

WHAT'S THE ANSWER?



Choke Coils

*"Are choke coils of any benefit in leads from line taps to transformers on an alternating-current feeder line for signaling?"**

Money Could More Wisely Be Spent on Additional Lightning Arresters

By B. F. OLER

Assistant Engineer, Telegraph & Signal Department, Pennsylvania, New York, N. Y.

THE Pennsylvania and the Long Island have rather extensive installations with and without such choke coils and, from our studies, we are not able to state conclusively whether or not the use of choke coils is justified. The installation of lightning arresters, either with or without coils, has shown decided improvement in signal operation, while, on the other hand, we experience failures with either method of protection.

The reliability of the arrester is undoubtedly and primarily dependent upon ground resistance and it is our opinion that more real protection would be afforded by discontinuing the use of the choke coils and using the money thus saved in the study and improvement of the ground connections and purchase of additional arresters.

We find that arresters located on the two poles adjacent to the location of the transformer, in addition to those located directly at the transformer, give the maximum amount of protection and are justified where severe lightning storms are experienced.

A. H. Yocum, signal engineer of the Reading: "We formerly used choke coils in our leads from line taps to transformers and found that they were a detriment rather than a benefit and, therefore, we have entirely eliminated their use."

Red Flash in Polarized-Control Signaling

"Has any satisfactory means been found to prevent the neutral armature of a polarized relay from dropping when the polar armature reverses? What has been done to prevent the red flash incident to this condition in color-light signaling? Is this red flash considered to be a serious defect?"

Slow-Release Relay Is Used

By E. P. WEATHERBY

Signal Engineer, Texas & Pacific, Dallas, Tex.

I KNOW of no satisfactory means to prevent the neutral armature of a polar relay from dropping when the polarity is reversed. Our first automatic

*See also the July issue for other answers to this question. Editor.

TO BE ANSWERED IN A LATER ISSUE

(1) What type of container is furnished maintainers for hauling water with which to renew primary batteries?

(2) For underground wire and cable runs what type of construction is preferred: (1) Fibre conduit surrounded by concrete, or (2) Clay duct set in concrete? Why?

(3) What is the best method of cleaning enameled steel signal blades and roundels on semaphore signals, and cover glasses on light-signal units?

(4) Is the unit system of defining maintenance districts satisfactory? What are its limitations, advantages, disadvantages?

(5) Is there any objection to selecting signal control circuits through the polar contacts of d-c. polarized relays in such manner that this current will be interrupted at the polar contact? Will this materially effect the polar-contact pressure and, therefore, the polar calibration?

(6) What, if anything, has been done to make approach lighting effective only when trains are approaching and not when receding from a signal?

signals were installed without any attempt to prevent the red flash incident to this condition and the enginemen complained.

To eliminate this red flash, we install in our signal circuits a slow-acting neutral relay controlled through the neutral contacts of the polarized relay. This slow-releasing type of relay will not drop while the polarized relay is reversing, and thus the red flash is eliminated.

Polarized Relay Without This Characteristic Not Available

By H. S. LOOMIS

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NO satisfactory means has as yet been developed, nor at least commercialized, that will prevent the neutral armature of a polar relay from dropping when the polar armature reverses. It is our standard practice to provide a slow-acting relay repeating the neutral front contact of the polar relay, and to carry the light signal circuit over the slow-acting relay, thereby entirely avoiding the flash of the red signal at the time of the reversal of polarity of the polar relay.

We regard the red flash as being serious when produced as a result of the closing of the back neutral contact on the polar relay. It is at least serious enough to warrant introducing the extra relay to ef-

fect its elimination. Whether or not this red flash would be regarded as objectionable depends upon the duration of the illumination of the red light. There is, of course, a tendency to display the red light at the time of passing from yellow to green and from green to yellow in the case of the searchlight signal. The duration of the red flash with this type of signal, however, is so short as not to be regarded as a serious defect.

