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*Seventeenth Safety Congress***Address****By HOMER L. FERGUSON****President, Newport News Shipbuilding & Dry Dock Company,  
Newport News, Va.**

Not so many years ago I felt that safety work was largely waste effort, that after management had done its share to provide a safe place to work and met all of its legal obligations, it was then up to the men to take care of themselves. This was not on account of any lack or real sympathy for injured employees, but because it seemed a fairly hopeless task to make the careless careful about the one thing that most concerned them. My medical friends tell me that men of the soundest judgment in industry, finance or the professions, are apt to be quite childish about what is of greatest importance to them—their own health.

Accident hazards are undoubtedly increased by the speed and constancy with which we move about while awake. We are all sorry when anyone is hurt or killed, are glad that the injured man is properly compensated and his family made comfortable for the time being. The feeling of pity predominates. In an industrial plant, if a valuable piece of machinery is broken down or ruined by carelessness, there is usually a great deal of profanity and decisive action is taken to prevent a recurrence. The feeling of pity is quite apt to be absent.

My excuse for talking to you today is that I was drafted to discuss the question of industrial safety in a more general way at the first of your large meetings and feel that perhaps my experience may be helpful, as my ideas as to the value and efficacy of safety work have been changed.

For the benefit of those not familiar with shipbuilding, I would say that the Newport News Shipyard employs 5,000 men and has most of the hazards of industrial employment. There are machine shops, boiler, blacksmith and forge shops; iron, brass and steel foundries; copper, sheet iron and pipe shops; wood-working plants, ship sheds and furnaces; rigging loft, mold loft, shipways where hulls are constructed, dry docks and piers; probably twenty miles of railroad track, trucks, dozens of cranes of every description from three tons to one hundred and sixty tons capacity. The plant covers about one hundred and fifty acres. At our plant about thirty-five per cent of the men are colored, and these men do a large part of the stage building and rigging. We have found them rather less careful about getting hurt themselves and probably rather more careful about hurting any one else.

Our safety work started in a small way about fifteen years ago, with the appointment, and later the election, of a yard safety committee. This committee still exists, has regular meetings, with definite duties. Its members have the obligation to report immediately any unsafe practices or conditions, and may order emergency jobs of small extent done. In conjunction with the inspection provided by the State under the Workmen's Compensation Law, mechanical safeguards have been provided and applied and this work still goes on, although to a noticeably smaller extent.

Shortly afterward the Clinic was installed with nurses in attendance during working hours and a surgeon in attendance most of the time and always within easy reach. One of the chief values of a clinic in the plant is that minor injuries may be treated properly and quickly and infection prevented. This department is of great use, not only in the treatment of injury, but also in an educational sense. In a large plant, a clinic should have an X-Ray, for frequently small bones may be broken which otherwise would not be discovered.

The next step was the adoption of a definite employment and training program, with a physical examination for every new employee. In training men and boys for their jobs, the necessary instruction in safety is easily given. The record of our 200 apprentices for safety is excellent. A considerable contribution to safety is

made by the exercise of sound judgment in not placing men in jobs for which they are not suited by reason of their age, physical condition, or lack of training.

On account of the great risk involved in repairing vessels which have been carrying oil, it became necessary to have a certified chemist. We found a man who could do this work, in addition to his other work and whose word is final as to the conditions of safety in or about tanks of an oil vessel, most particularly as to freedom from gas in such tanks.

We then took other natural steps in accident prevention, through the use of bulletin boards and posters throughout the plant, and the adoption of competitive methods as between the various departments. These steps were taken for the education of both supervisors and men and to create a spirit of competition. Every one can see these records daily, and there is apparently a keen desire on the part of the departments to keep their records clear. I would say, however, that the department causing an accident is charged with the accident, not necessarily the department of the man who is injured. The records of accidents are not only shown on bulletin boards, but are published monthly in a small plant publication. The rates of the various departments for order and safety are also shown in this publication. Organized safety campaigns with prizes are carried out once or twice a year—usually of a week's duration. In this connection, I would state that a clean plant where everything is kept in an orderly way, such as any good housekeeper or good industrialist should insist upon, adds considerably to safety.

We now have a full time safety engineer whose job is safety and nothing else, and who is primarily charged with the greater part of the safety work, keeping of records and the determination of the exact causes of accidents—and this means not only direct causes but indirect causes as well. Complete statistical records have been kept for years, and only from such records may sure advance be made.

Supervision is the key to safety work in a shipyard. We have adopted a plan of reducing bonus to a supervisor because of accidents to men under his care. In the case of serious or lost time accidents, a small court of inquiry is held at the clinic shortly after quitting time, and there appears at this meeting the superintendents and foremen of the departments involved, the employment manager and safety engineer, as well as the witnesses and the injured man if he can come. A report of the facts involved is made, and a copy sent to every one concerned. The effect of this is to create a real interest and to further extend the processes and benefits of education. It may be held that supervisors might give undue time and thought to this work. I do not agree with this view at all, as there is no reason why a man may not be a most competent machinist foreman and at the same time contract the habit of seeing and instantly correcting unsafe practices. Fortunately the human mind is one thing that can keep on growing indefinitely without getting too complete or too big. I am convinced that well directed and systematic effort in accident prevention will yield as large financial returns as will the same kind of effort applied in many of the other various fields under the control of industrial management.

