Westbound Baltimore & Ohio train at crossing

Simple Interlocking Saves Many Train Stops

Manual control plant in Vincennes, Ind., at crossing of Baltimore & Ohio with Chicago & Eastern Illinois and the Pennsylvania saves train delays

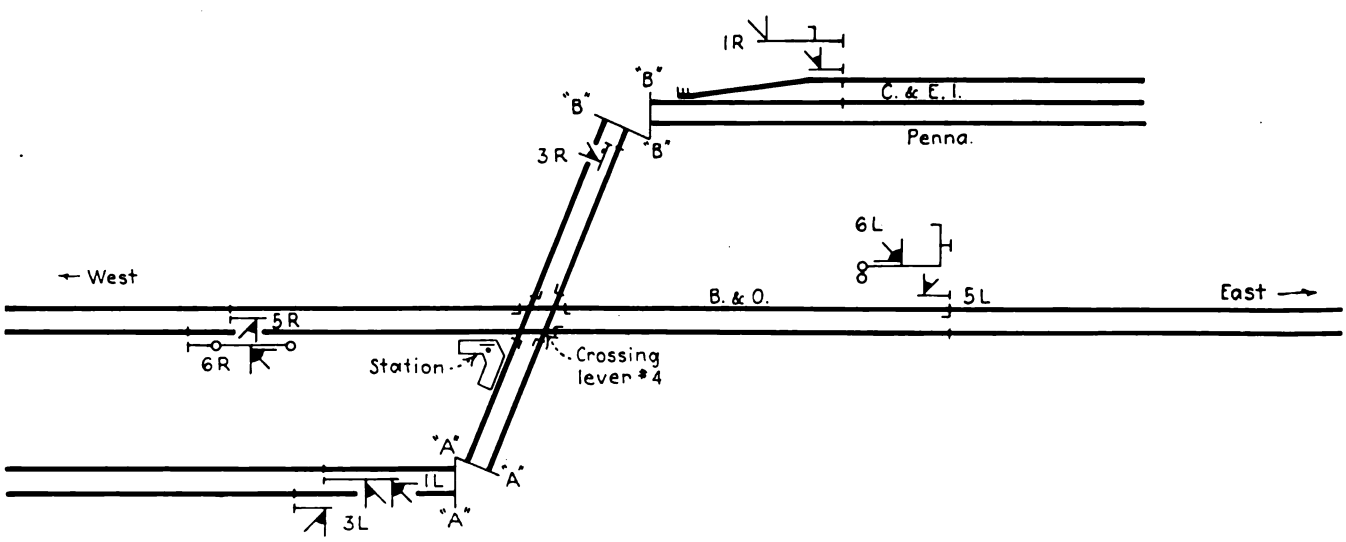
AT Vincennes, Ind., the single-track main line and a siding of the Baltimore & Ohio cross the single-track main of the Chicago & Eastern Illinois, and a single-track branch line of the Pennsylvania. A passenger station used jointly by the B.&O. and the C.&E.I. is located in the southwest quadrant of the crossing. Heretofore, all trains have made the statutory safety stop before passing over this crossing.

About 46 Trains Daily

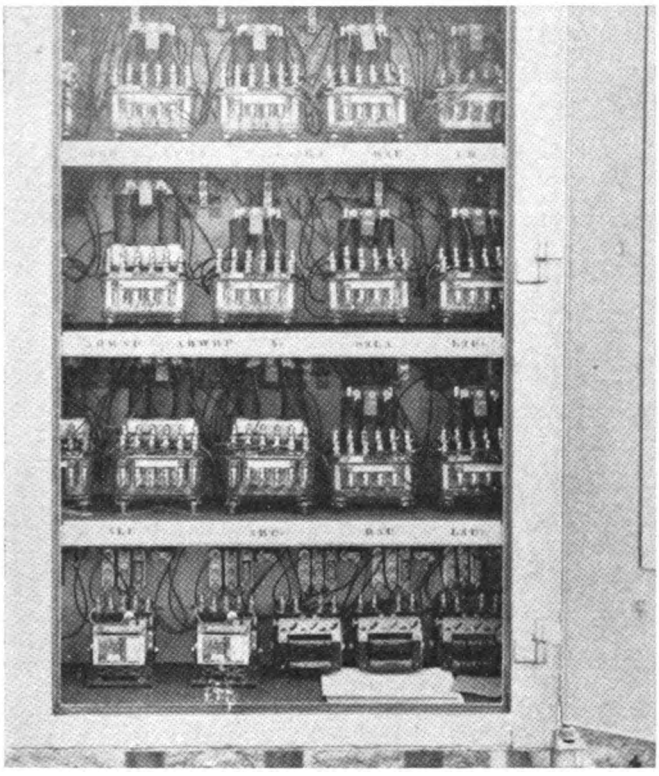
The Baltimore & Ohio operates eight passenger trains and about 10 through freight trains daily over this line, which with several extra trains total about 22 to 25 through trains daily. Also the B.&O. switch engine makes numerous moves over the crossing every day. The C.&E.I. operates eight passenger trains daily, and also another train, the Dixie Flagler, both directions every third day. Including freight trains, the C.& E.I. operates about 20 to 22 trains daily. The Pennsylvania operates a local freight train each way daily over the crossing.