Red Flash Is Objectionable

By C. R. BEALL

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I KNOW of no means now on the market for preventing the neutral armature of a polar relay from dropping when the polar armature reverses. A number of devices are known that will prevent the dropping of the neutral armature on reversal of polarity, but in practically all of these schemes the cost is so high that the combination cannot successfully compete with the present standard method of using a slow-release neutral relay to bridge the open-circuit time period of the neutral contacts on the polar relays. This slow-release relay is controlled by the neutral contacts of the polar relay and has sufficient retardation to keep its front contacts closed while the polar armature is reversing.

I believe that all signal engineers are agreed that the red flash, that would occur if steps were not taken to prevent it, is very objectionable and should not be tolerated.

W. K. Howe, chief engineer, General Railway Signal Company, answers briefly: "Where the circuits or apparatus or both are such that an objectionable red flash would be apparent, slow-acting relays are installed to bridge the interval and eliminate the flash. It is obvious that a so-called red flash could be long enough to be objectionable. As to how long the flash can exist and not be objectionable is a question on which there is a good deal of difference of opinion among railroad men."

Maintenance Organization for Car Retarder Systems*

"What maintenance organization is required for car retarder systems?"

Maintenance and Motive Power Departments
Co-operate

By D. F. COBURN

Car Retarder Foreman, Norfolk & Western,
Portsmouth, Ohio

THE maintenance force at our car retarder yard in Portsmouth, Ohio, consists of the following men: One foreman with two helpers and two laborers on the day shift, and one maintainer on each of the two other shifts.

We have both the Boston-type and the Model-28 Union car retarders. The Boston-type was placed in service February 1, 1928, and the Model-28 in June, 1929. As 95 per cent of the traffic over these retarders consists of heavily-loaded coal cars, there is a very heavy burden on all retarders, and especially on the main-ladder retarders.

We find it necessary to remove and overhaul the re-

tarders on the main ladder at intervals of about ten months each. When making such repairs, the maintenance force dismantles the retarder and the motive power department employees do the repairing, such as rebushing end bearing frames for outer driving crank pins and crank bases on angle tie plates for inner driving cranks. Repairs to brake shoe beams consist of welding a carbon steel plug in the worn hole and drilling the plug for an eye-bolt pin. After the motive power department has finished repairing the retarder unit, the retarder maintenance force reconstructs and places it in the track.

Such work as dismantling trunnion assemblies for inspection and thorough cleaning is done by the maintenance force; also such work as running dies over brake shoe studs and other bolts is done on the hump by this force. Practically all material including the eye-bolt pins and beam connecting pins, is re-used in overhauling these retarders.

The routine maintenance work consists mostly of changing the outside line of brake shoes, adjusting outside line of beams to compensate wear on brake shoe, lubricating, and last, but by no means less important, the constant checking and tightening of loose stud bolts and nuts.

This maintenance work and overhauling of retarders referred to, with the exception of lubricating changing shoes and making adjustment of beams, is performed on the Boston retarders. We have worked out several schemes and changes in design of bolts to speed up maintenance and re-construction of this retarder, but this part of the work should, I believe, come under a separate heading. The adjustment of beams on the Model-28 is made with two large turnbuckles, and about the only work we do in connection with this retarder is to make these adjustments, check them periodically and lubricate according to instructions.

Warning Devices on Motor Cars?

"What kind of bells, horns, etc., do you provide on track motor cars used by signal forces for a warning to be sounded when approaching trackmen and road crossings, or when passing through passenger stations?"

Gong Less Easily Confused with Locomotive Whistles or Automobile Horns

By C. R. KNOWLES

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THERE does not seem to be any established rule as to warning devices used on railway motor cars. The various devices used range from electrically-operated Klaxons to the ordinary street car gong. The practice on our road is to equip these cars with a 10-in. steel gong, operated by foot or hand. It is my opinion that a gong of this type is more effective than a horn, whistle or bell of any other kind for the reason that the warning is distinctive. Horns are easily confused with those on automobiles while electrically-operated bells may be confused with other bells of a similar type. It seems to me it is very important that whatever warning device is adopted it should be uniform on all cars and of such a type that it will give a distinctive warning that cannot be confused with automobile horns or other bells or whistles.

E. P. Weatherby, signal engineer of the Texas & Pacific, is opposed to the use of such a warning device. He says, "We use no bell or horn on our motor

*Received too late to be included in the discussion of this question published in the June issue.