

Bulletin No. 96

Safety Series No. 38

University of Arizona Bulletin

State Safety News

DECEMBER, 1918

EDITED BY S. C. DICKINSON

SAFETY ENGINEER, ARIZONA STATE BUREAU OF MINES



Entered as second class matter November 23, 1915, at the postoffice at Tucson, Arizona, under the Act of August 24, 1912. Issued weekly, September to May.

PUBLISHED BY

University of Arizona
Bureau of Mines

G. M. BUTLER, *Director*

TUCSON, ARIZONA

1918-19

State Safety News

Safety

Efficiency

BULLETIN No. 96

DECEMBER, 1918

WE ARE seeking today a thousand social readjustments when what we need is a new social temper. There are few controversies in or outside the courts, between individuals or nations, which would not be ended as the rising morning ends the night, if only men came together in the right temper, brotherhood and love; a passion for justice, the love of one's neighbor as oneself, are mighty solvents of the world's strife.

—Gaius Glenn Atkins.

WELFARE WORK

BY

S. C. DICKINSON

Large corporations throughout the United States are now engaged in carrying on extensive welfare work among their employes. No expense is being spared in making the living and social conditions among the works as pleasant and attractive as possible. Hospitals, visiting nurses, medical examinations of employes, club houses, libraries, night schools, manual training schools, lunch rooms, gymnasiums, billiard rooms, bowling alleys, swimming pools, baseball fields, playgrounds for children, kindergartens, improved bungalows and dwellings, parks, voluntary relief plans, pension systems, and stock subscription plans comprise the important steps which are being taken to make desirable citizens of the vast army of workers and their families. The work is of great importance from the sociological and educational standpoints. The result is that the workers become more efficient and far better satisfied with their lot. In hours of leisure, the workers find time and opportunity for education, recreation and amusement. The results of this welfare work are directly reflected in the quality and quantity of the work performed, and in the loyalty and faithfulness of the employes.

One of the most important features of welfare work is the compulsory medical examination of employes. For this purpose, many companies engage one or more competent physicians to take charge of the work. Employes should be examined at least once a year for the purpose of discovering illness and physical defects of any kind. The examination is not conducted for the purpose of discharging those in poor health, but for enlightening employes of any illness, in order that they may receive proper care and treatment free of charge. Such an examination enables the management to place employes at the kind of work for which they are fitted.

A medical examination serves to educate employes in the fundamental principles of health preservation and hygiene.

Some employers interest their employes in health, hygiene and sanitation by giving illustrated lectures. These talks and lectures are supplemented by monthly pamphlets describing different diseases, symptoms, methods of prevention and cure. These are distributed among all employes and by these methods of education, and by information imparted by the physician during the medical examination, the employes gain a knowledge of the value of good health and how to acquire and retain it.

A necessary adjunct to first aid and mine rescue crews is an emergency hospital. Some companies maintain a hospital near or in their plants. These hospitals are located in a light, sunny part of the plant where plenty of fresh air is obtainable. The walls and floors are of white tile and the furniture is enameled white. The hospital contains an instrument cabinet, operating table, one or more beds, bed linen, medical cabinet, stretcher, wash basins, sterilizing basins, towels, sterilizers, electric heaters, water closet, splints, sterilized bandages and gauzes, tourniquets, chairs, etc. They are well ventilated and properly heated.

All cases of injury, no matter how trivial, are sent to the emergency hospital or station where treatment is given by competent surgeons and trained nurses. Whenever the accident is of serious nature, the injured man is taken to the emergency station, where first aid treatment is administered; he is then transferred to the nearest hospital.

Visiting nurses make periodical calls, at the homes of the employes for the purpose of treating the sick and instructing in all matters pertaining to health, hygiene and sanitation. They do much in educating families in methods of healthful living.

These nurses instruct and direct in the care and feeding of infants; explain the proper preparation of all food and advise in the matter of economical purchasing; discourage anything and everything that does not tend to produce good morals, and teach the value and necessity of cleanliness and the benefits of fresh air and sunshine.

