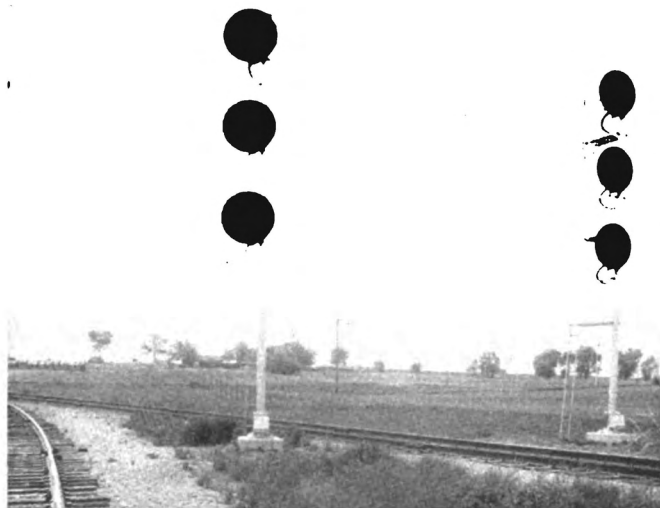


Remote Controls . . .

# Eliminate Train Stops

Soo Line interlocking includes switches at yard entrance and main line junction and a crossing with the Northern Pacific. Traffic consists of 8 passenger and 7 freight trains daily

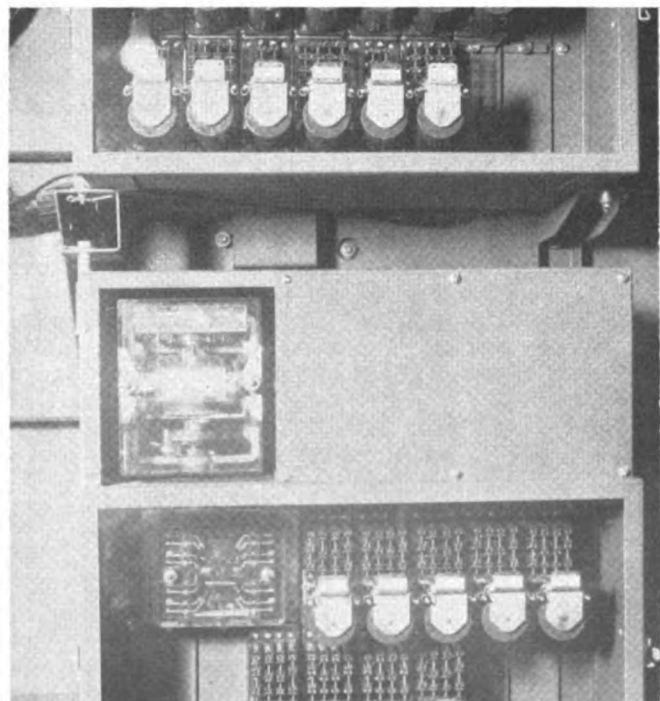
## Field Location



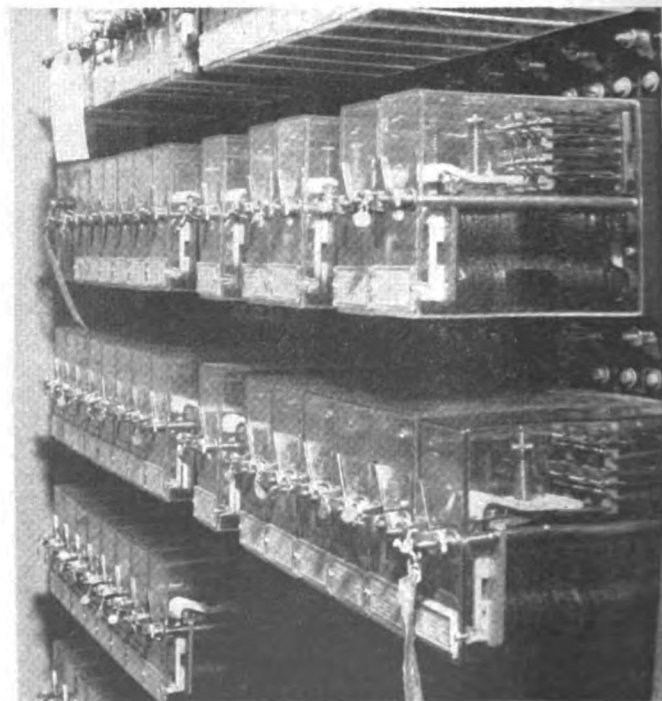
ALL SIGNALS are searchlight-type, high signals being approach lighted and dwarfs continuously lighted. Dwarfs are on yard tracks. View south from Winnipeg division



JUNCTION SWITCH for Winnipeg line. Model 5D dual-control switch machines with 24-volt heater in motor, controller compartments. Turnouts: No. 15 mainline, No. 10 yd tracks



CONTROL RELAYS and oscillator (rate is 270 per min.)



