Marker Lights on Automatic Signals

"Where marker lights are used on automatic signals, what means is employed to check whether the lamp in the marker is burned out? Is this lamp burned at the same voltage as the other signal lights?"

Sees No Necessity for Checking Marker Lamps

By F. H. BAGLEY

Signal Engineer, Seaboard Air Line, Savannah, Ga.

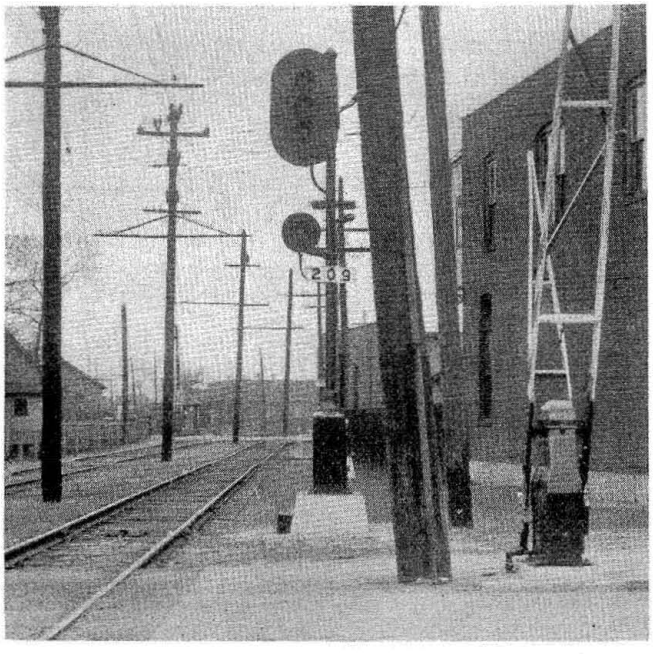
ABSOLUTE signals located in A. P. B. territory on the Seaboard Air Line have no marker lamps. Permissive signals, however, do have marker lamps. Theoretically, the absence of the marker light gives an absolute signal indication, but it is found from a practical operating viewpoint, that a marker light out may be observed as an improperly-displayed signal, and a permissive signal with marker light out may be observed as a permissive signal. The consequences of a train accepting a permissive signal indication without the marker light burning would be no different than if the marker were burning. There appears to be no necessity to check whether the lamp in the marker is burned out. On the Seaboard the marker lamp is the same type of lamp as the indication lamp and is operated on the same voltage.

South Shore Line Uses White Marker Lamp With Light-out Protection

By B. L. SMITH

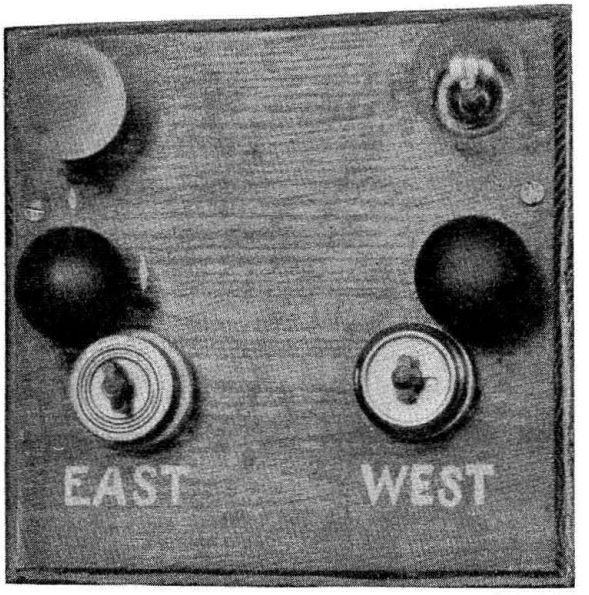
Signal Supervisor, Chicago, South Shore & South Bend, Michigan City, Ind.

AT Hammond, Ind., the Chicago, South Shore & South Bend has a signal which functions as an automatic signal, as a distant signal for the State Line interlocking plant and also as the westbound train order "board" for Hammond station. All trains stop at this station. A white marker light is attached to the signal which makes it positive and designates it as an order "board."



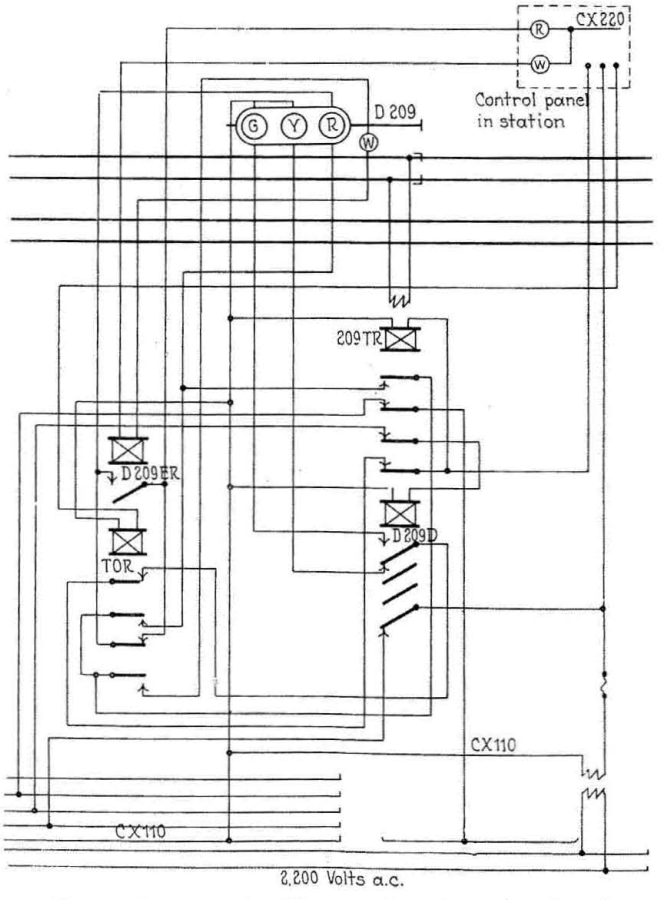
Signal *209* with marker lamp at Hammond, Ind.

