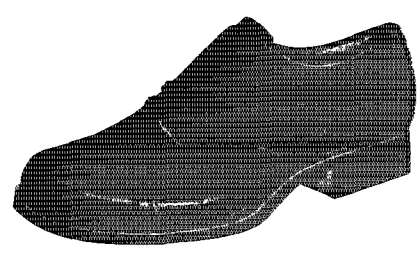
FEELING himself physically incompetent to operate a motor vehicle on the highways with safety, a man in Franklin, Pa., voluntarily revoked his operator's license for 1932. In a sworn statement which accompanied his returned license he stated that he was suffering from nervous and physical infirmities which, he felt, made him an unsafe driver.

FOOT INJURIES CAN BE PREVENTED



Foreman Type

Featuring
Steel Box Toe
and
Steel Shank



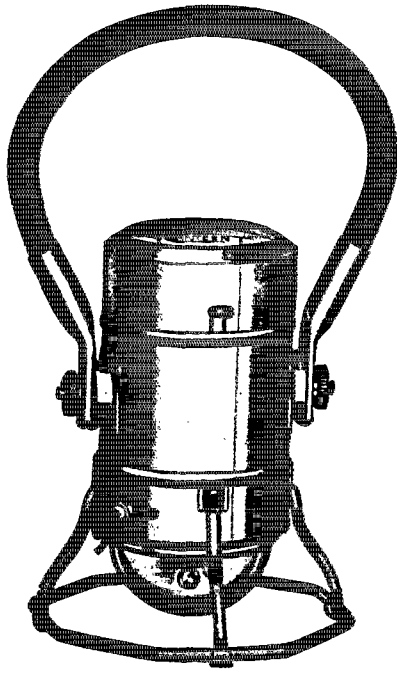
For Office Wear

Hundreds of thousands of dollars in lost time and compensation costs have been saved through the use of LEHIGH "SAFETY" SHOES; and their use is extending rapidly throughout the industrial world.

Visit our EXHIBIT BOOTH 32, Safety Congress, October 3-7, 1932.

LEHIGH SAFETY SHOE COMPANY
ALLENTOWN, PA.

Never a Fire or Accident



APPROVED SAFETY ECOLITE
No. 40-UV, Pat. Pend.

Caused By An ECOLITE SAFETY LANTERN

Ecolite No. 40-UV is the only portable electric lantern recommended by the Underwriters' Laboratories.

You can avoid many costly fires and accidents by equipping workmen with recommended Ecolite 40-UV safety lanterns.

Many industrials are standardized for all locations or work requiring safe portable lights.

Safety engineers, fire, accident and indemnity insurance inspectors all recommend them.

This safety light costs no more than ordinary, unapproved portable lights. It is more economical to operate. It lasts longer than any other portable light in any class of service.

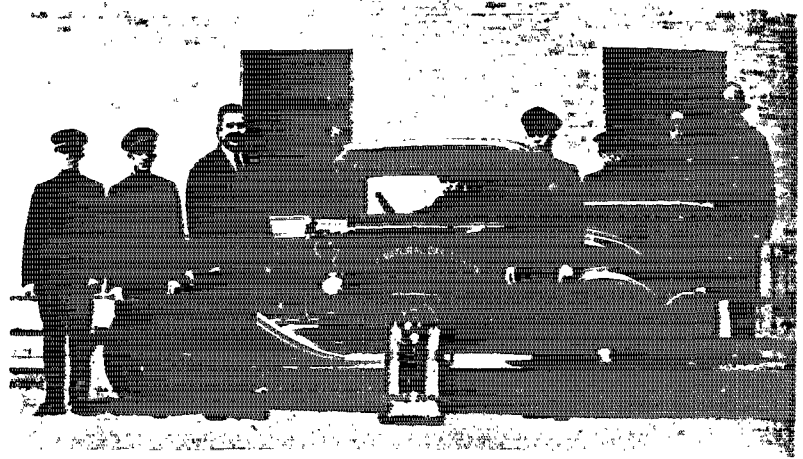
LIST PRICE \$4.50 less battery
List Price Battery, 50c each
F. O. B. Chicago

Usual Trade Discounts

For further details address

DEPT. A

**ECONOMY ELECTRIC
LANTERN CO.
CHICAGO ILLINOIS**



The Oklahoma Natural Gas Corporation emergency car which operates in Tulsa and its crew. The crew works in shifts and is available for duty 24 hours daily.

Safety Program Includes Community Service

By R. S. HUFFMAN*

THE organized safety work of the Oklahoma Natural Gas Corporation has not been allowed to suffer, in spite of the necessity for drastic economies. In the words of President E. A. Olsen, "Safety is one of the most constructive and practical activities a public utility can sponsor." Our experience shows a substantial saving both in time and money as a result of the safety work we have stressed.

In 1930, with a total daily average of 1,565 employees, there were 86 accidents in which time was lost. In 1931, however, with an average of 1,097 employees, these accidents were reduced to 22. We trace the improvement directly to the influence of the safety and first aid classes which have been organized along the lines suggested by the Bureau of Mines.

We have what is known as the Oklahoma Natural Service Club in each district. These include Tulsa, Oklahoma City, Enid, Muskogee, Okmulgee, and Morris, Oklahoma, and clubs will soon be organized in Ardmore and Shawnee. These places all have their meetings monthly, the programs consisting of safety talks, entertainment and quarterly first-aid contests. Recently we had a first-aid elimina-

tion contest among the teams from all over our system in Tulsa, our Morris, Oklahoma, team winning first place. This team was entered in the Oklahoma Utilities Association first aid contest and won first place with a silver loving cup as the trophy.

One of the outstanding activities in our safety program is the operation of two emergency cars, one being located in Tulsa and the other in Oklahoma City. In addition to the purely local work necessary on our company's service, these cars answer all city fire alarm calls and are available twenty-four hours a day. The active participation of the Tulsa car in this service is one reason why that city's fire insurance loss has been sliced nearly \$500,000 annually.

The cars are fast coupes, fitted with a light truck body, and are fully equipped to fight fires. They also carry a complete first aid equipment, including an oxygen lung inhalator. Two men can ride on the rear step, in addition to the two riding in the driver's seat. However, it is customary to use only two men for each call, unless more are needed. The cars are painted a bright red and have a siren to help in obtaining traffic clearance.

The car equipment includes bandages, splints, blower type gas masks.

NATIONAL SAFETY NEWS

*Personnel Director, The Oklahoma Natural Gas Corporation, Tulsa, Okla.

latest type firemen's hats and slickers, safety tank, blankets, hot pads, powerful electric removable lamps, axes, and a 'CO. fire extinguisher. The crews have been trained in advanced first aid methods and in a knowledge of poisons and gases.

It once fell to the lot of the Tulsa crew to revive an entire family that had been overcome by gas, and on another occasion they thwarted a suicide attempt by asphyxiation. During a bad fire two women were overcome by heart attacks and were successfully revived. On still another occasion it was necessary to rush the car with an inhalator to Okmulgee, 50 miles from Tulsa, to resuscitate a boy who had been overcome by gas.

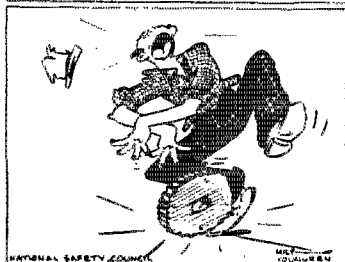
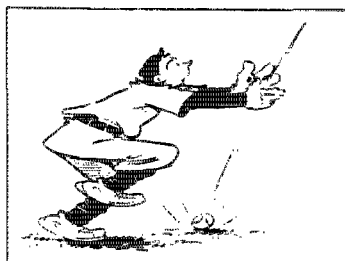
Our men's first aid team from Oklahoma City recently had an opportunity to do some practical work on the road. The team was returning home after participation in the elimination contest when, just ahead of them, another automobile was struck by a train. Prompt and efficient work by the team made matters simple for the doctors when they arrived.

In addition to the various men's first aid teams, we have a girl's team in the Tulsa office, and this is constantly in demand to appear before civic clubs and other organizations to demonstrate its ability.

Judge: "Well, what is your alibi for speeding 50 miles an hour?"

Traffic Offender: "Your honor, I had just heard that the ladies of my wife's church were giving a rummage sale and I was hurrying home to save my other pair of pants."

Judge: "Case dismissed!"



Errors

TRUE Safety

BEGINS WITH Safe Footing



In the best protected plants, men repeatedly fall into danger and are injured because of uncertain footing.

GRO-CORD soles and heels provide a non-slip walking surface for workmen at all times wherever they may step. Heavy cord tire cords embedded upright in live rubber make Gro-Cords non-slip. Wear keeps the cord ends bare and workmen safe from falls.

