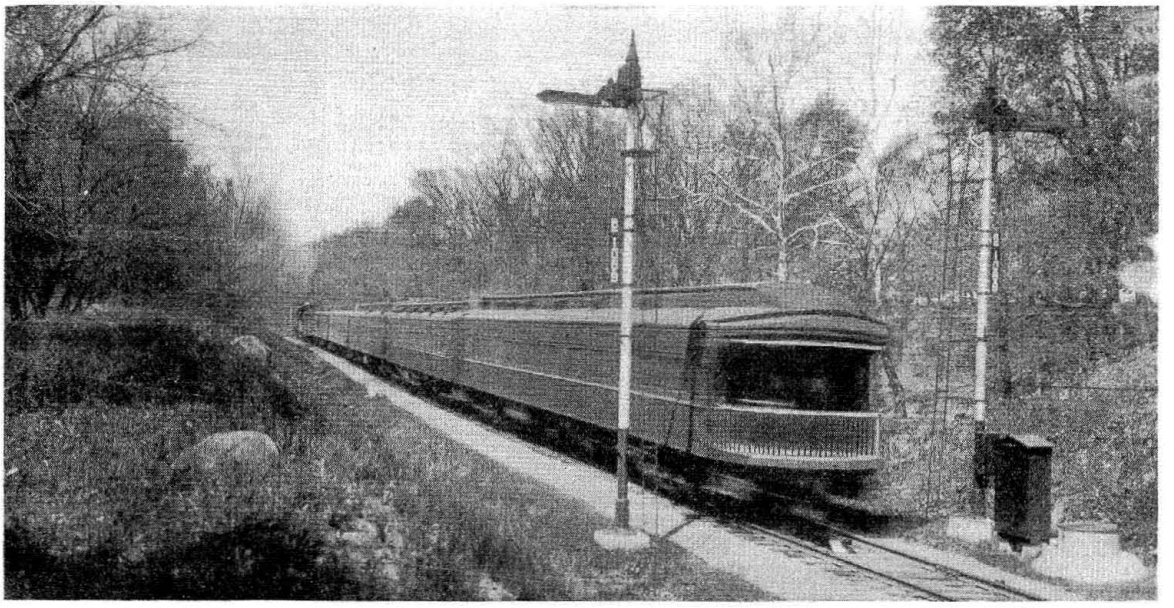

The route of the Hoosier is protected by automatic signals and train stop

Monon Revamps Signals to Co-Ordinate with Automatic Train Stop

Part I—Signal reconstruction program embraces 161-mile single-track line between Hammond, Ind., and Indianapolis*

By E. G. Stradling
Superintendent of Telegraph and Signals, Chicago, Indianapolis & Louisville

IN 1911 the Chicago, Indianapolis & Louisville (Monon Route) installed an automatic block signal system between Hammond, Ind., and Indianapolis, a distance of 161 miles of single track. The signals were the General Railway Signal Company's Model-2A operating in two positions with circuits arranged for overlap. The intermediate signals between sidings were staggered 3,000 ft. apart. There were also caution signals located 2,500 ft. in approach to meeting points at sidings. When the Interstate Commerce Commission issued its order No. 13413 in 1922, calling for the installation of automatic train control or train stop on certain railroads, it included the Monon. Upon the petition of the management of the railroad, the commission consented to a change in the prescribed territory, so that a fulfillment of both of its requirements under the order would be taken care of on that portion of the line between Hammond and Indianapolis, this being that section of the line carrying the heaviest passenger traffic.

Intermittent Inductive Train Stop

After due consideration it was decided to install an intermittent, inductive device as a plain automatic train stop, but with such a device on single track it was found that it would be necessary to make considerable alterations in the existing block signal system. It was believed that for the best operation of trains the overlap of the track elements in an intermittent device should not be any greater than the overlap of the block signals which controlled them; also that, wherever possible, there should be braking distance between one track element and the next. To secure this braking distance, it was obvious that certain block signals would have to be moved to new locations. To make one track element serve for both directions on single track, it was necessary to place the element in the center of the track between the rails and to have the track element controlled by a block signal for each direction. To secure this arrangement at a double location of signals, it was necessary to separate the intermediate signals a sufficient distance, and then to relocate the approach signals for the meeting points at the sidings opposite thereto. This arrangement of having one element in the center of the track serve for both directions made quite a saving in the cost, compared to what it would have been had there been a track element installed on the outside of the rail for each block signal.

In carrying on the work of relocating the signals, the first practice was to use a derrick and work train to pick up the signal complete with its foundation and move it to the location where the new excavation had been made. Flat cars were used so that several signals could be moved with one train. Considerable difficulty and delay was encountered, however, in attempting to have the old foundations fit the new excavations, therefore, in order to hasten the reconstruction, a concrete gang was later set to work and new foundations were cast in place, the old foundations being abandoned when the signals were removed. The saving of time of the

*Part II explaining the train stop system will be published in a later issue.