

automatic signal circuits would cause the high-speed arm on the home signal to remain in the horizontal or stop position.

Each railroad has its own rules for moving a train past a home signal in the stop position at an interlocking plant. On the "Monon" with the high-speed arm in the stop position we require the train to come to a stop at the signal, but it can immediately advance upon receiving a permissive indication from the call-on arm. This call-on arm advises the engine crew that the route through the interlocking plant is clear, and the fact that the high-speed arm is at stop, informs them that they must comply with the rules for block signals in moving through the next block.

If we did not have the call-on arm, the only way we could get such a train past an interlocking home signal with the high-speed arm in the stop position, would be for the towerman to go on the ground and verbally inform the engine crew. This would result in considerable loss of time for each train affected, and when there is not anything wrong with the interlocking, there is not any need of requiring the towerman to leave the tower.

#### Santa Fe Provides Short Track Section in Approach of Signal to Give Restricted Speed Indication

By THOS. S. STEVENS

Signal Engineer System, Atchison, Topeka & Santa Fe, Topeka, Kan.

WE do not use so-called "calling-on arms" because we never use more than one arm on any signal. We realize, however, the necessity for moving a train into an occupied block at an interlocking plant in a definite way which does not involve the difficult method of flagging. In order to accomplish this, we provide a short track section of two or three rail lengths which, when occupied by a train or engine, will allow the governing signal to assume the restricted speed position. We believe such a practice is slightly safer than the use of a calling-on arm, unless the display of a proceed indication by this arm is controlled somewhat in the same way.

I remember my own experience when occupying the rear end of a train which had entered an interlocking plant and another train was allowed to proceed into the same block by an uncontrolled calling-on arm. The second train was flagged, and it needed flagging, although perhaps it would have stopped safely. Of course, this does not condemn calling-on arms. There should be some way provided for the proper movement of a train into an occupied block by means of a signal and not by flagging. For those railroads who use three-arm signals it would seem that the display of the third arm in the 45-deg. position is good signal engineering practice.

#### Rock Island Uses Call-On Signals

By LEROY WYANT

Signal Engineer, Chicago, Rock Island & Pacific, Chicago, Ill.

WE use the calling-on arm under all conditions in track circuit territory to reduce to a minimum the necessity of the towerman giving a hand signal through an interlocking plant. Our operating rules clearly indicate that such calling-on signals in automatic block signal territory authorize train movements only through the interlocking plant, and that our standard "automatic block signal standard rules" apply immediately after the train has passed through the plant and enters the automatic signal territory.

## Normal-Stop Versus Normal-Clear Signaling

*"With the present trend toward approach-lighted signals, both color-light and semaphore, there would seem to be a reversion to the old normal danger scheme of automatic signaling. Has experience disclosed any inherent disadvantages in normal danger signaling?"*

#### Both Schemes Are Equally Safe, but Normal-Clear Signals Are More Easily Tested

By F. B. WIEGAND

Signal Engineer, New York Central, Cleveland, Ohio

MY opinion is that the normal-stop (I do not like your term "normal danger") system of signaling is as safe as the normal-clear system. The normal-clear system, however, lends itself to quicker test by the maintenance forces owing to the absence of the clearing circuits. With the color-light signal, it matters not whether the signals are burning constantly or are approach-lighted, except from the viewpoint of economy.

With the light signal of all types, color, color-position, and position, no means are provided for the reading of the indication from the back of the signal and, inasmuch as all observations must be made facing the signal, any inherent disadvantage in the normal-stop system must also be present in the normal-clear system.

## Parkway Cable Entrance Through Signal Foundation

*"Where passageways are left in concrete signal foundations to bring wires or cables up into the case from a point below the ground line, how are these chases or passageways formed in the foundation, and is any conduit used?"*

#### Four-Inch Pipe Used

By H. C. LORENZEN

Assistant Signal Engineer, Pere Marquette, Detroit, Mich.

WHEN building concrete foundations on the Pere Marquette we form the wire chase by placing a 4-in. straight pipe in the form. Our instrument cases are furnished with large openings in the bottom, and the 4-in. pipe is placed in the form at an angle. The top of the pipe is placed near the center of the foundation, and the bottom near the side at which the parkway cable enters. The 4-in. pipe is large enough to carry all necessary cable. After the concrete is set, the pipe is removed.

#### Grand Trunk Western Uses Two-Inch Pipe

By W. L. DAYTON

Superintendent of Signals, Grand Trunk Western, Detroit, Mich.

ON the Grand Trunk Western we have found the method of construction shown in the accompanying illustration to be effective and to present no great difficulty in installing. When the form for signal foundation is made, a piece of conduit is inserted so that the upper end is in the center of the top of foundation and the lower end projects from the lower part of the side. This conduit is left in the form, and the cement poured around it. When the cable is to be