Only GRO-CORD can use this amazing patented feature. In the interests of safe footing, write GRO-CORD for full information.

THE LIMA CORD SOLE AND HEEL CO.

Dept. 9-F

Lima, Ohio

Fully protected by Patents

GRO-CORDS
Are Widely Used In
Dairies
Iron and Steel Foundries
Railroad Shops
Auto Factories
Gas and Electric Plants
Ice and Fuel Stations
Packing Houses
Stone Quarries
Mines
General Warehouses



THE SAFE WAY

Never Slip Safety Clamps for use in handling boiler plate constitute the safe sure way to perform this operation. They have many advantages over old-fashioned hooks and chains because they do not have a tendency to slip, as the weight of the piece pulls the clamp tighter.



Boiler plates are easily damaged—don't tolerate clamps that encourage bent, chipped work. The safe way is the only profitable way.

Write for complete details

Never Slip Safety Clamp Co.

51 East 42nd St., New York

Worth's ANTI-SLIP

Floor Cleanser
SAVES TIME AND MONEY
Keeps Dirt Out

MODERNIZE your methods of cleaning. New and original floor cleaning and sweeping compounds for wood, metal, marble, mosaic, terrazzo floors.

EASILY APPLIED, merely scatter over floor and and SWEEP with push-broom. This SINGLE and SIMPLE operation lays DUST, takes up DIRT and CLEANS swiftly.

LEAVES FLOOR ABRASIVE, protects from injuries due to slipping and automatically reduces liability risks.

Approved for use by casualty insurance companies.

Obtainable in 10 pound packages or in steel drums of 50, 100 and 250 pounds.

WORTH MILLING COMPANY, Inc.

Middletown, Conn.

36 West 44th Street, New York City

Tel.: Murray-Hill 2, 2050



SHOW THE SAFETY "SPIRIT OF '32"
AT WASHINGTON •• OCTOBER 3-7

How Diet Affects Fatigue and Efficiency

FIND out what the applicant eats before you hire him, was the advice given by Dr. Donald A. Laird, director of the Colgate University Psychological Laboratory, at the summer meeting of the National Office Management Association. The psychologist pointed out the growing body of scientific knowledge which shows the importance of diet as concerns fatigue and efficiency.

Iron and copper bearing foods, calcium and phosphorus bearing foods, and carbohydrate foods are the ones, Dr. Laird reported, which scientific research is showing to have a profound relation to fatigue and production. Studies were cited which discovered that workers on a habitually low carbohydrate diet were lower in production than when they were put on a high carbohydrate diet. What is probably of more interest to the worker is the discovery that he does not feel fatigued as much when on the high carbohydrate diet. This paradox of doing more work and feeling less fatigued about it, is due to the carbohydrate foods being the primary sources of muscular energy.

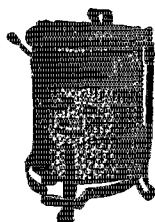
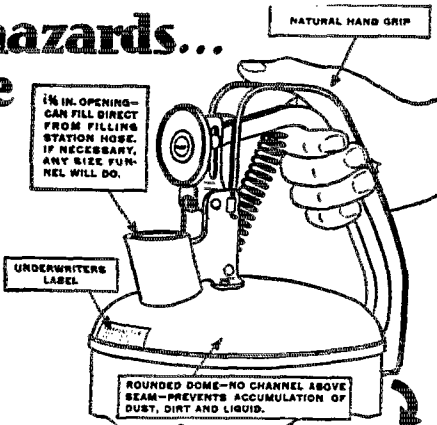
"The plant cafeteria, lunch room, and canteen should take these facts into consideration," Dr. Laird commented. "By supplying predominately carbohydrates they can help production and feelings of tiredness, especially in the afternoon work spell. A mid-afternoon sweet snack of a chocolate bar or a few cookies is an excellent 'pick-up' from fatigue."

NATIONAL SAFETY NEWS

Justrite SAFETY APPLIANCES

Reduce fire hazards...
Lessen insurance
rates.....
Increase shop
efficiency...

JUSTRITE Safety Appliances are inspected and labeled by the Underwriters, Inc., and the Associated Factories Mutual Fire Insurance Companies. Protect your plant—your employees—install the latest improved JUSTRITE Safety Devices. See your dealers or write us for interesting prices and literature.



Justrite Waste Can
Capacity—6, 8, 10,
14 gallons

JUSTRITE SAFETY CAN

For explosive and volatile liquids. Leaking and evaporation are prevented by automatic spring controlled spout cap. Non-explosive even under extreme heat. Natural hand grip. Sizes—1 1/2 to 5 gallons; can be filled direct from filling station hose. No special funnels required. Handy—convenient—sure safety.

JUSTRITE WASTE CAN

Opens with Foot—Closes Automatically

For oily waste rags and other inflammable material. Automatic. Foot operated. Leaves hands free. No springs. Portable. Quickly emptied. Non-leakable. Sizes 6 to 14 gallons.

JUSTRITE MFG. CO.
2087 SOUTHPORT AVENUE CHICAGO



Justrite Safety Can
Sizes—1 pint to
5 gallons

THE HONOR ROLL

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

Empire Refining Company

Working a total of 886,273 man-hours without a lost-time accident, the Empire refining division has set a company record for the first six months of 1932. This record won for the refining division the management's trophy for the period.

Georgia Power Company

With an average of 3,782 employees, the Georgia Power Company, Atlanta, worked throughout the month of June, for a total of 756,400 man-hours, without a lost-time accident. This is the first time that these employees have succeeded in completing a calendar month in perfect safety, and it has stimulated both the management and the employees to greater efforts in accident prevention.

Inland Steel Co.

All departments of the Inland Steel Company, Indiana Harbor Works, recently completed a no accident period of 52 days without a lost time accident. This record was made during the period May 22 to July 12, inclusive. Having worked during the period 124,101 man turns with an average of 8.1 hours per turn or a total of 1,005,218 hours. Following are several department records as of July 26: Coke Plant, 420 days, 325,896 hours.

Tie Plate & Splice Bar, 922 days, 403,722 hours.

14 inch Merchant Mills, 747 days, 591,842 hours.

10 inch Merchant Mills, 501 days, 381,578 hours.

Bolt & Rivet, 453 days, 91,377 hours.

Stores & Refractories, 846 days, 366,568 hours.

Steam, 1244 days, 365,736 hours.

Masons, 742 days, 248,224 hours.

Roll Shop, 1372 days, 560,032 hours.

Track Labor, 553 days, 183,656 hours.

Transportation, 848 days, 690,664 hours.

Inspection, 658 days, 301,616 hours.

Blast Furnaces, 283 days, 465,492 hours.

36 inch Bloom & 19 inch Mills, 329 days, 204,402 hours.

Structural & Rail Mills, 266 days, 492,012 hours.

Sheet Galvanizing, 349 days, 201,580 hours.

Mechanical, 286 days, 349,528 hours.

Power, 238 days, 163,512 hours.

Electrical, 292 days, 40,592 hours.

Yard Labor, 234 days, 131,632 hours.

Miscellaneous departments, 605 days, 1,123,720 hours.

All departments of the plant, with the exception of eight, have gone more than 200 days without a lost-time injury.

Lion Oil Refining Company

The Lion organization, consisting of 493 employees, has now gone through three

consecutive months without a lost-time accident. The employees are scattered in various departments through Arkansas, Louisiana, Mississippi, Alabama and Tennessee. During the months of April, May and June they worked a total of 403,437 man-hours in safety.

Mid-Continent Petroleum Corp.

The car repair department of the Mid-Continent organization has worked through two and one-half years without a lost-time accident. The record runs from January 28, 1930, to July 28, 1932, and comprises a total of 335,846 man-hours. Fifty-seven men are employed in the department, doing all kinds of light and heavy repairs to steel tank cars, including painting and general maintenance.

New Orleans Corrugated Box Co.

With an average of 105 employees, the Bogalusa plant of New Orleans Corrugated Box Company has operated 856 working days without a lost-time accident. The exposure was approximately 500,000 man-hours. On July 26 the record was still unbroken. The plant is a subsidiary of Robert Gaylord, Inc., St. Louis, and there has been safety competition between branches during the past three years.

Northwestern Bell Telephone Co.

Four years without a lost-time accident have been completed by the Sioux City district of the Northwestern Bell Telephone Company. The last lost-time accident occurred July 13, 1928. The 134 employees have worked a total of 1,416,720 man-hours in the period.

Following closely is the Davenport district of this company, which has not experienced a lost-time accident since July 8, 1929. The average number of employees in this district has been 172, and they have worked 1,209,472 man-hours without a lost-time accident.