Employes who have become incapacitated, either temporarily or permanently, by sustaining work accidents are provided for by some employers through compensation systems. Compensation is also provided for dependents of workmen who may be killed while in the employ of the company. Workmen's compensation laws are now in effect in 31 states, with the probability that all other states will adopt similar laws in the near future. These laws, though open to much improvement, have done a great deal to relieve the suffering of those who are rendered physically and financially helpless by work accidents and for dependents of those who are killed. Wherever these laws are in effect, industrial workers are, in a measure financially compensated for injuries received during the course of their work. Some companies supplement the financial aid rendered by the operation of workmen's compensation laws.

Pension funds have been established by a number of companies, affording relief for workers in their old age. Such a plan increases the

loyalty of the working force, and enables companies to retain experienced men in their service.

Some of the features of these funds are:

- a. Compulsory retirement for men at seventy years of age, and women at sixty, after twenty years service.
- b. Retirement at the request of the employe or his employing officer after the age of sixty for men and fifty for women, after twenty years of service.
- c. Retirement by reason of permanent total incapacity after fifteen years of service.
- d. Pension basis — For each year of service, 1% of the average monthly earnings for the last ten years of service.
- e. Minimum pension, \$12.00 per month; maximum pension, \$100.00 per month.

Data concerning the source of supply and the condition of drinking water furnished employes is collected by employers with a view to furnish pure water at all times. By having bacteriological analyses made once a year or oftener wells and springs which were formerly used have been abandoned. Where the water was found to be of good quality especial precautions are taken to avoid pollution from surface water or other causes. Many systems have been installed for the purifying, cooling and proper distribution of water to the workmen, including the sanitary drinking fountains. These systems are so arranged that the temperature of the water is easily controlled, thereby giving the workmen water of a temperature best suited for good health. Common drinking cups have been eliminated.

Metal garbage cans and trash cans, equipped with tight fitting covers are placed at the rear of houses in the mining camps and at convenient places throughout the mills. The garbage and refuse is collected periodically and burned. Tenants are required to keep their premises in clean and sanitary condition; and if they fail to do so, the work is done by the company and the expense is charged to the tenant as a matter of discipline.

The bath invigorates, relieves fatigue and renders the individual far less susceptible to colds, pneumonia, etc., as well as to the various parasitic skin diseases so prevalent among the class employed. The workman is enabled to return to his home in a cleanly condition. This tends to better the home conditions and elevates the standard of cleanliness and neatness in his family. It is believed that the self-respect of the individual and the general health of the community have been much benefitted by this system.

Some companies have made a great effort to eliminate flies. They have circulars printed in several different languages and in simple terms, explaining the dangers from the fly, and these are distributed to the employes.

Restaurants have been provided for employes: The following is typical of a regular menu:

Soup: Puree Navy Beans.

Meat: Prime Roast Beef; Leg of Lamb; German Pot Roast; Frankfurters and Sauerkraut.

Vegetables: String beans; sugar corn; mashed potatoes.

Dessert: Tapioca pudding.

The price of the regular noon-day meal is 25c.

Some companies also provide lunchrooms for the use of their employes within the plants. These are operated along the same lines as the restaurants, the prices charged being fixed to cover the bare cost of maintenance and operation.

For men who bring their own dinners or who have dinner brought to them at noon by some member of the family, special rooms have been provided for their use. Steam coils and other similar arrangements have been provided to enable the workmen to warm their food and heat coffee in cold weather.

Houses for miners and their families have been built in some communities, which are rented for \$2.00 a room per month, and they contain all modern conveniences. They have also built barracks and dormitories for men without families so that each man can have a separate and sanitary room. These of course, have common mess-rooms, shower baths, etc.

Gardens and beautiful lawns help to make homes. A home means more than a mere shelter from the elements. The beauty of the gardens and lawns exert a refining influence on the family, which shows inside of the house and in the behavior of the members of the family toward each other. The man who has learned to take pride in his garden hurries home from work, spending little time in loitering and none in the saloon. Therefore the garden tends to reduce alcoholism. The man's standing in the community is raised; and what is even better, his own self-respect is promoted.