PLUG-IN RELAYS were used for ease of maintenance

## Special Features

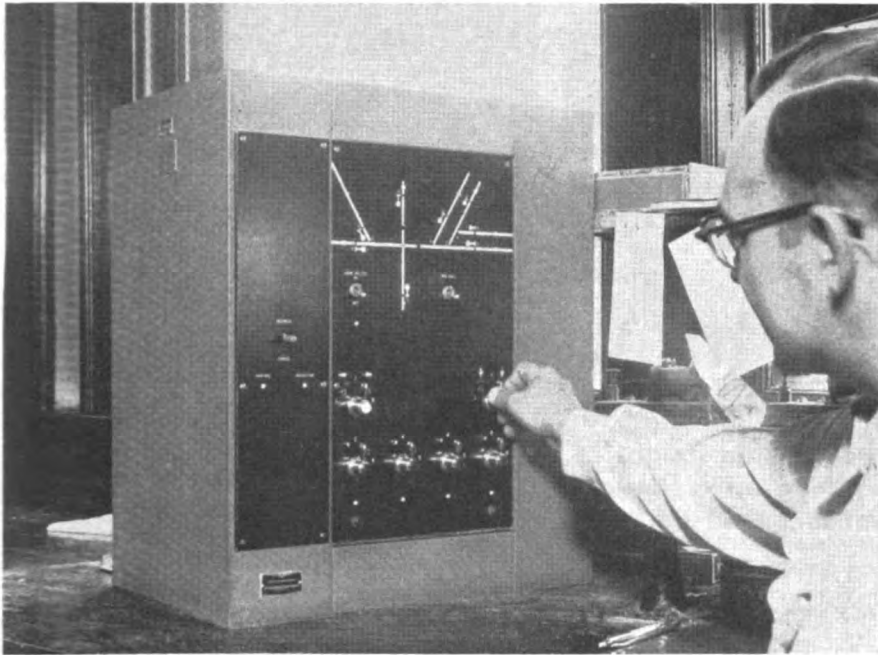
### Switch Heaters

Because of the deep snow prevalent in central Minnesota, switch heaters, remotely controlled, were installed in the interlocking. These Rail-Tel propane heaters are next to the outside edge of the stock rail through the length of the switch. The heat from the stock rail is adequate to melt snow which falls or drifts into the switch between the stock rail and the points, as well as within a distance of 6 in. or more from the rails. The heaters are controlled by a lever on the interlocking control machine in the depot. Two 500 cu. ft. propane tanks are filled twice yearly.

### OS Annunciators

The interlocking leverman, whose duties also include those of telegrapher and station agent, must have more than the normal amount of time than that provided by annunciators in the approach circuits to the plant. Therefore, two OS annunciators were installed five miles west and north of the interlocking, one on the Minnesota division and the other on the Winnipeg line. The annunciators, installed in non-block territory, are actuated by occupancy of a two-rail length track circuit. When so operated, a Morse code is put on the dispatcher's phone line, which the leverman-operator hears. Each annunciator has a directional relay so that only approaching trains operate the OS annunciator.

## Control Office



**CONTROL MACHINE** has four switch and two signal levers, as well as levers for maintainer's call and the switch heaters. Recheck and cancel lever can also be used for testing



**SYNCROSTEP OSCILLATOR**, coding and indication relays at the control machine in the Glenwood station

GLENWOOD, MINN. is a junction of the main line (east-west, Minneapolis-Minot, N. D.) with a line which runs north to Winnipeg, Man. The junction is 1.3 miles west of the depot and at the west end of Glenwood yard. Also at this point, a single-track branch line of the Northern Pacific crosses the Soo Line. An interlocking has been installed, being remotely controlled from the Glenwood depot. The operator controls the interlocking home signals of the NP, the junction switch and two high signals governing movements from the west and north into the yard, three power switches on yard leads, and their associated signals.

Before the interlocking was installed, all trains were required to make a statutory stop at the crossing of the two railroads. Switches at the west end of the yard were handled by switch tenders. Regularly scheduled trains include eight passenger and seven freight trains. A daily freight and a tri-weekly way freight operate between Glenwood and Winnipeg. During the harvest season in the fall, Glenwood yard handles considerable grain traffic, cars of wheat being assembled into trainloads at Glenwood for shipment east and south to the Twin Cities and Chicago.

Thus to reduce operating expenses and expedite train movements, by reducing delays to trains in entering and leaving the yard and eliminating train stops at the NP crossing, the Soo Line installed the remote control interlocking. As a means of obviating the necessity (and also the expense) for multiple control wires, Syncrostep is employed as the means for controlling the switches and signals, 1.3 miles west of the control machine in the depot. The 7-step simplex system handles all controls and indications over two No. 9 Copper-weld line wires.

Conventional d.c. track circuits using four-ohm relays were used. Each circuit is fed by two cells of 1,000 a.h. Edison or Eveready primary battery. Power for the low-voltage switch machines is supplied by 14 cells of Exide 200 a.h. storage battery. Six cells of 120 a.h. storage battery supply the d.c. mains. Commercial power at 110 volts a.c. is available. All wire and cable was furnished by the Kerite Co. and the signaling equipment by the General Railway Signal Co. The construction and installation work was done by railroad men under the jurisdiction of B. F. McGowan, superintendent of signals.