



What's the Answer?

An open forum for the discussion of maintenance and construction problems encountered in the signaling field. *Railway Signaling* solicits the co-operation of its readers both in submitting and answering any questions of interest.

To be answered next month

1. *What methods do you use to prevent trouble in starting a motor car in cold weather?*
2. *Do you rewind your own relay and slot coils? What kind of a coil winding machine do you use?*
3. *What mileage of road on your railroad is now operated by signal indication without written train orders and what methods are used?*
4. *When out on a motor car do you watch the automatic signals on your territory to determine the approach of trains? Are special indicators provided to inform motor car operators when trains are approaching?*
5. *Do you believe that it is advisable to eliminate intermediate wayside automatic block signals where train control with continuous cab signals is in service?*

Marking Signals When Out of Service

"Do you use any special means of marking a signal that is temporarily out of service so that trains can pass without coming to a full stop?"

No Distinguishing Marker Is Employed—All Interested Are Notified by Bulletin

WHEN a signal is to be taken out of service temporarily, a bulletin is issued stating the time when this will be done and the blade and lamp is removed at such time. Instructions are given in this bulletin as to the manner in which trains shall be operated when the signal is out of service.

A manual block station may be closed for certain periods of a day or month. The rule governing this operation is as follows:

"Unless otherwise provided, a signal station must not be closed until the block in each direction is clear of all trains.

"To close a signal station the signalman must give '9'

to the next signal station in each direction and when he receives '13' enter it on his block record with the time it is received from each signal station.

"The block signals must then be cleared, all lights extinguished and the block wires arranged to work through the closed signal station."

Albany, N. Y.

W. H. ELLIOTT,

Signal Engineer, New York Central.

Rules Permit Passing a Stop and Proceed Signal If a Marker Letter Is Displayed

ON our earlier installations of automatic signals, the letter "C" was painted on the reverse side of the number plate and when this indication was displayed enginemen were authorized to proceed by a stop signal without stopping, at a slow rate of speed and under full control, prepared to stop short of train or other obstruction, this being covered by Rule 806 of our book of rules, reading as follows:

"A train stopped by a 'Stop and Proceed' signal may proceed at once, but must run cautiously, expecting to find a train, open switch, broken rail, or other obstruction in the block."

On our later installations the solid number plate referred to above has been replaced by the multiple unit plate, but we have not changed our rules up to the present time. In order to take care of this situation we would probably attach a grade indication to a signal if it were taken out of service for any length of time and the same instructions and rules as quoted above, would apply.

There is no objection that I can see to using a special type of marker for this purpose and in our case we would use practically the same type of marker as we use for grade indications.

Roanoke, Va.

D. W. RICHARDS,

Signal Engineer, Norfolk & Western.

Rules Provide Number Plate with Yellow Back Suspended from Reversible Clamp to Allow Trains Passing Stop Signals

THE Southern Pacific, Pacific Lines, use a horizontal number plate, the back of which is painted yellow. It is suspended from a clamp in such a way that it may be readily reversed to show yellow to approaching trains.

The following rule in the transportation book governs this arrangement:

"When a number plate is reversed showing yellow and signal indicates 'stop' train may, without stopping, proceed with caution through the block."

This practice has been in effect for over 20 years with very satisfactory results.

San Francisco, Cal.

R. D. MOORE,
Assistant Signal Engineer, Southern Pacific.

Proper Notice by Bulletins Should Be Given of Any Signal Which Is Temporarily Out of Service Before Blade Is Removed

WHEN a signal is temporarily out of service for any time, the fact that the signal is out of service should be bulletined to the trainmen through the regular channel and the blade should be removed from the signal. In case the blade is removed from the signal and no bulletin issued, the signal is an improper signal and must be considered to be at its most restrictive indication. In the absence of a blade at an automatic block or home signal the train must come to a stop and be governed as if the signal was functioning properly and displaying its most restrictive indication, providing, of course, there was not a bulletin posted.