When the station agent wishes to set the train order "board," he turns the switch in the station which gives the white and red indication. These units are so inter-



Snap switches and indicating lamps for control of marker light and train order signal

connected, that, if the white light should fail, the red would also go out, making the signal indication a positive stop. If the leverman in the interlocking plant



Circuit diagram for Hammond train order signal

should set his lever for either green or yellow, the signal would still show the red and white indication. Should the red light burn out, the white lamp would not be affected.

Burning the Lamp at Substantially Below Rated Voltage Reduces Possibility of Burn-Out

By F. B. WIEGAND
Assistant Signal Engineer, New York Central, Cleveland, Ohio

WE have used marker lights for the past 20 years or more on automatic signals for the purpose of distinguishing between "stop-and-proceed" and "stop" signals, and we have never considered it necessary to provide a check to determine whether the lamp is burned out or not. The possibility of this lamp burning out is reduced by burning it at a lower voltage than the voltage at which the operating lights burn. In color-light territory the voltage at the operating light is 7.8 and at the marker it is but 5, although both lamps are rated at 8 volts.

In the event the marker light burns out, if there is any hesitancy on the part of the engineman, trains should stop as the signal may be regarded as an imperfectly displayed signal; however an interpretation could be placed on Code Rule 27, adopted January 17, 1928, which would permit the engineman to proceed, "except that when the day indication is plainly seen it will govern." The marker light tends to complete the signal aspect; the operating light gives the indication.

The greatest advantage of having a marker light is, as the name implies, the marking of the signal location, should the operating light burn out. For this reason it should always be of a color which will give the most restrictive indication that can be given by the operating light. The lower voltage insures longer life and less possibility of a burn-out.

H. E. Brashares, assistant superintendent of signals, Great Northern, is of the opinion that, "No light is necessary on a marker for either purpose. This marker has no effect on a train unless the signal to which it is applied displays the stop indication, and under such circumstances there is no difficulty for the engineman to determine whether the signal is a permissive or an absolute one."

Track Circuit Shunts at Switches and Foulings

"For connections between the rails and switch circuit controllers for track shunts, what are the advantages or disadvantages of using: (1) bare stranded cables stapled to ties; (2) parkway cable buried; (3) insulated wire in trunking nailed to switch tie; (4) or insulated wire in trunking on stakes?"

Parkway Cable Is Safer Because It Cannot Be Damaged by Dragging Equipment

By A. J. YARRELL
General Signal Inspector, Texas & Pacific, Dallas, Tex.

IN my opinion underground parkway cable forms the most satisfactory connection between rails and switch circuit controllers for track shunts, both from the standpoint of reliability and maintenance economy. In many instances, dragging equipment is responsible for switches being damaged to such an extent that they become dangerous. The switch circuit controllers, together with the necessary shunt wires, are installed to provide protection in such cases.

It appears to me that when the shunt wires are placed where they may be damaged by the same dragging object which damages the switch, their purpose has been defeated to a certain extent. The first cost of installing parkway cable, when compared with other methods, is somewhat greater. However, the lower maintenance cost offsets this to some extent, and I believe the added protection alone is worthy of the additional cost. In using (1) stranded cable stapled to the ties, (2) insulated wire in trunking nailed to the switch tie, or (3) insulated wire in trunking on stakes, the disadvantages in each arrangement are that the conductors are continually being subjected to a certain amount of abuse by the track forces and are located where they may be damaged by dragging equipment.

Favors Bare Stranded Cables Stapled to the Ties

By L. E. CARPENTER
Signal Engineer, Pennsylvania, Philadelphia, Pa.

SHUNT connections on track circuits should have high conductivity, be easily accessible for inspection and at the same time not be excessively costly to install. The bare stranded cables stapled to the ties (1) meet these requirements better than any of the other schemes referred to in the question as methods (2), (3) or (4). They can be readily inspected to determine if they are intact without making an operating test. The cost of installation and maintenance is comparatively low as there is no conduit nor insulation. The only possible disadvantage, but one which would not apply to all cases, is the greater probability of an accidental shunting of the track by workmen getting tools across the bare conductors, or by the connections becoming short-circuited by cinders, etc. This objection is more imaginary than real, as it has not proved troublesome in practice.

Electric Approach and Stick Locking Features

"What is the difference between approach and stick locking? Why is the latter sometimes used instead of approach locking?

The Circuit Differences and Relative Flexibility Are Clearly Defined

By OSCAR E. MILLER
Circuit Engineer, Cleveland, Cincinnati, Chicago & St. Louis, Cincinnati, Ohio

APPROACH locking and stick locking (sometimes called "approach-stick" locking) are both designed to prevent the moving of a switch or derail in the route of an approaching train, in case the leverman restores the home signal to normal and attempts to change the "line up" which has been set up for the approaching train. These two types of electric locking differ in that stick locking is effective on the clearing of a signal, while approach locking depends on the presence of a train on an "outside" or "approach" circuit located in approach of the home signal.

Stick locking may be applied advantageously in territory where there are no track circuits outside the home signal limits. As soon as the leverman clears a home signal, the stick locking becomes effective. The route is then tied up until it is released by the train passing on to the "inside" track circuit. In the event that the train does not accept the signal, the route is usually released by means of a clockwork time release, after the expiration of a time interval. Stick locking has the disadvantage of being rather inflexible, for if a home