Editorial Comment

Not New But Different

MANUAL block is a form of signaling in which a manually controlled signal at a given office, when cleared, authorizes a train to proceed to the manual block signal at the next station. This is the oldest form of block signaling. In absolute manual block, only one train occupies a block at any time. In permissive block, following moves can be made within the limits of a block. In the Interstate Commerce Commission statistics concerning signaling, the Table 8—Train Operation by Signal Indication Without Train Orders, has a column heading "Controlled Manual Block", which means that in addition to manual control, the signals are also controlled by track circuits so that if a train is occupying any portion of a manual block a signal cannot be cleared manually to authorize a second train to enter. Such installations have been in service on various short sections on certain railroads for many years.

The above introductory statements are intended to convey the thought that manual block signaling, including track circuit controlled manual block signaling, has been used and widely recognized as an accepted form of signaling for many years. Therefore, the fact that the Wabash has installed track circuit controlled manual block is of special interest, because of the important fact that the Wabash uses a new arrangement for the location of the manual block signals at sidings and also that the signals at all the sidings for an extended mileage are controlled remotely from the dispatcher's office. These projects, therefore, are properly classified under the I.C.C. statistics Table 8—Train Operation by Signal Indication Without Train Orders, and in the column "Controlled Manual Block."

An important consideration with reference to the Wabash installation is that the manual block signals are of the two-aspect type, either Stop or Proceed, and there is no provision for using signals to authorize a train to follow one which is already occupying a block. The continuous track circuits throughout affords protection against head-on and rear-end collisions, as well as detecting broken rails. Switch circuit controllers check the position of switches. Thus the automatic protection is just as complete as in automatic block.

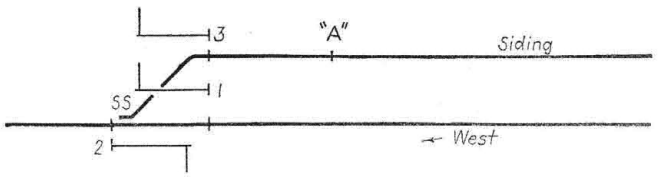
The track circuits between sidings feed in one direction or the other, depending on the direction of traffic. The local controls are all by track circuit so that no line wires are required for signal controls. The line code controls and indications between the dispatcher's office and the sidings are superimposed on the previously existing line wires for the telephone train dispatching. The savings in line wire and the reduced number of intermediate signals, required for this manual block remote control, brought the costs down to compare with straight automatic block as installed on an adjacent section of the same division about two years ago.

A conclusion, therefore, is that on single-track lines where the volume and type of traffic are adaptable to the use of manual block remote control, this form of signaling rather than straight automatic block should be installed extensively within the next few years.

Signaling for Spring Switches

A CONVERSATION among signal engineers concerning signaling at spring switches usually brings forth several ideas, some of which vary considerably with reference to the protection afforded for different train movements. In a report concerning a recent train accident, the Interstate Commerce Commission included a recommendation that the railroad provide adequate protection for the movement of trains which enter a main track through a spring switch. The Commission did not state what would be considered adequate signaling.

As applying to a spring switch layout at an end of a passing siding, it may be assumed that automatically controlled signals are or can be installed, as shown in the accompanying diagram. One practice is to arrange the controls so that the two main track high signals 1 and 2 normally display the Clear aspect and the leave-siding signal 3 normally displays the Stop aspect. With this arrangement, some provision must be made for placing signals 1 and 2 at Stop and to Clear signal 3 when a westbound train on the siding is ready to depart. One practice is to provide a short track circuit clearing section on the siding between signal 3 and a point "A". An objection is that this practice wastes a couple of car lengths of the siding, because trains must clear this section when being held on the siding. Also the starting of trains and then stopping on the clearing section short of the signal is objectionable. These objections can be avoided by using a push-button at the signal 3 to be operated by the head brakeman when a westbound train on the siding is ready to depart. This practice of requiring trainmen to operate push-buttons may be satisfactory on some roads where push-buttons of this general nature are in service for similar purposes at outlying interlockings or other sidings. On the other hand, on roads where no push-buttons operated by trainmen are now in use, it may be inadvisable to introduce the practice.



For these and other reasons some roads install controls so that the leave-siding dwarf signal 3 normally displays the Clear aspect, and main track signals 1 and 2, the Stop aspect. The main track signaling includes approach clearing sections so that when a westbound train, for example, approaches on the main track, then signal 3 is placed at Stop and after the necessary time interval, signal 1 is cleared.

In this arrangement, a westbound train on the siding would normally have a Clear aspect on signal 3, but would not accept this aspect to pull out unless it was authorized to do so by timetable and train orders.