Philadelphia Electric Company

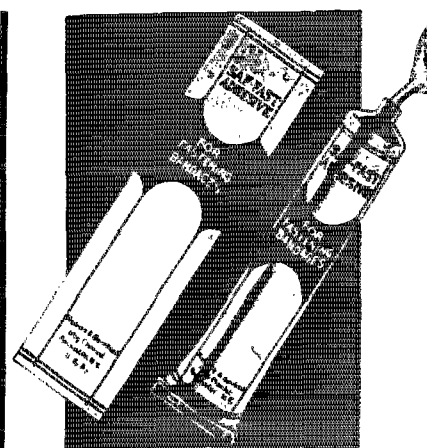
On July 10 the entire Philadelphia Electric Company organization, approximating 7,150 employees, completed a period of 33 days, or 1,700,000 man-hours, without a lost-time accident. This is the largest number of consecutive days without a lost-time accident in the history of the company.

Tide Water Oil Co.

During the six months ending June 30, five of the ten groups of the Tide Water Oil Company worked 634,143 man-hours without a lost-time accident. The manager's trophy, for which the units were competing, was won by Group No. 7, with an exposure of 155,893 man-hours without a lost-time accident. This group consists of East Jersey Railroad, East Jersey Lighterage, Industrial Railway and Motors, Material Warehouse, Salvage and Supply, and Material Handlers. During the contest period the ten groups worked 1,420,903 man-hours with nine accidents involving a total loss of 2,792 working hours.

Wickwire Spencer Steel Co.

On July 21 Morgan Works of the Wickwire Spencer Steel Company at Worcester, Mass., completed two years of operation



Try This Free

We'd like to give you a sample tube of Saf-fast, the liquid adhesive for fastening bandages. You will find Saf-fast remarkably useful in all bandaging operations. Just squeeze a little from the tube onto the bandage (Saf-fast soaks through about three layers of gauze) and it dries in 20-30 seconds, holding the gauze perfectly.

Saf-fast is pure white, absolutely sanitary, and not affected by oil, or water, or gasoline. Men whose bandages are fastened with Saf-fast can go right back to work without danger of bandages coming unfastened. Saf-fast is quick and sure. Doctors, Nurses and Safety Engineers all should try Saf-fast. Get your sample at Booth 20, Annual Safety Congress, or—

Clip
The
Coupon

Robert A. Barnhart

155 Anderson Ave.
Rochester, N. Y.

Please send me a Free Tube of Saf-fast.

Name.....

Firm.....

Address.....

**High VELOCITY
Low PRESSURE...**

**Blow, Spray
or Suction-clean**

This portable electric blower delivers DRY air, FREE FROM OIL, at high velocity, yet comparatively low pressure.

It is instantly convertible for suction-cleaning stocks, bins, auto interiors, furniture, overhead pipes, rafters, line-shafting, etc., or for spraying insecticides, paints, lacquers, etc. The most complete equipment for every suction-cleaning or spraying requirement.

No installation. Universal motor. Attach to any light socket. Less than 2c an hour to run. Ball bearing—no oiling. 4 models.

**Endorsed
...by Insurance Underwriters**

It safely, quickly, and efficiently cleans motors, generators, converters, shafting, overhead piping, etc. Reduces fire risk and danger of "shorts" and "burnouts." Lengthens life of motors. Helps prevent shutdowns.

Fully GUARANTEED by 20-year-old company, originators and largest manufacturers of portable electric blowers. Used by over 20,000 concerns.

TRY THIS BLOWER 10 DAYS. Then pay for it or return at our expense. WRITE TODAY.

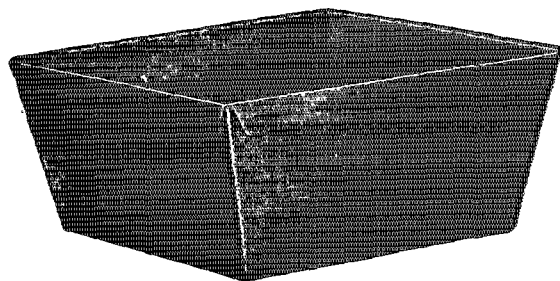
Clements Mfg. Co., 567 Clements Bldg.
6650 So. Narragansett Ave., Chicago

**Ball-bearing
Clements
Cadillac**

**10 day
FREE
TRIAL**



Sanitary Paper Cuspidor



JUST the thing you have been looking for to promote plant cleanliness. Men must spit and if not provided with convenient receptacles the corners suffer and you have an unsightly plant.

Burnitol waterproofed paper cuspidors are too inexpensive and too easy to handle to tolerate careless spitting habits in any plant. They will save their cost in janitor time.

1,000 cost only \$8.50 F. O. B. Boston or send \$3.50 for a trial order of 250—sent prepaid.

Burnitol Manufacturing Company
Everett Station Boston, Mass.

without a lost-time accident. During this time the average number of employees was 271 and the exposure was 1,036,462 man-hours. The mill manufactures wire and springs, operating a wire mill, heat treating rooms and related activities, with presses, forming machines, and special automatic machinery. This record won for the plant a certificate of merit from the insurance carrier.

Wood-Mosaic Co.

On July 24, the Walnut Veneer Department of the Wood-Mosaic Company, Louisville, Ky., completed 1,000 working days without a lost-time accident. The exposure totaled 327,493 man-hours. An energetic safety committee was the principal factor in making this record, according to F. C. Starkey, safety director for the company.

The present accident prevention program was adopted in 1926 when Mr. Starkey was placed in charge. In 1928 a safety trophy was offered by the company to the employees of the department which made the best record during the year. At this time the Walnut Veneer Department was far behind the other three departments but came from behind to win with a record of 353 days without a lost-time accident. The accident which terminated this record was the last which has occurred in the Walnut Veneer Department to date.

In the annual statistical tabulations of the National Safety Council the Walnut Veneer Department ranked first in its group in 1930 and second in 1931. The Oak Veneer Department has operated 665 days without a lost-time accident.

COMING EVENTS

Associations featuring safety in their programs are invited to send dates of meetings

Sept. 26-30, Swampscott, Mass.

Illuminating Engineering Society. Annual Convention. E. H. Hobbie, general secretary, 29 West 39th Street, New York City.

Oct. 3-7, Washington, D. C.

National Safety Council, Twenty-first Annual Safety Congress. W. H. Cameron, managing director, National Safety Council, 20 North Wacker Drive, Chicago.

Oct. 10-14, Atlantic City, N. J.

American Gas Association, Annual Convention. Alexander Forward, managing director, 420 Lexington Ave., New York City.

Oct. 24-27, Washington, D. C.

American Public Health Association, 61st Annual Meeting. Dr. Kendall Emerson, American Public Health Association, 450 Seventh Ave., New York City.

Nov. 3-4, Winston-Salem, N. C.

Third Annual State-wide Industrial Safety Conference. E. G. Padgett, director of safety, North Carolina Industrial Commission, Raleigh, N. C.

NATIONAL SAFETY NEWS

Unenforced Safety Rule Is No Defense

FAILURE on the part of the employer to enforce safety rules has again been found sufficient grounds by the court to award full compensation to an injured employee, even though the injury was brought on by his disobedience of the rules. The burden of responsibility rests squarely upon the shoulders of the employer.

The case in point is that of Milwaukee Corrugating Company vs. Winters, Supreme Court of Wisconsin, 222 N. W. 251, where the employer sought to have compensation reduced on the ground that at the time of the injury the defendant, Winters, was not wearing the safety device provided. The law says specifically that "Where injury is caused by the willful failure of the employee to use safety devices where provided by the employer" a certain reduction in compensation may be made.

Nevertheless, each case is decided upon its individual merits. Winters was a drop hammer operator. These hammers were equipped with a safety device consisting of a strap so attached to the arm of the operator and the hammer that if he failed to remove his hand from the zone of danger, as the hammer fell it would automatically jerk the operator's hand into the clear. Under the shop rules operators were required to use this "harness." Winters lost his left hand while operating the hammer without the safety device.

Evidence was introduced to show that while the safety rule existed and the defendant was aware of it, the rule was never truly enforced; that the safety device was cumbersome and interfered to some extent with the operator's movements, and for that reason the device was not generally worn.

In addition, the defendant showed that, while the drop hammer operators were reminded of the rule to use the safety device when caught working without it, a reprimand was always the extent of punishment. As the result of this policy, the rule was never taken very seriously by the employees and more or less open disobedience was the rule rather than the exception.

The court said: "Such a situation amounts practically to a tacit consent on the part of the employer, and un-

der such circumstances the failure to use the harness can hardly be deemed to be willful, in the sense . . . of the statutes. . . . The failure to use the device was not in the nature of a defiance of the rule of the company, but because its use was connected with discomfort, because it interfered with the operator's dispatch of duties, and because, notwithstanding the reprimands, the failure to use the device was tolerated."

What Do We Mean by Accident Prone?

(Continued from page 20)

have continued such a practice until we acquired better knowledge and could in turn educate them?

