

went through the Great Lakes and the New York State Barge Canal. In Phoenix a new supply of dry ice was taken on. The evidence showed that the quantity of dry ice spread over the load of cherries was much greater than actually required. It took three more days for the ship to reach New York.

Unloading of the hold containing the cherries started in the evening. No precautions were employed to ventilate the hold or to determine the percentage of carbon dioxide in the air and whether it was safe for the men to enter the space. The hatch of the hold was uncovered, and within two or three minutes a number of men started down to the bottom.

Cries of assistance from the hold were soon heard, but were at first ignored. When they continued, a rescue squad went down but did not get very far before the men also felt themselves overcome by the high percentage of carbon dioxide gas in the air.

A gas mask was then used, but since it had no connection with a new oxygen supply, it was of no value. When the police emergency squad arrived it was equipped with efficient masks and oxygen supply tanks, so that the men were independent of the air in the hold for breathing purposes.

Some of the men, meanwhile, had made heroic attempts to rescue their comrades, several of whom were lying at the bottom of the hold face downward—where, of course, the percentage of carbon dioxide was highest.

All the men overcome were bleeding profusely at the mouth. Post mortems showed that the lungs were highly congested with blood. The examination of other organs such as the brain, liver and kidneys showed no indication of poisoning. The men were simply drowned in an atmosphere from which the oxygen had been forced by very high percentage of carbon dioxide.

Test tubes of which a number were filled with the air in the hold at various levels and places showed carbon dioxide gas concentration between 35 and 60 per cent. No traces were found of carbon monoxide, hydrocyanic acid, ammonia, phosgene or sulphur dioxide.

Five men were dead when taken out. Three who were still breathing when they reached the deck were immediately taken to a hospital and have since entirely recovered. Another man who was partly overcome needed no attention and went home.

Simple means are now in existence whereby the percentage of carbon dioxide in the air is indicated by instruments located outside the hold. Warning signals are attached to these instruments, and it is even possible to start automatically ventilators which will evacuate the highly charged air and replace it with fresh air.

The holds of ships are particularly dangerous as points of possible asphyxiation because they are almost hermetically sealed and because air infiltration from the outside is practically nil.

WEDNESDAY AFTERNOON SESSION

October 13, 1937

Accidents in Delivering Refrigerated Products and Their Prevention

By G. L. GORE

Chief Safety Engineer, Bruce Dodson & Company, Kansas City, Mo.

Accidents in the delivery of refrigerated products and their prevention opens up two distinct topics for discussion: namely, injury

to the employee himself and injury to the person or property of others through the use of teams and trucks.

In many plants, particularly the smaller ones, the deliveryman's hazard begins before he gets into his truck. For the unwary, the vault is a dangerous place. Floors are slippery because of chips of ice and natural frozen moisture. There is the hazard of falls caused by a cake breaking, tongs pulling out or the employee becoming overbalanced by improperly handling a heavy cake.

Floors should be kept as free as possible from chips and moisture. Many concerns equip their men with creepers fastened by means of a strap to the soles of the shoe. Toe injuries may be guarded against by safety shoes or metal guards placed over the toes and instep. Tongs should be kept sharp so that they will readily cut into the cake, thus preventing slipping.

To handle a cake of ice without injury is an art. No man should be permitted to do this work until some experienced man has fully demonstrated the safe way.

Very frequently the deliveryman is required to score his own ice. This materially increases his hazard. The scoring machine has been involved in some very serious accidents. The exposed side should be guarded so that one will not come in contact with the saws or permit his trouser leg to become engaged in the sprocket. Should a cake become lodged, the power should be shut off so that it can be safely loosened. To attempt to dislodge a cake by giving it a shove with the foot is extremely dangerous. I have known of many cases where the injuries have been serious enough to warrant amputation. In one plant of my acquaintance a driver and his superintendent each lost a foot on successive days due to this practice.

We all remember the old time ice deliveryman who carried his tongs suspended from his shoulder. Fortunately, most men now carry their tongs in their hands when not in use. A recent case coming to my attention involved an employee who had his tongs on his shoulder. He stepped on a small round stick which caused him to lose balance and fall. The point of the tongs punctured one of his lungs, the injury resulting in death.

Another dangerous practice is to carry the pick in the trousers pocket with the point up. A serious puncture or a severe scratch might be the result.

This brings up the matter of infection. The wound might heal in a day or two or it might

cause death. Medical authorities claim that an infection can develop in eight hours. This emphasizes the importance of carrying a small first aid kit on each truck or wagon. A small bottle of mercurchrome and a few adhesive tipped compresses will suffice. A whole fleet could be so equipped for a few dollars.

