

Railway Signaling

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Phantom Signaling an Innovation

IN the train control order of the Interstate Commerce Commission of June 12, 1922, it was pointed out that, "In prevailing practice the primary function of automatic train-stop or train-control devices is to enforce obedience to indications of fixed signals; but the feasible operation of essentially similar devices used without working wayside signals may be regarded as a possibility." The Illinois Central is the first and only road that has considered this suggestion worthy of test and has proceeded to install its train stop installations on both double track and single track without intermediate wayside signals. On the first section on the Illinois division, which was previously equipped with semaphore signals, these signals were removed from service when the continuous train stop with cab signals was placed in service. On the Iowa division, which is single track, no signals were included in the installation except at headblocks.

At intermediate points where a change of the cab signal indication can be given the same as on an installation, equipped with wayside signals, the Illinois Central uses what is termed a "phantom" signal, in other words, if signals were used they would be located at these points. This raises a question for the Signal section to decide—whether a phantom location without a signal should be counted as a blade, or a light, or given an entirely new classification, when authorizing representative votes.

The elimination of the signal itself removes the necessity for so spotting the location as to secure the proper view from an approaching locomotive and as a result the spacing is uniform except where grades influence the braking distances. What was pointed out as possible by the commission in 1922, has been proven as practical in regular railroad operation on two busy divisions of the Illinois Central which road deserves special credit for taking the initiative in such a radical development.

Signal Business Is Good Especially for Single Track

THOSE interested in the design, manufacture, construction or maintenance of railway signal facilities enjoy the distinction of participating in one of the most progressive and busiest fields in present day railroading. Within a week, recently, news was received of contracts being awarded for a.c. position-light signals covering 122 miles of single track on the Norfolk & Western between Roanoke, Va., and Winston Salem, N. C.; for d.c. color-light signals on about 165 miles of single track on the Missouri Pacific between Jefferson City, Mo., and Kansas City; and for 139 miles of d.c. color-light signals on the Seaboard Air Line between Savannah, Ga., and

Jacksonville, Fla. Orders were placed in the same week also for materials to signal a section of single track on the New York Central Lines complete with remote control switch machines, so arranged that trains can be operated by signal indications without train orders, while another road is working on plans for a similar installation on a short mileage of busy single track. In addition, news is received almost daily of contracts for new interlockings, many of them to be installed on busy single-track lines to eliminate train stops and reduce train schedules in competitive territories.

Signal business is good and should continue to be so for several years because railroad managements are becoming more and more convinced that the track capacity of a busy single-track line can be increased safely by the use of signaling more economically than by additional tracks in many cases. There are approximately 152,870 miles of single-track lines in the United States, only 22,459 miles of which are equipped with automatic block signals. Within the last few years industrial, mining and agricultural developments have been responsible for an unusual growth in traffic on many of these divisions. This situation has accentuated the difficulties ordinarily encountered where a seasonal movement of fruit, grain or tourist traffic congests certain sections of the road for a short period. Signal officers could be considered lax in their duties if they do not keep in touch with such conditions on their lines. Most of them are in a position to inform their managements as to what signals and interlockings can do to enable an increased traffic to be handled efficiently with a minimum capital expenditure.

Automatic Switching for A. C. Power Supply

WITH the extensive installations of a.c. continuous train control now being made it is highly important that the supply of alternating current be uninterrupted for otherwise unnecessary train stops may result. To protect against such a possibility, ingenious automatic switching arrangements have been improved considerably during the last few years to insure continuity of service. Several roads have used apparatus of this character for some time but the Florida East Coast has recently installed eight such automatic substations of the latest design on 347 miles of new double track equipped with a.c. color-light signals from which it is securing satisfactory operating results, as is described in an article elsewhere in this issue. The flexibility of automatic control now possible with the perfection of protective relays in central station practice justifies fully the extension of their application to the railway signaling field. Any one who has witnessed the reliable performance of