

connection therewith, yet the duties and responsibilities of safety officers do not appear to include operating conditions and practices which vitally affect the safe handling of trains and the maintenance of the track and equipment involved. In the case of each of the accidents to which I have referred, there was not a single recognized safety officer present at the investigations.

In connection with the non-observance of rules which was involved in some of the accidents I have mentioned, there is one matter which I desire particularly to call to your attention. Frequently an investigation indicates that employees have been doing or have been failing to do certain things in violation of the rules until it develops into an established practice and this practice finally results in an accident. Under these circumstances the employee usually is held at fault. Rules and instructions governing the operation of trains are based on years of experience and are the result of careful deliberations of the best minds among experienced railroad operating officers; yet there are occasions when these important rules are not enforced, violations being overlooked as a matter of expediency. An operating officer assumes a grave responsibility if in his desire to expedite the movement of traffic he permits violations of the rules to go uncorrected. The rules of various railroads differ, but all of them have the same ultimate object in view, namely to insure that signals are displayed behind a train to provide adequate protection. In many instances however, it is common knowledge that in order to avoid delay the flagman is not expected or required to comply with the rules. On some roads the flagman starts back promptly and continues for a proper distance or until recalled. But on others he lingers around the rear end or is not expected to go back any great distance; when these things are observed frequently the natural inference is that the employees are reflecting the attitude of those charged with enforcement of rules on the particular railroad involved. Another example of rules being frequently overlooked has to do with speed. I venture to say that violations of speed restrictions or rules governing speed are among the most common rule violations on the railroads of this country. Out of 87 accidents investigated by the Bureau during the fiscal year ended June 30, 1934, excessive speed was involved directly or indirectly in at least 17 cases.

To avoid accidents, there are two essential principles to be kept in mind: first, rigid enforcement of and obedience to rules so that as a result of instruction, training and practice the employee will, in case of emergency, instinctively do the right thing; and secondly, thorough investigation of all accidents for the purpose of ascertaining not only the immediate causes but also the underlying factors leading up to the immediate causes, and then applying the proper remedies or preventive measures.

Report of Committee on Train Service Accidents

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The speaker said in part: Our record of train service accidents shows that in 1933 a total of 4,598 persons were killed and 15,107 persons injured. Confining the figures to employees on duty, we find that a total of 329 were killed and 6,032 were injured. Of these 209 trainmen were among the killed and 120 were other employee fatalities. And among the injured, 5,468 were trainmen and 564 other employees on duty.

The relative importance of train service accidents as compared with accidents of all classes becomes evident when you note that out of a total of 500 employees killed on duty in 1933, of these 329 were classed as train service accidents, while of the 15,583 employees injured in 1933, 6,032 were injured in train service accidents. When major injuries alone are considered, the proportion of those injured in train service accidents is much higher. Another thing that makes the matter of train service accidents of great importance is that nearly all of these accidents are preventable; in other words, hundreds of employees are killed and thousands injured unnecessarily.

The causes of accidents of this class and the remedies to prevent accidents of

this class are just what they were a year ago, and just what they were four years ago. The task before us therefore is not to discover causes of accidents and not to discover what the remedy is, for these have both been made apparent years ago. The important thing before us, then, is what to do, or rather how to get the remedy applied. Let us look, then, at some of the outstanding types of these accidents.

Coupling or uncoupling cars or locomotives. The Interstate Commerce Commission figures show that in 1933, 12 persons were killed and 246 injured; and that of these 9 trainmen were killed and 238 injured, and 3 other employees were killed and 8 other employees injured. This type of accident is the one in which speed seems to be accountable for most of the injuries but in reality they are the result of violation of rules.

Those in supervisory capacity should see to it that men in this class of service, as well as all others, fully understand that a request for work to be done in less time is not in any way to be considered as permission or invitation to violate safety rules to accomplish the task.

Operating hand brakes. Of the 15 persons killed and 514 persons injured in 1933 while operating hand brakes, all were employees on duty. All those killed and 511 of the injured were trainmen. While there was an increase of 25 per cent in fatalities when compared with 1932, the number injured decreased 13 per cent. There has been a steady improvement in the total number of casualties, the figures for 1933 showing a reduction of 55 per cent under 1930.

In studying the causes of these accidents, we find considerable evidence of lack of forethought and care on the part of the men.

It is recommended that a definite educational program be instituted with concentration on the following suggested subjects: the importance of first sizing up the job quickly and thoroughly from all angles; the different types of hand brakes, method of operation; brake clubs, examination for strength and proper use of; position of feet on brake platforms and manipulation of the pawl; importance of secure footing, particularly in winter; importance of having a firm grip; precautions taken with brakes that are set too tightly; precautions to be taken when on a moving car or on a standing car.

Getting on or off cars or locomotives. The total number of persons killed in this manner in 1933 was 516, while the total injured was 3,785. Of these 15 employees were killed while on duty and 1,345 injured; 11 of the killed were trainmen and 1,266 injured, while other employees killed numbered 4 and 79 injured.

This tabulation shows progress. When compared with 1930 the total casualties to employees on duty decreased 52 per cent including a reduction of 67 per cent in fatalities. There was a decrease of 19, or 56 per cent, in the number killed and a decrease of 204, or 13 per cent, in those injured as compared with 1932.

The chief causes of accidents under this classification are falling, either due to slipping or tripping, getting on or off cars or locomotives while in motion, and stepping down on uneven roadbed or on obstructions. Many of these accidents occurred at night or during inclement weather and some were due to defective equipment. Most railroads have safety rules in effect which, if complied with, would have prevented a great many of these accidents. The greatest progress can be made by rigidly enforcing the rules and applying suitable discipline in individual cases of rule violations.

Operating locomotives. In 1933, 5 persons were killed and 834 persons injured while operating locomotives, all of them being employees on duty.

Accidents under this classification are generally due to the failure of engineers to comply with the operating rules of the railroad, as well as the safety regulations established for their protection. Many improvements can be made in the method of cleaning fires, handling coal, as well as the methods of using fire tools, and it is recommended that safety officers give particular attention to this subject.

One of the outstanding causes of serious and fatal injuries under this classification is the taking of water at water plugs in all kinds of weather, and in a great number of instances the inefficiency of operation is due to the lack of proper maintenance of these water plugs. The unexpected movement of the locomotive plays its part in the serious phase of injuries under this cause, and proper cooperation by the men on the locomotive is essential to eliminate this type of accident.

The operation of stokers and power reverse gears, squirt hose and other me-