Editorial Comment

Co-ordinating Cab and Wayside Signaling

WITH the development of cab signaling, with or without wayside automatic signals, many new problems have arisen. When installing automatic block signals, efforts are made to locate each signal so that the engineman approaching it may have the maximum distance in which to view the signal and observe the indication. This time or distance may be termed the sighting space, in which the engineman has time to apply the brakes either to control the speed of the train, or to stop it in accordance with the indication displayed. In order to conform to this established practice, the control for cab signaling should be so arranged as to repeat the indication of the signal approached, upon entering the space required as braking distance in approach of the signal. Where signals are spaced not far beyond the maximum braking distance, the control can be arranged more conveniently to give a change in indication of the cab signal at the signal next in approach. Where wayside signals are eliminated, the so-called "phantom" signal can be located without consideration of the necessity of providing a long space in which the engineman can see a signal in advance. All of these methods should receive consideration in developing continuous cab signaling. Increased track capacity and facility of train movements may in some cases be secured by adapting the wayside control to the needs of cab signaling rather than wayside signaling.

A Standard Aspect for Highway Crossing Signals

THE large number of persons who are being killed in automobile accidents at highway grade crossings of the railroads in the United States presents one of the most important safety problems before the roads today. Automatic highway crossing signals are an effective and economical means of warning an automobile driver that a train is approaching. These signals have been standardized by the Signal Section, A. R. A. to the extent that its specification authorizes an aspect which, when indicating the approach of a train, presents the appearance of a "horizontal swinging red light and/or disc." In brief, this includes both the alternate flashing-light and the wig-wag types. Of the 2,151 crossings equipped with automatic signals in the United States in 1927, the flashing-light type was installed at 1,409 and the wig-wag at 742 crossings. The wig-wag is the legal requirement in California, and is probably given preference in the majority of the states west of the Mississippi, while in the eastern states the flashing-light type is preferred, although the wig-wag may be seen in Maine or Virginia as well as in California. In may states, the type of signal to be installed at any crossing depends on the preference of the railroad or the local city authorities. The results are confusing to an automobile driver out for a Sunday afternoon, to say nothing of the tourist on strange highways. As an illustration, at four successive railroad crossings on a highway near Chicago, a driver will find, first a two-position wig-wag, next a flashing-light, at the third a three-position wig-wag, and at the fourth a flashing-light with an illuminated stop sign.

In his annual address at the convention of the Signal Section, A. R. A., last March, Chairman Tillett pointed out the need for standardization of the aspects for automatic highway crossing signals, and stated that the Board of Railway Commissioners of Canada had established one standard for highway crossing signals. He held no brief for either type, but he believed that it would be a benefit to humanity if one standard could be established for the continent. His idea is that a committee should be appointed to establish this standard, the committee to include representatives from the Board of Railway Commissioners of Canada, the Interstate Commerce Commission of the United States, and representatives from the national highway commissions of both nations.

Before calling in the "policeman," however, would it not be a good idea for the Signal Section, A. R. A. to settle this question itself, so as to be in a position to make definite recommendations to these bodies, rather than having them establish some arbitrary rule.

Building Concrete Foundations in the Field

ON those roads which consider it more satisfactory to pour concrete signal foundation in place, there is a decided difference of opinion as to the most economical method of mixing the concrete. Some signal engineers contend that the volume of concrete to be mixed at any one location is so small that a crew of six or eight men can mix and place it quicker by hand than with a mixer. Especially on a busy railroad this method eliminates interference with train movements.

In contrast to this simple method is the completely equipped concrete train that has been used extensively by the General Railway Signal Company on the Southern, the Missouri Pacific and other roads. In this outfit, a mixer with a capacity of 1 yd. or 1.5 yd. is mounted on a flat car from which chutes discharge the mix into the foundation forms. Overhead tracks are provided on which to operate a small car to bring to the mixer the sand and crushed rock from adjacent cars, and an old locomotive tender is used for water storage. About 23 men and a foreman are required to operate one of these outfits, in addition to the regular train crews. On one job on the Missouri Pacific 398 signal and 218 cable post foundations were poured in 26 working days in spite of the fact that on account of the traffic of from 25 to 30 trains a day on this single track, the concrete train was enabled to remain on the main line only 3.5 to 4 hr. a day. In other words, each foundation was poured in an average of eight minutes.

On signal installations of comparatively short mileage, it may not be worth while to equip a concrete train. Likewise, the hand mixing method may be considered uneconomical and slow. The Canadian National has worked out a happy medium. In the installation of color-light signals, recently completed on 88 miles of double track, a small ¼-yd. capacity, gasoline-engine-driven mixer was used. This mixer, which weighs about 500 lb., was mounted on skids and wheels so that six men could handle it off or on a push car readily. On arrival at a location, the mixer was set off on the ground in position to pour directly into the largest form, the sand and gravel having previously been unloaded conveniently to this location. The concrete for the smaller foundation was carried across the track in buck-