# EDITORIAL COMMENT

## Getting Results from Signal Failure Reports

THE real purpose of detailed reports of train interruptions caused by the failure of signaling apparatus should be to develop the information necessary to determine ways and means of so improving the equipment and methods of construction and of maintenance as to eliminate the faults which cause the trouble. Although certain failures may result from neglect on the part of the maintainer, some roads believe that he should not be blamed for all types of failures. In fact, if too much pressure is brought to bear, it is only natural for a maintainer to acquire the habit of shifting at least a part of the blame for many failures to causes which are beyond his control and which cannot readily be refuted. The result is that the signal engineer does not get a true picture of the circumstances, and may be influenced to form erroneous conclusions as to the merits of certain devices or methods. Such a tendency has been prevented on one large road through the development of a spirit of co-operation and confidence between the maintainers and their supervisory officers. When a supervisor investigates conditions in the field at a location where a failure has occurred, he endeavors to make his comments as constructive suggestions rather than caustic criticisms. As a result, the original signal interruption reports give accurate and detailed accounts of all the factors involved in each failure. The results obtained from this method of procedure on this road are reported to be satisfactory from the standpoint of the maintainers, as well as the supervisors and the signal engineer.

## What Can Be Done Now?

WITH the volume of railroad traffic at the present low ebb, every effort must be made to reduce operating costs, especially those that continue at a constant rate regardless of the volume of business being handled. The signal departments have an opportunity to render extensive service toward this end. For instance, where an automatic interlocking can be installed to replace one requiring the services of levermen, an annual saving of from 80 to 100 per cent on the expenditure can be accomplished. Similar results can be secured under certain conditions by combining the control of two or more plants, or controlling a plant from an existing office where operators are otherwise required. The use of the code control system practically eliminates the factor of distance from the layout to the point of control.

The remote control of manual block signals at intermediate block offices not only affords the ordinary means of spacing trains on light-traffic lines, but also gives an OS for the passing of each train, the same as if operators were on duty. Going further along the same lines, certain roads are considering the use of centralized traffic control for the sole purpose of directing train movements by signal indication, with power switches only in a few locations; the installation being fully justified by the elimination of operators at intermediate stations.

Likewise, in towns where several street-railroad crossings are protected by flagmen or by gates and signals controlled locally, a system for controlling the equipment from a central point will not only result in a decided saving, but will in many cases, afford better protection. Where switching movements during certain periods of the day require manual control, the system can be arranged for automatic track circuit control during the remainder of the 24-hr. period.

In many of the projects suggested above, the requirements for materials and labor are comparatively small, and therefore, do not involve any large amount of money. Especially when considering that the savings are not only worthwhile but will continue regardless of the volume of traffic, it would seem that special efforts should be made at this time to search out conditions where such changes can be made profitable, and then to push the projects to early completion.

## A Definition for Centralized Traffic Control

IT SEEMS high time that a proper definition be prepared for the term, "centralized traffic control." At the recent convention of the Signal Section, a member suggested that Committee X include such a definition in the requisites on the subject. A member of the committee explained that the Train Rules committee of the Pennsylvania had worked for two days trying to formulate a definition for centralized traffic control and, after failing to reach an agreement, concluded that "anybody ought to know what it is, anyhow!" Other committees, including Committee I, have discussed this matter, but each time the "hot potato" has been passed on to someone else.

Realizing that sometimes "fools rush in where angels fear to tread," the editor of *Railway Signaling* has the following suggestions to offer as a means of differentiating between remote control and centralized traffic control. It is common knowledge among those familiar with modern signaling that a centralized traffic control installation is one in which semi-automatic power-operated signals, and, in most cases, power-operated switches, are controlled from a central point, train movements in the entire territory being directed by signal indications which supersede the superiority of trains, regardless of whether this superiority is by train order, time table, direction or class. Where switches are involved and the controlled signal governs more than one route this signal is the equivalent of a home signal at an interlocking plant, and such a signal, according to the standard code of the A. R. A., governs the use of routes of an interlocking plant and for movements within home signal limits, its indications supersede the superiority of trains.

So far so good, but we find that another function of centralized traffic control is to direct the movement of

trains between points, stations, block stations, interlocking layouts, etc. In other words, this second function of centralized traffic control is that of the manual block system rather than of interlocking. According to the standard code, "Block signals govern the use of blocks, but, unless otherwise provided, do not supersede the superiority of trains." At this point, it is well to remember that a block is a "length of track, of defined limits, the use of which by trains is governed by block signals." Therefore, the distinguishing characteristic of centralized control is that it provides for the movement of trains through a block on the authority of signal indications alone, superiority by train order, time-table, direction or class being dispensed with.