Place a baby at the top of a flight of stairs, leave it unguarded, and soon or late it will tumble down the flight; moreover, it will repeat this performance as often as it is left in such an unguarded position. But install a gate across the stairs and such accidents will promptly cease. Is this any reason for calling the baby in the meantime accident prone?

New employees, untaught in safety and improperly selected for their jobs, are more or less like that baby; but with ever increasing knowledge in the art of job selection, periodic checks both on physical health and mental attitude, and more intensive accident prevention work, fewer employees will be misplaced and the so-called "accident-prone" employee will disappear.

In the meantime, the term "accident-prone" carries a stigma altogether too sweeping in its implications, the inference being that such employees are all a general hazard, like "typhoid Mary"—that they are prone to accident wherever placed; whereas even the advocates of the term mean as a rule only prone to accident in a particular job. You remember the old saying—"Give a dog a bad name and you might as well hang him." A new employer would look with suspicion on any employee dismissed from service of a previous employer because of accident proneness.

I have tried therefore, to make a plea in all kindness on behalf of the worker who cannot speak for himself, and urge upon you in a sense of fairness that the term "accident-prone" be allowed to drop into oblivion.

IRON AGE SAFETY SHOES



Every pair
Guaranteed

IRON Age Safety Shoes protect the toes from injury. Built with steel box or rigid composition non-inflammable box. Constructed with heavy double durable soles, insuring protection against nails, slivers and foot bruises. Your choice—Grocord, Oak or Chrome leather soles. They stand for foot-ease and protection.

See and Hear About
IRON AGE SHOES
AT OUR
EXHIBIT BOOTH 21
21st ANNUAL SAFETY
CONGRESS AND
EXPOSITION
OCTOBER 3-7
WARDMAN PARK
HOTEL
WASHINGTON, D. C.

Write for catalog. Samples shipped promptly.

H. Childs & Co., Inc.

Established 1817

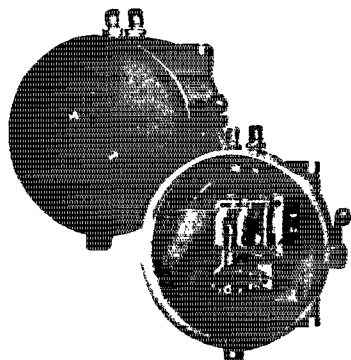
813 Penn Avenue, Pittsburgh, Pa.

WITH THE MANUFACTURER

Manufacturers are invited to send in announcements of new products, or improved special features. Only items which can be considered as "news" to our readers will be published

NEW EXPLOSION-PROOF CONTROL

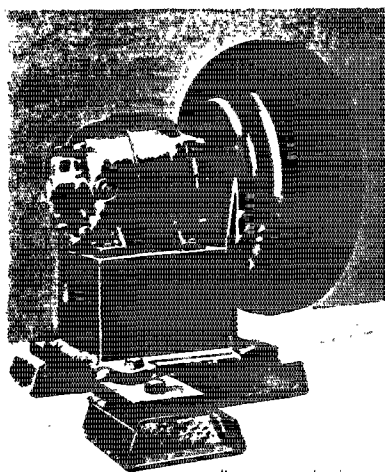
A new, air-brake type of D. C. explosion-proof, across-the-line, manual control approved and rated "permissible" by the U. S. Bureau of Mines, has been announced by Cutler-Hammer, Inc., 395 N. 12th Street, Milwaukee, Wisconsin.



These two-pole starters have thermal overload and low-voltage protection and are rated 4 HP. at 230 volts, and 5 HP. at 550 volts. A main line fuse is built directly into the case which is made of cast iron and has a screwed-on cover. The overload when tripped is reset by the outside operating lever.

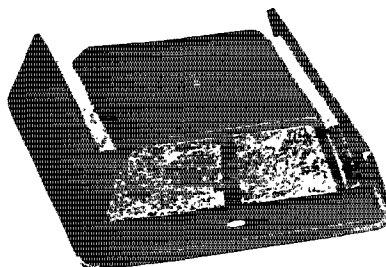
MACHINERY VIBRATION ISOLATION

The engineers of the Korfund Company, 48-15 Thirty-Second Place, Long Island City, N. Y., have introduced a device



called the Seismo-Damper, as shown in accompanying illustrations. This Damper consists of an arrangement by which any isolating material (cork, rubber, etc.) inserted between an upper and lower housing, is preloaded at the factory to exactly that point which compensates for the difference between the loading established by the operating machine, and the peak efficiency loading required by the isolating material.

The upper housing is drilled and tapped for bolting directly to the base or leg of the machine. There are machines in every



shop that were previously impractical to isolate which, these engineers claim, can now be inexpensively and effectively isolated with the Seismo-Damper.

SULLIVAN SAFETY PRODUCTS

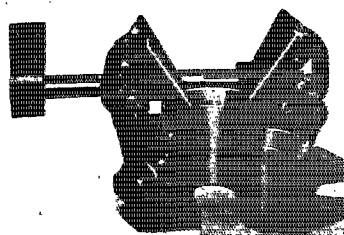
Sullivan Machinery Company, 400 North Michigan Ave., Chicago, has recently placed on the market two new safety developments.

The "Stringalite" safety lighting cable consists of super service moulded rubber No. 10 two-conductor cable with all end connectors and lamp socket connectors attached and vulcanized at the factory.



This new cable has been developed especially to withstand the severe demands of underground lighting service for stations, main level, sub-level, stope, tunnel, raise and trestle lighting. It is also well adapted for use in quarries, open pits and other surface workings, in factory, railroad and power plant yards, on construction jobs and in oil drilling. The outstanding advantage offered by "Stringalite" is that it provides the safety and utility of a permanent installation, with the wiring simplicity and economy of a temporary job.

To handle diamond core drills in the hole safely, this company has lately in-



roduced a special safety clamp, shown in the cut. This, it is said, provides greater strength and security, with greater safety for the operator, as well as preventing injury through distortion to the drill rods. In operation, it is similar to the "spider and slips" commonly used in the oilfields. The drill rod is gripped by four jaws, which take hold evenly and at the same time. As the load is spread over a large area, with a reduction of the pressure per square inch, there is less likelihood of distortion and crimping resulting.

CENTRIFUSE BRAKE DRUMS

Motor Wheel Corporation, Detroit, Michigan announce that Centrifuse brake drums, introduced but a short time ago, have been made standard by many car manufacturers.

Centrifuse brake drums differ from the conventional pressed-steel drum in a number of essential details, the manufacturer claims. Two differences are cited: one is the fact that braking contact, which in the pressed-steel drum is between brake lining and steel, is in the Centrifuse between brake lining and cast-iron. The other difference is presented by a built-up construction involving the joining of a separately produced drum back to the iron-fused brake ring. The design gives a brake drum combining the recognized advantages of a cast-iron braking surface with the strength of steel, while internal stresses are eliminated by the use of separate, "tailor-made" drum backs.

Most interesting in the making of Centrifuse brake drums is the unique process by which iron braking surfaces are spun, in the form of molten metal, into steel foundation rings by centrifugal force. This centrifugal "casting" is done with the aid of intricate machinery that had to be specially developed for the purpose. It is from this involved centrifugal casting operation that the brake drum derives its trade name.

NEWS ITEMS

H. W. Mowery, for many years with the American Abrasive Company, has established his own company under the name of The Safe Tread Company, 220 Broadway, New York City.

Mr. Mowery announces that his company is in a position to furnish Safety Treads in all standard patterns and made by a new process which he states imbeds the abrasive especially deep in the metal to insure greater durability and effectiveness of the wearing surface. Mr. Mowery is a past president of the American Society of Safety Engineers and a pioneer for greater walkway safety.

NATIONAL SAFETY NEWS

Pennsylvania Wages War on "The Glare That Kills"

THE Pennsylvania Department of Revenue, through its Bureau of Motor Vehicles and its State Highway Patrol, is using every means possible to counteract the "glare that kills" on highways of the state. The "glare that kills" is not a mysterious death-dealing ray but the blinding glare that comes from the automobile headlights of thoughtless and inconsiderate operators.

Much could be accomplished in abolishing the danger caused by glaring lamps if the individual car owner would do his part in eliminating this menace. Most drivers are conscious only of the other fellow's lights. Nine out of ten have never seen their own lights from in front.

State highway patrolmen have found one of the most effective and instructive demonstrations on correct lighting equipment is to have a driver walk out about 25 feet ahead of his car and face his own lights. In most cases this test gives a practical and thoroughly dazzling illustration of what a terrible "shot" in the eye he is giving the drivers who are approaching him.

Every motorist is aware of the hazard of the "one-eyed car." Few drivers of "one-eyed cars," however, realize that they are an accident hazard to themselves as well as to others. In addition to the fact that only one light leaves other motorists in doubt as to the type of vehicle they are approaching the car with one light has not enough illumination, even if the other car's lights are not glaring. The difference in the volume of light given in the two cars will blind the driver with the one bulb.

