

A view of one of the switches at Gresham interlocking during a severe snowstorm illustrating effectiveness of the electric heaters



Electric Switch Heaters at

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Thirty-two units installed—Prove their value in severe snowstorm

THE GRESHAM interlocking plant, located near 88th and South Halsted streets, Chicago, is one of the most important on the Chicago, Rock Island & Pacific, controlling a junction of the main line with a heavy traffic suburban line and a crossing with a double-track line used by passenger trains of the Baltimore & Ohio and the Pere Marquette. Traffic through this plant is heavy, especially from 5:52 a.m. to 7:52 a.m., when 37 trains pass. During the balance of the day from 8 to 15 trains per hour cross this junction.

The tracks lie in open country, with little protection from the wind. In periods of heavy snowfall, this plant has been difficult to keep open. Even with a man stationed at each switch, it remained a difficult job because the passage of trains over a turnout on one route wedged snow and ice about the switch points in such a way that it was impossible to throw the switch until the points were again cleaned out. This condition frequently result-

ed in serious and costly train delays; a six-minute tieup on one occasion is reported to have held up 12 trains.

To cope with this situation, the Rock Island, in January of this year, applied Westinghouse heating elements to the rails of the most important turnouts in the Gresham interlocking; three No. 10 turnouts, two No. 15 turnouts, two No. 10 double slip switches, and one No. 10 movable point frog. In all, 32 heating units were installed.

Construction of Heaters

These heating elements consist essentially of a coiled nickelchrome wire centered in magnesium oxide and enclosed within a nickel silver tube 9/16 in. in diameter. The active heat-radiating element of nickelchrome wire is varied in length and in heat output according to the location in which it is applied. For the No. 10 turnouts the wire is 15 ft. long, of which 6 ft., extending from a point slightly in advance of the switch point through the distance in which the switch rail makes contact with the

stock rail, is rated at 350 watts per ft., and the other 9 ft. is rated at 125 watts per ft. The element placed on a No. 15 turnout is 18 ft. long, of which the first 7 ft. rates at 350 watts and the remainder at 125 watts per ft. On the movable point frog and on the center points of the slip switches a 14-ft. unit is doubled back upon itself and rates uniformly throughout at 350 watts per ft.

The heating tube is secured against the web of the rail under the ball by "VV" conduit clamps held by 1/4-in. stove bolts running through holes drilled in the web. The elements are non-rigid. Flattening for special clearances and the making of short-radius bends for the double-back was done in the shops at the time of assembling the complete units.

At either end of the heating elements a brass male connection is silver-soldered, which enters a female connection 1 3/8 in. in diameter and approximately 4 1/8 in. long that completely encloses the terminal contacts. From the heating wire a monel rod leads to a contact with the terminal brass insert which is seated in a

