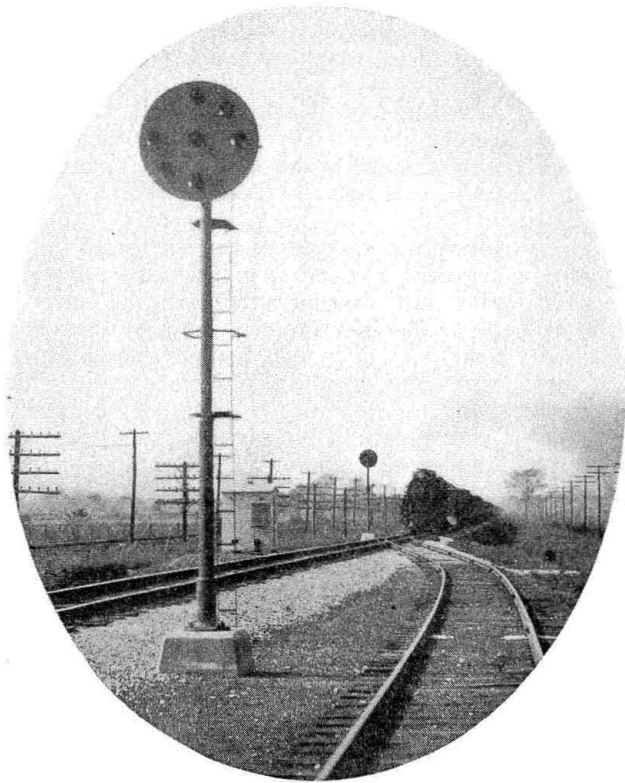


Pennsylvania Installs on 30.3 Miles of

*Twelve minutes saved on each freight
First installation of Union*

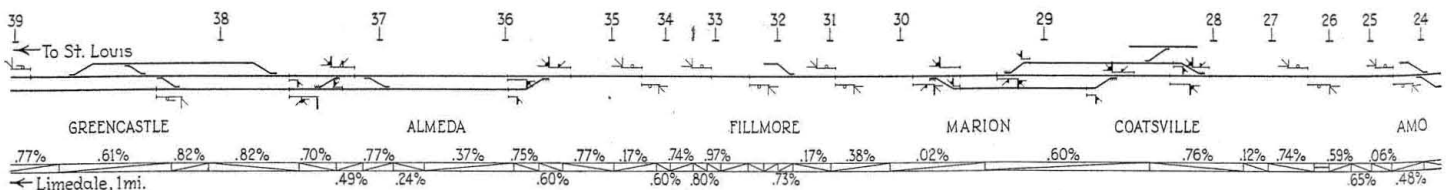


Eastbound train approaching Ben Davis

THE Pennsylvania has recently completed an installation of centralized traffic control on 30.3 miles of single-track line between Ben Davis, Ind., and Alameda, which is a portion of the main line between Indianapolis, Ind., and St. Louis, Mo. As a result of the installation of this centralized control system for the 12 power-operated switches, and the 32 signals which direct the train movements without train orders, the movement of trains, especially the freights, has been greatly facilitated. This result is accomplished chiefly through the elimination of train stops at meeting points when entering and leaving the sidings which results in an estimated saving of 12 min. for each train stop eliminated.

Characteristics of Line and Traffic

Double track extends from Indianapolis to Ben Davis, 6.9 miles, and also from Alameda to Limesdale, Ind., 3.1 miles, the second tracking of the intermediate section



Track and signal plan, indicating grades, for

between Ben Davis and Alameda, 30.3 miles, having been postponed on account of proposed extensive line changes and grade revisions. This section of the line traverses a rather rough rolling country crossing several small streams, short grades up to .83 per cent being numerous and in a few cases extending for about a mile. Curves are numerous, but not of a curvature to interfere with the normal operation of trains.

The traffic on this division consists of 19 regular passenger trains and an average of 16 freight trains daily.

Two of the passenger trains make eight local stops in the territory, while the remainder are on fast schedules, making the 30.3 miles in 30 min. eastbound, and 32 min. westbound. Two of the freight trains are locals and the remainder are on fast through schedules. The latest type locomotives are rated to handle 3,400 tons westbound and 3,250 tons eastbound, at a maximum speed of 50 m.p.h.

The passing sidings in this territory include advance tracks at Ben Davis and Alameda, a set of lap sidings at Marion, and a single siding at Gibson and Summit. On account of the grade conditions, serious delays were caused when trains were stopped to enter sidings at Summit and Gibson, so much difficulty being experienced at Gibson that this siding was used only when absolutely necessary. Train movements were operated by time-table and train orders, 40 to 45 train orders being issued daily in this territory.

The solution of this operating problem was to install power-operated switches, which, together with the signals for directing train movements, are controlled from a central point. Operators had previously been employed at Summit and at the end of double track at Alameda, and one relief operator was required, making a total of seven men. By placing the centralized control machine in an existing interlocking tower at Limesdale, where the Chicago, Indianapolis & Louisville crosses the Pennsylvania, the offices at Alameda and Summit were discontinued. Limesdale is four miles west of Alameda.

The Control Machine

The control of the 12 field stations is assembled in the centralized machine at Limesdale. The term "station" designates a group of associated apparatus, such as a switch and the two or more signals governing movements over that switch and into the adjacent block. Each station is controlled by one panel in the control

machine, each of which includes a section of the track model, a two-position switch lever, a three-position signal lever, a stick button, and a code-starting button, arranged in order from top to bottom.

The centralized control system, with the attendant switch and signal apparatus, was furnished by the Union Switch & Signal Company, and installed by the railroad company. Several new developments were incorporated in this installation. For example, this is the first extensive installation of the new three-wire coded relay con-