Many Train Stops Made

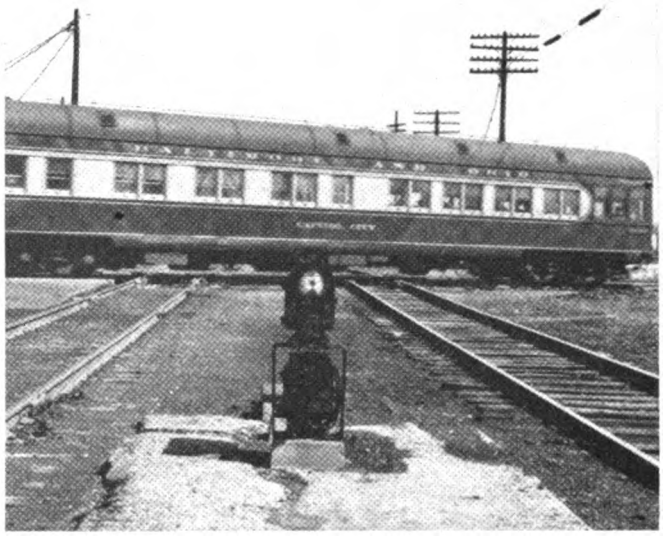
All B.&O. passenger trains stop at the station, but some of the Chicago-Florida trains of the C.& E.I. are not scheduled to stop at Vincennes. The new interlocking reduces delays to passenger trains, as westbound B.&O. and southbound C.&E.I. passenger trains heretofore made the statutory stop, in addition to the station stop. Elimination of delays to freight trains by doing away with the crossing stop has been very beneficial. This is especially important because, during the past few years, freight train tonnage has been increased and overall running time between terminals reduced. The stop at the crossing increased the difficulty for eastward B.&O. freight trains because of the ascending grade east of Vincennes. A further disadvantage was that, while freight trains were stopping and starting, they were blocking street crossings. This is now avoided



Track and signal plan of the interlocking at Vincennes, Ind.



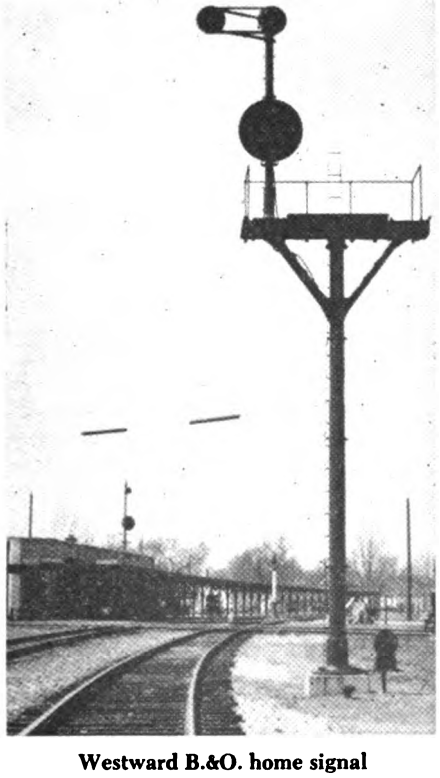
Relays are in a case at the crossing



Northward C. & E. I. home signal is a two-"arm" dwarf

since they pass through town at normal speed with no stop. A solution was to install the new interlocking, which is controlled by the operator on duty in an office in the passenger station.

The C.&E.I. has centralized traffic control through this territory, with the control machine in the dispatcher's office at Danville, Ill., 112 miles north of Vincennes. The electric switch machine on switch No. 2 at the south end of the C.&E.I. siding at Vincennes was formerly controlled as part of the C.&E.I. centralized traffic control. When the Vincennes interlocking was installed, the control of this power switch was transferred to a lever in the new interlocking machine. The C.& E.I. home signals, 1R, 1RA and 1L are controlled jointly by the operator at Vincennes and the C.T.C. dispatcher.



Westward B.&O. home signal

Simple Circuits

The control circuits of the remainder of the interlocking are quite simple. The control machine is the desk type with mechanical locking and electric lever locks.

Lever No. 4 is the master lever which is thrown to the left for a B.&O. line up, or to the right for the C.& E.I. and Pennsylvania. Having thrown this master lever for the B.&O., for example, all that remains is to operate lever 6 to the right for an eastbound train on the B.&O. main line, or the same lever to the left for a westbound train on the same track. An illuminated track diagram has lamps which indicate track-occupancy, switch position, and signal or signals displaying proceed aspects.

The interlocking is equipped with track circuits throughout, and complete electric locking is provided. On the B.&O., and P.R.R., there is a dead track section of more than 35 ft. through the crossing. Protection is provided by a trap circuit arrangement, which necessitates that when a train passes a home signal it must pass beyond home signal limits in order to release the crossing. If a switching move is made improperly or a track circuit fails, or for any reason the trap cycle is not completed, release can be effected by operating a push button above the master lever. This starts a time element relay which holds all signals at Stop until a pre-determined time interval has elapsed.

Types of Signals

The signals on the B.&O. are the color-position light type, high signals being used for home signals on the main track, and dwarf signals on the siding. The signals on the Pennsylvania are the position-light type; and on the C.& E.I., the color-light type. The relays for the control of the interlocking are the conventional type housed in sheetmetal cases on the north side of the track opposite the station. The batteries are in concrete boxes.

The interlocking was planned and installed by the Baltimore & Ohio signal forces, under the jurisdiction of W. W. Welsh, Signal Engineer, and H. A. Maynard, Assistant Engineer-Signals, Western Region. The new equipment installed was furnished by the General Railway Signal Company.