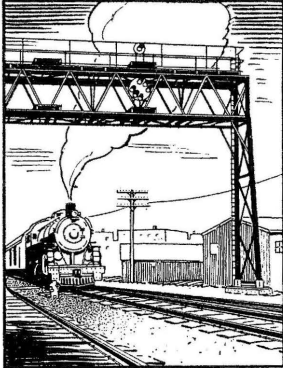


# What's the ANSWER?

## To Be Answered in a Later Issue



Contributions paid for in cash or by a subscription to **Railway Signaling**

If you have a question you would like to have someone answer, or if you can answer any of the questions below, please write to the editor.

(1) *What is the best procedure in handling parkway cable installations, i.e., how are the reels set up, and lengths cut; is this done at headquarters or at the field location, and are bootleg rail outlets attached at headquarters or in the field?*

(2) *What is the best method to be used by one man alone when making temporary repairs or permanent repairs of line wire breaks?*

(3) *When installing a signal for the protection of a spring switch in the facing-point direction, how far from the switch should the signal be located?*

(4) *What has been your experience as to the success in using manual cut-out, push-button switches operated by trainmen for the control of highway-crossing signals, to eliminate unnecessary false operation of the signals during switching movements?*

## Unusual Signaling Trouble

*"What unusual cases of signaling trouble have you encountered? Explain how it was located and corrected."*

### Spikes and Nails

G. E. BECK

Signal Supervisor, New York Central,  
Toledo, Ohio

The details of an unusual piece of trouble and a hard one to locate are as follows: A new switch was being installed, and the rail was changed from 105 lb. to 127 lb. Signalmen had finished the bonding, the track was restored to service, and everything worked satisfactorily until about midnight, when a movement was made through the switch, after which the

track relay would not pick up. The trouble was finally located where a track spike, driven after a jumper bond had been installed, contacted a nail used to hold the jumper bond in place. The contact between the nail and the spike was evidently not a good one until a train movement had caused the rail and spike to better the contact to the nail and jumper bond.

### Frost Trouble

H. C. DUNN

Huntington, W. Va.

Through the past years, I have experienced, in the fall and spring, when frosty nights prevail, several cases of signal and switch interruptions caused by frost or ice gathering on the contacts of switch machines. We have tried from time to time different remedies, but it seems that they all proved nil. This year we are trying canvas covers, 7 ft. by 9 ft. in size,

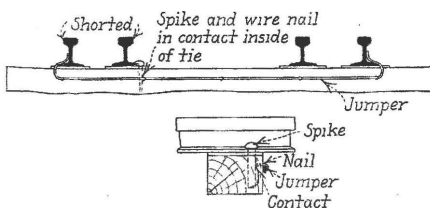
covering the switch machines from end to end, and from rail to outer edge, in fact overlapping the machine sufficiently to permit the covers to lay flat on the ground, with the edge covered with sand or ballast. These covers are anchored against the rail by 60-penny spikes driven in the switch timbers and slightly bent over. This permits easy access at all times and yet allows the canvas to be placed back over the machine without disturbing the ballasted edge. This year has been a bad frosty year in our section of the country and so far we have not had one case of trouble, where canvas was installed, attributable to frost. I would like to hear from some of the other boys on their experiences.

### Defective Battery Terminal

J. F. SCHMILL

Signal Maintainer, Texas & Pacific,  
Maringouin, La.

I am submitting one of the unusual cases of signal trouble that I have been confronted with during my 17 years of signal experience. On Christmas night, 1934, I was called to in-



Cause of mid-night trouble

investigate a report of a dark signal which had caused a delay to a passenger train. After a complete check and inspection of all apparatus involved in the circuit everything was found to be functioning properly.

This particular location was in A.P.B. territory equipped with G.R.S. Type D three-position light signals using 9-volt storage batteries for stand-by power on charge from a Type B, Size 116, 13.5-volt, 0.35-amp. rectifier. The lighting system was approach controlled in connection with a Type W power-off relay, which was controlled through a contact on a stick relay. The stick relay was connected to battery locally, being normally de-energized, energizing on the approach of a train and thus supplying a-c. for the lamps as well as the power-off relay as long as it is functioning.

As the elements of the storage battery were invisible, I placed my voltmeter across the main terminals noting the instrument carefully while I tapped each individual terminal lightly with my pliers until suddenly a deflection was noticed when I tapped a certain terminal. I replaced the battery, and the old battery was sent to the shop where it was opened up for inspection and found to be defective.

It was assumed that the output of the battery during its improper operation was insufficient to energize the stick relay, although the output of the battery during that same operation was sufficient to retain all of the instruments that it controlled in their normal position.

