number of fatalities and 28 per cent in number of persons injured as compared with the previous year. The three most prevalent causes of these accidents are: first, losing hold, slipping or falling; second, sudden stopping, starting, lurch or jerk of train or car; third, struck by brake club because wheel threw around.

Prevention of personal injuries due to the causes mentioned rests very largely with the employee *performing* the service. It is true, climatic conditions at times make the roofs of cars and places where employees must operate the hand brakes, conducive to slipping and falling accidents. Sudden starting and stopping of the trains also are contributive causes. The employees whose work requires them to come in contact with these conditions, however, must not only know of them but at all times be alert and ready to guard themselves so that no accident will occur as a result. However, the importance of proper inspection and maintenance of hand brakes is a factor in reducing this class of accidents.

Under the heading "operating switches," in 1931 no persons were killed but 245 were injured; these figures compare with the record for 1930 when 2 persons were killed and 578 injured. The first direct cause of these accidents is due to strains and ruptures. The second cause is due to the switch lever coming in contact with some part of the employee's body, causing a bruise or contusion. The third cause is slipping and falling by reason by stepping on rails.

This last class of accidents is prevalent among switch tenders. I have found that 72 per cent of the men injured while operating switches on three of the important lines entering Chicago were injured in this manner. Switch tenders are prone to step on the rails rather than step over the rails, and in a great many instances it is necessary to step on the rails.

The proper and standard clearance of all switch stands, the proper maintenance of the switch, particular attention being given to the head block and also to the switch light, which should in all cases be properly focused, will greatly reduce accidents. Another important thing, switches should be properly oiled. There is a minimum of expense in connection with oiling switches and it should be looked after very carefully.

Under the heading "getting on or off cars or locomotives," in 1931 447 persons were killed and 4,086 injured; which figures may be compared with 1930, when 441 persons were killed and 5,010 injured.

With reference to getting off cars, the frequency of accidents from this cause indicates that men are getting off cars while the cars are moving at a high rate of speed, they are stumbling and falling, straining their ankles and in other ways injuring themselves so that they are incapacitated. This situation must be controlled by proper supervision, and in these cases where the rules are violated discipline must be administered.

In passenger service, accidents occur by persons falling from vestibule platforms because vestibule doors are left open carelessly; by employees getting off passenger trains while these trains are moving at a high rate of speed; by passengers jumping on trains before they come to a stop because of improper supervision of the station forces and of train crews.

Proper supervision and education are the principal remedies, as well as proper maintenance of equipment to see that steps are in good condition, vestibule doors in good condition, and in cold and stormy weather to see that the steps are properly cleaned, and that salt is used in all conditions during sleety weather, proper coordination between conductor and engineman with reference to stopping of trains, a check up on the length of the platform to see that passengers are not unloaded at obscure points, proper supervision of the sleeping car porters by the train conductor and the Pullman conductor with reference to care in unloading passengers, and the same supervision directed by the train conductor to the members of his crew with reference to proper unloading of passengers.

Under the heading "accidents (train service) at highway grade crossings," the



record for 1931 is 1,720 persons killed and 4,533 persons injured; the figures for 1930 were 1,980 killed and 5,377 injured. The following practical suggestions have been adopted by several lines and a noticeable reduction in highway crossing accidents has been the result.

(1) Switch crews and train crews working in stations should be prohibited from dropping cars across highways, their engines going down one track and cars going down another track, without protection on the crossing by a member of the train crew.

(2) Switch engines, switch runs and local way freights, backing cars over crossings at uncontrolled speed without proper protection on the crossing, should be prohibited.

(3) Passenger trains in switch movements, backing up with tail hose at the rear, over highway crossings, should reduce speed at all crossings that are not protected.

(4) Cars being kicked over crossing without engine attached should be protected.

(5) Switch engines, way freights, and switch runs, doing industry switching where it is necessary to shove cars by a building where there are alley-ways and where trucks and automobiles might be parked too close to the track, should be prohibited unless a member of the crew walks in advance of the movement to protect them.

(6) In certain districts where there are trunk line highways and where trains stop on these highways, with flat cars directly on the crossing during the nighttime, where headlights from an automobile either shine directly over the top of the car or underneath, fuses should be placed in such a way that the car on the crossing will be illuminated.

If we can educate the army of employees on the railroad to give consideration to the safety of the driver of automobiles and pedestrain who cross our tracks, and in each instance where it is necessary, warn them, we will be going a long way toward avoiding a great many accidents and eliminating many fatal accidents.

Under the heading "operating locomotives," in 1931 7 persons were killed and 1,406 persons injured; these figures compare with the record for 1930, when 17 persons were killed and 1929 injured.

With respect to operating locomotives the first, greatest and most important means of preventing accidents or injuries is the constant observance and strict compliance with the operating rules and general regulations governing train service.

Still another division of these accidents falls under the heading "struck and run over, not at public crossings." In 1931, 1,730 persons were killed and 1,022 persons injured in this manner, and in 1930, 1,828 persons were killed and 1,276 persons injured. These figures are so large in proportion to the total number killed on the railroads of our country that special interest is attracted to this phase of the accident situation. By far the greater number killed and above one-half of those injured come under the head of "trespassers." It should be noted that on the railroads of foreign countries very few trespassers are killed or injured, but the sole reason is that these countries have strict laws against trespassing and these are enforced. It will be necessary to get the public generally to recognize the evils of trespassing before we shall be able to have laws enforced covering trespassing. We already have the laws, but the sentiment is such that the law is not enforced.

Accidents to employees from this cause come under three classifications: (1) the employee steps on or foul of the railroad track without first looking in both directions; (2) the employee walks too close to the end of a car in a live yard; (3) the employee walks on the track or foul of cars on the track. If we could eliminate the fatalities to employees occurring under the above mentioned three conditions, we would practically eliminate all employees killed on account of being struck and run over.