



What's the Answer?

Crossing Problem

"It is desired to install an entirely automatic interlocking plant at a grade crossing where it is necessary for trains on one line to make a 10-min. station stop within 25 ft. of the intersecting track. How should the circuits be designed in order to avoid the possibility of the plant being unnecessarily 'tied up' by reason of this stop? The home signals must be located 300 ft. to 500 ft. from the crossing."

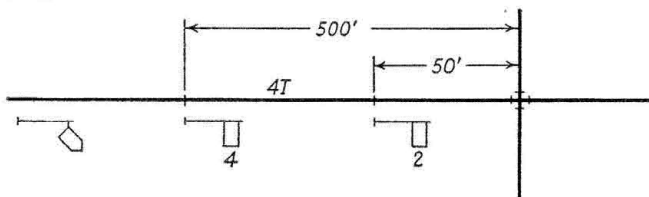
Suggests Use of Additional Signals

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The same train operation as that described in the question has occurred at interlocked crossings where the depot for both lines is located at the crossing and where it is desired to bring the train as close to the crossing as possible and still allow the train on the conflicting route to move over the crossing. In such a case, the regular home signal, 4, as shown in the sketch, is located 500 ft. from the crossing, and signal 2 is located about 50 ft. from the crossing.

Some may question the merit of the additional signal, 2, but when a train once stops in the interlocking limits and waits for 10 min., some sort of an indication should be provided for the engineman to start again, and further, some sort of marker should be provided to mark the fouling point of the crossing. A signal serves this purpose best.



Sketch showing location of signals

When a train enters the approach circuit for signal 4, signals 4 and 2 will clear provided no train has the conflicting route. After the train has stopped on track circuit 4T, a trainman will operate the push-button, which will put signal 2 at Stop and then release the conflicting route, whereupon the signal will clear provided the train is approaching. When the train is ready to proceed the trainman will operate another push-button which will clear signal 2, providing the conflicting route is clear. If the conflicting route is occupied, signal 2 will clear automatically without the necessity of the push-button being again operated after the route is cleared.

If the push-buttons are not desired and the layout is to be entirely automatic, an automatic time release can be provided, the release to operate while the train is in

To Be Answered in an Early Issue

(1) *Should some form of locking, i. e., approach, time or stick locking, be applied to levers controlling dwarf signals in regular power interlocking plants?*

(2) *How can rust and tarnish be removed from brass and other metal parts of relays, switch circuit controllers, etc., in the repair shop?*

(3) *What methods are being used to prevent lamp failures in light signals? To what extent are auxiliary devices such as reserve lamps, etc., being used? What is being done to prevent shop failures without having to depend upon a rigid system of inspection and removal of lamps?*

(4) *In terminal areas involving only dwarf signals, is four-position signaling justifiable as a general rule?*

(5) *Are switch lamps essential in automatic block signal territory?*

track circuit 4T and, after one minute, putting signal 2 at Stop, and, after another minute, releasing the conflicting route. Another time release is provided, to operate for 10 min., which will again clear signal 2, provided the conflicting route is not occupied. In this case, the train will always have to wait 10 min., except in the case when a push-button is provided to take care of the second release.

The push-button release seems to be the most desirable method as it assures that the train has actually stopped before the release of the conflicting route is effected, for the trainman has to get off the train, after it has stopped, in order to operate the push-button.

Would Extend Approach Circuits on One Line

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One method would be to arrange the approach circuits so that trains moving through the plant without stopping, would have a substantial advantage over trains moving on the line where they stop within home signal limits for a period of 10 min. For instance, if the ap-

