SPECIAL INTERLOCKING CONTROLS

"At interlockings or in extensive C.T.C. track arrangements, have you provided special controls, so that a route through certain switches in secondary tracks can be established for switching movements back and forth under authority of opposing signals displaying proceed aspects independent of track occupancy, but dependent upon switch position? If so, how are the controls set up, what aspects are used, and what are the requisites for knocking down the controls to restore normal operation?"

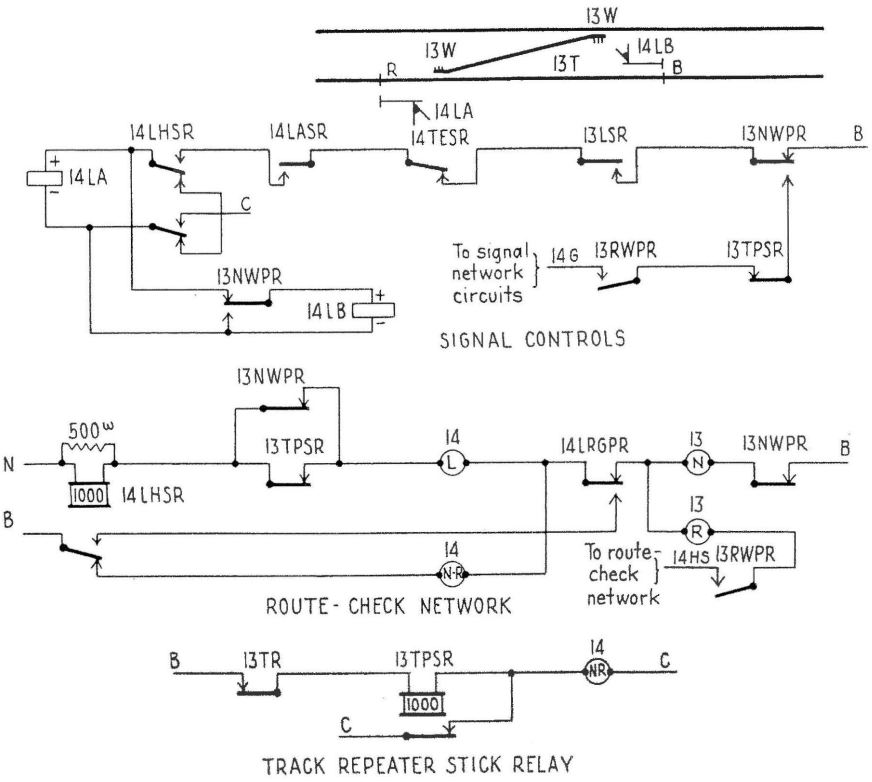
At North Milwaukee, Wis.

By P. V. MATHER
Signal Inspector
Chicago, Milwaukee, St. Paul & Pacific
Milwaukee, Wis.

AT our interlocking at North Milwaukee, Wis., provision has been made to permit switching on certain secondary tracks under authority of opposing signals independent of track occupancy, but dependent upon switch position.

By referring to the accompanying diagrams, it will be noted that a special feature is provided for the control of the LHSR relay to bypass the TPSR relay through a front contact of the NWPR relay, to insure normal position of the switch. The 13 NWPR and 13 RWPR relays are standard normal and reverse switch-repeating relays. Also, the 14 LRGPR relay is a standard red signal-repeater relay. Standard restrictive aspects are displayed for the movements.

Normal operation is restored in 30 sec. by placing the signal lever to the Stop position which, in turn, actuates the automatic time-releasing circuits, thereby permitting a change in lineup.



Signal control, route-check and track-repeater stick circuits

At Two Plants

By A. P. HIX
Signal Engineer
Terminal R. R. Association of St. Louis
St. Louis, Mo.

IN two of our interlocking plants, we have a track over which many switching movements are made daily to and from freight houses and storage yards. In each case, there is a turnout between two opposing signals controlled by the right or left movement of the signal control levers. A major portion of the movements out of the yards extend beyond the entrance signals. Independent operation of the signals would require, while switching is being done, almost constant attention by the signal operators, and interfere with their other necessary duties. Attending to other duties at those times would, in all probability, result in delay to the switching operations.

In order to facilitate the switching operations and eliminate interference with other duties, the circuits are so arranged that, when any movement is to be made to or from the yard tracks, the opposing signals will, when operated,

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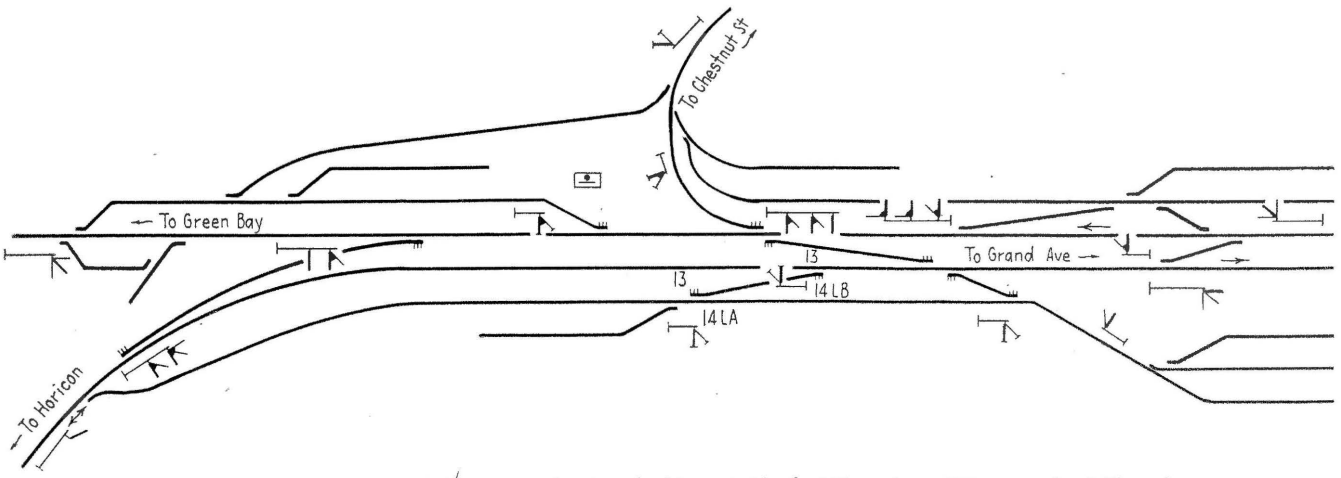

