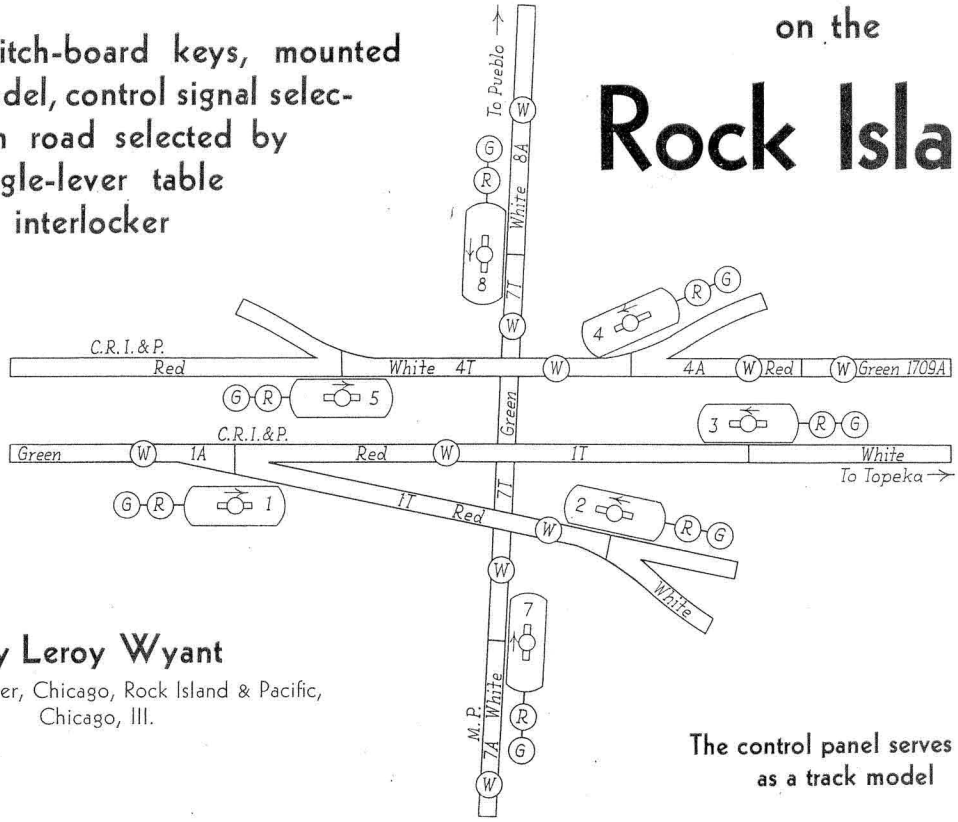
Another Unique Interlocker on the Rock Island

Telephone switch-board keys, mounted on track model, control signal selection on road selected by single-lever table interlocker



The control panel serves also as a track model

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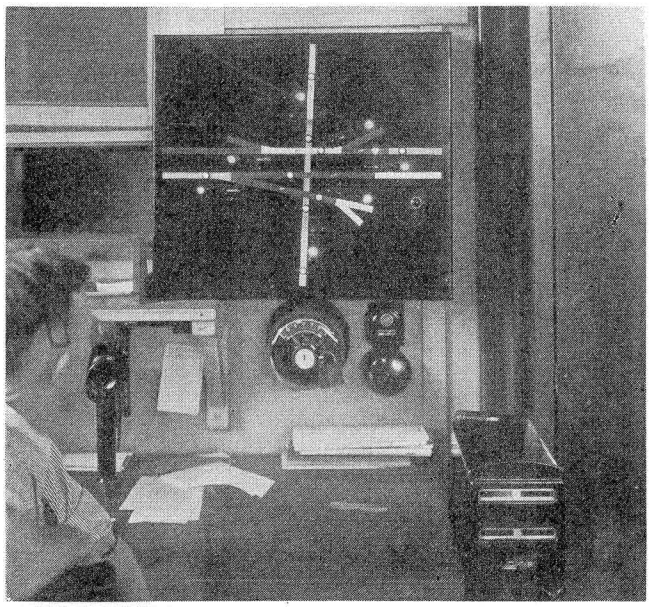
A UNIQUE interlocking has been developed and installed by the Chicago, Rock Island & Pacific for a grade crossing with the Missouri Pacific at Herington, Kan. The interlocking is semi-automatic,



Photograph of control panel shown in drawing

being under the control of one of the telegraph operators in the yard office adjacent to the crossing, who also handles train orders and commercial telegraph business and performs other duties.

The Missouri Pacific operates 6 passenger trains and 8 freight trains over the crossing daily. The Rock Island has 12 passenger trains and 14 freight trains through the plant daily. The Rock Island engine house and the yards are just east of the crossing, resulting in numerous engine movements over the crossing, and in addition the tracks over the crossing are used as switching leads constantly excepting when necessary to clear the main track for through movements or to clear the crossing for the Missouri Pacific. The Rock Island has about 220 daily switching movements over the crossing.

Prior to the installation of this new plant, all trains, as well as switching cuts, were required to stop for the crossing which introduced thousands of unnecessary train stops annually and caused constant delays. As all movements in this area are made at slow speed, the problem was to provide some simple signaling system that would permit the elimination of the crossing stops and also authorize trains to move on certain routes without the usual handicaps of the conventional interlocking plants in which all switches inside home signal limits are "hooked up." The signals are all located within 100 ft. of the crossing so as to reduce the interlocked zone to a minimum. High color-light signals are used on the Missouri Pacific, while color-light dwarfs are used on the Rock Island so as to locate the signals properly beside tracks where clearances are limited.