Of primary importance in the list of gardens are vegetable gardens. Gardens reduce the cost of living. The products of the gardens help to decrease the expenditure for food, and many of the gardens have surplus products to sell. The gardens not only supply a great variety of food, but also provide fresh vegetables to take place of canned goods during a large part of the year. The family that has

the spirit and has acquired the garden habit will not allow refuse to accumulate around the house.

Playgrounds have been installed for the use of the children by some companies. In most cases they are installed on the company's unused land near the plant or mine, and are equipped or maintained at the company's expense. The equipment consists of the usual paraphernalia found in the city playgrounds, and in many cases additions have been made. Competent instructors employed by the company are in charge of the grounds.

In addition to playground work, some companies provide instruction in sewing, basketry, raffia and handicraft. Much assistance is given in the work by the young women in the plant vicinities, who give their services voluntarily. These playgrounds are not restricted to the use of employes' children, but are open to all children in the community.

In communities where they have community gardens the company does the plowing and filling where it may be required, and the soiling and fertilizing of gardens where good soil does not exist. And, when necessary, the company instructs employes in developing and growing profitable gardens and pretty grass plots and flowers in connection with their homes in the towns adjacent to its mines and plants. The employes and their families use profitably their otherwise unemployed hours in gardens and lawns.

One of the most practical and successful of new departments developed in connection with the welfare movement is that devoted to gardening and nature study. The principal gardens are conducted in connection with the playgrounds. Areas have been divided into plots and each plot has been placed in charge of a boy or girl. The children are under a trained instructor and are given daily lessons in garden making.

Wading pools usually installed in the play grounds are a constant source of amusement and delight to the children of employes as well as to the children of other workmen living in the neighborhood of the pool locations. The wading pool and other playground features serve to keep the children off the streets and alleys, while affording them good, clean and healthful outdoor exercise. It is impossible to overestimate their influence for good in the lives of the boys and girls of the communities where they are located.

At several plants and mine locations, swimming pools, both large and small, have been provided at the expense of the companies. Drowning accidents have decreased since the installing of these pools. The pools are not restricted to the use of the employes and their

families. Separate hours for boys and girls are usually stipulated. All persons are required to use the shower baths before entering the pools.

Many companies have provided commodious and well equipped club houses for the exclusive use of their employes, members of their families and friends. The features are: Reading rooms and a library, dormitories, gymnasium and swimming pools, baths (tub and shower), billiard and pool rooms, bowling alleys and basket ball halls, motion pictures and lectures, concerts, smokers, musicals, etc. The companies pay taxes, insurance and furnish heat. All other expenses are borne by the club members, the initiation fee and monthly dues being very small. In some cases these are fixed in proportion to wages. Reading rooms are supplied with many of the current periodicals and magazines, daily papers, and a large collection of books. The affairs of the club are handled by the members themselves. Intoxicating liquors and gambling are prohibited.

Baseball is encouraged by a great many concerns. Grounds and stands have been provided for the use of teams composed of employes. Teams have been organized at various plants and these teams play regular schedules. The president of one company has donated a silver cup, which is played for from year to year by the teams of the various companies. The companies foster this sport and in some cases committees composed of employes are appointed by the management to supervise the games and arrange the schedules.

Besides baseball, provision is made for other outdoor games, such as tennis, handball, football, etc. Under the direction of visiting nurses children are trained in calisthenics on the play grounds.

Much attention is devoted to the fitting celebration of Independence Day, endeavoring to promote a "safe and sane Fourth." At night there are fireworks and moving pictures for the entertainment of the children. The employes and their families join in these celebrations with the proper spirit. Interesting programs are arranged and the children trained in the flag drill and various other exercises.

Brass bands and musical choruses have been organized at various plants where a considerable amount of vocal and musical talent has been discovered. In some cases the bands have been fully equipped at the expense of the company. These bands and choruses not only provide local entertainment but they frequently are invited to the adjacent towns. A room with a piano for the rehearsal of orchestras has been provided. Pavillions have been built for dancing and the music is furnished by the band.

