

EDITORIAL COMMENT

Centralized Traffic Control and Remote-Control

IN ITS instructions to the railroads for collecting annual statistics as to signaling facilities in service, the Bureau of Safety, I.C.C., incorporated the following definitions for centralized traffic control and remote control.

Centralized Traffic Control—A term applied to a system of railroad operation by means of which the movement of trains over routes and through blocks on a designated section of track or tracks is directed by signals controlled from a designated point without requiring the use of train orders and without superiority of trains.

Remote Control—A term applied to a system of operating outlying signal appliances from a designated point to facilitate the operation of trains over a designated section of track or tracks by means of signal indication, time table and train orders.

In view of the wide diversity of opinion regarding proper definition for these two systems of signaling, some roads may be confused as to how to classify certain installations. As an aid, representatives of the Bureau of Safety, in a recent conference, offered some very definite suggestions which, in brief, follow:

In determining whether a given installation should be classed as C.T.C., there are two principal factors to consider: First, whether superiority of trains is dispensed with and, secondly, whether train orders are required to authorize or direct train movements in this territory. A train may carry orders through the territory in question and also covering additional adjacent mileage, but if such orders are not required for the movement in this C. T. C. territory, the fact that such orders are issued does not preclude the classification of the installation as centralized traffic control.

Some thought must also be given to the new definition of remote control. Previously, in requesting remote control data, the Bureau of Safety specified functions operated from separate banks of levers; or, if controlled from interlocking machines, outlying functions were not to be classed as remote control if there was any form of locking with other functions of the interlocking plant. Under the new definition, the distinction between remote control and interlocking lies in the operating rules. If the outlying installation is outside the limits of the interlocking from which it is controlled, it is properly classed as remote control.

Definitions for these terms have been under consideration by the Signal Section, A.R.A. for several years. These definitions as now issued by the Bureau of Safety have been considered by Committee V of the Signal Section, and will, no doubt, be presented for consideration at the next convention. In the meantime the use of the definitions by the railroads in classifying installa-

tions for Bureau of Safety statistics will provide a good test of their clarity and, no doubt, bring up certain points that may well be discussed before the Signal Section convention next May.

Call-On Signals

A REAR-END collision occurred on the Erie at Binghamton, N. Y., on September 5, and a close study of the Bureau of Safety's report of this accident reveals that there were a number of contributing factors, such as short flagging, the failure of the engineman properly to control speed when operating under a calling-on signal indication, and the fact that the engineman, when he saw an automatic signal ahead standing at danger, jumped to the conclusion that he would not be required to stop until he arrived at that signal, whereas a train was standing in the intervening space. The use of the call-on signal was one of a train of circumstances which set the stage for the condition leading to the collision, and in seeking to benefit from a study of this accident the problem of call-on signals is once more brought to the front.

In the Bureau of Safety's report of the Binghamton accident, the statement is made that "the calling-on signal was installed for the particular purpose for which it was used on this occasion and the present case constitutes no exception to the usual practice throughout the country."

It is to be inferred from the report that the leverman, in using the call-on signal, did not violate the rules or depart from the usual practice on the Erie, and incidentally it is understood that these rules conform with the Standard Code. However, the accident did happen, and assuming that the call-on signal was a contributing factor, it seems that a few deductions are in order.

Granting that the leverman did not violate the rules of the Erie, nevertheless it is questioned whether the statement that this represents the "usual practice throughout the country" is entirely warranted. A number of roads have placed greater restrictions around the use of the calling-on signal than were in effect on the Erie and than are provided for by the Standard Code. It may be argued (by some authorities) that the primary function of a call-on signal is to make a movement within interlocking limits to get a train out of the way when some other train within interlocking limits prevents the operation of the track-circuit-controlled home signal. It was brought out in the hearing that there were no other impending train movements on the cross lines or within the interlocking. Therefore, it is to be assumed that the leverman had no incentive to use the call-on signal other than for the purpose of preventing a train stop. This leads to the thought that the call-on was in this case used not only to direct the train through the interlocking lim-

its, but also to direct it beyond these limits into the adjoining automatic block.

It may be argued that the indication of a call-on signal, when indicating proceed, affords the same restrictions as those governing when a train stops and then proceeds at an automatic signal on double track indicating danger, the rule in the case of the call-on signal being "Proceed prepared to stop short of train, or obstruction, or anything that may require the speed of a train to be reduced."