Diagram of track and signal layout at the interlocking at North Milwaukee, Wis., on the Milwaukee

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simultaneously display proceed aspects and, when a movement is to be diverted through a turnout, only the signal governing the movement through the turnout will, when operated, display a proceed aspect. In each of the above situations, opposing proceed espects are controlled by operating the signal lever to the "left," which also locks the turn-out-switch lever in the normal position, and the proceed aspect for movement to and through the turnout is controlled by the signal lever to the "right", which also locks the turnout-switch lever in the reverse position.

Operation of signals is not affected by track occupancy. The signals are the dwarf type and display either red or yellow lights. The yellow light indicates "Proceed at Restricted Speed." The simultaneous display of opposing proceed aspects under the conditions described above, in effect, simply removes the turnout switch and establishes a track in which there are no switches and, consequently, there is no necessity for any signals, as priority of train or engine movements in situations as above is usually conferred by verbal instructions and/or hand signals from the yardmaster, or other employees engaged in the yard switching operations.

COMMUTATORS

"What is the best way you have found to clean the commutators of electric motors in switch machines, signal or crossing-gate mechanisms?"

By E. KIMPTON
Signal Maintainer
Canadian Pacific, Cobourg, Ont.

FIRST and foremost, I would not recommend the use of crocus cloth in the cleaning of motor commutators, as I have found this to be a direct invitation to trouble. A motor, when first installed and properly cleaned, generally takes in the condition of commutators, such as high mica, and I have usually found new or repaired motors received from our own signal shop practically perfect.

Over a period of almost 30 yr., I have paid particular attention to older and more experienced signalmen, and have found their ideas a good guide in maintaining electric motors in good shape while in service. The most vital point I have found in the maintenance of low-voltage motors, such as in G.R.S. 2A signal mechanisms and U.S.&S. switch machines—both the older and more modern types of equipment, including the G.R.S. Model 5D switch machines — is to keep the commutators free of carbon dust from the brushes. If the commutators get somewhat dirty, the power should be cut off and two or three drops of clear gasoline placed on a narrow strip of chamois and the commutators carefully cleaned; the gas will dry quickly. While performing this task, a narrow strip of extra-fine sandpaper should be used with the smooth side to the commutators, to sand the brushes lightly, as this is where the evil may lie. If this fails to remedy the situation, the brushes should be changed. With the proper grade of brushes, by being careful not to use oil too frequently on motor bearings, and with the correct tension on the brushes, I see no reason for dirty or gummy commutators developing.

In answering this question, I have only spoken from my own experience. The tips of my signal supervisor, and those which some of the old timers have given me, have and still do prove quite helpful.

UNUSUAL SIGNALS

"What is the most unusual modern fixed wayside signal you have ever seen, and for what purpose is it used? Please explain and send snapshot or simple sketch if possible."

A Traffic Signal

By H. P. HANCOCK
Supervisor of Signals
Norfolk & Western, Roanoke, Va.

THE most unusual modern fixed wayside signal that I have ever seen was used as a traffic signal at a street intersection in Ashville, Ohio. This signal displayed a full-round red disk when the "danger" aspect began and assumed a crescent, decreasing from what would be a full moon to a new moon when the "danger" signal changed to green. The same aspect was then assumed for the "proceed" or green indication. By this method of signal indication, one could always look at the size of the signal displayed and know with certainty the amount of time left before the signal indication would change.

INSTRUMENT CASE LININGS

"What are the most effective types of linings you have used for sheet-metal instrument cases and houses, with reference to their geographical location, condensation problems, etc? With appropriate linings, should these housings be ventilated or not?"

Celotex or Similar

By F. A. TEGELER, JR.
Acting Signal Engineer
Western Pacific, San Francisco, Cal.

THE Western Pacific extends from sea level through mountainous terrain and over the Nevada desert. In addition to the considerable variation in altitude, the territory also extends through that portion of the United States that is subject to extreme temperature variations.

The humidity at sea level is quite high, whereas in the desert it is very low. Due to these extreme variations, we believe that all instrument houses should be lined, preferably with some type of insulation similar to Celotex. All instrument housings should also be equipped with adjustable ventilators and screens. Regardless of lining, all houses should be equipped with ventilators.

Unlined, Ventilated Cases

By H. L. KINCAID
Electrical Engineer*
Kentucky & Indiana Terminal
Louisville, Ky.

WE use only unlined, ventilated relay housings, and we have experienced no trouble whatever from condensation. Since our geographic location is such that we do not have severe cold winters, we have had no trouble from temperature variations.

The possibility of trouble from condensation, however, is eliminated by completely sealing the cable openings in the base where the relay cases set, with an asphaltum sealing compound. (All cables come through the bottom of the relay cases.) By sealing these cable openings, we prevent cool air from below ground entering the relay case and thus causing the temperature differential which, of course, prevents condensation. The temperature inside the case is the same as outside the case, and our vents are left open.

*Mr. Kincaid is also in charge of signaling and communications—Editor