In January 35 accidents were reported to have been caused by poorly focused headlights. Two persons were killed and 32 injured. These accidents resulted in \$5,150 property damage to 36 vehicles.

Automobiles operated with both headlights out contributed directly to 24 accidents. One person was killed and 18 injured. In addition, property damage amounting to \$3,950 was reported. Four accidents were caused by "one-eyed" cars. They resulted in injury to four persons. There were 24 accidents resulting in 20 persons injured because of failure to have tail lights burning.

SEPTEMBER, 1932

Trade Publications

for your

SAFETY EQUIPMENT LIBRARY

A Service for Our Readers

Now is the time to devote more study to all types of equipment and products which can lower production costs through factors of safety. Find out now what the market offers. The publications listed below will be sent free and without obligation to readers of National Safety News. Check the items you wish; fill out coupon and mail this advertisement to us.

- ☐ **Centrifuge Brake Drums.** Operators of motor vehicle fleets or pleasure cars will be interested in this new braking development. Booklet tells why they are needed, advantages gained and action explained. Motor Wheel Corporation.
- ☐ **Wiping Towels for Industrial Purposes.** Descriptive folder describing woven-to-specification wiping towels to be used in place of waste or rags; describing how many industrial organizations throughout the country are using uniform sanitary wiping materials. Callaway Mills, Inc.
- ☐ **Clements Cadillac Portable Electric Blower.** Illustrated folder showing different models of portable electric blowers for cleaning all types of machinery. Clements Manufacturing Company.
- ☐ **Electrician's and Linemen's Tool Guide.** A pocket tool guide containing specifications and information on tools for telephone, telegraph, railway and power construction work. Mathias Klein & Sons.
- ☐ **Benjamin Electrical Products.** A complete catalog of standard styles and specialized lighting equipment for industry; store and office lighting accessories; signaling devices; water tight equipment and wiring devices. Illustrations, specifications and prices included. Benjamin Electric Mfg. Company.
- ☐ **Explosion-Proof Starting Switch.** Bulletin 709EP covers starter designed for use in chemical plants, filling stations, oil refineries, paint rooms, cleaning and dyeing plants and for any service which requires a starter that can be operated with safety in a fume laden or explosive atmosphere. Allen-Bradley Company.
- ☐ **Federal Sir.** Information on fire alarm and industrial signaling; code sirens, remote control switch, general alarm control, special automatic general alarm control and other signaling systems are described. Federal Electric Company.
- ☐ **Metro-Matic Lubrication.** Folder describing new Alemite Metro-Matic Lubrication System for machinery. A multiple pipe line system that forces lubricant into all bearings while machinery is running. Alemite Corp.
- ☐ **Material Handling Equipment.** 32-page bulletin on hand power hoists and trolleys, including high speed chain, differential and screw hoists. Chisholm-Moore Corporation.
- ☐ **Acme Mats.** Folder describing non-slip steel safety matting for corridors, runways, in front of machines and all slippery surfaces. Acme Steel Company.
- ☐ **Finnell Facts.** Presentation listing various types of industrial electrical floor scrubbers, waxers and polishers for all types of flooring. Finnell System, Inc.
- ☐ **Cory Interlocks.** A 92-page bulletin describing unit types of safety interlocks for protection of high voltage switching apparatus. Electrically and mechanically operated valves and similar equipment. Chas. Cory Corporation.

NATIONAL SAFETY NEWS

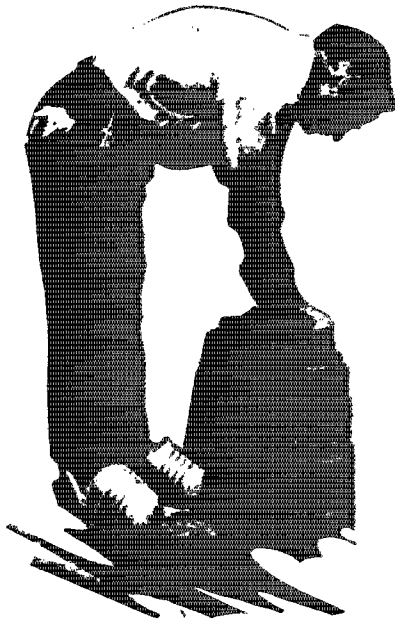
20 North Wacker Drive

Chicago, Ill.

Please have sent to me the publications I have checked:

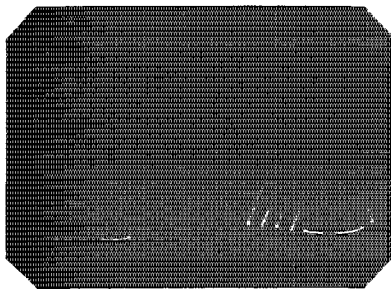
Name
 Title
 Company
 Address

Feet Protected from Costly Injuries!



Sankey Foot Guards protect your workers' feet from the ever present hazard of falling weights. Don't tolerate dangerous lost-time accidents resulting in serious foot injuries that could be prevented.

Sankey Guards may be obtained in either 16-gauge steel or Rigidlum, an aluminum alloy. They are surprisingly light and comfortable to wear. The coupon below will bring you a trial pair that you may see for yourself the superior qualities of Sankey Guards.



**ELLWOOD SAFETY APPLIANCE
COMPANY**
Ellwood City, Pa.

ELLWOOD SAFETY APPLIANCE CO., Date.....
Ellwood City, Pa.

Please send us, on memorandum invoice,
.....pairs Rigidlum,
.....pairs Steel Sankey Corrugated Foot Guards.
It is understood that these guards may be returned without
obligation if they fail to meet our requirements.

Name of Firm.....
Street Address.....
City and State.....
Attention of

Accidents and Education

THERE is scarcely an activity that does not feel the menace of accidents, and the pursuit of higher education is no exception. Increased attention to safety is urged in the following editorial which appeared recently in the *Faculty Bulletin* of the University of California:

Safety orders of the California Accident Commission make necessary the observance of certain rules with regard to machine hazards, electrical equipment, elevators, and general care of shops and buildings. Yearly inspections of University buildings are made by representatives of the commission, and reports of conditions submitted, together with recommendations of suggested changes. In recent years the record of the University has not been as satisfactory as we should like to have it.

Accordingly, a safety committee has been formed on each University campus to study the possibility of reducing the hazard of accidents to employees and students. Regular monthly inspections of buildings and equipment are made by members of this committee. Departments having laboratories or shops can aid the committee by giving particular attention to the conditions of machines, tools, and apparatus used in class instruction or for research.

As an additional precaution, the president suggests that at the beginning of each semester a general class announcement be made, where appropriate, calling attention to the desirability of careful use of all apparatus and equipment, and, particularly, of following instructions to the letter in performing experimental laboratory work.

How ARMCO Trains Men

(Continued from Page 18)

cutting. Practically every man in our plants has been job trained. We still have an agreement with all the groups that if they suffer a lost-time accident, they will immediately go into job training.

In addition to our foreman-manager and job training programs, we also have special groups in our general offices for training, organized on exactly the same basis as our job training program. You can imagine the result of this type of training in the building of morale.

In our opinion, the best way to avoid mistakes in manufacturing is to train every individual so that there will be a minimum of costly errors—a worth while objective at all times, but especially so under present business conditions.



Refreshing and Safe

That is your assurance when drinking from a Rundle-Spence Vertico-Slant drinking fountain.

Because the water spouts angularly from a jet that is completely protected, lips cannot come in contact with this jet, and that means sanitation.

Rundle-Spence drinking fountains can be had in any one of a variety of colors. Our late catalog tells you all about them. Write for it.

RUNDLE-SPENCE MFG. CO.
441 No. Fourth St. Milwaukee, Wisconsin

RUNDLE-SPENCE



PYROIL
(Simply Add to Regular Oil)

**Protects
EQUIPMENT**

Lathes, pulleys, line shafts, bearings, rollers—Intricate machinery of every description needs PYROIL PROTECTION for efficient, SAFE operation.

Alays friction. Reduces overheating. Minimizes wear. OVERCOMES MOST STUBBORN LUBRICATION PROBLEMS.

For an amazing revelation, apply PYROIL to any difficult lubricating requirement.



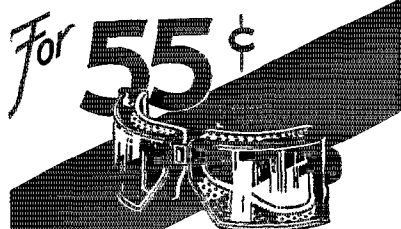
A FREE copy of
"THE STORY OF
PYROIL"
on request.

