

Monon searchlight signal



Grand Trunk color-light signal



Pennsylvania position-light signal

# Interlockings Modernized at Three *Railroad Crossings*

ABOUT 26 miles south of Chicago, there is a triangle of three railroads, each of which cross the other two, thus forming three railroad crossings approximately one-half mile apart, as shown in the plan herewith. The railroads involved include: the Chicago, Indianapolis & Louisville, on the route between Chicago and Indianapolis; the Pennsylvania, on the route from Chicago to Logansport, Columbus and Cincinnati; and the Grand Trunk Western on the route from Chicago to South Bend, Battle Creek and points in Canada.

For many years there had been a separate mechanical interlocking, including derails, at each of these three railroad crossings. The plant at the crossing of the C.I.&L. and the Pennsylvania was known as Air-

line. The plant at the crossing of C.I.&L. and the G.T.W. was Monon; and the plant at the crossing of the Pennsylvania and G.T.W. was Maynard. All of these old mechanical interlockings had seen many years of service, and were in need of extensive repairs. Therefore, a program of modernization was adopted and carried through to completion.

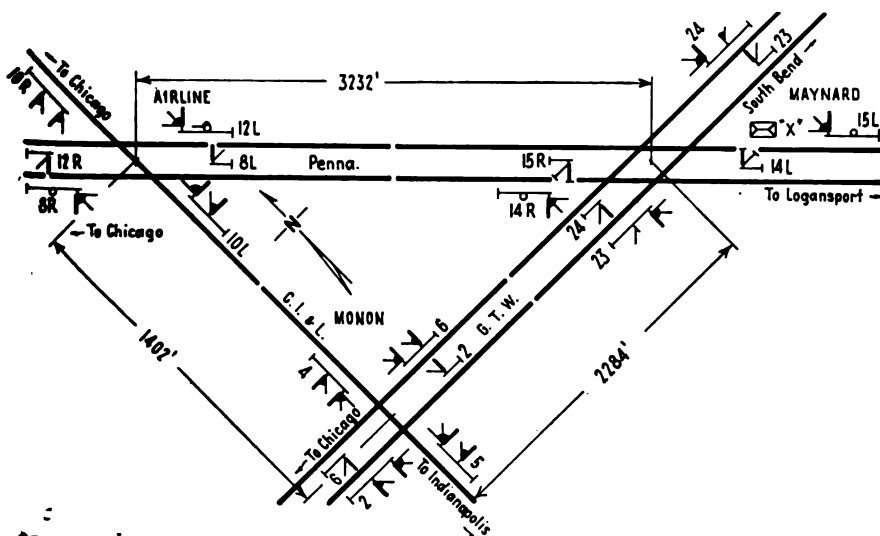
**At a triangle layout, including three old mechanical interlockings, the controls of two were consolidated, and the third was replaced by an automatic plant**

The old main track derails, which had been operated by pipe connections in the mechanical interlockings, were eliminated. As there were no switches in the home signal limits of any of the plants, the elimination of the derails left only the home signals to be controlled. Light signals are in service for home signals at all three crossings. The C.I.&L. has searchlight signals, the G.T.W. has triangular-type, color-light signals, and the Pennsylvania has position-light signals.

The old mechanical interlocking at Airline Jct. was taken out of service and removed at Airline. The tower at Maynard was retained; being rebuilt and modernized. In the new control arrangement, an interlocking machine in the Maynard tower controls the interlocking protection at Maynard crossing and also at Airline crossing. A new automatic interlocking replaces the old mechanical plant at the C.I.&L.-G.T.W. crossing.

### At Maynard

The interlocking machine now in service in Maynard tower includes a Saxby & Farmer type mechanical machine with four mechanical levers in service, and six Union Switch &



Plan of signal protection at three crossings

Signal Company Style-S electro-mechanical levers which are mounted over the S.&F. machine in the conventional manner, these levers being connected with the mechanical locking in the S.&F. machine, as is customary practice. As the pipe lines were all eliminated, the S.&F. levers are used only to operate the mechanical locking and circuit controllers. A new illuminated track and signal diagram was mounted

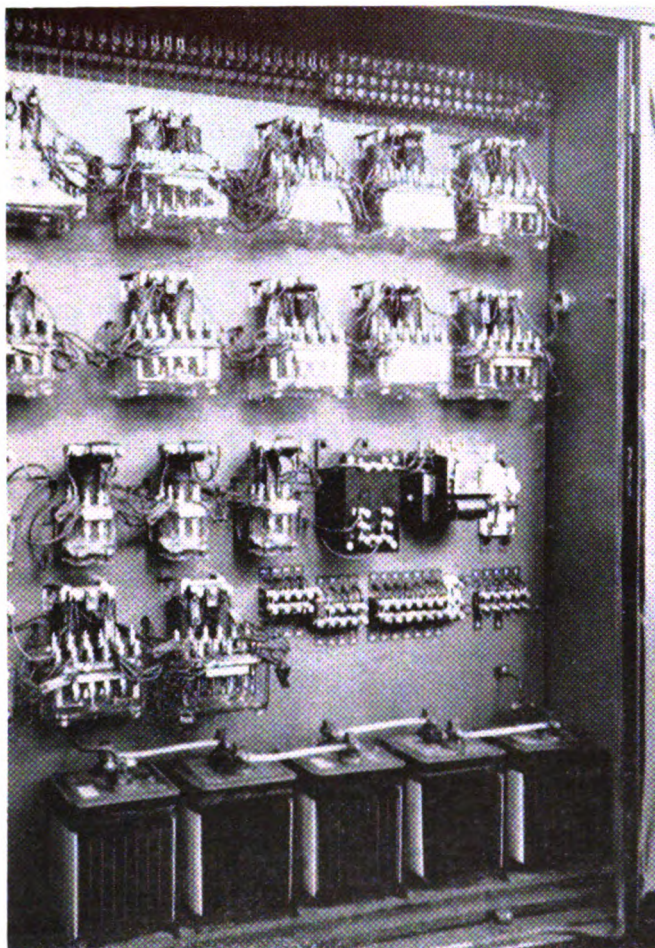
moved, and a new automatic interlocking was installed. The circuit arrangements in this new plant are in accordance with Signal Section A.A.R. practices.

