

cator control circuit in Fig. 1, it will be seen that the home signal line control must not only be energized, but it must be polarized to result in the 90-deg. position of the signal before the contacts in the indicator control

two blocks are not occupied by a train.

The use of a circuit for a normally-energized switch indicator was not practicable on account of the current required to feed it from primary battery. Likewise, it was found that it was not possible to pick up the indicator directly by a push-button because three extra cells had to be added to the line battery. Therefore, the problem was solved by using a normally de-energized 50-ohm relay, which could be energized from the existing line battery. A set of two dry cells was provided to pick up the indicator, such a set of battery usually giving a life of at least 18 months in this service.

On Light Signal Territory

On the color-light signal territory west of Trenton, the a-c. floating system of power supply is used so that a-c. power can be used as necessary to operate the train-approach indicators. For this territory, each train approach indicator consists of a 10-watt, 110-volt electric lamp in a metal body with a 3-in. clear glass lens. The lens is directed straight across the track so that the light can be seen readily from a passing motor car, but cannot be seen by the enginemen of approaching trains. The lamp is controlled through the contacts of a Type 9-C d-c. relay, which is connected in series with the signal line control circuit. A total of 22 of this type of train-approach indicators are in service on the color-light signal territory west of Trenton.



Lamp-type train-approach indicator on color-light signal territory

relay are closed so as to complete the circuit to clear the train-approach indicator. In other words, the signal for the block must be clear and the next signal in advance must be at 45 or 90 deg., thus indicating that the



Remote control location on the Pennsylvania near Baltimore, Md.

Instructions for Crossing

Protection in New York

THE railroads operating in the state of New York have co-operated in an attempt to reduce unnecessary traffic delays at railroad-highway grade crossings, where highway traffic is very dense, by the issuance of special instructions to train crews. These rules apply only in the state of New York.

The instructions issued by the New York Central read as follows:

"When switching, or when a train or cars are left standing on the approach track circuit of a highway flashing-light signal, causing the continuous operation of the signal, a member of the crew must, when practicable, be stationed at the crossing to facilitate highway traffic, advising such traffic when it is safe to cross."

The Lackawanna has the following rule:

"When crossing watchman is not on duty and trains stop on a main track within the above described approach sections, without blocking the crossing, or when cars are being switched over the crossing, a member of the train crew, equipped with proper signaling appliances, shall proceed immediately to the crossing for the purpose of expediting the movement of vehicles and pedestrians over the crossing."

The Ontario & Western rule reads:

"At crossings where automatic crossing warning signals are maintained and no watchman is on duty; when a train stops or is switching, or cars are left standing on the crossing signal circuit, causing the crossing signals to operate unnecessarily when actual train movement over the crossing is not involved, a member of train crew or watchman should be stationed at the crossing to direct and avoid delay to highway traffic."

The Reading has the following rule:

"Should a train or cars remain on the bonded section of track causing continuous indication of visual train-approaching signals; where practicable, a trainman or watchman must be stationed on the crossings and arrange for pedestrians or vehicles to pass over the crossing."

The use of rules such as these should eliminate a lot of the criticism emanating from the general public regarding grade crossing protection, which results in extended delay to highway traffic.