

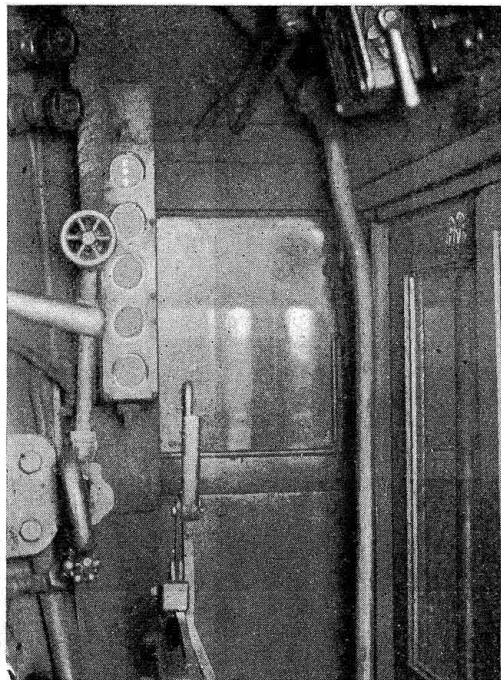
# Railway Signaling

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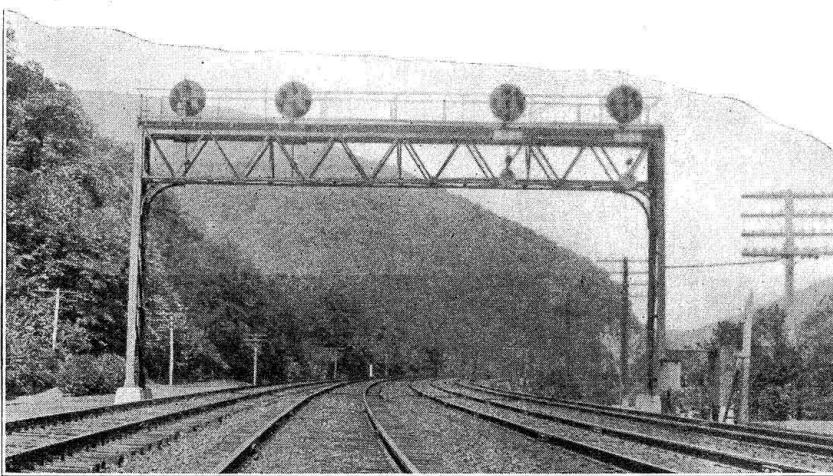
Number 4

## Pennsylvania Installs Code System of Train Stop with Signaling



*The cab signal*

*Four-indication cab signals, power immune from foreign current and position-light signals included in installation on 1,492 track miles*



*The position-light wayside signal*

IN compliance with the orders of the Interstate Commerce Commission the Pennsylvania has installed automatic train stop on five divisions, totaling 611.5 road miles and 1,492 track miles, with 1,159 locomotives equipped, as shown in detail in Table I. All of these installations include modern alternating current automatic block signaling, using position-light signals. On the four divisions placed in service during 1927, the new code system of train stop is used, in which the four indications of the cab signal are secured by a novel system of coded current, transmitted through the rails to an approaching locomotive. The wayside signal and train stop equipment, as well as that on the locomotives, was furnished by the Union Switch & Signal Company, and was installed by Pennsylvania forces.

### Train Control Development on the Pennsylvania

Soon after the commission issued the first train control order in 1922, the Pennsylvania, for the purpose of test and development, made an installation of the Union three-speed continuous train control on 45 miles of its Sunbury division with 12 locomotives equipped. The continuously controlled cab signal used on this installation and forming an integral part of the continuous system, was a new develop-

ment of considerable importance and utility. Having secured the desired results, this installation was dismantled in 1926.

In the meantime the commission had announced, in July, 1924, that the permissive or forestalling feature could be used with the simple train stop, which does not include the speed controller. The Pennsylvania, therefore, decided to install the continuous system with the permissive feature, in the belief that the cab signal, which it includes, was of great benefit in giving advance and continuously accurate information to the engineman irrespective of weather conditions.

Before starting on the installation of train stop on the territories specified by the commission, the Pennsylvania decided that modern a-c. automatic block signaling, using position-light signals, should be provided as the basis for the wayside apparatus. In order to eliminate the possibility of interference in the operation of the signal system, as well as of the train stop system, from 60 to 25-cycle commercial or power circuits, it was decided to use 100-cycle power for the wayside apparatus.

The first installation of this signaling with train stop was placed in service between Baltimore, Md., and Harrisburg, Pa., on July 17, 1926. At the time