The coloring—red or yellow or whatever it might be—on the compress gauze is merely the result of sterilizing the gauze and does not make the use of mercurchrome on the wound unnecessary. The use of a pick scabard will greatly reduce the possibility of a scratch or puncture.

The deliveryman, burdened with his product—weighing anywhere from a few to three hundred pounds, always is subjected to the falling hazard. This can be best eliminated by the eyes finding safe places for the feet to walk, but as an added prevention, shoes should be equipped with non-skid soles and heels. We have found these real aids in reducing the slipping hazard.

A deliveryman should wear shoes with what is known as the safety toe-cap. I prefer the metal toe because of strength and durability, although much can be said in favor of composition toe caps. Safety shoes have met with so much demand that today it is possible to get them in almost any weight, style and cost. Many present as attractive an appearance as a dress shoe or slipper.

As a matter of precaution, however, no deliveryman should become oversold on the fact that the toe cap will not break down.

The possibilities of wrenched backs and hernias are causes for considerable concern. Physical examinations are desirable. It is very dangerous work for a man with a tendency toward hernia or a weak back to be engaged in this work. All old employees should be periodically examined, and any defects coming to light should be repaired, or the employee placed in some work where his defects are not so likely to result seriously. No new employee, regardless of the fact that he might be used for only a few days, should be put to work unless he has passed a satisfactory physical examination before a physician designated by the prospective employer.

Portable ice crushers present a very serious problem. Here is a report of a typical accident:

"Our employee was feeding the crusher to fill an order. He was standing on the step

in the rear of the truck, bracing himself with his left hand on the left side of the bed. He was reaching into the bed of the truck with a pair of tongs in his right hand, attempting to drag toward him a 50 lb. cake of ice, when his left foot slipped off the end of the step causing him to lose his balance and throwing his left hand into the hopper of the crusher which was in operation at the time. For a time it was feared amputation would be necessary."

From time to time we hear of an ice man being knocked down simply because he failed to look in both directions before going across the street. Such accidents can be eliminated only by caution.

Dog bites are still somewhat prevalent. One company of my acquaintance has almost entirely eliminated this hazard through the "trial and error" method. Their men were instructed to report any bad dogs on their respective routes, following which their foreman made a call either in person or over the phone, asking that customer to keep his dog tied up between certain hours. Strange as it may seem, this plan met with little opposition on the part of the customer, although I must admit some of the customers were unreasonable. This simply meant no service to those homes for a few days. This firm also taught its men how to conduct themselves around dogs. There are many articles written by various authorities on the subject.

Insofar as the vehicle end of the ice industry is concerned, we can almost entirely concern ourselves with the truck; since the horse drawn vehicles are now the exception rather than the rule, their problem is almost insignificant. There is a great opportunity to effect many economies through a study of the accident situation in the fleet.

Some plant owners feel that they have fulfilled their obligations to their employees by fully guarding the plant. I have one such instance in mind. This plant is the last word in safety. The scoring machine was built with full safety in mind, on the owners' own design. Other machines were similarly developed. No one can be hurt by machinery in that plant, except almost deliberately. Brakes, lights, horns, etc., are inspected daily and the fleet kept in the best possible condition, and yet the vehicular accident frequency rate is quite high.

In that case the management simply has failed to recognize its accident problem in

its complete sense. The same degree of tireless effort directed toward truck accidents as was put forth in the plant would develop the best record in the country.

The problem of seasonal help is a serious one. Many companies have made a practice of hiring athletes to work during the summer months. The purpose is laudable and from an engineering standpoint satisfactory, providing the youth can drive a truck. Regardless of educational qualities, past history, or what he might say about his experience, no man should be placed in charge of a truck until he has gone through a series of actual tests, proving that he is a capable driver. Too often a prospective employee is merely asked whether he can drive a truck, and if he says he can, he starts out to deliver ice.

Giving human nature its due, we know that when a man is seeking a job, his eagerness quite often leads him to make claims with reference to his ability with the thought he can later learn or cover up after he has the job. We are left to luck as to what accidents he might have or people he might kill in the meantime.

The physical examination mentioned earlier should include tests for sight and hearing. The former should include tests for color-blindness. Many eye specialists are now equipped to give tests for depth perception—that is the patient's ability to judge distance—which are quite helpful in determining ability to drive a vehicle.

In selecting employees to be retained after the rush season is over, consideration should be given the accident record of each.

