

a busy lead, that does nothing but swing switches, this man will get on, make his cut and get off on an average of 200 times on an eight-hour shift, and this in addition to his other duties.

Just a few hints to make his work easier and safer. Assuming that the crew is working in the orthodox manner on the right hand side of the switching cut, the pin puller in getting on, should grasp the second tread of the side ladder firmly with left hand, place left foot on lower tread of the sill step, and brace his right leg against the rear journal box. This position will give him all the necessary leverage to operate the cutting lever with his right hand and, what is most important, his body will be braced against all unexpected bumps or jolts.

Inspection of Trains In Yards and Enroute

By A. A. LOWE

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The speaker said in part: On the lines of the Coast division we work on the principle that the best way to avoid trouble is to remove the fundamental causes, and the best way to do it is by stressing the need for thorough conditioning of triple valves, tight brake pipes, paying attention to leakage tests by enginemen, testing of retainer valves at designated points, correct piston travel, close attention to draft rigging and air hose, careful education of enginemen in the handling of air brakes and constant attention to those numerous other details of maintenance and operation which have a vital bearing on avoidance of stuck brakes, break-in-tuos, slid flat wheels and damage to brake rigging.

Our principal yards are located about 500 miles apart. Cars arriving and departing in those yards are placed in thorough condition and, as a rule, require very little attention after serving at these points. As a train arrives in yards where car inspectors are employed, they station themselves where they can give entire train a careful rolling inspection. Rush cars are usually blocked at the head or rear and are given first attention by inspectors for prompt release to yardmen. In some yards it is found advisable to have traveling carmen make the rounds of the industrial, team and house tracks to effect minor repairs.

When trains are made up, the usual inspection is made in accordance with Interstate Commerce Commission regulations and general practice. Trainmen are required to look train over to see that hand brakes are released and assist carmen in making rolling inspection as train departs. We have no hump yards with depressed inspection pits as the volume of traffic through any one yard is not considered sufficient to justify this investment. Standing inspection of freight trains is made every 30 to 80 miles in open country. Stops are made at intervals of seven to ten miles on heavy descending grades to permit wheel heat to equalize. Inspection is made at such points by trainmen. On these heavy grades where view is obscured we require a trainman to ride on rear of caboose to watch tracks for indication of derailed wheels and by night we light the track to the rear of the train with two inspectors' heavy lanterns. We make standing air brake tests before descending heavy grades and give train a rolling inspection at every opportunity as stops are made.

In snow shed territory we make use of electric reflector lights, permanently located on foundations at the wheel level and facing the track to aid trainmen in making rolling inspections. These lights are actuated by track circuits as trains

approach and depart. Trainmen are required to ride on the top of trains to change retainers as required and to watch for overheated wheels, excessive fire flying or other indication of trouble. In certain districts where operating conditions are especially difficult, such as through snow shed territory, we make use of emergency air hose cut in between cars and extended to top of train so that trainmen may apply air if an emergency arises and if obstacles cannot be seen.

Our records show we are remarkably free of accidents which may be traced to the quality of our train inspection, but that, on the contrary, both carmen and trainmen, including the enginemen, render a good account of themselves in detecting trouble at its inception and taking necessary action to prevent serious results.

The Car Department's Responsibility In Accident Prevention

By W. E. DUNHAM

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The speaker said in part: The responsibility of the car department can be separated into three general groupings: 1st, the responsibility for accidents to car department employees themselves; 2nd, responsibility for accidents to employees of other departments; and 3rd, responsibility for accidents to the patrons of the road. As an example in the first grouping, our railroad in 1910, when matters of safety and accident prevention were first attacked in something like an organized manner, had in the car department about 269 reported lost-time accidents and 7 fatalities per year, with an average force of 3,356 employees. By dint of earnest correction of tools, exchanging methods that had in themselves any chance for accidents, by installing safety guards and similar devices, as well as trying to develop in the individual employee a personal interest in his fellow employee's safety, that original record, after ten years, was brought down in 1920 to 393 reported lost-time injuries, and to 6 fatalities.

However, the problem was studied from a different angle. Direct responsibility of the supervisory organization for the actual training of the employee under the individual jurisdiction was determined to be the most prominent line of attack on the causes of injuries. A few years of effort along those lines, in addition to the maintaining of the previous form of attack, brought the reported lost-time injuries for 1928 down to a total of 80 per year, and reduced the fatalities to 3, among a total of 5,234 employees.

Such a record, as compared with 1910, might have appeared to be very satisfactory, but there was still another step in accident prevention that was practical. That step was to eliminate the careless man and the man whose mind was not on the job at hand. The result was that in 1930, with an average force of 4,846 on the payroll, there occurred but 21 lost-time injuries and 2 fatalities. In 1932, with an average force of 2,434 on the payroll, 8 lost-time accidents were reported and only 1 fatality.

In considering the second responsibility, that to employees of other departments, it is rather more difficult to present concrete results. However, they can be brought out in a general way. The employees referred to are those who in their assigned duties use the active freight and passenger equipment which the car depart-