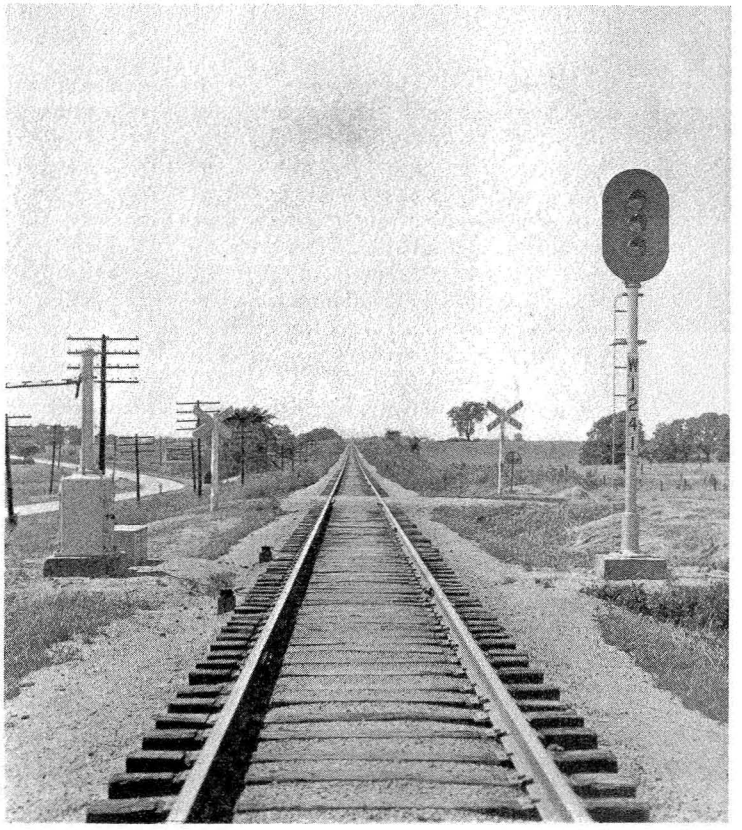
Automatic Signal Program on the Illinois Central

Projects on the Western Lines include new installations on 112 miles and re-signaling on 132 miles—Construction forces well-organized and equipped



Typical intermediate signal

A complete signaling program is under way between Broadview, Ill., and Waterloo, Iowa, 259 miles, on the Western lines of the Illinois Central which extends between Chicago on the east and Sioux City, Iowa, and Omaha, Neb., on the west. For the most part this line is single track.

Between Broadview and Freeport, Ill., 102 miles, the three-position upper-quadrant semaphore signaling with A.P.B. controls which was installed in 1915-18, is to be revised to utilize more modern directional stick controls, and the semaphores are to be replaced with color-light signal heads. Between West Junction, in Freeport, and Scales Mound, Ill., 36 miles, new color-light automatic signaling has been installed. Between Scales Mound and Portage, Ill., 16 miles, lower-quadrant two-position semaphore signaling with overlap controls, installed in 1912, was rebuilt, using new relays, A.P.B. controls and new color-light signal heads. Between Portage and East Dubuque, Ill., the line is double-track with upper-quadrant semaphore automatic signaling, no changes being made. Between Dubuque, Iowa, and Peosta, 14 miles, the two-position lower-quadrant semaphore signaling with overlap controls installed in 1912 was reconstructed, using new relays, A.P.B. controls and new color-light signal heads. At Peosta, the installation includes a power switch machine at each end of a 90-car passing track and new color-light signals, all of which are controlled remotely from a set of desk levers in the station. Between Peosta and Waterloo, Iowa, 76 miles, no signaling was in service before, and, therefore, new A.P.B. signaling with color-light signals is being installed. The installation between Peosta and Masonville, 40 miles, is nearing completion. Thus the new construction and reconstruction involves 244 miles of line on various sections between Chicago and Waterloo.

Character of Line and Traffic

To those who have known Illinois as a prairie state, it may be interesting to note that the northwestern section is rough to the extent of being almost mountainous, the highest point in the state, 1,294 ft. above sea level being at Scales Mound, near the Illinois Central. In passing through these hills, the line includes numerous curves and grades. Between Dubuque, Iowa, and Peosta, the line ascends from 618 ft. elevation at the Mississippi River to 1,034 ft. in a distance of 16 miles, which includes 0.9 per cent maximum grade, numerous curves and bridges to cross streams.

On account of the grades, curves and other local conditions, the passing tracks could not be spaced on a time distance basis, the spacing in some instances is about 4 miles and in others up to 6 miles. A few of the passing tracks will hold up to 90 cars, but most of them will hold about 60 cars.

This line handles 6 passenger trains and up to 34 freight trains daily. The maximum permissible speeds are 60 m.p.h. for freight trains and 70 m.p.h. for conventional passenger trains, the diesel propelled light-weight, Land O' Corn, being allowed 80 m.p.h. as maximum.

The preponderance of high-class freight traffic is eastbound, including about three to four trains of meat between 9 p.m. and midnight, and several trains of western fruit and other products which usually pass through this territory during the early forenoon. The 2,900 class locomotives are rated at 3,000 tons. However, in order to provide service and increase speeds, the meat and fruit trains take whatever is ready to go, thus some of these trains may have only 40 to 60 cars.

In general, the automatic signaling was reconstructed and new sections were added to improve safety and to save train time by permitting following moves at closer spacing and to make closer meets with safety on a line where train movements are authorized by time table and train orders.

Apparatus and Equipment

The apparatus, circuits and equipment are practically the same on the reconstructed and the newly signaled territories, the only difference being that the old cases, masts and ladders, track bonding and some of the old line wire were reused.

In the old "home" and "distant"