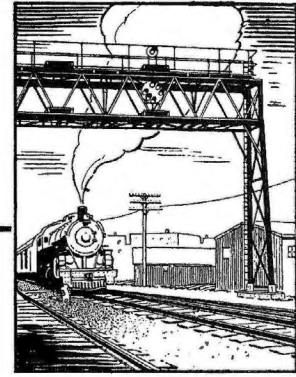


# What's the ANSWER?



## Motor Car Lamp Power

*"What arrangement is most practicable for power supply for a head lamp and tail lamp on a track motor car?"*

### Automobile Headlight

C. P. MAXWELL

Signal Maintainer, Canadian Pacific,  
Quebec, Que.

I have been using an automobile headlight bracketed to the front framework of the motor car, the power source consisting of five dry cells in series, packed in a small wood box bolted to the floor boards in front, where it is easy to service. The lamp is a 6.8-volt bayonet base

lamp. For a tail lamp, I have found it convenient to use a Delta Red-Bird electric lantern with a red color glass. The lamp is a 2.4-volt lamp energized from two dry cells in series. This arrangement is both efficient and dependable. By having the leads from the battery to the headlight about 15 ft. long, the headlight also can be used as an aid in inspecting switch boxes, relay boxes, pole-line connections etc., at various locations.

## Problems of Four-Indication Signaling

*"Under what circumstances, when four-indication is substituted for three-indication automatic block signaling, does it become necessary to display successive approach aspects? Successive approach-medium aspects? What do you consider to be the disadvantages and advantages of displaying successive approach aspects? Successive approach-medium aspects?"*

### Other Available Aspects

F. B. WEIGAND

Signal Engineer, New York Central,  
Cleveland, Ohio

First of all, we must have a clear understanding of what is meant by three indications and four indications. I assume that it is generally understood that by three-aspect indications is meant successively the indications "Proceed," "Approach," and "Stop," and that by the term four-aspect indications is meant "Proceed," "Approach at Restricted Speed," "Approach" and "Stop."

Generally, the three-aspect system is all that is required. However, when the traffic becomes dense, greater flexibility of train movement can be had with four than with the three-aspect indications as such a system avoids stops; it keeps the trains moving but at a slower speed,

and this has the advantage of increasing the track capacity. The latter conclusion was reached by an A.A.R. Signal Section committee some few years ago, which committee made an exhaustive study of the matter.

### Successive Approach Indications

Successive approach indications can be avoided if other available aspects, such as yellow over green—indication "Proceed preparing to pass next signal at medium speed," yellow over yellow—indication "Proceed prepared to stop at second signal," or green over yellow—indication "Proceed prepared to pass second signal at medium speed," are used, as these indications all have to do with regulating the speed of trains. There may come a time, however, in terminal territory dur-

### To Be Answered in a Later Issue

(1) *In your opinion, should the controllers on rock-slide fences or flood detectors control signal line circuits directly, or should the detectors control a relay, fed from a separate battery, and this relay control the line circuits? What are the advantages and disadvantages of each type of control?*

(2) *Should dragging equipment detector units be mounted on long track ties or on timber foundations set independent of the ties and rail?*

(3) *Do you have, in your train and interlocking rules, a rule forbidding the practice of a lever-man taking a route, or portion thereof, away from a train, engine or car which has entered the route, before he has ascertained whether or not the train is clear of the limits of the interlocker?*

(4) *What special equipment have you designed and built for use when tearing down and assembling spring switch mechanisms while cleaning and repairing such equipment in a shop?*

(5) *Have you experienced any trouble caused by certain types of grass or other vegetation piercing the insulation on wires in trunking or near the surface of the ground?*

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

ing the rush periods when successive approach signals cannot be avoided. This, of course, depends upon the density of traffic, the distances between stations, and the number of station stops.

The only theoretical disadvantage in a system designed to display successive approach indications is that it reduces track capacity by widening the spacing of trains in order to avoid what is known as "running on the yellow," whereas with a system using the other available aspects, track capacity is increased and flexibility of train movement is obtained.