Manufactured and
Guaranteed by

PYROIL COMPANY
W. KIDDER, President
27 LA FOLLETTE AVE., LA CROSSE WIS. USA

NATIONAL SAFETY NEWS

EYE INSURANCE



A real wide-vision, general utility goggle with large curved lenses, non-corroding metal frame, ventilated and rubber-edged eye cups, adjustable bridge, and elastic band. Lenses replaceable.

NEW ERA GOGGLES Reduce the Cost of Safety

THIS TYPICAL value is offered by way of proving that you can save money by dealing with New Era—whether you buy goggles of our special design or the standard styles for which we are distributors. A copy of our new Industrial Catalog—it's free for the asking—will show you the economy of purchasing from a house whose 20-year reputation is based on selling quality optical goods at lower prices.

NEW ERA OPTICAL CO.
Industrial Division
17 North Wabash
Chicago

HOLCOMB PROTECTION

Protective Clothing

Every protective clothing need can be quickly and efficiently met by garments of Holcomb manufacture. The same quality and service are back of Holcomb Safety Garments as always. Tell us what you need, we can furnish it.

We have specialized in the following articles made of Asbestos, Fireproof Duck and Leather:

Aprons	Coats
Blankets	Hats
Gloves	Pants
Mittens	Masks
Curtains	Helmets
Spats	Sleeves
Foundry Leggings	
Hand Pads	
Knee Pads	
Safety Outfits	
Jumper Suits	
Over-Shoes	
Arm Protectors	
Finger Protectors	

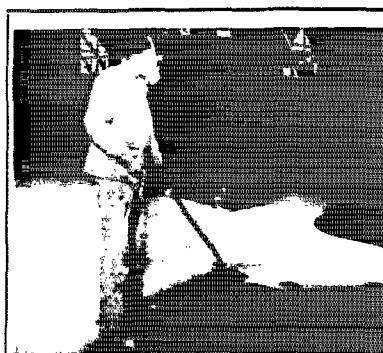
Holcomb Safety Garment Co.
Manufacturers

118 N. Jefferson St., Chicago, Ill.

SEPTEMBER, 1932

INDEX TO ADVERTISERS

Alemite Corp.	67
American Optical Co.	2-3
American Telephone & Telegraph Co.	61
Bernhard, Robert A.	81
Burnitol Mfg. Co.	82
Burroughs-Wellcome & Co. (U. S. A.) Inc.	7
Central Iron & Steel Co.	76
Chicago Eye Shield Co.	72
Childs & Co., H.	83
Clements Mfg. Co.	82
Davis Emergency Equipment Co., Inc.	71
Economy Electric Lantern Co.	78
Ellwood Safety Appliance Co.	86
Erdle Perforating Co.	72
Finnell System, Inc.	71
Harrington & King Perforating Co.	68
Holcomb Safety Garment Co.	87
Hynson Westcott & Dunning, Inc.	43
Inland Steel Co.	47
International Shoe Co.	5
Justrite Mfg. Co.	80
Kidde & Co., Walter	90
Klein & Sons, Mathias	70
Lehigh Safety Shoe Co.	77
Libbey-Owens-Ford Glass Co.	8
Lima Cord Sole & Heel Co.	79
Mine Safety Appliances Co.	41
National Safety Council	Inside Front Cover-73-74
Never Slip Safety Clamp Co.	79
New Era Optical Co.	87
Patent Scaffolding Co.	45
Pulmosan Safety Equipment Corp.	Inside Back Cover
Pyroil Co.	86
Reece Wooden Sole Shoe Co.	68
Rundle-Spence Mfg. Co.	86
Safety Equipment Service Co.	Back Cover
Safety First Shoe Co.	69
Schiff & Co., Leon	75
Spencer Turbine Co.	87
Stonehouse Signs, Inc.	76
Taylor-Shantz Co.	75
Travelers Insurance Co.	65
Wardman Park Hotel	4
West Disinfecting Co.	59
Westinghouse Electric & Mfg. Co.	63
Wiesman Mfg. Co.	69
Williamsport Wire Rope Co.	87
Willson Products, Inc.	1
Wilmet Castle Co.	66
Worth Milling Co., Inc.	80



The Spencer Central Cleaning System

protects employees by removing injurious dirt and dust at its source.

It also saves in the cost of cleaning, in reclamation of valuable materials and in keeping the finished product clean.

Cleans any surface and is inexpensive, practical and dependable.

Let Us Send You The Bulletin

THE SPENCER TURBINE CO.
Hartford, Conn.

SPENCER
CENTRAL CLEANING SYSTEM

For More Uniform Service... Use... WILLIAMSPORT WIRE ROPE

Day in and day out you'll find this rope giving more uniformly superior service than ropes which claim wild statements of service in the attempt to justify their increased cost.



Modern wire rope blocks made the way blocks should be made.

Williamsport
WIRE ROPE
COMPANY

Main Office and Works

Williamsport, Pa.

General sales offices:
Peoples Gas Bldg., Chicago

THE BUYERS' SERVICE

All firms listed below are advertisers in this issue—See Advertisers' Index Page 87