One company operated a fleet of 30 to 60 trucks in a principal southwestern city with 10 minor accidents in two years, none involving personal injury. That company religiously follows the practice of holding a meeting exclusively for the discussion of safety once a month during the off season, but weekly during the summer months. Bulletins and placards from the National Safety Council and the insurance carrier are used. As a means of further encouraging interest, a monetary award system is used. Each driver who has had no accident of any kind during the month is eligible for the drawing. Three awards are made each month for \$12.50, \$7.50, and \$5. The employer, of course, benefits many times the amount of expense in the way of lower insurance

costs, avoided damages to equipment, good will, etc.

Proper discipline and supervision are of the greatest importance. Trucks should be used only for their prime purpose, and when the driver is through with his deliveries, the truck should be returned to the garage and left there. Some companies follow the practice of permitting the drivers to take the trucks home with them, thinking that they will be used only as transportation to and from work. However, the temptation to use them for social purposes is pretty great, and occasionally one will become involved in an accident while it is so engaged.

Drinking in any degree should be strictly forbidden, and the drivers' superintendent should interest himself in seeing that there is no drinking on the job. Since saloons, night clubs and taverns are heavy users of ice, a drinking man might be inclined to imbibe as he went along.

On December 25, 1933, there occurred an accident which appropriately describes what might happen in this respect. A theretofore reliable colored driver was delivering ice on his route. It being Christmas day, many of his customers left out various drinks to be taken after icing their boxes. He withstood the urge for the first several times, but finally his appetite overtook him. The first was the one he should not have taken, because it called for company, and it wasn't long until the driver himself tired of work and thought of companionship.

He quit delivering ice, took his truck and went calling. He picked up three Negro women and two men, and the six started out. All went well until late in the afternoon when it was necessary to descend a rather steep grade. He lost control of the truck,

which struck a coupe in which a young man and his lady friend were visiting, almost demolishing the coupe and severely injuring the occupants. The truck glanced from the coupe, across the street, and head-on into a tree, killing three of the Negroes outright and injuring the other two. The driver escaped with little more than scratches. Such an accident is purely a supervisory problem.

The two greatest vehicular hazards are backing without making sure the way is clear and intersection accidents. The first hazard can be substantially reduced by the use of proper type of rear vision mirrors and educating drivers to the fact that they must know the way is clear before backing. Should the driver back into some object or person, responsibility, according to law rests absolutely upon him and his employer.

The second must be met by the realization that there is no recognized law of right-of-way. The best rule to follow is to educate drivers to the fact that they must always yield the right-of-way to the other party. There are three fundamental reasons for this: In the first place, in case of an accident between a car and a truck, the truck almost invariably receives the majority of the blame, regardless of the actual fault. In the second place, yielding the right-of-way will eliminate many accidents. In the third place, it creates public good will and good will means more sales.

An ice truck holds a certain attraction to children. I have seen trucks with several children riding on them. The driver should accept the view that this is a dangerous practice and keep children off. This calls for salesmanship on his part. He won't lose any friends by keeping them off, but he certainly will if one is injured.

Fatigue in Its Relation to Accident Prevention

By J. R. GARNER, M.D.

Chief Surgeon, Atlanta and West Point Rail Road Company, Atlanta, Ga.

While the provocative causes of accidents due to man-failure are numerous, one, *fatigue*, stands out preeminently.

Fatigue has been described as a physiological condition of the cells or organs of the body which have undergone excessive

activity with a resulting loss of power. More correctly speaking, however, fatigue should be considered from both the psychological and the physical aspect.

Psychically, one who has been active for a considerable time, either mentally, or

physically, or both, develops a condition familiarly described as "a tired feeling"; this sensation is truly a psychical phenomenon, conveying no comprehension of any physical changes in the body tissues although important material changes have, in fact, taken place. Physiologists have been given much concern in their endeavor to determine in just what these changes really consist, and even yet some are not fully understood.

Physically, the phenomena of fatigue within the living body are exceedingly complex; all organs and tissues must of necessity work to a greater or less degree in unison, and excessive work upon the part of one body structure will increase the functional activity of others.

Thus, the action of the central nervous system is demanded in order that any muscle or group of muscles may be brought into play, the muscular action in turn demanding increased work on the part of the heart and respiratory organs in order that the augmented demand for oxygen be adequately met. At the same time various glands are stimulated to increased activity, inducing more secretion and demanding an acceleration of function on the part of the eliminatory system.

The internal or inherent power which undergoes a loss following excessive bodily, mental, or nervous activity is described as "energy." Decrease in this energy is attributable to changes having taken place in those yet unknown energy-holding compounds of the body as well as to a reduction in the available number of such compounds.