## Locating Intermittent Signal Trouble

E. S. LAND

Signal Maintainer, St. Louis-San Francisco, Neosho, Mo.

No doubt every maintainer who reads this, if he has been maintaining any length of time, has experienced at some time or other, the difficulty of locating intermittent signal trouble, which sometimes occurs in underground wires in trunking, and in bootleg connections at signal and battery locations. I have found in my experience that the quickest and most efficient manner of locating this kind of trouble, where there is only one person present, is to use a long pair of meter lead wires. These should be long enough to permit the maintainer to carry the meter around the location with him while shaking bootleg wires or pounding on trunking, with the lead wires connected to the circuit in the signal case. In most cases this

kind of trouble will be due to bad connections, or openings in wires inside insulation, or in trunking where it cannot be seen. Ordinarily, when the wire containing the trouble is shaken or jarred it will show a deflection on the meter needle. The object of the long lead wires is to allow the maintainer to watch his meter while shaking or jarring the wires in the

circuit. A piece of lamp cord, approximately 30 ft. long, with clips on one end and meter connections on the other, will serve the purpose very nicely. Maintainers will find these long leads will come in handy, and will help to locate this kind of trouble promptly, saving both time and extra work, and perhaps in some cases unnecessary delays to trains.

## Instructing Enginemen on Signal Indications

*"How are enginemen and trainmen on your railroad instructed in the indications of signal aspects and proper observance of such indications? How often are they examined as to their understanding of signal indications? How is such examination conducted?"*

### Instruction Car Provided

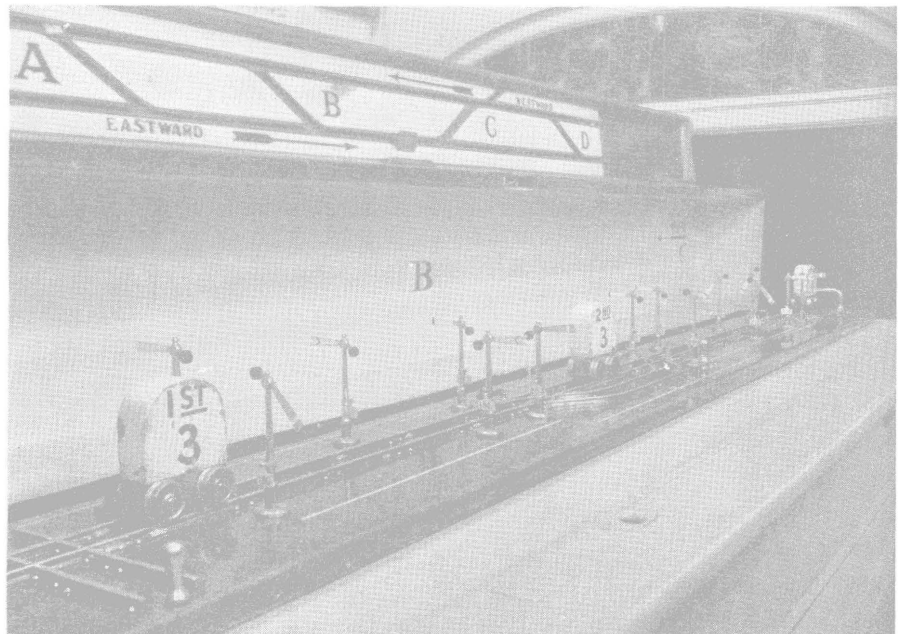
R. D. MOORE

Signal Engineer, Southern Pacific, San Francisco, Cal.

For the past 30 years the Southern Pacific has operated an "instruction car" for the purpose of instructing employees in the rules pertaining to train operations. The present car is an observation car, remodeled to pro-

vide a classroom and living quarters for the instructor and his assistant. Part of the instruction is, of course, on block signal rules and, to facilitate these instructions and to assist in explaining the operation of the block system, a working model is used. It represents about six miles of

railroad with sidings and a complete arrangement of automatic block signals. The signals are electrically controlled and as the instructor moves the miniature brass cars along the track circuits, the class can see the signals function just as they do in actual practice.



A working model of a block system is provided for the instruction of enginemen

vide a classroom and living quarters for the instructor and his assistant. Part of the instruction is, of course, on block signal rules and, to facilitate these instructions and to assist in explaining the operation of the block system, a working model is used. It represents about six miles of

been instructed. Class periods are of three hours duration. One period, which is attended by men in all branches of operating service, is devoted to a review of general rules, and interlocking and block signal operation. The other period covers air

(Continued on page 362)