A	C	F	G	
Accident Prevention Service National Safety Council	Car Blockers Safety Equipment Service Co.	Films or Slides For Rent and Sale National Safety Council	Gas Detectors Davis Emergency Equipment Co., Inc. Mine Safety Appliances Co.	Hooks, Linemen's Belt Davis Emergency Equipment Co., Inc. Mine Safety Appliances Co. Safety Equipment Service Co.
Anemometers Mine Safety Appliances Co.	Car Blockers—Mine Mine Safety Appliances Co.	Finger Protectors Chicago Eye Shield Co. Davis Emergency Equipment Co., Inc. Holcomb Safety Garment Co. Mine Safety Appliances Co. Safety Equipment Service Co.	Germicides	Hooks—Safety Hoisting Never Slip Safety Clamp Co.
Aprons Davis Emergency Equipment Co., Inc. Holcomb Safety Garment Co. Mine Safety Appliances Co. Pulmonan Safety Equipment Co. Safety Equipment Service Co.	Car Movers Safety Equipment Service Co.	Fire Alarms Mine Safety Appliances Co.	Germicide—Cutting Oil West Disinfecting Co.	Hospital Equipment Burrhoughs - Wellcome & Co. (U. S. A.), Inc. Davis Emergency Equipment Co., Inc. Mine Safety Appliances Co. Safety Equipment Service Co.
Arm Protectors Davis Emergency Equipment Co., Inc. Holcomb Safety Garment Co. Mine Safety Appliances Co. Pulmonan Safety Equipment Corp. Safety Equipment Service Co.	Car Step Treads—Safety Central Iron & Steel Co. Davis Emergency Equipment Co., Inc. Inland Steel Co.	Fire Detectors	Glass, Non-Shatterable Chicago Eye Shield Co. Mine Safety Appliances Co. Libbey-Owens-Ford Glass Co. Pulmonan Safety Equipment Corp. Safety Equipment Service Co.	Inhalators Davis Emergency Equipment Co., Inc. Mine Safety Appliances Co.
Badges and Buttons Mine Safety Appliances Co.	Carboy Inclinator Safety Equipment Service Co.	Fire Extinguishers Walter Kilde & Co., Inc. Mine Safety Appliances Co. Pulmonan Safety Equipment Corp.	Gloves and Mittens Chicago Eye Shield Co. Davis Emergency Equipment Co., Inc. Holcomb Safety Garment Co. Mine Safety Appliances Co. Pulmonan Safety Equipment Corp. Safety Equipment Service Co.	Insurance Travelers Insurance Co.
Belts—Linemen's Davis Emergency Equipment Co., Inc. Klein, Mathias & Sons Mine Safety Appliances Co. Pulmonan Safety Equipment Corp.	Chain—Factory	Fireproofed Clothing Davis Emergency Equipment Co., Inc. Holcomb Safety Garment Co. Mine Safety Appliances Co. Safety Equipment Service Co.	Goggles American Optical Co. Chicago Eye Shield Co. Davis Emergency Equipment Co., Inc. Mine Safety Appliances Co. New Era Optical Co. Pulmonan Safety Equipment Corp. Safety Equipment Service Co. Wilson Products, Inc.	Jointer Guards Davis Emergency Equipment Co., Inc. Safety Equipment Service Co. Standard Safety Equipment Co.
Belts—Safety Davis Emergency Equipment Co., Inc. Mathias Klein & Sons Mine Safety Appliances Co. Pulmonan Safety Equipment Corp. Safety Equipment Service Co.	Chairs—Safety Boatwain Mine Safety Appliances Co.	First Aid Equipment Robert A. Bernhard Burrhoughs - Wellcome & Co. (U. S. A.), Inc. Davis Emergency Equipment Co., Inc. Hynson Westcott & Dunning Mine Safety Appliances Co. Pulmonan Safety Equipment Corp. Safety Equipment Service Co.	Gongs, Sirens, Horns and other signaling devices Mine Safety Appliances Co.	Ladders—Safety Mine Safety Appliances Co. Patent Scaffolding Co.
Belts—Tree Trimmer's Mine Safety Appliances Co.	Chip and Spark Guards Chicago Eye Shield Co. Davis Emergency Equipment Co., Inc. Safety Equipment Service Co.	First Aid to Illness Burrhoughs - Wellcome & Co. (U. S. A.), Inc.	Guards—Safety Davis Emergency Equipment Co., Inc. Erdle Perforating Co. Harrington & King Perforating Co. Safety Equipment Service Co.	Ladder Shoes Davis Emergency Equipment Co., Inc. Patent Scaffolding Co. Mine Safety Appliances Co. Safety Equipment Service Co.
Belts—Window Cleaners' Mine Safety Appliances Co.	Clothing, Weatherproof Davis Emergency Equipment Co., Inc. Mine Safety Appliances Co. Safety Equipment Service Co.	Floor Machines Finnell System, Inc.	Hand Cream Davis Emergency Equipment Co., Inc. Mine Safety Appliances Co.	Lamp Hangers
Blackboards	Cuspidors—Sanitary Paper Burnitol Mfg. Co.	Flammable Vapor Indicators Davis Emergency Equipment Co., Inc. Mine Safety Appliances Co.	Hand Leathers Davis Emergency Equipment Co., Inc. Holcomb Safety Garment Co. Mine Safety Appliances Co. Pulmonan Safety Equipment Corp. Safety Equipment Service Co.	Lamp Locks Mine Safety Appliances Co. Safety Equipment Service Co.
Blankets—Fireproof Davis Emergency Equipment Co., Inc. Holcomb Safety Garment Co. Mine Safety Appliances Co. Pulmonan Safety Equipment Corp. Safety Equipment Service Co.	Disinfectants and Deodorants West Disinfecting Co.	Flooring Materials—Safety Central Iron & Steel Co. Davis Emergency Equipment Co., Inc. Inland Steel Co.	Hats—Safety Davis Emergency Equipment Co., Inc. Mine Safety Appliances Co.	Lamps—Safety Davis Emergency Equipment Co., Inc. Mine Safety Appliances Co.
Blowers—Portable Electric Clements Mfg. Co.	Drinking Fountains Rundie-Spence Mfg. Co.	Flywheel Guards Davis Emergency Equipment Co., Inc. Erdle Perforating Co. Harrington & King Perforating Co.	Helmets American Optical Co. Chicago Eye Shield Co. Davis Emergency Equipment Co., Inc. Holcomb Safety Garment Co. Mine Safety Appliances Co. Pulmonan Safety Equipment Corp. Safety Equipment Service Co.	Lanterns—Electric Economy Electric Lantern Co. Mine Safety Appliances Co.
Blow Torches Mathias Klein & Sons	Elevator Safety Devices Davis Emergency Equipment Co., Inc.	Foot Guards Davis Emergency Equipment Co., Inc. Hilwood Safety Appliances Co. Mine Safety Appliances Co. Safety Equipment Service Co.	Linemen's Protectors Davis Emergency Equipment Co., Inc. Mine Safety Appliances Co. Pulmonan Safety Equipment Corp. Safety Equipment Service Co.	Leggings Davis Emergency Equipment Co., Inc. Holcomb Safety Garment Co. Mine Safety Appliances Co. Pulmonan Safety Equipment Corp. Safety Equipment Service Co.
Brakes, Vehicle, Power	Emblems Mine Safety Appliances Co.	Footwear—Rubber	Linemen's Tool Bags Davis Emergency Equipment Co., Inc. Safety Equipment Service Co.	
Buckets, Hoisting Davis Emergency Equipment Co., Inc.	Eye Shades—Non-Breakable Chicago Eye Shield Co. Davis Emergency Equipment Co., Inc. Mine Safety Appliances Co. Safety Equipment Service Co.	Fuse Pullers Mine Safety Appliances Co. Safety Equipment Service Co.		
Bulletin Boards Davis Emergency Equipment Co., Inc. Mine Safety Appliances Co. Pulmonan Safety Equipment Corp. Safety Equipment Service Co.	Expanded Metal Erdle Perforating Co. Harrington & King Perforating Co.			
	Explosive Containers Davis Emergency Equipment Co., Inc. Justite Mfg. Co. Mine Safety Appliances Co. Safety Equipment Service Co.			

NATIONAL SAFETY NEWS

Lockers and Hangers for Clothing	Paint Remover	S	Slings—Safety Wire Rope	Trusses—Safety Extension Patent Scaffolding Co.
Lubrication Pyroll Co.	Pneumonia Tents Mine Safety Appliances Co.	Saw, Safety Davis Emergency Equipment Co., Inc. Mine Safety Appliances Co.	Sterilizing Equipment Wilmot Castle Co.	V
Lubrication Systems Alomite Corp.	Power Press Guards Chicago Eye Shield Co. Davis Emergency Equipment Co., Inc. Safety First Equipment Co. Taylor-Shanta Co. Wiesman Mfg. Co.	Saw Guards Safety Equipment Service Co.	Surgical Dressings Mine Safety Appliances Co. Burrage - Wellcome & Co. (U. S. A.), Inc.	Vending Machines—Sanitary West Disinfecting Co.
M	Prize Awards Mine Safety Appliances Co.	Scaffolding	Switchboard Mats and Flooring Davis Emergency Equipment Co., Inc.	W
Masks Chicago Eye Shield Co. Davis Emergency Equipment Co., Inc. Mine Safety Appliances Co. Pulmosan Safety Equipment Corp. Safety Equipment Service Co.	Pyrotannic Detector Mine Safety Appliances Co.	Scrubbing Machines—Electric Finnell System, Inc.		Washroom Equipment—Industrial
Masks—Navy Type Mine Safety Appliances Co.	R	Shaper Guards	T	Washers—Safety, for Grinding wheels
Mats—Standing, Safety Davis Emergency Equipment Co., Inc.	Rail Clamps	Shoe Soles—Non-Slip Davis Emergency Equipment Co., Inc. Luna Cord Sole & Heel Co.	Tools—Linemen's Davis Emergency Equipment Co., Inc. Klein, Mathias & Sons	Waste Cans Davis Emergency Equipment Co., Inc. Justrite Mfg. Co. Mine Safety Appliances Co. Pulmosan Safety Equipment Corp. Safety Equipment Service Co.
O	Respirators American Optical Co. Chicago Eye Shield Co. Davis Emergency Equipment Co., Inc. Mine Safety Appliances Co. Pulmosan Safety Equipment Corp. Safety Equipment Service Co. Willson Products, Inc.	Shoes—Factory and Foundry Childs & Co., H. Davis Emergency Equipment Co., Inc. International Shoe Co. Lehigh Safety Shoe Co. Mine Safety Appliances Co. Revere Wooden Sole Shoe Co. Safety First Shoe Co. Schiff, Leon & Co.	Tools—Non-Sparking Pulmosan Safety Equipment Corp.	Water Coolers Rundis Spence Mfg. Co.
Oil Cans Davis Emergency Equipment Co., Inc. Mine Safety Appliances Co. Safety Equipment Service Co.	Resuscitation Equipment Davis Emergency Equipment Co., Inc. Mine Safety Appliances Co.	Signs Mine Safety Appliances Co. Safety Equipment Service Co. Stonehouse Signs, Inc.	Towel Cabinets—Paper West Disinfecting Co.	Welding Equipment
Oxygen Breathing Apparatus Davis Emergency Equipment Co., Inc. Mine Safety Appliances Co.	Rock Dusters Mine Safety Appliances Co.	Sirens and Signals	Treads—Safety Central Iron & Steel Co. Davis Emergency Equipment Co., Inc. Inland Steel Co.	Wet Finishing Processes, Laundry & Textile
P	Rope—Wire Williamport Wire Rope Co.	Slides—Lantern—Also see Films or Slides	Tree Trimming	Window Cleaner
Pads—Knee Mine Safety Appliances Co. Safety Equipment Service Co. Safety First Equipment Co.				Wrenches—Hopper Car Safety Equipment Service Co.

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.

National Safety News,
20 N. Wacker Drive, Chicago

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.)

.....
.....
.....

Company

Address

Your Name

Are Your Flammable Liquid Processes Fireproofed?