Magnificent buildings have been built for Y. M. C. A. for the

purpose of affording industrial workers of all classes the opportunity to obtain a better training in their own work or in other lines of industry.

The purposes of the movement are:

1. To increase the efficiency of the workmen by teaching the fundamental and more advanced principles involved in their individual lines of work.

2. To increase the earning power of the pupils by guiding them along the paths of quicker and deeper reasoning which lead to positions of gradually increasing responsibility.

3. To promote and develop the happiness of the pupils by opening the door to a more thorough understanding not only in their daily work but in their home life as well.

Ample facilities for teaching and demonstrating each branch of work are provided. The teachers are men actively engaged in their respective lines. They are selected because of their scholarship and broad practical experience in the branches they teach. The majority are assistants or foremen of the various departments, and therefore, are personally acquainted with many of the students in their classes, which results in an increased mutual benefit. Actual problems are considered and studied in each step of the work as it is taken up in the prescribed courses.

Night schools are being conducted in connection with some mines, and their purpose is to aid young men who are desirous of improving themselves in the various lines of work offered.

Technical training is offered in Electricity, Mechanical Drawing, Chemistry and Steam Engineering and Mining. Classes are also organized in Mathematics, Algebra, Geometry, Trigonometry, etc. All technical subjects offered cover a period of two years or more.

Academic courses are offered in English and Arithmetic to meet the needs of many of the students whose early education has been too limited to afford even the elementary training required for the every day duties of life.

All classes meet three times weekly.

Apprentice departments are maintained in some plants. Sons of employes are given preference and are taken on in the various trades as conditions permit. Schools have been organized, specially trained men are placed in charge of them and competent instructors assigned to the various classes. The schools are maintained without expense to the pupils. Books and other supplies are provided and bonuses are paid to the graduate apprentices as rewards for meritorious service. The boys are paid their regular wage rates for the time spent in

school. At the end of a four year course the boys have acquired a practical industrial education at the expense of the company. A bonus of approximately \$130.00 is paid to each boy at the termination of the apprenticeship period.

Plant libraries are established and conducted under the auspices of the Public Library. The space and bookcases, with a librarian and interpreter are provided by the company. The public library supplies the books and all cards and stationery required for keeping a record of the books in circulation. About 500 books are kept at the plant library and they are changed as often as there is a demand for new books.

Salesmen's schools have been provided and their object is to familiarize the salesmen with the process of manufacture of the products they sell and also to supply information concerning credit, transportation, etc. The course is covered in eight weeks.

A post-graduate course is designed for young men with technical education sufficient to warrant an attempt to learn the business. The course occupies two years and each member of the class must do actual work in the different branches.

Some companies hold picnics for all employes and their families and pay all expenses. The picnic is placed in charge of the Safety Committee. One, and in some cases two, trains are chartered and the people are taken to an appropriate picnic ground. Games, fishing, swimming, etc., are the amusements of the day.

First aid crews are a permanent part of some safety organizations. Some of the crews are purely voluntary on the part of the employes, while at other plants the men receive a bonus. Four to six men are assigned to each crew. They meet periodically and are trained by a doctor or a first aid instructor. The course consists of lectures, demonstrations and drills. Twelve lessons are usually required to complete the course, and each man is given a certificate after he has qualified. Through these systems of first aid, companies have been able to materially reduce the cases of infection.

The infected cases take three and a half times as long to recover as the non-infected ones. The number of amputations, excisions and stiff joints resulting from infected cases is very great, while in the non-infected cases it is reduced to a minimum. The economic gain must be apparent to anybody, when the loss of time and expense of treating the cases, together with the resulting permanent disability are taken into consideration. The primary object of First Aid is to furnish an antiseptic or clean dressing that will prevent infection of the wound and to supervise the removal of the injured person to the

home or hospital and to render appropriate assistance in cases of shock, gas poisoning, etc.

