

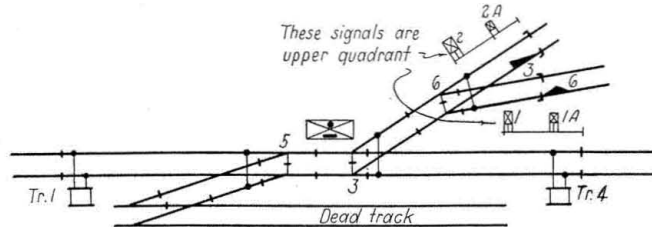
Multiplicity of Circuits for Operating Call-on Arms

"Can you design a circuit to obtain the desired operation of the call-on arms as indicated in the sketch below?"

Information Desired in Question No. 4

I would like to install a circuit to clear signal 1 and prevent call-on signal 1A from clearing when a train passes No. 1, such a circuit to use the same signal lever in the tower but not a middle position on the segment, using only the full normal and full reverse position. The same requisite applies to signals 2 and 2A.

The present condition allows the operator to use the



Track and signal plan of interlocked junction with call-on signals at two locations

call-on signal under all conditions and I would like to change it so that when he pulls lever 1 or 2 (which ever route is set up) the train will receive full protection from the high signal. Signal 1A must not be allowed to bob. I would also like to include signal repeaters for the call-on arms. Note that I do not want to use push buttons to clear the call-on signals, but want the same lever to clear both signals.

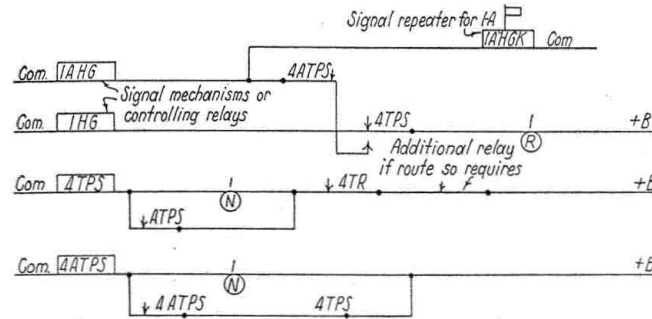
If a train approaches and passes either high signal and opens the track circuit, putting the high arm at stop I do not want the call-on arm to clear immediately.—P. H. W.

Prize Winning Solution

(Lack of space prevents publication of all of the solutions received for this question. Remaining solutions of merit will be given in the June issue.—EDITOR.)

Two Stick Relays Used in This Circuit

INFORMATION given in the question was not sufficient to make this circuit more complete, but the principle of the circuit should be as shown. The written circuits for signals 2 and 2A would be similar



This control circuit employs two stick relays; one for each arm

to those shown from 1 and 1A. It will be noted that this scheme employs two stick relays, 4TPS to be energized before signal 1 can clear and 4ATPS which must be energized before signal 1A will clear. The two stick

relays are so connected that 4TPS must be down before 4ATPS can remain energized through its stick circuit. In this way the call-on signals are governed by the track relays. When they are de-energized, the call-on signal will clear when the lever is reversed. However, the lower arm will not clear automatically when the top arm drops behind a train. It is necessary to return the signal lever to normal and then reverse it in order to clear either signal 1 or 1A. When the lever is thus reversed and the track relay or relays are down, the call-on arm will clear.

Nashville, Tenn.

E. W. ANDERSON,

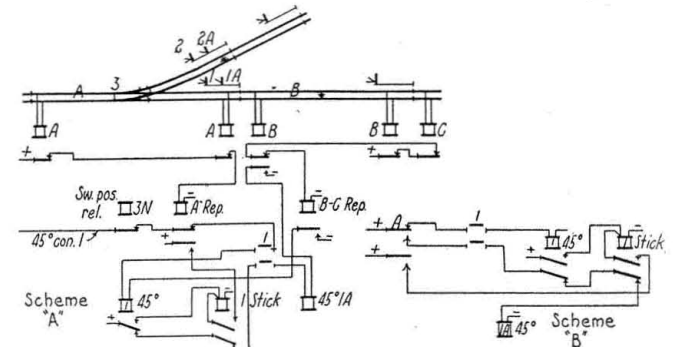
Signal Designer, Nashville, Chattanooga & St. Louis.

(Signal repeater does not give towerman information that signal has actually cleared.—EDITOR.)

Two Alternate Circuit Schemes Proposed Depending Upon Use of Approach Signals

HEREWITH is a sketch of a circuit which is proposed to take care of the conditions referred to in question 4 published in the April issue. The correspondent did not indicate whether or not approach signals were in service at the location shown, and for this reason I have prepared two circuit schemes. If it is assumed that approach signals are in service the circuit scheme A can be used. If, however, it is assumed that no approach signals are involved the scheme shown in B can be employed satisfactorily.

No attempt has been made in either circuit scheme to show the detail control features. It has only been



Alternative circuit control scheme for use either with or without approach signals

attempted to show the principle of a circuit that will prevent a call-on signal from clearing whenever it is possible for a high signal to be cleared.

Albany, N. Y.

A. VALLEE,

Supervisor Signal Construction, Delaware & Hudson.

(Back contact No. 2 of A. Rep. relay would require adjustment so same would make before front contact No. 1 of same relay breaks in order to prevent 45 deg. No. 1 relay from dropping, which would break the pick-up circuit of No. 1 stick relay before the stick-up circuit was completed, or the 45 deg. No. 1 relay would have to be a slow-acting relay; otherwise the stick relay would drop, completing the circuit for 45 deg. No. 1A relay, thus clearing signal 1A which is objectionable.—EDITOR.)

Simplified Circuit Recommended Which Makes Use of a Slow Acting Stick Relay

THIS circuit plan is designed to cover question No. 4 in the April issue, and I think it is self-explanatory. I had never used this circuit previously; however, I have tried it out since the question was published and have obtained very satisfactory results, even from a mechanical interlocking lever. A similar cir-