This really constitutes the first etiological factor in the production of fatigue.

The other prime factor in fatigue production is the accumulation of poisonous waste materials within the body, these being the so-called "fatigue substances." We may only briefly outline here the changes which occur when muscular tissue is brought into action. Glycogen is the chief source of muscular energy. When muscular contraction takes place its available oxygen enters into a chemical combination resulting in the disintegration or combustion of its glycogen, followed by the formation of carbon dioxide and lactic acid, both of which are powerful underlying contributors toward the induction of muscular fatigue and constitute the etiological factors while the exciting factor is work.

Resultant upon fatigue, the individual's ability to perform is lowered, his output decreased, the quality of his production diminished, his mental aptitude lowered, his susceptibility to disease increased in a direct ratio to the lowering of his vitality, his liability to commit errors is heightened, and, last but by no means least, his liability to sustain personal injury is greatly enhanced.

In all body activity a certain degree of fatigue is developed which is harmless so long as complete recuperation occurs. That is so long as oxygen and glycogen are supplied in adequate quantities to compensate for the combustion that is taking place in the activated musculature, and the "fatigue substances" are promptly and completely eliminated. When these requirements are not fully met the condition known as fatigue reaches a pathological status.

While carbon dioxide and lactic acid have been mentioned as being the "fatigue substances" developed in muscle tissue as the result of work, there are, under similar conditions, formed and accumulated in the brain and nerve tissues somewhat analogous katabolic substances productive of mental and nervous fatigue.

Mental fatigue follows exertion which requires deep and prolonged thought particularly along some single line. Nervous fatigue is induced by the expenditure of nerve force and follows the prolonged enforcement of body exertion beyond that point where physical or mental fatigue has become manifest. The exhausted brain worker or one with an overly expended nerve force is in no condition to continue the performance of physical labor and his accident hazard is greatly increased.

To understand the relation of fatigue to accident prevention, attention must be directed toward the individual conditions known as being inductive of fatigue. Paramount among such factors are the following:

Environments

The workers' environments play so important a role in the causation of fatigue that his home surroundings and general living conditions become of as great importance as are those connected with his work. A workman, whose home is unsanitary and unattractive, whose family relationships are causative of anxiety, or who is continually harassed by the worry attendant upon some

severe illness in his family, becomes an active candidate for very early development of fatigue. Such a person is a hazard to himself as well as to others in close working relationship.

The physical status and mental bearing of his fellow workers reflects upon the individual to such an extent that it may become productive of fatigue and is therefore to be considered from the environmental standpoint.

The inadequate or improper delivery of heat, light, and ventilation in plants and offices add greatly to the rapidity with which fatigue becomes manifest. Such conditions are always remedial and may be readily detected during the progress of an engineering survey.

General Health

Those whose physical standard is impaired by poor health, with the consequential lowering of vitality, will exhibit fatigue in a much shorter period of time and with much less physical and mental exertion than do normal beings. They are, therefore, more prone to sustain accidental injuries. Attention to the physical status of employees will accomplish much toward economical improvement as well as accident prevention.

It is impracticable to deal here with all the ailments which might be recognized as being productive of fatigue; only passing mention can be made of those which are most important.

Tuberculosis, while affecting all classes, is unquestionably more prevalent among those engaged on the labor side of industry. Not only are tubercular subjects prone to present a lowered vitality which renders them more subject to fatigue and accidents, but the transmissibility of the disease makes of them potential hazards for fellow-workers. Regular periodic reexamination of employees will greatly aid in the early detection of incipient infections when they are most amenable to arrest.

Diabetes, another systemic disease accompanied by early fatigue manifestations, may also be readily detected during a physical examination. Not only is the accident hazard, through fatigue, greater in diabetics, but wounds sustained by these persons are slower in healing and convalescence may be very greatly prolonged.

Cardio-vascular-renal conditions include

all of the generally so-called heart diseases, kidney diseases, and circulatory disturbances—including blood pressure. Any one of these conditions will sooner or later be followed by an associated condition in the other organs, and are generally considered as a single syndrome for general purposes. The ease and rapidity with which these subjects become fatigued renders them of interest in this survey.

Syphilis stands out preeminently as the greatest industrial hazard from the standpoint of disease. It is in the first and third stages of syphilis that its industrial relation is of more importance. During the first stage a sense of shame, a certain amount of fear and anxiety, and a realization of the seriousness of the malady reacts upon the individual's mental faculty to such an extent that fatigue is more rapidly induced. Throughout the second stage the disease is usually sufficiently quiescent to produce little or no disturbance in the subject's mental equilibrium.

