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. *Do you believe that it is advisable to ground the common return wire of signal control circuits?*
2. *How far should current economy be stressed in comparing some of the latest track relays with earlier designs? Are the probable savings of sufficient magnitude to off-set any decrease in shunting efficiency?*
3. *What has been the average life of poles used in signal pole lines on your railroad? What kind of poles have been used? Do you know the average labor cost of replacing a pole?*
4. *What depreciation rates do you believe should apply to such items of signal equipment as, semaphore signals, light signals, power switch machines, mechanical interlockers, highway crossing protection, transformers and power supply facilities?*
5. *What special means do you use to maintain bonding in planked road crossings?*

Can Cab Signaling Be Relied Upon Exclusively?

"Do you believe that it is advisable to eliminate intermediate wayside automatic block signals where train control with continuous cab signals is in service?"

Cab Signals Without Permissive Wayside Signals Have Proven Entirely Satisfactory on the Illinois Central's Train Stop Installations

THE Illinois Central has installed continuous automatic train stop with cab signals on a double track engine division which was equipped with automatic block signals. These signals were of the semaphore type with oil lighting. The signals were taken out of service but left in place when the train stop was placed in service. After almost a year of operation in this manner it was found that the signals were not needed and a saving was effected in material relieved and in maintenance and operation, by their removal.

The Illinois Central has also installed continuous automatic train stop on a single track division using cab signals and no permissive wayside signals. Work of installing automatic block signals had been begun on this division when train stop was authorized. Operation by cab signal has proven entirely satisfactory.

Based on the above experience covering a year's operation on two divisions, I can say that operation of continuous train stop with cab signals without permissive wayside signals is satisfactory, and I think the elimination of permissive wayside signals is advisable because:

(1) They are unnecessary for satisfactory operation and constitute an additional expense in construction, maintenance and operation.

(2) A more satisfactory installation may be obtained without wayside signals because block spacing may be arranged according to braking distance without regard to the view of wayside signals or difficulty in starting trains on grades. This has an important bearing on cost and makes a simpler installation to maintain.

Chicago. H. G. MORGAN,
Signal Engineer, Illinois Central.

Until 100 Per Cent Operation is Secured From Automatic Train Control it is Questionable Whether Wayside Signals Should be Eliminated

IT is my opinion that intermediate wayside automatic block signals can be eliminated where continuous cab signals are in service in connection with automatic train control. I question the advisability of doing it however at the present time, as although we are getting very good results from the continuous system of automatic train control on this road, we have not as yet reached 100 per cent operation, therefore, if we should have a failure of our automatic train control apparatus, the elimination of the intermediate automatic signals would necessarily cause delays to train movements.

Where the continuous system of automatic train control is installed and is practically an adjunct to a complete system of automatic signals, any failure of the train control apparatus will not seriously delay or affect the train movement as the train control apparatus can be cut out and the movement taken care of with the automatic signals until the terminal is reached where the train control apparatus can again be put in working condition. Without the automatic signals the failure of train control apparatus would naturally affect the movement of this train, as well as all other trains, as it would have to proceed at slow speed until it arrived at a terminal point.

Roanoke, Va. D. W. RICHARDS,
Signal Engineer, Norfolk & Western.

Efficacy of Cab Signals as Compared With Wayside Signals Can be Demonstrated Only After Many Years' Experience

I DO not believe any of us are as yet in a position to say just what we think about the elimination of wayside signals. We know there must be economy involved. We know that cab signals eliminate all the undesirable features now present in connection with wayside signals. Used in connection with automatic train control where proper speed restrictions are provided there seems to be sufficient safeguards thrown around the observances of the cab indication to insure against the difficulty of making checks. But the real demonstration of the efficacy of cab signals used in connection with automatic train control as compared with wayside signals is something which in my opinion will only be demonstrated after many years' experience.

Topeka, Kan. THOS. S. STEVENS,
Signal Engineer System, Atchison, Topeka & Santa Fe.

Should Motor Car Operators Watch Signals More Carefully?

"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?"

Why Require Enginemen Only to Be Governed by Signal Indications?—Motor Car Operators Can Obtain a Great Deal of Information from Signals

THE Chesapeake & Ohio does not use switch indicators or special indicators of any type to inform motor car operators of the approach of trains.

Having spent the greater part of the last 10 months on a motor car during the construction and inspection periods in connection with the recent 125-mile installation of automatic train control, I have made it a practice to watch the signal indications not only to see that the system is functioning correctly, but also to note the approach of trains. I always watch the signal indication of the signal the motor car is approaching for opposing train movements, and as the Chesapeake & Ohio uses a modified A.P.B. system on single track, the indication given by the absolute signal is of great value when expecting to meet opposing trains.

When passing a signal governing movements in the opposite direction to which the motor car is traveling, I watch the indication of this signal to see if there is a train following close in the rear.

In many instances by governing motor car movements by signal indication we are able to get into a passing track or a siding and thus let the train pass us rather than having to take the motor car off the rails at a road crossing or on the right of way, when the line up received from the dispatcher indicated that a train was due for a meet with the motor car. Since enginemen are required to operate by signal indication, why should not motor car operators be governed accordingly in addition to operating by the motor car rules?

Richmond, Va. GEORGE A. WASHBURN,
General Signal Inspector, Chesapeake & Ohio.

Track Forces on the M-K-T Highly Appreciate the Protection Afforded by Automatic Block Signals —Spacing of Signals Is Such That Special Indicators Are Deemed Unnecessary

WHEN out on a motor car in automatic signal territory we are guided almost exclusively by the automatic signals, and we find that trackmen, bridgemen, linemen and inspectors also watch the signal indications very carefully and are governed by them. We have single track territory on this line that is obscured by curves, cuts and timber, and before the signals were installed track forces were required to do a great deal of flagging to get to and from their work. Since the signals were installed they travel safely on motor cars without delay.

We find that various classes of employees who are required to operate motor cars highly appreciate the automatic signals and are interested enough to ask questions relative to the distance that various signals control, this so they will have a clear understanding of the signal indications displayed. We rarely ever have a motor car, hand car, or push car hit by a train in automatic signal territory.

Automatic signals are not installed for the purpose of protecting motor cars and, therefore, we have not gone into the practice of providing special indicators for the use of motor cars only. In fact, signals on this line are so spaced that the installation of such indicators is not necessary.

It is gratifying to feel that the automatic signals are a help to motor car operators and that they take a live interest in the automatic signals.

Denison, Tex. J. A. JOHNSON,
Signal Engineer, Missouri-Kansas-Texas.

Switch Indicators Convey Useful Information to Train Crews and Motor Car Operators

WE observe the block signals and switch indicators. The switch indicator is mounted on a concrete post at each switch location and is operated in connection with the signal circuits. The indicators serve train crews by informing them of approaching trains. We generally consult the train dispatcher for a line up before we start out and are governed accordingly.

Plattsburg, N. Y. WM. F. COOK,
Assistant Supervisor of Signals, Delaware & Hudson.

Observance of Signals Desirable as a Check on Their Operation and as a Personal Safety Precaution

AT all times when a maintainer is on the road with his motor car he should watch the wayside signals for two reasons; first to see and check that his signals are functioning properly, and secondly to know of the approach of trains. The value of watching signals as a warning as to the approach of trains is dependent upon whether or not the motor car is running against the current of traffic. When running on single track or on track where the current of traffic is reversible