## Unusual Signal Trouble

*"What were the circumstances involved in the most unusual signal failure you have encountered, and how did you correct the trouble?"*

### Soup

E. L. RUSSELL  
Signalman, Union Pacific,  
Los Angeles, Cal.

Late one night I received a frantic call from a bridgetender to the effect that after a train movement over the drawbridge he was unable to restore No. 1 lever on the interlocking machine, with the result that the bridge was locked down, and there were several boats in the bay under a heavy fog, calling in all sort of tones for the lift.

I made the 15-mile trip in about the same number of minutes, thinking that the bridgetender probably might have some clue to the case. However, he only complicated the situation by stating that a few minutes before I arrived, by working the lever desperately several times, he was able to restore it and the plant was O.K.

On top of the interlocking machine was a large, hand-made lunch box which he carried to work. I removed this, raised the glass case cover, and on the contact of No. 1 lever I discovered a heavy greasy substance. On cross-questioning him he told of upsetting his hot soup container on the way to work. Neither the lunch box nor the case cover was waterproof; when the mixture became cold on the lever contacts the lever could not be restored. In the future he promised to park his pantry in the patio.

## Railroad Operation and Railway Signaling

**Note: Answers to these questions are not solicited. If you have questions, please submit them to the What's the Answer department.**

160-Q: *May a train which has passed the limits of a particular manual block back into that block?* A: No; except upon permission of the block operator, who must not give such permission until he has regained control of the block. The fundamental purposes of a block system are to establish a space interval between following trains and to provide protection between opposing trains. Train movements are made from point to point, and all the rules regarding the use of blocks by trains are based upon normal operation in which trains pass successively from one block to the other. Thus when a train passes out of a particular block it relinquishes the use of that block to other trains. If the operators, who have recorded the block as clear, act on that basis and allow another train to enter, any train which backs into a block is encroaching upon the rights which have been given to the other train legitimately by the operators under the rules.

161-Q: *In Q:156, why is the record of the train not given to the operator at W until the rear of the train has passed a certain specified distance beyond the block signal at X governing movements into block XY?* A: Trains are not allowed to pass a signal displaying a stop indication unless writ-

ten permission is received for them to do so. However, in order to guard against violations of this rule, particularly where no distant signals are provided, the rear of a preceding train must have passed the manual block home signal a specified distance (usually 300 ft.) before the block it has just left is reported clear and another train allowed to follow.

162-Q: *What rules must be observed in the manual block system when a train or engine takes a siding or otherwise clears the main track?* A: Unless the switch involved is operated by the block operator, the conductor or engineman must report the fact that the train has cleared the main track to the operator. The block operator must know that the train is in the clear before giving 2 or displaying a clear indication for that block.

163-Q: *What precautions are necessary if a train or engine is to be allowed to enter a block from a siding, to foul the main track, or to cross from one main track to another?* A: The block operator must examine the block record and if all the blocks affected are clear of approaching trains he must provide or arrange for block protection before giving permission for such a movement.

164-Q: *What forms of written permission are used to admit trains to blocks when the manual block signals cannot be cleared or when means of*



### EAST AND WEST RAILROAD COMPANY CLEARANCE FORM A



\_\_\_\_\_ M \_\_\_\_\_ 19\_\_\_\_  
To Conductor and Engineman \_\_\_\_\_ at \_\_\_\_\_

I have \_\_\_\_\_ orders for your train.

Order No. \_\_\_\_\_ Order No. \_\_\_\_\_ Order No. \_\_\_\_\_ Order No. \_\_\_\_\_

Order No. \_\_\_\_\_ Order No. \_\_\_\_\_ Order No. \_\_\_\_\_ Order No. \_\_\_\_\_

have been delivered.

This form is authority to pass stop-indication.

Block \_\_\_\_\_

\_\_\_\_\_  
Signalman

Manifold copies will be made for each Conductor, Engineman, and Signalman, the latter retaining a copy.