The third stage is most hazardous from the industrial standpoint since it is at this period that the brain and spinal cord become involved and neural manifestations appear. There is an actually diseased mentality. The subject becomes inefficient, manifests fatigue under extremely slight provocations and becomes exceedingly liable to sustain accidental injuries from which recovery is generally greatly retarded.

Until recently, syphilis has been under such a moral and social taboo that every effort has been exerted to keep its presence hidden and much irreparable damage has resulted. It is now becoming recognized as a physical ailment which requires intelligent handling and scientific treatment from its inception. Detected in its early stages syphilis is curable and the catastrophes attendant upon the tertiary stage may be averted.

Adaptation to Work

By force of necessity many individuals seek any available form of employment without having regard for their own adaptation to the work. Any person unfitted for the labors he is required to perform will become fatigued with a remarkable degree of rapidity. Industrial heads, when considering the employment of men, should see that each individual is adapted to the class of work assigned to him. This will result in

the lessening of fatigue, increasing of efficiency and decreasing of the accident hazard.

Working Hours

Those who have had actual and practical experience know that in some instances shortening of the day's work has actually resulted in an increase in the amount of work done. One occupation will be found far more fatiguing than another. Our present interest is centered upon over-fatigue which is recognized as being causative of accidents.

There are in general use many labor-saving devices, the operation of which produce much noise and vibration and require high speed attention on the part of the operators. Such inventions unquestionably save much labor and yet they have a tendency to greatly increase fatigue.

Monotony, another cause of emotional fatigue, deserves consideration under this heading. Rest periods have been found to prevent and relieve fatigue when interspersed with the day's work. These rest periods may often be of no more than five or ten minutes' duration and their frequency governed by the monotonous nature of the employment. Actual experience of industries where such rest periods have been instituted has shown that fatigue has been lessened, production increased, and accidents minimized.

Noise

Though scientific experiment has not yet demonstrated that working under conditions of continuous noise is productive of fatigue, it is generally accepted as an axiomatic fact. Exceedingly loud noises, those of a droning nature rapidly repeated, and monotonous noises are particularly prone to induce fatigue. It would appear that the character and quality of noise is of the greatest importance and, where they cannot be eliminated, efforts at changing or supplanting the character of sound have met with remarkable success.

By means of loud speakers installed throughout many factories in Germany the rhythm of music has been used to overcome the hum of machinery. The practice is just beginning to permeate American industry; in English and South American factories it has been in vogue for some time.

Posture

Incorrect posture is a most important factor in the causation of fatigue and its attendant accident hazards. Man having assumed the upright position, all studies of posture must consider this as being his normal attitude. A perpendicular line drawn alongside of the standing figure should pass through the center of the ear, the center of the shoulder, center of the hip, center of the outside of the knee, and center of the external malleolus at the ankle. Such a posture requires the minimum of physical exertion for its maintenance since the parts of the body are so superimposed upon each other that the force of gravity replaces much muscular effort.

The correct seated posture maintains the above relation with the head, torso and hips; the thighs are at an angle of approximately ninety degrees with the body, while the knees are flexed so that the feet rest firmly and comfortably upon the floor. When work requires that the body be inclined forward so as to accommodate itself to a desk or machine, this position should be assumed by a pivoting at the hip joints and not by permitting a slouch in the spinal column.

The general ill effects of an improper sitting posture result from the disturbances of function of the organs of the body resultant upon a flattened chest, rounded shoulders, obliteration of the natural curvatures of the spine, protrusion of the abdomen, removal of the natural support provided for the heavy abdominal viscera by a natural shelving of the spine where these organs rest and are retained by the abdominal muscles, undue stress upon supporting ligaments, retardation of circulation, undue pressure upon that sensitive area surrounding the lower end of the spine and the coccyx, and undue pressure upon the nerves, arteries and veins passing through the popliteal space at the back of the knee joint. When, due to improper posture, the heart's action is impeded there is noted a diminution in both the quantity and quality of the blood's supply with a corresponding depreciation in available oxygen and glycogen accompanied by a retention of the "fatigue substances." The invariable result is a rapid manifestation of fatigue symptoms. The subject begins to feel sleepy, yawns frequently, responds but sluggishly to external stimuli, lags in the performance of work, becomes inefficient, and is far more liable to accidental injuries

Many workers have been provided with no seat whatever, others with improper seats or chairs which do not admit of adjustment either to the individual's anatomy or to the work entailed. Due to the exceedingly inefficient character of such seats, piece workers can rarely be induced to use chairs of ordinary construction while doing their work.

