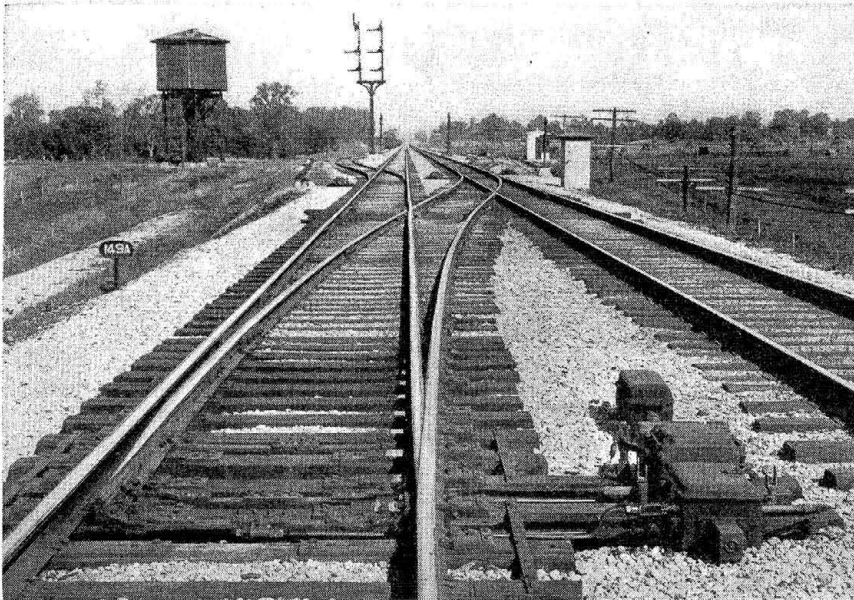


# Big Four Uses Centralized Control

## For Remote Interlocking

Saves \$6,000 annually in operating expenses as compared with locally operated interlocking plant

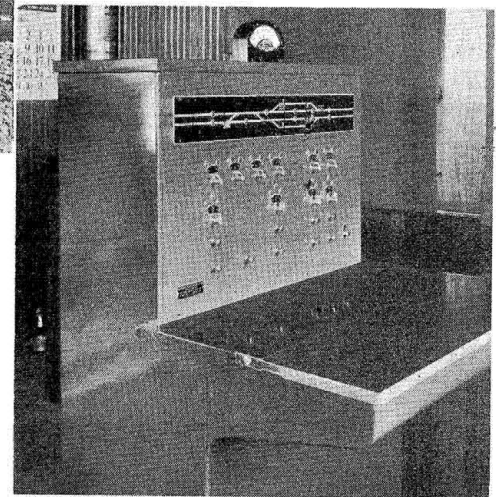


**T**HE Big Four has made an interesting installation at De Graff, Ohio, where a complete interlocking layout, including two crossovers and four passing-track switches with accompanying signals, is controlled remotely, by means of coded line circuits, from a CTC type of machine in a tower 3.5 miles away.

De Graff is located on the main line between Cleveland and St. Louis, 9.6 miles west of Bellefontaine, which is an important division point and the junction of lines from Detroit, Toledo, Sandusky, and Cleveland. In normal times the traffic on this division includes 16 passenger trains and from 40 to 50 freight trains daily. The trains are all operated on very fast schedules. For example, the freight trains make the 140-mile run over this division in about four hours, and therefore no delays in leaving or approaching the Bellefontaine terminal can be tolerated. One of the principal operating problems in heavy traffic seasons was to relieve the congestion on the first ten miles of line west of Bellefontaine, as difficulty was encountered not only in getting eastbound trains into the yard, but also in starting westbound trains when they were ready to depart. Approaching Bellefontaine from the west, the line ascends at an average grade of 0.7 per cent for about five miles, which fact further added to the difficulties of train operation.

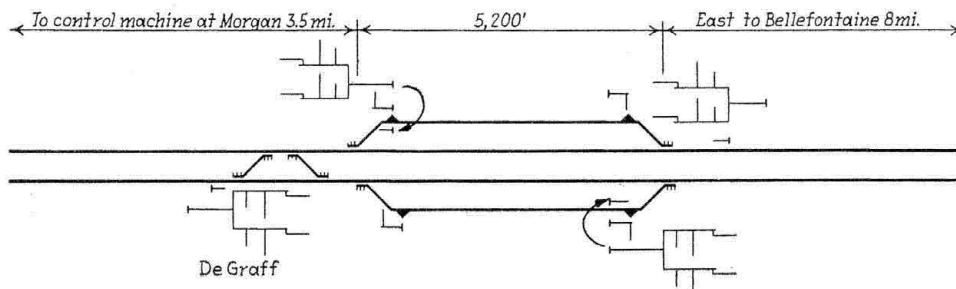
Two 125-car passing tracks—one for each direction—, as well as two crossovers, were provided at De Graff several years ago. The two crossovers were installed so that trains could be diverted from one track to the other, with the idea of using both tracks in either direc-

Above—  
View looking east from De Graff, showing some of the controlled units



tion, as the case might be, to meet a demand for increased track capacity. Such moves were, of course, handled by train order, and as all the switches at De Graff were hand thrown, so much delay was encountered in making such moves that the practice was seldom followed. About four years ago an estimate was made showing that it would cost about \$30,000 to install an interlocking to handle the crossovers and the switches at the west end of the passing tracks. This plant was not authorized, not only because of the first cost, but also because of the added expense for levermen.

The development of coded line-control apparatus within the last few years made it practicable to install the interlocking facilities at De Graff as previously planned, but to eliminate the expense for levermen, the latter being made possible by placing the control machine in an existing interlocking tower at Morgan, where there is an electro-mechanical interlocking protecting a cross-



The CTC machine (above) controls the switches and signals shown in the diagram