Mine rescue crews have been organized, and from five to eight men compose a crew. The stations are located near the mines and are equipped with the best apparatus and accessories obtainable. Training consists of the actual use of the breathing apparatus for stated periods while actually doing work such as would be required in rescue work in a chamber filled with smoke or noxious gases. As in the case of First Aid each man is given a certificate after he has qualified. Special instructors are employed to direct the training of these men.

Some companies also maintain fully equipped rescue cars, containing stretchers, splints, breathing apparatus, oxygen supplies for same, safety lamps, flash-lights, life-lines, first aid material, etc. The cars are manned by a full crew and are at all times ready for an emergency call.

The sphere of welfare work must not be confounded with that of legislation nor should it be used as a means of retarding wise labor laws. If it should have this effect and make working conditions, the safeguarding of machinery, or the prevention of child labor and night work for women dependent on the employers' kindness or sympathy, its effect becomes at once deleterious instead of beneficial. Sanitary conditions within the factory, mine, etc., should be a legal obligation.

It is safe to predict that the time is not far distant when much of present day welfare work will be a requirement. This tendency has recently been amply illustrated in the case of employers' compensation to workingmen for accidents, a conspicuous feature of welfare work.

If these ideas on Welfare Work are followed out the general end and purpose of the work may be said to be selfish to the degree of attracting reliable workmen, but it is unselfish to the degree of giving every man, woman and child an opportunity of self-improvement, wholesome recreation, housing conditions above the ordinary, steady employment, and superior school advantages.

HOME SAFETY

The rules for making home safe, quoted in the following article, were drawn up by the Public Safety Committee of the Rochester Chamber of Commerce:

"When the subject of safety is under discussion, there is generally a tendency to associate it with the street where there is much traffic,

or to the industrial establishments where men and women are at work with machinery, but comparatively few give serious thought to the question of home safety.

Nevertheless, it is a fact that many people are crippled by accidents in their own homes, and statistics show that the number who are killed in home accidents is large, and that in the majority of these cases a few precautionary measures would have prevented the accidents.

The newspapers in Rochester frequently print reports in regard to men, women and children who were injured because of carelessness in the home. Scores of babies have been scalded because mothers were careless in leaving boiling water within their reach; the number of persons who sustain injuries by falling down stairways in this city each year is formidable, and there are other accidents in homes which occur so frequently that they are called "common".

Did you ever stop to consider *whether your home is safe?* If you have not, then do so when you go to your home tonight. Look around you and see whether there is danger for yourself or the children.

When you are injured in the street there is a chance that some other person may be to blame for the accident, for you may be the victim of a reckless autotist or driver of some other vehicle, or circumstances over which you have no control may be to blame. The same rule may apply when you are engaged in your daily occupation.

But if you are injured when you are in your home, then it is very likely that *you are to blame*, or that the blame rests upon some member of your family.

Here are eight rules for *making your home safe*:

1. *Babies Scalded.*

Thousands of babies have been scalded because mothers left hot water within their reach. Place all hot liquids in a safe place.

2. *Playing with Matches.*

Don't allow children to play with matches. Hundreds of fires have been started, many children have been burned, and homes have been destroyed because of this dangerous practice.

3. *Rusty Nails Cause Blood Poison.*

Stepping on nails and broken glass has caused many cases of infection and blood poison. Keep the premises clear of sharp objects.

4. *Poisons.*

Keep all poison out of reach of children and label "Poison." Remember children are likely to taste anything, and poison should be kept in a separate closet.

5. *Gasoline Fumes Explode.*

Fumes of gasoline, when exposed to a flame, will explode. When cleaning with gasoline, always have the room well ventilated and keep the gasoline can closed.

6. *Falls.*

Children are likely to fall from porches. Always have the porches well provided with safety rails to protect them.

7. *Dangerous Stairways.*

Keep the stairs in good repair and free from all obstructions. If the cellar stairway is dark, paint the bottom step white in order to keep from stumbling.

8. *Iodine Prevents Infection.*

Ninety per cent of all cases of infection and blood poison are caused by neglecting slight injuries. Use Iodine for any break of the skin which draws blood.

Fathers and mothers are morally obliged to make their homes safe, and to teach their children safety."