Apparently, in this case the engineman did not have a clear and correct understanding of the requirements of the calling-on signal indication, but granting that the speed restrictions are fully understood to be the same in both cases, it is questioned whether the engineman follows the same line of reasoning in complying with the two types of signals. Confusion on this score can be eliminated from the minds of enginemen by confining the function of the call-on signal to interlocking limits and locating a regular track-circuit-controlled advance automatic signal at the leaving end of the interlocking limits. This practice is followed at all important interlockings on the Milwaukee and the Southern. With this arrangement, the towerman, by means of the call-on signal, can give the authority to move in the interlocking limits only. If the automatic signal is indicating danger, the enginemen would, according to the rules on most roads, be required to stop and then proceed. The argument might be advanced that if the engineman would not obey the restricted-speed regulations conveyed by the call-on signal, he would likewise not obey such restrictions conveyed by the automatic signal. The point of difference, however, is that the towerman, when enabled to use the call-on signal indiscriminately, is eliminated as a possible contributor to accidents. Furthermore, under this arrangement the engineman faces a clean cut distinction between the functions of the call-on signal to give him authority to make a move in interlocking limits, and the automatic signal to direct his movement into an automatic block.

Another arrangement is to provide a stop-and-proceed aspect on the home signal. On the Baltimore & Ohio, on the territories where the color-position-light signals are in service, this aspect includes two red lights horizontally with a lunar white marker. In order to display this indication, the leverman must make two different operations, so that he is not apt to give this special signal inadvertently. When operating under such a signal, the speed restrictions are "one-fourth normal maximum speed, prepared to stop short of train or obstruction."

On the Pennsylvania, in the territories where the position-light type of signals are used, the "stop then proceed" aspect includes a horizontal row of three lunar white lights with a marker below. In order to display this aspect, the leverman must not only operate the lever but also push a button. The speed is limited to "not to exceed 15 m.p.h. prepared to stop short of train or obstruction." When handling a long train that could not be stopped short of an obstruction when running 15 m.p.h., the speed must, of course, be reduced below that

figure, and enginemen are thoroughly instructed on this point. On roads using color-light signals, a "stop then proceed" aspect could be devised by using certain combinations or by an additional unit.

If some roads consider it impracticable at this time to install one of the arrangements described, it might be well to see what can be done to improve the rules. First it must be remembered that a call-on signal ordinarily is used when the track-circuit-controlled signals cannot be cleared. Therefore, a call-on usually leads a train into a position of potential danger. The rules governing such a movement are intended to protect against this danger, and safety requires a proper understanding of the requirements and strict adherence to them. In view of the fact that accidents do occur occasionally, it is to be inferred that some enginemen do not understand the requirements and, therefore, need some help.

One way to clarify the situation quickly is to change the rule to conform with the practice on certain roads, as for example the Union Pacific, where a call-on signal is used only for controlling switching movements or slow-movements through crossovers or on to siding in interlocking and not for advancing trains on main lines. If circumstances are such that the operating officers consider it absolutely necessary to advance trains on main lines by call-on signals under certain conditions, it might be well to establish a rule that the train first be brought to a stop before clearing the call-on. One road has a rule limiting the speed to 10 m.p.h. rather than leaving it to the engineman to establish a speed at which he thinks he can stop short of a train or obstruction. In the last analysis, the effectiveness of rules in preventing accidents depends on the supervision in the operating department, and it is interesting to note that in the conclusions of the Bureau of Safety's report on the Binghamton accident, considerable blame was placed on the operating officers for not enforcing the rules, while more instruction and supervision were recommended.

After considering ways and means of surrounding call-on signals with limitations and rules, we come back to the old question, why use call-on signals at all? Many roads contend that call-on signals are absolutely necessary, although at least one large road, the Burlington, operates without call-ons. On this road a serious rear-end collision occurred at Buda, Ill., on June 30, 1924. In this case the rule prohibited the use of a call-on signal for advancing a train on a main track. However, the leverman was so impressed with the importance of not stopping a fast mail train that he overstepped in giving this train a call-on signal to proceed into an occupied block. Here again the engineman failed to comply with the restrictions and short flagging entered into the picture. In order to eliminate one important factor from future accidents, the Burlington proceeded to eliminate call-on signals, and what is more, this road has no serious difficulties in getting trains through interlockings. Quite true, some extra signals are required in extensive interlocking layouts, but if the Burlington can do the trick, it might be well for some others to give it some thought.