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## Safety Organization on the Michigan Central Railroad.

From carefully compiled records on all the units of the New York Central Lines, of which the Michigan Central Rd., with its Canada Southern division, is a part, it has been observed that of all the preventable accidents, the majority have not been due to defective conditions, defective equipment or improper methods of operation, but to that hard to control factor, the "human element." These records are kept every month, with the cause and nature of each accident, serving as complete data from which to make the deductions. With these rather alarming conditions before the management, a campaign of education was planned among the employes, to force home their responsibility in the matter, and the degree to which they can assist in the matter of reducing the preventable accidents by a proper co-operation on the part of all concerned.

With this in view, an organization was formed under the charge of Geo. Bradshaw, who was given the title of General Safety Agent, with offices in both New York and Chicago. Prior to this appointment, he had been engaged for about 10 years in the investigation and settlement of claims for personal injuries and death resulting from railway accidents. This placed him closely in touch with conditions as they existed, with a good working basis on which to evolve the safety organizations which are at present in successful operation. Covering this long term of experience, in touch with all sorts of conditions where accidents—preventable and otherwise—were observed, Mr. Bradshaw wrote a book called, "Prevention of Railroad Accidents," in which the more important of his observations are outlined. This book, as a basis for the employes to ground their plans for careful actions in future, has been distributed over all the New York Central Lines, to the number of 60,000. In addition to this, the subject is being kept alive by the periodical distribution of safety literature. This has resulted in the employes taking a personal interest in the subject, with an increased desire on their part to further the cause of safety.

In this book which has been so freely distributed over the lines, there are some very forceful arguments supporting the contentions that a large portion of the preventable accidents are due to carelessness on the part of the human element involved. Stress is laid on the use of an ounce of prevention, instead of a pound of cure in the form of monetary compensation for damages received. This sort of compensation can never make amends to widows and orphans, for example, for the loss of husband or father. The book, being addressed to employes, is confined exclusively to those phases of the subject on which they are able to direct their energies in support of the movement.

On one of the initial fly leaves of the book, there is a very trite remark, an abstract from a paragraph contained in the book, which ought to carry great weight with those for whom the work is intended. It is as follows:—"Injure an experienced man, a new man must take his place. A

new man is always an experiment. The new man to whom you extend the hand of fellowship today, may run a car over you tomorrow." This emphasizes to the employe the fact that even if he be not the victim, his chances of safety are decreased by the presence of indifferent employes about him. For this reason it should be the constant aim of every one to be ever on the alert to point out practices that are dangerous, and suggest alternative ones that eliminate the trouble.

Tables in the book, from statistics compiled by the U.S. Interstate Commerce Commission, show that injuries to employes are constantly on the increase. Whereas

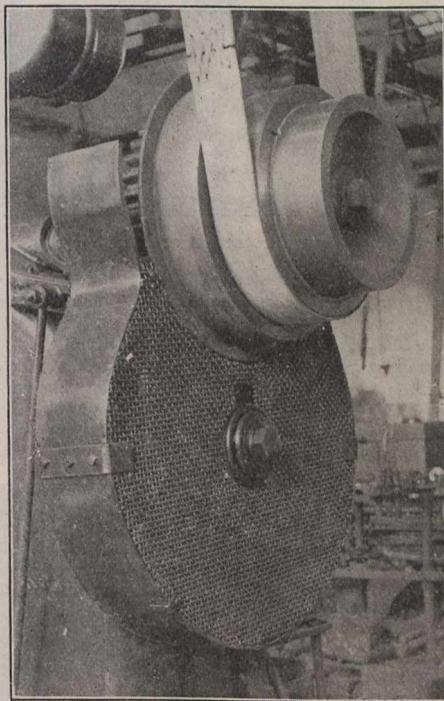


Fig. 1.—Gear Protection on a Slotter.

in 1890, only one out of every 33 employes was in any way injured, in 1911 the ratio had increased to one in every 13. Truly a remarkable subject for thought. The number of accidents resulting in death has not increased to the same degree, but there is still a marked increase. All this has occurred despite the volumes of legislation passed by nearly every Parliament and Legislature in both Canada and the United States. Numerous means of making the lot of the railway employe safer in every way have been introduced as a result of this legislation, so that a great many systems have most of the approved safety devices and other kindred appliances. Over 99% of all trains are equipped with air brakes, reducing the necessity of trainmen traversing the top of the train, and about the same proportion have automatic couplers, making going between the cars unnecessary. Yet with these two greatest death traps removed, the accident record has been growing at an alarming rate.

The only conclusion that can possibly be derived from these records, is that the human element must be at fault. Nobody can say that the present day employe is less intelligent than his predecessor, for such is decidedly not the case with modern high specialization in the particular branch in which the employe is engaged, and the increased opportunities for attaining a higher degree of knowledge concerning the work in hand. This leaves the deduction that the workmen are becoming more careless with their work, and that it is in this direction that those concerned in the reduction of the accident record must look if conditions are not to continue becoming worse and worse as time goes on. Conservation is the present day motto, and the conservation of human life the highest attainment in that programme.

In Mr. Bradshaw's book, instances of everyday carelessness without number are cited from his own observation, the disastrous results occurring being in each case added. Among the incidents cited, a few will be here mentioned: The passing of a danger signal by a fast train because the signal was almost invariably with the engineer and not against; carelessness and a feeling of security prevented the engineer observing the signal. The neglect of car repairers to place warning signs at the ends of cars under which they were working; result, car bumped by yard engine, and workmen injured. Watchmen on car ferry failed to examine ports from a feeling similar to that of the engineer above; sea on the open port window side caused the boat to fill to the extent that saving was impossible, the boat sinking and crew perishing.

A long series of illustrations are given in the book to illustrate the commoner causes of accidents, and the reasons why they occur. These include the careless loading of baggage on trucks, placing baggage in car aisles, unblocked frogs, switches and guard rails; jacking up a track with the jack on the inside; using a hammer on the end of a tempered chisel; not paying attention to work around wood machinery; kicking drawbar jaw as cars are about to couple; opening elevator doors before elevator stops; standing on top of tender between coal chute and cab where the fireman would be caught if the locomotive backed up; hitting a tempered tool in a lathe with a hammer; standing between tracks to jump on the front footboard of a locomotive instead of to one side of track; leaving loose material lying around a freight yard where trainmen might trip and fall under the wheels; defective electrical insulation; sitting on brake wheel, loose baggage and trucks on station platform; where there are two trainmen one should observe each end in switching around; neglecting to flag back when train is stopped. These are but a few of the more common of the many instances cited and illustrated in this book, giving the employes for whom it is primarily intended an idea of the grossness of the careless methods of which they are guilty. In the majority of cases, it is more from lack of perception of the dangers in-