Muscles will respond to an enormous amount of action before manifesting symptoms of fatigue. When, however, during

muscular action, oxidation has been incomplete and the supply of glycogen inefficient, a rapid increase of the "fatigue substances" will occur in the muscle cells and fatigue will increase in direct proportion to the reduction of muscular efficiency. Muscles that have become fatigued will not be accurate in directing movements; there will be incoordination of action with other muscles—this uncertainty of movement and non-concerted action increases the accident hazards of the individual as the elements of fatigue increase.

Safety Control In Air Conditioning

By A. G. HILLEN

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In our discussion we will deal only with the safety control which should be practiced in engineering design, which constitutes safety in material, safety in controls, and safety in physiological reactions of the occupants of the space. To obtain these safety measures the designing engineer must be selective in the materials used and lay out the system to produce comfortable conditions without hazards to the occupants. The engineer operating the system must maintain in the conditioned area the temperatures and humidities to produce comfort.

In comfort conditioning, refrigerating effect is required to produce cooling and dehumidifying of air, which in the majority of cases calls for a refrigerating machine. The refrigeration machine is used either for the direct expansion of the refrigerant in the path of air or for the cooling of water to cool the air. The types used today are absorption, rotary, reciprocating, centrifugal and steam ejector water vapor. Absorption systems are seldom used for air conditioning and the rotary type is seen infrequently.

The most commonly used refrigerants are freon, ammonia, carbon dioxide, sulphur dioxide, methyl chloride, water vapor and carrene. Due to their toxic or irritant values, in case of a leak, methyl chloride, ammonia and sulphur dioxide are seldom used in air conditioning. Carbon dioxide is used less and less, due to its high working pressure and the high temperature of condensing water found in some sections of the country.

This leaves freon and carrene as the most generally used refrigerants, and while they are similar in some respects they are quite different in operating characteristics within the cooling range required for comfort air conditioning.

Freon is used in a reciprocating compressor which produces the cooling at a differential in pressure, both high and low side above atmospheric; while carrene is used in a centrifugal machine which produces its cooling at a differential of vacuum.

Of course, water is sometimes used as a refrigerant. It is used in the steam ejector and water vapor centrifugal machines. To produce the refrigerating effect, cooling water to 50 degrees, a very low vacuum is required, approximately 29.2 inches of vacuum. Water, without a doubt, is the safest refrigerant which could be used, but has its limitations due to its refrigerating characteristics.

Freon and carrene are considered safe refrigerants. Both are considered non-explosive, non-flammable, and non-toxic. The National Board of Fire Underwriters has made an elaborate report entitled "The Comparative Life, Fire and Explosion Hazards of Common Refrigerants."

Due to the safety of freon, it is acceptable to use for direct expansion work, as under normal operating conditions the amount of refrigerant leak would be so readily diffused and diluted that it would not be harmful. Since with the use of freon the refrigerating

Is Safety In YOUR Annual Report?

A number of companies think
their stockholders are interested
in safety.
Many more do not

INTERESTED in whether safety is included in annual reports to stockholders, and in what form, NATIONAL SAFETY NEWS queried a selected list of Council members.

The excerpts published on these pages speak for themselves.

Of special interest were some of the letters telling us safety was not included in current annual reports.

- Many safety men who answered in the negative expressed regret. Apparently they believe safety ought to be included in their companies' annual reports.

- Some told us that although the current year's report contained no mention of safety, former reports had. Among the reasons for omission this year: poor record and lack of space due to other important messages to stockholders.

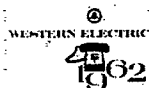
- One safety man complained that he is regularly asked to prepare a brief statement summarizing the year's safety program, but that his material rarely appears in the published annual report.

- Many seemed surprised at the idea of including safety in the annual report, and expressed interest in seeing an article on the subject in the News.



Ford Motor Co.

The frequency of lost-time industrial injuries incurred by employees during 1962 was at an all-time low. Fewer than two out of every 1,000 employees lost time from work because of accidents on the job or from occupational disease.



General Motors Corp.

The outstanding record achieved by GM's plant safety program in 1962 is the result of the excellent cooperation of supervisory and plant personnel. During 1962, out of every 1,000 GM employees in the United States and Canada, 998 went through the entire year without lost time resulting from accidents or occupational diseases.

Western Electric Co.

Employees at all locations kept up their efforts to promote safe practices on the job, and the results were again rewarding. The Company's safety record continues to be among the best in American industry.

In April, the Greensboro (N.C.) Shops completed its tenth consecutive year without a disabling injury. This record of more than 30 million man-hours is the best safety performance ever attained in the electrical industry.