Reconsidering the points discussed previously, it seems that, in brief, centralized traffic control may be defined as a system in which semi-automatic power-operated signals and / or switches in a certain territory are controlled from one point, the controlled signals governing the use of routes as well as blocks, the indications of these controlled signals superseding the superiority of trains throughout the territory.

Now to answer the query as to the difference between remote control and centralized traffic control. Strictly speaking, the principal feature which distinguishes a centralized traffic control system is the function of governing train movements throughout blocks. A track layout, including switches with signals governing train movements to routes or between home signals, is in truth an interlocking, regardless of whether it is controlled from a signal station located at that point or remotely. Therefore, it would seem that "a remote control system is one including semi-automatic power-operated signals and power-operated switches, all controlled from a remote point, the home signals governing the use of routes and, as to movements within home signal limits, their indications superseding the superiority of trains."

These rambling suggestions are submitted to be "shot at" by committees or individuals. Comments are welcomed for it is possible that a general discussion of the subject will bring forth practical definitions which are highly desirable at this time. Those who have studied the problem are referred to the question on page 221 of this issue and are invited to send answers for publication.

# Accidents

## A Challenge For Every Employee

"I CONGRATULATE the American railways upon the admirable results achieved in their seven-year campaign for the drastic reduction in their casualties to employees. This is a most inspiring record in the great campaign for safety in industry." This was the message telegraphed from the White House by President Herbert Hoover on May 18. In a similar vein Colonel Robert Lamont, Secretary of Commerce in President Hoover's cabinet, wrote, "The railways have been pioneers in the field of organized accident prevention. Through the extensive use of safety devices and through the individual and collective efforts of all of those included in the great army of railway men, the roads have made a great contribution to safety." While addressed specifically to the members of the Safety Section of the American Railway Association, these congratulatory messages were in reality words of commendation to every railway employee who contributed to this record by increased care in his work.

The safety movement on the railways is a most interesting one. Inaugurated at a time when industry as a whole was giving little attention to the accident problem, the idea, when first advanced, that a railway should spend its money for the purpose of preventing its employees from injuring themselves and others was considered idealistic and impractical. Yet in the last year alone, tentative reports indicate that the railways spent approximately $300,000,000 for the protection of their employees and the general public.

### An Outstanding Achievement

That progress is being made in the conservation of life and limb is indicated in a striking manner by the record made by the railways in the last seven years. At its convention in June, 1924, the Safety Section of the A. R. A. adopted as a goal a 35 per cent reduction in accidents by 1930, compared with the record for 1923.

With the expiration of this period it is found that the number of passengers killed in train accidents has been reduced 83 per cent and the number injured, 70 per cent. Expressed in other terms, only seven persons were killed in train accidents in 1930, or one for each 101,000,000 passengers carried, as compared with 42 killed in 1923. Likewise the number of employees killed has dropped 52 per cent and the number injured 78 per cent. More specifically, the number of employees killed was reduced from 1,940 in 1923 to 935 in 1930, the latter being the first year, since accident statistics of this character have been compiled, that the fatalities to employees have fallen below 1,000. In the same manner the number of employees injured was reduced from 151,960 in 1923 to 35,325 in 1930. Thus the seven-year safety campaign has been responsible for a cumulative saving during that period of approximately 4,000 lives and the elimination of injuries to nearly a half million employees.

Likewise in highway crossing accidents the railways have, as stated in the last issue, made an outstanding record. In the face of an increase in automobile registration, an even greater increase in the use of motor vehicles, and an increase in fatalities of 6 per cent at all points, resulting from the use of the automobile, there were 1,122 fewer collisions at railway grade crossings in 1930 than in the preceding year, a reduction of 18.71 per cent. There were also 465 or 18.71 per cent fewer fatalities and 1,287 or 18.91 fewer injuries.

### Of Personal Concern

Records such as these are of the most direct concern to every railway employee, not only because of his natural pride in the achievements of the industry to which he is devoting his life, but also because of its direct relationship to the protection of his own life and limb. How were these records attained? What influences contributed to them? What responsibility rests on supervisory officers and on individual employees? How can this record be maintained and still further improved? These are pertinent questions that deserve consideration at the conclusion of this seven-year period of endeavor.

The railways have fought a good fight in the battle