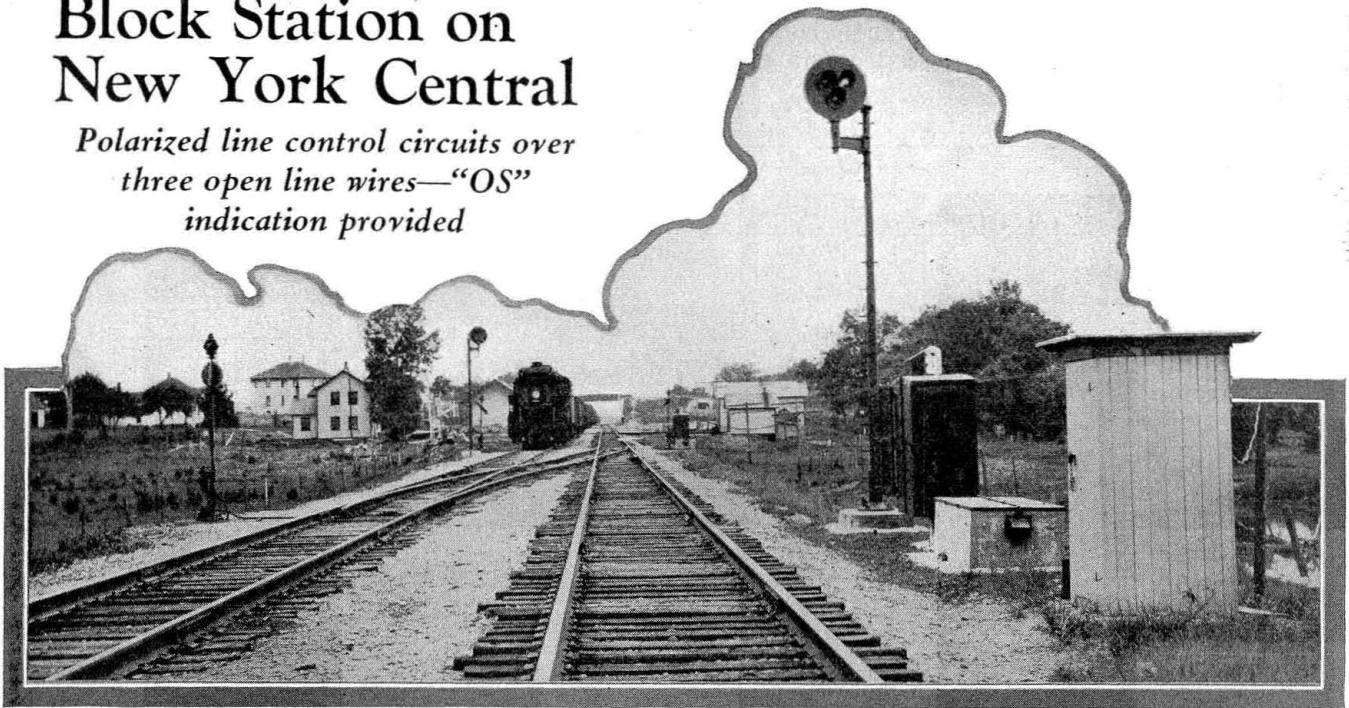


Remotely Controlled Signals Replace Manual Block Station on New York Central

Polarized line control circuits over three open line wires—"OS" indication provided



Northbound train passing controlled signal at Campbell

THE use of remotely-controlled signals to direct train movements without the expense of maintaining a telegraph station has been demonstrated by an installation recently completed on the Danville line of the New York Central at Campbell, Ill. Formerly a manually-operated block station working on two tricks daily, this station, located at a trailing point crossover on the double-track line extending northward from Danville, Ill., was a logical layout for the application of remotely-controlled signals.

Past and Present Operation

Campbell is a way-station located $5\frac{1}{4}$ miles north of Danville, from which point the signals are controlled. There are no telegraph offices between Campbell and Danville, and the nearest telegraph office north of Campbell is nine miles distant, at Sloan. A trailing-point crossover at Campbell is used to facilitate the departure on both tracks of northbound freight trains from Danville. Formerly, the telegraph office at Campbell functioned as a manually-operated block station, and telegraph operators on two tricks daily copied and transmitted train-orders to the train crews.

The grade is level from Danville to Campbell and from the latter point northward the grade descends at .0024 per cent. All of the functions formerly effected under manual block control are now performed by the new remotely controlled installation and the services of the operators were dispensed with when the present signals were placed in service. The operator at Danville now operates the signals and "OS" indications are automatically transmitted to his control machine, since it is desirable that he know when trains pass this station, to guide him in issuing train orders. The switches of the trailing-point crossover are hand-operated.

The traffic at this point consists of six passenger trains, six regular northbound freight, two local

freight, and about six southbound freight trains each 24 hours. The average tonnage of the time freight trains is about 2,360 tons in 39 cars.

Centralized Traffic Control Machine Is Used

The signals are the General Railway Signal Company's three-position Type-G, arranged triangularly, the indications being the standard red, yellow, and green. The operator at Danville may set these signals in any desired position by operating the levers of his control machine. Each of the two signals is controlled by a separate lever. The control machine is a four-lever frame with two of the spaces blanked out and reserved for future expansion. The General Railway Signal Company's standard centralized traffic control type of machine is used.

An OS indication is automatically transmitted to the operator's control machine upon the passage of a train through the route established by the signal. This indication is effected through two adjacent track circuits in order to reduce the possibility of a false indication if, for any reason, a track circuit should fail or accidentally be shunted by track forces. A train running against the current of traffic from Danville to Campbell, before crossing over to the other main track through the crossover at Campbell, must stop and call the operator to obtain permission to move with the current of traffic from Campbell to Sloan, the next station north. The train must also report when clear of the southbound track.

Upon receiving a stop signal when moving with the current of traffic, the train crew must call the dispatcher for train orders. A telephone, connected to the dispatching circuit, is provided for this purpose in a booth located at the crossover. A stop signal, however, does not necessarily imply that there are train orders for the crew; the operator may simply be using the signal to time-space a preceding train, as was formerly done with the manual block signals.