The off-the-job safety program, inaugurated in 1961, was extended and included group discussion meetings and a campaign to promote the use of automobile safety belts.

U.S. Steel

"Safety First" as a slogan was pioneered by U.S. Steel in the early 1900's. Safety as the first consideration in all operations has been a continuous objective as well as a continuous practice in U.S. Steel and outstanding results have been achieved.

During 1962 the disabling injury frequency rate in the steel producing operations — the group of operations for which safety statistics have been regularly recorded in this report — established another all-time

low. The number of disabling injuries in 1962 was 0.77 per million man-hours worked. In recent years, U.S. Steel's disabling injury frequency rate for its steel producing operations has been less than one-fourth of the average in the balance of the steel industry. U.S. Steel is the first company in the history of the National Safety Council's annual safety contest to win the first, second and third place safety awards in both the Council's "largest steel plants" and "next largest steel plants" categories. Recognition by the National Safety Council and other agencies was earned by additional plants, mines and other operations for their safety performances. Efforts continue toward reaching the ultimate goal of total elimination of injury in every mine, plant and other operation.

It is with deep sorrow that, in spite of these intensive efforts, there must be here recorded a major coal mine disaster in which 37 men lost their lives as a result of an explosion on December 6, 1962, at Robena No. 3 Mine located in southwestern Pennsylvania. Prior to this disaster, there had been no lost-time accidents at this mine since March 1961, during which time the employees had worked over 1.6 million accident-free man-hours.

Carrier Corporation

Workmen's compensation costs increased somewhat in 1962 and, accordingly, accident prevention programs were given renewed emphasis.

Major attention was also devoted to an improved salary administration plan covering all of the exempt employees of the Corporation. Special supervisory de-

velopment programs were undertaken at Bryant Manufacturing Company and Elliott Company and similar action is contemplated with respect to other divisions.

St. Louis-San Francisco Railway Co.

For the ninth consecutive year, the National Safety Council's Public Safety Activities Award was conferred upon the Frisco in recognition of its efforts to prevent accidents at rail-highway crossings, and on railroad property as well as at home and off the job.

Phillips Petroleum Co.

Six employee groups completed periods of one or more million man-hours worked without an injury resulting in lost time. Company-wide, employees reduced lost-time injury rates 9 per cent.

Pres. Stanley Learned, three times president of Oklahoma Safety Council and a director and member of executive committee of National Safety Council, [was] commended for safety work by Oklahoma's Governor J. Howard Edmondson.

Monsanto Chemical Co.

Monsanto's safety performance was again outstanding. Its accident frequency rate was far below the industry average. Thus, the company's record as one of the safest in the chemical industry was continued.

Rayonier Inc.

Safety for the worker on his job is one of Rayonier's important personnel policies. The company carries on an aggressive and fully organized program throughout its operations for the elimination of accidents. Over the years, this effort has steadily reduced the injuries to Rayonier employees in both frequency



dent-safety, United Air Lines, Inc., Maintenance Base, San Francisco.

Automotive and Machine Shop
R. Beeson, safety-coordinator, Perfect Circle Corp., Hagerstown, Ind.

Electrical Equipment
F. C. Peregov, safety engineer, Standard Linear Accelerator Center, Stanford University, Stanford, Calif.

Power Press and Forging
John Churchill, supervisor, Safety Engineering, Safety Services Dept., Allis-Chalmers Mfg. Co., Milwaukee.

Group Vice Chairman of Sections — Group C
C. C. Ruddick, Pittsburgh Plate Glass Co., Pittsburgh.

Sections under this grouping and their chairmen are:

Coal Mining
C. E. Linkous, Island Creek Coal Co., Holden, W.Va.

Construction
F. Deeg, manager, Accident and Fire Prevention Dept., National Association of Mutual Casualty Companies, Chicago.

Marine
D. L. Buchanan, director, Claims Div., Pittsburgh Steamship Div., U.S. Steel Corp., Cleveland.

Mining
John A. Cooke, Falconbridge Nickel Mines, Ltd., Falconbridge, Ont.

Public Employee
G. F. Kuhns, safety supervisor, Illinois Div. of Highways, Springfield, Ill.

Public Utilities
P. Windsor, secretary, Bureau of Safety, Chicago.

Railroad
W. V. Hayes, director of safety, New York Central System, New York.

Group Vice Chairman of Sections — Group D

P. C. Folse, manager, Accident and Fire Prevention, Socony-Mobil Oil Co., New York.

Committees under this grouping and their chairmen are:

Cement, Quarry, and Mineral Aggregates
Arvid Tiamson, safety director, Material Service Corp., Lyons, Ill.

