to proceed without reservation. The permissive indication applied to the entire block; the proceed indication to the limits of an interlocking plant. Code Rule 305 states: "Block signals govern the use of the blocks" and Code Rule 605 states: "Interlocking signals govern the use of routes of an interlocking plant."

It may be stated that in automatic territory interlocking home signals are used also as block signals and the question arises, which rule governs? The answer is, interlocking rules govern movements through the interlocking and automatic block system rules in the territory beyond. A rule to protect the situation should read: "Where an interlocking is in use in automatic block territory, interlocking rules govern movements through the interlocking. Interlocking home signals will be used as automatic block signals." Enginemen know when they are operating in manual block, and in automatic block, territory and are governed accordingly.

Taking the question as a whole, I am inclined to believe it is the signal indication rather than the signal aspect that the questioner has in mind. The aspect is the picture of the signal as it appears to an engineman, which enables him to distinguish its kind, whether interlocking, automatic block or manual block. The indication is the information given by the signal, by which train movements are governed, such as Stop; Proceed, prepared to stop at next signal; Proceed, etc.

With the two involved points in mind, my conclusions are:

1. The aspects of signals at interlockings, regardless of their location, should be the same.

2. Each class of signal should have a different aspect, the class being designated by some distinguishing feature. See Code Rule 289 and 291.

3. The Proceed indication of signals at interlockings, regardless of location, should be the same, i. e., green or the equivalent.

No Special Proceed Indication

By C. H. Morrison
Signal Engineer, New York, New Haven & Hartford, New Haven, Conn.

We have no special Proceed indication for home signals at isolated interlocking plants such as automatic crossings, etc., and it is my belief that the A. R. A. standard signal aspect is sufficient to take care of all the Proceed indications of signals.

At automatic grade crossings we use a vertical arm, or green light, which indicates to an engineman that he may run his train at the highest speed permissible at that point. If it were desired that they reduce speed, we would use the semaphore arm in the 45-deg. position, with a yellow light, and, according to the New Haven operating rules, the indication would be "Reduce speed at once and proceed at restricted speed."

If the automatic interlocking is located at an isolated point and the blocking of trains is handled by a telegraph block system, the block system would work through the grade-crossing point. Therefore, the grade crossing signals would only govern the movement of the train over the crossing and if the train were being operated under a clear block, it could continue at the highest speed permissible between the two block stations. If the speed were restricted over the grade-crossing frogs, the train would proceed at restricted speed until the crossing frogs were cleared and then could resume regular speed.

We have, on the New Haven system, only two automatic interlockings at grade crossings and we do not see the necessity for a special Proceed signal indication. It may be that on roads having numerous automatic interlockings a special Proceed signal indication would be advisable.

No Distinction on New York Central

By W. H. Elliott
Signal Engineer, New York Central, Albany, N. Y.

It is the practice of this road to provide the same Proceed aspect and indication for all locations, where a restriction on the movement of a train is not required, regardless of whether or not there is a signal in advance of the signal in question. An Approach indication requiring the train to approach another signal at a speed less than normal is used only when such a signal is located a reasonable distance in advance.

Where railroad grade-crossing signals are installed in manual block territory without signals immediately in advance, the home signals give the regular Proceed indication. Where automatic switch signals are located in manual block territory governing the approach to switches and a home manual block signal it is our present practice for the switch signal to be three-position, giving Proceed, Approach and Stop indications.

Sequence of Levers

In interlocking machines having no mechanical locking, should the circuits be designed so that the operator must throw the levers in a specified sequence in order to set up a route? What are the arguments pro and con?

Any Sequence

By C. F. Stoltz
Signal Engineer, Big Four, Cincinnati, Ohio

The purpose of an interlocking machine having no mechanical locking is to facilitate the movement of the levers. It is the necessity of operating in sequence and waiting on indications that slows up the operation of the mechanically locked machine. This is what we are trying to avoid.

In the simplified type of interlocking where the protection is provided electrically rather than mechanically, it should make no difference whether certain switch controls are operated prior to other controls. A Proceed signal indication will not be displayed until the route is completed, and anything that may be done to facilitate a change in route, such as permitting the levers to be manipulated in any sequence, will, of course, facilitate train movements through the plant. At Linndale, Ohio, where we have one of these plants in operation, the circuits are designed to require the movement of a switch-controlling lever when the detector circuit is unoccupied, in order to move the switch. The lever is free to be moved at any time, but with a train on the approach circuit approaching a Proceed signal or occupying a detector circuit, the movement of the switch will not follow the movement of the lever. This was done because, in electrified territory, single-rail track circuits are used, and it was principally a precaution against a possible momentary loss of shunt. This feature may be omitted at many points, particularly at outlying points where the switches are more remotely controlled, and a close meet may eliminate the necessity of stopping a train.