Where a marker of some kind is used so as to prevent trains stopping at the block, temporarily out of service, there is a great danger of the maintainer using the marker before he determines what is actually wrong and makes sure the signal is not indicating properly. When there is any doubt, the signal should be displayed in its most restrictive indication. A marker should not be used, as it is placing a temptation in the hands of maintainers to cover up failures without first determining what is actually wrong.

Russell, Ky.

J. D. KEILEY,
Supervisor Maintenance, Chesapeake & Ohio.

Reducing Winter Maintenance Troubles at Interlockers

"What special attention do you devote to the maintenance of switch machines in cold weather?"

Denatured Alcohol Will Prevent Condensate Freezing in Air Lines—Frost Trouble in Low-Voltage Machines Can Be Reduced by Burning a Small Lamp Constantly

ON electro-pneumatic switch machines it is a good practice before cold weather sets in to completely dismantle each machine and thoroughly overhaul it. All moving parts and surfaces should be thoroughly cleaned of all old oil, grease and dirt. After the machines have been thoroughly cleaned, all parts which show defects should be replaced and the machine then greased and lubricated and put together. The packing and gaskets, where necessary, should be renewed. Particular care should be given to see that the strainers are cleaned and all foreign matter removed.

When the temperature drops, denatured alcohol is placed in the pipe lines at the source of supply, so as to prevent the condensate from freezing. Careful attention should be paid to blowing out the air storage drums so as to prevent any accumulation of water.

The principal trouble with direct acting electro-pneumatic switches is experienced in the morning, just as the sun is coming out, which, at times, causes ice to form on the pin valves, making the machine inoperative. When this happens the pin valves have to be taken out and the ice removed. Under no account should fire be built under the machines to thaw them out.

In low-voltage switch machines, trouble due to frost accumulating in the machine is sometimes experienced. This can often be overcome by placing blotters or some other similar absorbent in the machine. Another remedy is to place a small electric bulb in the machine and keep it burning.

Russell, Ky.

J. D. KEILEY,
Supervisor Maintenance, Chesapeake & Ohio.

Those Responsible for the Operation of Interlocking Plants Are Kept Advised as to Weather Conditions by Operating Officers

EACH interlocking location is equipped with snow fighting apparatus which includes shovels, brooms, picks and thawing outfits. The amount at each location depends upon the size of the plant. Our operating people keep those responsible for the operation of interlocking plants advised relative to the weather conditions and if they deem it necessary that help be called to prevent interruption of operation, they do so.

In the matter of lubricant, we use black oil in the winter, which is thinned with kerosene. We have not found it necessary to use any special arrangements on account of frost troubles. On some of our power switch movements we have installed a special cap over the operating arm. Previous to the installation of these caps, we experienced one or two failures which the caps have eliminated.

Albany, N. Y.

A. H. RICE,
Signal Engineer, Delaware & Hudson.

Proper Lubrication and Tight Fitting Covers on Machines Needed During Cold Weather

THERE is little special preparatory work that needs to be done in advance of the cold weather season on account of the general maintenance program which anticipates troubles that might occur at any season. However, some items should receive particular consideration at this time of the year.

First of all, it is essential that all parts are well lubricated. Machine covers and gaskets must be in good condition, all bolts and lag screws should be tight. There should be good drainage at switch locations and surplus ballast at switch ties should be removed in order that the snow can be cleaned out easily.

Sandusky, Ohio.

H. FAIRFIELD,
Signal Maintainer, New York Central.

At Certain Locations Switches Are Operated Frequently in Severe Cold Weather to Prevent Freezing of Connections

WE make it a practice to examine and clean electric switch machines to remove all old oil or grease and to see that contacts make firmly. Where A. R. A. switch adjustments (Drawing 1390) are used, it is good practice to wrap a piece of "gunny sack" around the switch rod and adjustment and fasten the ends of it to the switch rod with some marlin to keep out the snow and ice. Where the enclosed type of switch adjustment is used this is not necessary.

We use a special grade of oil on switch movements known as "Polar Ice" machine oil, which will not gum up or freeze. We also make a practice of having switches operated frequently in severe cold weather, at locations where this is possible, to prevent connections freezing fast.

We have also found that frosted commutators on switch motors can be prevented by making a band of felt to fit around the motor commutator with slots