Chemical
G. R. Cummings, head, Safety and Industrial Hygiene Dept., Eli Lilly & Co., Indianapolis.

Fertilizer
John S. Mark, manager, Fertilizer Mfg. Div., Farm Bureau Coop. Association, Inc., Columbus, Ohio.

Glass and Ceramics
John Rheinheimer, Kaiser Refractories, Mexico, Mo.

Petroleum
S. Ross Carr, Gulf Oil Corp., Houston.

Rubber
F. C. Starbird, safety manager, Firestone Tire & Rubber Co., Decatur, Ill.

Textile
J. B. Skinner, chief, Industrial Hygiene Section, American Mutual Liability Insurance Co., Wakefield, Mass.

Chairman Elect of Conference
G. L. Gorbell, manager, Safety and Fire Protection, Monsanto Chemical Co., St. Louis.

Group Vice Chairman of Committees — Group A
R. N. Papich, safety consultant, American Gas Association, New York.

Committees under this grouping and their chairmen are:

Audio-Visual Aids
W. E. Stuffing, director of safety, Carrier Corp., Syracuse, N.Y.

Training
H. Riefenstahl, safety director, Alpha Portland Cement Co., Easton, Pa.

Off the Job
John E. Smith, safety director, Spencer Chemical Co., Pittsburg, Kan.

Standards
A. L. Cobb, director, Safety and Fire Protection, Eastman Kodak Co., Kodak Park Works, Rochester, N.Y.

Technical Publications
R. L. Moore, assistant secretary, Lumbermens Mutual Casualty Co. and American Motorists Insurance Co., Chicago.

Group Vice Chairman of Committees — Group B

R. H. Albisser, safety manager, Merck and Co., Inc., Rahway, N.J.

Committees under this grouping and their chairmen are:

Contests and Awards
Ralph Hartman, assistant manager, Safety Department, Bethlehem Steel Co., Bethlehem, Pa.

Physical Hazards
Cole A. Allen, vice president-engineer, American Mutual Liability Insurance Co., Wakefield, Mass.

Research Projects
S. F. Spence, director, Safety and Loss Prevention, American Cyanamid Co., Wayne, N.J.

Associations
R. Hagopian, assistant manager, Accident Prevention Dept., Association of Casualty & Surety Companies, New York.

Occupational Health Hazards
J. Radcliffe, safety director, Ford Motor Co., Detroit.

Occupational Health Nursing
Anne Kloiber, R.N., Pabst Brewing Co., Milwaukee.

Group Vice Chairman of Committees — Group C

D. A. Farrell, director of safety, U.S. Steel Corp., Pittsburgh.

Committees under this grouping and their chairmen are:

Sectional Programs
H. M. Huntington, supervisor of safety, International Harvester Co., Chicago.

Subject Sessions
K. S. Hedges, safety director, General Motors Corp., Detroit.

If your safety shoe program isn't complete, you're taking an awful chance.

You want a safety shoe program? You have two choices.

Call some guy who sells safety shoes. He'll show you a selection of the styles he's got. Choose some you think will come closest to your employees' requirements. Talk nice to the man and maybe he'll throw in some safety posters, too.

What do you pay? The cost of the safety shoes.

Or.

Call some guy who sells safety shoes. Who works for **Lehigh!** Who's a safety shoe expert. He'll show you more kinds of safety shoes for more kinds of jobs with more kinds of special features than any other salesman can show you.

And even if you curse at him,

he'll throw in the following:

A complete set of safety posters. Dramatic safety posters that someone will actually look at. And read. And pay attention to.

He'll give you a 20 minute safety movie. Remember what we said about the posters? The same thing goes for the movie.

Then he'll give you a brochure. It lists dozens of ways to sell safety. And safety shoes.

More. He'll give you bulletin board flyers you can use as catalogues for safety shoes. And he'll keep them coming as new styles and features are added.

Still more. He'll give you pay envelope stuffers. A complete fitting program including record cards and banners. And displays. And the Scarab Award. The Scarab

Award? The Scarab Award. Give it to any employee whose feet are saved from injury by a pair of safety shoes.

What do you pay? The cost of the safety shoes.

Come to think of it, you really have one choice, don't you?

LEHIGH

Don't be half-safe. The most complete safety program in the industry costs no more than the incomplete ones.

Some call it madness.

We call it the surest way to maintain Lehigh as the number one safety shoe company in the world. And that's a fact.

LEHIGH SAFETY SHOE CO., ENHAWA, PA.