

chanical equipment call for constant education and training to eliminate them as potential accident hazards.

Operating switches. Although none were killed in this manner in 1933, 176 persons were injured, all of them being employees on duty. Of these 165 were trainmen and 11 other employees. The reduction of casualties due to operation of switches has shown a very marked decrease over 1930, 2 killed in 1930 against none in 1933, 378 injured in 1930 as against 176 in 1933. This indicates that employees are exercising more care while handling switches.

Of the causes leading to these injuries we would enumerate the following as the most important: insecure footing; haste in attempting to throw the switch; improper position of man throwing the switch; switch hard to throw; and unsafe conditions around switch. The first three of these causes might all come under the single heading "haste."

Before attempting to throw the switch a man should be sure his footing is secure, that his body is free of the movement of lever, and he should never take it for granted that the switch will be easy to throw; because of variable weather conditions, the switch that is easy to throw today will be hard to throw tomorrow. A man should never undertake to jerk the switch lever over; because if he jerks on the lever with the expectation that it will move easily when for some reason it is hard to move, injury is apt to result. He should always take a firm hold and throw the switch over with a steady uniform movement, being sure that there is no obstruction that will catch his hand in the movement of the switch lever. Those whose duty it is to keep the switch in good working condition, and to keep the vicinity of the switch clear of unnecessary obstructions, should see that this duty is performed. Switches need frequent inspection.

Struck and run over not at public crossings. The total persons killed in 1933 numbered 1,792 and 938 persons injured. Among employees on duty 101 were killed and 146 injured; of these 32 killed were trainmen and 74 injured, and 69 killed were other employees and 72 injured.

The reduction of employees killed on account being struck and run over not at public crossings is very marked, 231 having been killed in 1930 as compared with 101 in 1933. I think this good showing has been largely brought about by the special attention given to the elimination of the causes of such accidents.

An examination of casualties under this heading classifies nearly all of them as due to one of three causes: (1) failure to look both ways before stepping on the railroad track; (2) walking on the railroad track or foul of the track when possible to walk elsewhere, and (3) walking too close to the end of a car in a live yard.

Practically all of these injuries are easily capable of being eliminated. The remedy is apparent and may be briefly stated as follows: (1) always look both ways before stepping on the railroad track; (2) never walk on the railroad track or foul of the track when possible to walk elsewhere, and (3) never go within ten feet of the end of a car in a live yard.

Getting On or Off Cars and Engines and Operating Hand Brakes

By E. A. MEYER

Manager, Safety and Fuel Departments, Chicago, Milwaukee, St. Paul and Pacific Railroad, Chicago

The speaker said in part: Accidents resulting from the operation of hand brakes show an increase of 3, or 25 per cent, in fatalities during the past year. In all there were 15 killed and 514 injured. You can plainly see that here is a field for some intensive work to cut down these injuries that are so unnecessary. Very few of these accidents were caused from faulty equipment and a great many were due to falls, losing hold, slipping or losing balance. I believe that we could cut down

these accidents to a minimum if an educational program were carried on among employees.

I am happy to call your attention to the fact that accidents due to getting on or off cars or locomotives show a decrease, only 15 employees being killed instead of 34, a decrease of 56 per cent. Instead of 1,949 being injured, there were 1,345 injured or a decrease of 31 per cent.

All of these accidents due to getting on or off cars or locomotives were due to the following unsafe habits: uncertain hand or footholds, attempting to get on or off when not competent to do so, inability to see where they were alighting, and alighting on rough, uneven or slippery surfaces or on frogs or switches, or carelessness.

Before we had safety rules, men were getting out of gangways of locomotives facing outward and performing other hazardous stunts, trusting to luck that they would alight like a cat, on their feet standing up. These were unsafe habits and it has been hard for some of the older men to break themselves of such habits.

One of our master mechanics had a habit of getting down out of the gangway of an engine when facing outward. He realized it was a dangerous practice and that he was setting a bad example for his men. One day he did this as I happened along and he remarked to me: "I am going to break myself of that habit." So he deliberately got on and off the engine several times in the proper manner until he felt sure of himself; and then he remarked to me: "That is the last time I am going to bungle the job of getting off an engine." Moreover, he stuck to the good habit. In other words—he crowded out a bad habit with a good one.

Coupling and Uncoupling Cars and Engines and Air and Steam Hose

By D. A. KLUMPH

Supervisor of Safety, Pere Marquette Railway, Grand Rapids, Mich.

The speaker said in part: In the coupling and uncoupling of cars and locomotives, we were able to show a reduction, comparing 1933 with 1930, especially to trainmen,—and they do most of that work.

A comparison of the injuries to employees from this cause, for the past four years, shows conclusively that it is not rules alone that will stop these injuries because if there is any one thing that is adequately covered by the rules it is this kind of work. To quite an extent, it is the older employee who is injured in performing this work, and it seems to be due to his opinion that because of his experience in the old link-and-pin days he can still go between moving cars without injury. But in most cases he will not allow a member of his crew to do it because of the danger involved.

Because all injuries of this type are caused by violation of rules, it is within the power of the operating officials to stop these accidents through rigid enforcement of rules.

Coupling and uncoupling air or steam hose: we find that comparing 1933 with 1930, we have had more fatalities and fewer injuries in 1933.

The principal cause of these injuries seems to be failure to reduce the air brake pressure before endeavoring to uncouple the hose, and perhaps a more rigid rule in regard to this might be introduced with good results.

Another cause for many of the serious accidents is failure to protect the workman with blue signals or otherwise in compliance with the blue flag rule. These violations in many cases are too often caused by the desire on the part of someone to gain time at the expense of safety.

As to the rule situation, which is my pet hobby, because I have been pretty closely connected with it for a number of years, I feel that we can have too many rules. It seems to me that the more rules we have, the greater number of violations to rules occur. It is a good deal the same with rules as with our laws. We have so many that the average man doesn't know he is violating the law in what he is doing.