The interlocking equipment consists of a single-unit table interlocker, a clock-work time release, and a combined track model and control panel, which is mounted on the wall over the operator's desk. In operation, the table interlocker is first used to select between the Rock Island and the Missouri Pacific; then the individual

signal "levers" on the control panel are thrown to establish any desired non-conflicting route on the corresponding road.

Since there is considerable switching over the crossing, a siren has been installed nearby to transmit sound signals to crews of trains using the crossing. The push-button controlling the siren is located on the control panel. When the siren is sounded, any train which is on the crossing gets "in the clear" as quickly as possible.

The control panel is a track model on which the "levers" and indication lights are mounted in the same relative position as those occupied by the signals which they represent. The "levers" are telephone switch-board keys and the indication lights are telephone switch-board lights. This apparatus is mounted on the door of an ordinary steel wall-cabinet, on the outside face of which the track model is painted with Duco. The cabinet is 21 in. by 24 in. and 6 in. deep. Flexible wires lead from the terminals of the levers and lights, by way of a supporting bracket at the hinge side of the door, to A. R. A. terminals inside the cabinet, at which all wires from the outside terminate. With this arrangement the door of the cabinet can be opened to permit convenient inspection and maintenance of lever contacts, etc. This control panel was assembled in the Rock Island signal repair shop.

The table interlocker is the type ordinarily used in table interlocking machines, with an electric lock, and the usual control circuits are used to secure the desired operation. Very satisfactory operation has resulted from the installation of the plant which was placed in service April 14, 1930.

Crossing Warnings in the Sedate Seventies

Boston, Mass.

To the Editor:

The present-day agitation in regard to various kinds of grade-crossing protection, which cannot be too greatly emphasized, reminds some of the elders of a similar condition which existed many years ago. A somewhat elderly person suggested to the writer that it was his belief that bells were used as crossing warnings in the early seventies and after some search the record was found of an accident at Lincoln, Mass., in 1879, in the report of which the railroad commission stated that it was its understanding that, in some cases, bells had been arranged to ring and warn the crossing watchman when a train was approaching and "if the bells were arranged to make a louder sound, the public might also be warned even if the watchman was absent," which was the situation in the above mentioned accident.

In a previous article the "Hall Automatic Signal" was mentioned and a description of this states that a part of the system was so designed that bells would announce the coming of a train, mentioning particularly that at a station a different-toned bell was used for trains from different directions. Presumably this system depended upon track instruments (nigger-heads) as the present day track circuit was not used to any extent until the early eighties.

Although definite proof has not been found, it seems probable that the crossing bell of today was brought out very soon after the date of the above mentioned accident and it is still doing noble service.

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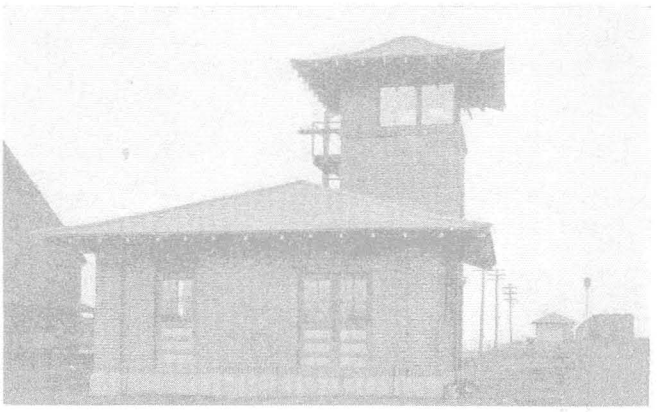
at which point another set of contactors closes, thus combining the generator and battery to furnish energy to the load. As the current demand is reduced the load is automatically switched back to the generator only and when the load is reduced below 20 amp. the motor-generator continues to run 3.5 min. during which time the battery is being charged.

The timing device mentioned previously can be adjusted between 0 and 30 min. to vary the charging time to meet requirements, however, our experience has shown that 3.5 min. is about correct for the condition of operation at Providence. This method of charging the battery is said to be ideal, as it is charged every time energy is taken from it, and just the proper amount of charge is given to keep the cells fully charged and in perfect condition. The battery has now been in service 18 months and in the accompanying illustration showing a section of the battery, attention is called to the color of the plates and the small amount of sediment in the bottom of the jars.

The capacity of the battery is sufficient to operate the classification yard at full calculated car capacity for a period of 12 hours without dropping below 1.9 volt per cell. Under test for a period of one trick of practically



The power house and control tower

constant humping, the battery operated the equipment without dropping below 2 volts per cell and with only a small drop in specific gravity.

Provision is made so that in case of necessity, the automatic equipment may be cut out and the board handled manually. The five-strap contactor at the right of the board, controls the d-c.-a-c. motor-generator and circuits which furnish alternating current to the track circuits and signal lights in case of loss of both sources of primary power.

The efficiency of the plant is considered high. From December 1 to 15 inclusive, with only 24.7 per cent of the number of cars being classified for which the power plant was designed, the over-all watts per car for the retarders, switches, track circuits, and signal lights was 60. As the energy required for the track circuits and signal lights remains constant, regardless of the number of cars humped, and the percentage of consumption due to machine losses, decreases with the increase of number of cars humped, it is safe to predict that with 75 per cent of the car capacity going over the hump, the watts per car would be reduced to below 30.

The power equipment was procured from the General Electric Company, and the storage battery from the Electric Storage Battery Company. The plant was laid out and installed by the signal department of the New Haven.