Each of the four home signals has two "arms" each consisting of a signal head, the bottom one is 13 ft. above rail level, and the top one is 10 ft. above the bottom one. The top "arm" can display red, yellow or green; the bottom "arm" normally

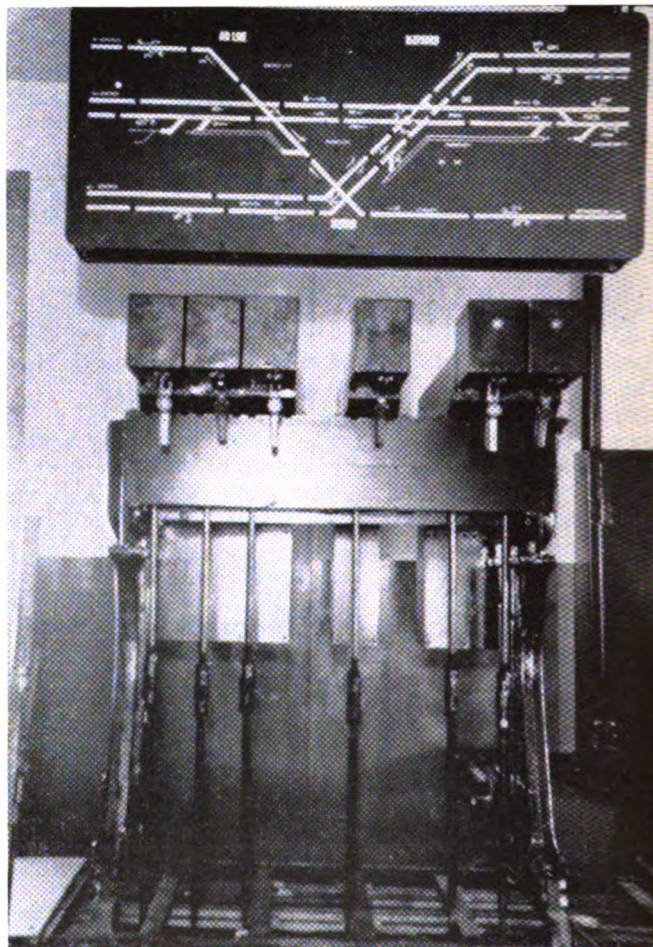
displays red. When circumstances are such that the signal cannot clear in its customary manner by automatic control, then the call-on "Restricting" aspect, as mentioned above can be displayed by the operation of pushbuttons, provided at the home signals and at the crossing.

#### All New Wiring

When changing over from the old mechanical interlockings to the new arrangement explained above, new wiring, relays, batteries, rectifiers, etc., were installed throughout. Pictures herewith show the interior of the new sheet-metal cases installed by the C.I.&L. at the crossing with the G.T.W. A somewhat similar case was installed for G.T.W. appliances at this crossing. At Airline, separate



Relays and battery in new Monon case at crossing of the C.I.&L. and G.T.W.



This machine in the Maynard tower now has four mechanical and six electrical levers in service

over the interlocking machine.

Lever No. 17 is the "crossing lever" which is reversed as the first manipulation in lining up for a Pennsylvania route through Maynard, in either direction. Levers No. 14 and 15 control the Pennsylvania home signals at Maynard. Lever No. 19 is the "crossing lever" for the G.T.W., for a line up at Maynard. Levers No. 23 and 24 control the G.T.W. home signals. For Airline, lever No. 9 is the "crossing lever" for both railroads, normal for C.I.&L.—reversed for Pennsylvania. Lever 10 controls C.I.&L. signals. Levers No. 8 and 12 control Pennsylvania signals.

#### Automatic Interlocking at Monon

At the crossing of the G.T.W. and the C.I.&L., the old mechanical interlocking and the tower were re-

moves displays red, but can be controlled to display yellow, under a red in the top "arm." This is the "Restricting" aspect, which indicates "proceed at restricted speed, prepared to stop short of train, obstruction, or anything that may require the speed of train to be reduced, but not exceeding 15 m.p.h."

Under normal circumstances the home signals on both the C.I.&L. and the G.T.W. will clear automatically when a train approaches, in accordance with conventional prac-

cases house the C.I.&L. and the Pennsylvania appliances. At Maynard, new sheet-metal cases were installed outside the tower building. With certain minor exceptions, the signal forces of each railroad did the installation work on its own tracks.

This installation has now been in service several months, and it has proven to be satisfactory from an operating standpoint, and has been the means of reducing operating costs as well as expenses for maintenance repairs on the old plants.