Management finds in accident prevention that the interests of employer and employee are more nearly similar than in probably any other contact. The hurt man loses his time, his body is impaired in some way, even his life may be lost, and the employer loses valuable trained services, frequently sustains a direct money loss, has his labor turnover increased, and suffers that intangible but vital loss of morale.

Comparative records of industrial accidents may be more readily obtained than any other industrial records, and in this connection the records sent out by the National Safety Council are invaluable. The backing of the community is behind safety work, and practically every one believes in it after they become acquainted with it. It can not be turned over to hired men, however, no matter how competent

they may be as specialists. To further the laborious process of training and education constant effort is required.

At first it seems arbitrary to require men to wear goggles under certain conditions. We have come to the conclusion that the man with the record knows more about hazards than the man with a chipping hammer, and therefore insist that men in certain definite trades wear goggles, and in case they have to wear glasses of their own, goggles which go over their glasses are provided.

To illustrate that the problem of safety in an industrial plant is capable of breakdown and analysis like any other industrial problem, I have prepared for the benefit of such industrial engineers as may be interested, a brief statement of accident causes and prevention and responsibility.

#### Accident Causes

1. Failure of Mechanical Equipment
  - (a) structural Weakness
  - (b) Faulty Design
  - (c) Poor Material
  - (d) Abuse
  - (e) Lack of or Improper Safeguards

#### Accident Prevention

1. Engineering
  - Purchasing
  - Inspection
  - Plant Maintenance
2. Improper Methods of Doing Work
  - (a) Lack of or Insufficient Instruction
  - (b) Poor Supervision
  - (c) Improper Use of Tools and Equipment
  - (d) Workman Unsuitably Located to do Work Safely
  - (e) Physical Unfitness of Workman to do Work Assigned Him
2. Planning and Scheduling
  - Competent supervisors
  - Job Analysis
  - Intelligent Allocation of Labor
  - Selective Employment
  - Mental and Physical Examination
3. Individual Carelessness
  - (a) Recklessness—Chance Taking
  - (b) Lack of Forethought or Imagination
  - (c) Lack of Interest (absentmindedness)
  - (d) Improperly Clothed for Job
  - (e) Inexperience
  - (f) Horseplay
3. Safety Education
  - Thorough Training
  - Enforcement of Plant Rules

#### Safety Responsibilities

##### WORKMAN

Health  
Suitable Clothing  
Safe and Efficient Performance of Duties  
Proper Conduct

##### MANAGEMENT

Equipment and Tools  
Material  
Work to be Done  
Plans and Schedules  
Methods of Doing Work

Supervision  
 Instruction  
 Inspection  
 Employment and Training  
 Making and Enforcement of Rules  
 Allocation of Help

There is a direct relation between accident prevention and any other industrial problem, both in the method of attack and the method of cure, and while we industrialists should always keep a proper sense of proportion, I would like to say for the benefit of those not already converted that as the result of many years of experience, I am satisfied that safety goes hand in hand with economical and high grade production, and the small cost involved is more than justified.

As a matter of fact, the principal problem involved is that of overcoming the natural resistance of the human mind to the entrance of a new thought. There will always be risks in industry. While it is a fine thing to have accident compensation, and it is a splendid sentiment that causes hospitals and charitable organizations to provide for the unfortunate, it is much more worth while to prevent accidents. When we can deliver to the owners a great ship, in whose construction and outfitting no workman has received an injury, I shall feel a very real pride in that achievement.

## Annual Report of Managing Director

By W. H. CAMERON

Managing Director, National Safety Council, Chicago

To the Members of the National Safety Council:

During the past fiscal year 851 new members have joined the National Safety Council. A comparison of the total membership for the past two years shows:

|                                |       |
|--------------------------------|-------|
| Membership, July 31, 1928..... | 4,638 |
| Membership, July 31, 1927..... | 4,359 |
| Net Gain .....                 | 279   |

The net gain in membership revenue was \$10,995.43. The total annual dues now being paid by 4,638 members is \$263,021.56, or an average of \$56.71 per member. The solicitation of new memberships through voluntary committees and in other ways has been continued unabated.

The NATIONAL SAFETY NEWS has gained in circulation and importance. The quality has improved and the number of special features and articles has increased. The minimum number of pages has been increased to eighty per issue. Two special issues were published during the year; the pre-convention issue of September, 1927, and the Chicago Congress Convention number. There has also been an increase in the number of extra copies ordered by members. The advertising doubled during the previous fiscal year and has considerably increased during the present fiscal year. The "Safety Exchange" and sectional articles have proved popular. Changes in typography and the use of more illustrations have improved the appearance of the magazine. The aim of the NATIONAL SAFETY NEWS is to provide practical information and to keep before safety workers a vision of the worthwhileness of their work.

The Safety Posters have been published regularly and steadily have been improved in quality. Four hundred and eighty posters were prepared during the year. This includes eight 17 by 23 inch posters and thirty-two 9 by 12 inch posters each month. More time and money have been spent upon their preparation and well known artists have furnished illustrations. The circulation has increased 27 per cent and the new varieties have emphasized the growing appreciation of