Automatic Plant With Derails

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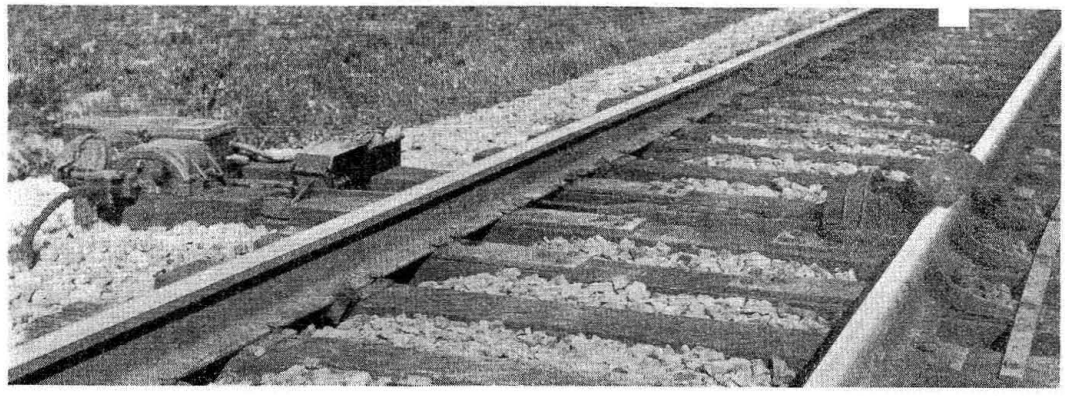


A dual-control for derails and several unique control features developed on job

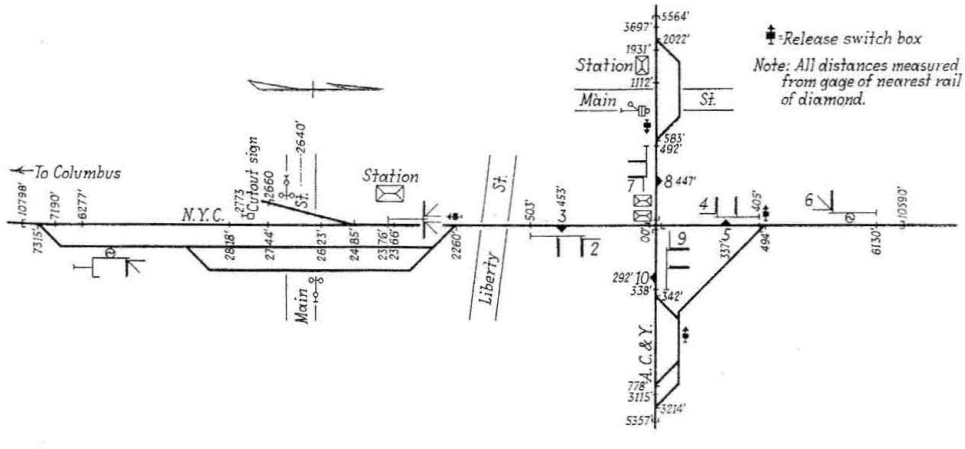
AT ARLINGTON, Ohio, the single-track line of the Ohio division, New York Central, crosses the single-track line of the Akron, Canton & Youngstown. The A. C. & Y. operates two mixed and four freight trains over this crossing daily, while the average traffic on the New York Central includes six passenger trains, two local and 12 through freight trains daily. The lading handled on the A. C. & Y. is general merchandise, while on the N. Y. C., in addition to merchandise, a large percentage of the lading is coal moving north from mines in southern Ohio and West Virginia.

Formerly protection was afforded at this crossing by a mechanically operated target signal which was set normally for N. Y. C. movements. All trains were required to make the safety stop before crossing, the A. C. & Y. trainmen operating the signal for a movement on their line, and then after passing over the crossing, restoring the signal for the N. Y. C. moves. In order to increase efficiency, promote safety and effect economy, the installation of an automatic interlocking, without derails, was contemplated. The Ohio Public Utilities Commission, however, insisted on the use of derails. The interlocking, as installed, and as approved by this commission, has not only home signals on the A. C. & Y. and home and approach signals on the N. Y. C., but also derails of the lift type on both lines.

The Problem

The use of main track derails, along with the location of passing sidings, industrial tracks, interchange tracks and highway crossing protection, all of which are in the approach of interlocking home signals, made the problem of designing the plant more complicated than that involved in a simple grade-crossing layout. All signals are of the color-light type, the aspects being in accord with N. Y. C. standard. Approach signals are in use on the N. Y. C. but on account of slow speed, good view, etc., no approach signals were installed on the A. C. & Y. The home signals are two-position, having a marker unit mounted vertically under the main unit, which designates it as an absolute signal. The approach signals are three position, having a marker unit mounted diagonally under the main unit, which designates it as a "Stop and Proceed" signal. The marker lights indicate red only. The home signals are located from 338 ft. to 503 ft. from the crossing and from 45 ft. to 68 ft. from the derails; the approach signals are from 5,725 ft. to 5,774 ft. from these home signals; and the derails are 292 ft. to 453 ft. from the crossing.

The derails are of the Hayes type and are each operated by a motor-driven machine similar to the skate-placing mechanism as ordinarily used in classification yards. This mechanism is modified somewhat to meet



Track and signal plan of the Arlington automatic interlocking