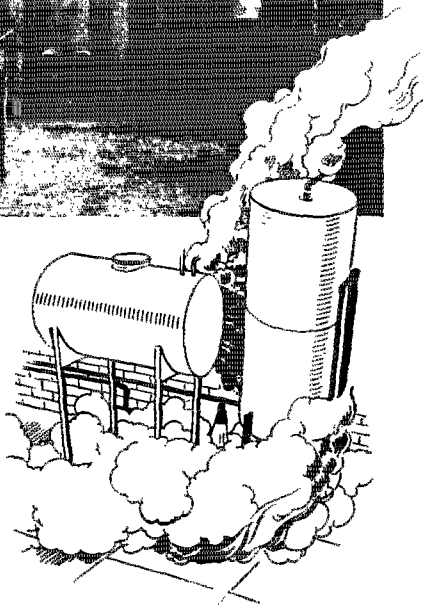


LUX-protected dry cleaning plant

THE causes of fire are strange and mysterious. There is one case where the sparks from the hoops of a run-a-way hose ignited some lacquer which eventually burned an entire plant. Another time, sparks from the lid of an iron vessel started a fire in gasoline that did \$500,000 worth of damage.

In spite of the strictest precautions, you never can tell when fire will break out in your flammable liquid processes, and unless you have made provision for extinguishing such fires within the first few seconds you are gambling against the destruction of your plant. Even a small fire, improperly extinguished, may cause untold damage in production delays, loss of orders, idle salesmen and dwindling profits.

The LUX System is designed to extinguish all



If not, your plant may swell the annual \$20,000,000 total of flammable liquid fires.

kinds of flammable liquid and electrical fire hazards *instantly*, before they can grow to alarming proportions. Under a smothering cloud of gas, LUX snuffs out fires in dip tanks, spray booths, paint and storage rooms, ovens, oil burning rooms—in fact any place

where flammable liquids are used. LUX is equally effective against fires in transformer vaults, generators, converters, and other electrical equipment.

LUX not only kills fire quickly but it leaves no mess—spoils no materials, does not corrode or otherwise damage the most delicate machinery.

Send for booklet, "LUX Makes the Difference" which describes portable and built-in units and their many applications.

Walter Kidde & Company, Inc.
140 Cedar Street
New York

LUX Fire Protection

FOR ALL KINDS OF FLAMMABLE LIQUID AND ELECTRICAL FIRE HAZARDS

NATIONAL SAFETY NEWS



DELEGATES— MEMBERS...



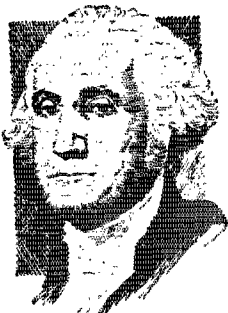
- Washington welcomes you
to the Centennial...
- National Safety Council
welcomes you to the Congress!

And . . .

PULMOSAN welcomes you
to see their exhibit at Booth No 36, showing
a most complete line of Air-supplied Respirators,
Hoods and Helmets.

We can solve your Respirator
problems—

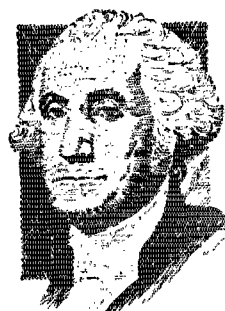
Consult **Fred & Bill Wahlert**
at Booth No. 36



PULMOSAN
SAFETY EQUIPMENT CORP.

176 Johnson St., Brooklyn, N. Y.

Manufacturers of Industrial Safety Equipment

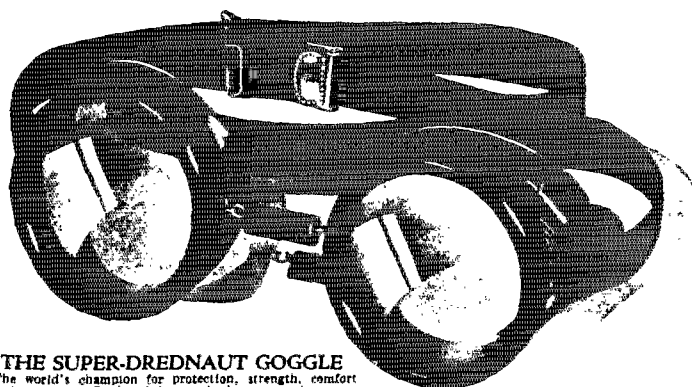


It's SAFE to be THRIFTY

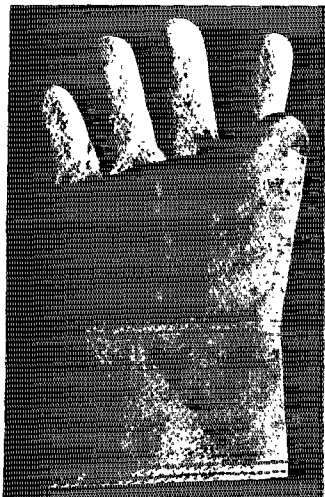
When You Buy "Safety Service" Clothing

You can ill afford to gamble with protective clothing of inferior quality or resort to the use of makeshift substitutes when "Safety Service" offers you quality merchandise backed by a 15-year old reputation at the lowest prices in the history of this business.

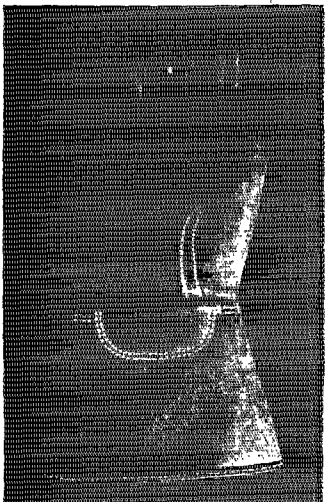
Send your orders for asbestos and leather gloves, sleevelets, suits, leggings, hand pads, aprons, etc., to "Safety Service" and take advantage of our money-saving direct-to-user prices.



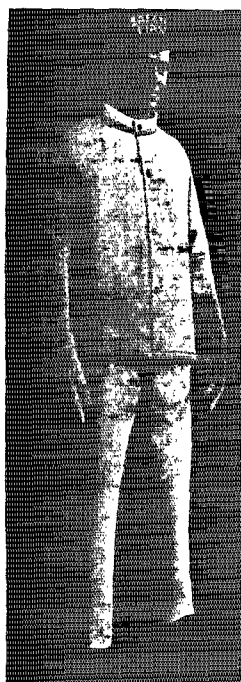
THE SUPER-DREDNAUT GOGGLE
The world's champion for protection, strength, comfort and economy. Replaced free if broken in service.



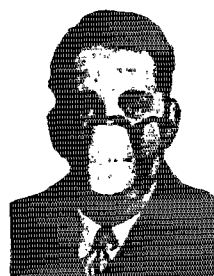
No. 1514
"STURDY-WEAVE" ASBESTOS GLOVE
Reinforced with chrome leather patch.
Dozen Pair **\$15.00**



No. 3008
CHROME LEATHER GLOVE
Made of high grade stock, all seams double stitched.
Dozen Pair **\$10.50**



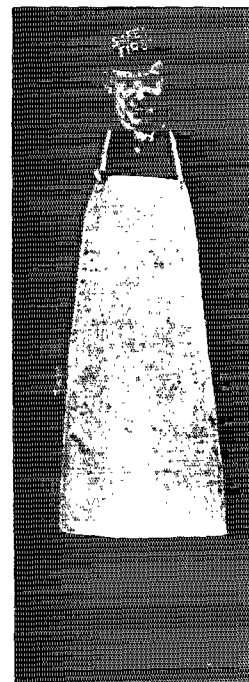
No. 202-AS
"STURDY-WEAVE" ASBESTOS SUIT
For protection against heat and flame. Each **\$12.25**



DR. WOOD RESPIRATOR
For protection against dust hazards. Extremely comfortable on the face. Filter cloths renewable. Each **\$1.35**



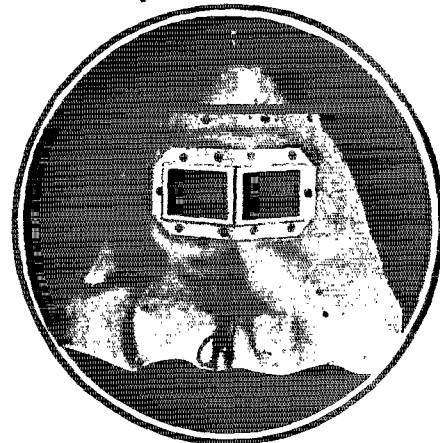
KLEENAIR RESPIRATOR
For protection against dust hazards, fumes, etc. Each **\$2.00**



CHROME LEATHER APRON
Made in various widths and lengths. Apron illustrated is 24x38 in. Dozen **\$24.75**

No. 90
SAND BLAST HELMET

Spun aluminum hood, chrome leather apron, fitted with compressed air attachment.
Each **\$9.00**



SAFETY EQUIPMENT SERVICE COMPANY
Headquarters for Accident Prevention Equipment
Buell W. Nutt, President,
1228 St. Clair Avenue,
Cleveland, OHIO.