

keep them out. I cut a block of wood to fit the opening in the bottom of the case, slotting this block to accommodate the parkway cable, or, if it is a trunking location, to accommodate the plain wires. Then I fill in the cracks between the block and the wires or cable, with plaster of Paris. This plaster and block can easily be taken out if it is necessary to make any changes in the wiring.

*Frank R. Schmidt*, New York Edison Company, suggests the following: "When possible, holes may be plugged with 'steel wool' or 'brass wool.' Mice do not seem to care to bite through these materials."

## Insulators

*"What are the advantages or disadvantages of using glass insulators, as compared with porcelain insulators, for signal-control open-line circuits? For a-c. power lines up to 440 volts?"*

### Brown Glass Insulators Now Available

M. K. Holmes

Chief Engineer, Hemingray Glass Co., Muncie, Ind.

In our opinion glass insulators are particularly advantageous for this use on account of their durability and economy. Brown porcelain insulators have been used for this purpose in some cases, on account of a Western Union ruling that in joint construction insulators should be used sufficiently different in appearance to distinguish the power lines from the telegraph lines.

It is now, however, possible to obtain brown glass insulators which qualify under this ruling and which make the expense of brown porcelain insulators unnecessary. Brown glass insulators are particularly adaptable to this requirement. These insulators are made of a glass which is well annealed and free from internal strain, thus giving the glass more resistance to breakage. The petticoats in this insulator are heavier and on comparative impact tests this type shows materially more strength than corresponding porcelain or glass types.

## Electric Lock on Spring Switch?

*"What are the advantages or disadvantages of using an electric lock on a spring switch?"*

### Believes That Speed Restrictions and Electric Locks Are Not Needed

Leroy Wyant

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

The disadvantages are obvious. An electric lock adds installation and maintenance expense. It will occasionally fail, causing delays to through main line trains. A lock will be an advantage on those roads where a speed restriction is imposed on main-line traffic over a spring switch and where this speed restriction would be removed by using the lock.

This brings up the question of whether a speed restriction is necessary for spring switches. It is my personal opinion that spring switches are as safe as rigid

switches, that speed restrictions are not necessary, and, therefore, that electric locks are not necessary. However, it will probably be a long time before the railroads will agree generally to eliminate the speed restrictions over high-speed main-line spring switches without an electric lock, and until that time the electric lock is a decided advantage for main-line locations where speed restrictions are a disadvantage. I believe the records show a consistent increase in the use of spring switches and this increase will be greatly accelerated as the use of electric locks is developed.

### Answer Depends Upon Safety of Spring Switch

I. A. Uhr

Signal Engineer, St. Louis-San Francisco, Springfield, Mo.

With the assumption that an electric lock is required on the spring switch for the protection of facing-point train movements only, then its necessity is determined by considering how safe a spring-switch arrangement is in comparison with the standard switch.

Some railroads evidently feel that spring switches are as safe as a standard switch, because they have no speed restriction over them, except when the point is to be moved or pushed over by a trailing train movement. If the electric lock performs no required service, then it has no advantage but is a disadvantage because it is superfluous.

## Location of Home Signals

*"Why are home signals at automatic interlocking plants usually placed 400 ft. or more from the crossing when there are numerous advantages of placing them 50 ft. to 75 ft. from the crossing?"*

### Favors Locating Signals Close to Crossing

James O'Dore

Signal Supervisor, Chicago, Milwaukee, St. Paul & Pacific, Butte, Mont.

It seems to me that locating home signals 50 ft. from the crossing would be the thing to do, especially where the angle is 90 deg. or nearly so. Where derrails are not in use I cannot see any advantage in holding a train 400 to 500 ft. from the crossing. In fact, it seems that trains stopped closer to the crossing could more readily communicate with one another in the event that the time release failed to clear one route. The saving in material would, in my opinion, warrant locating home signals close to the crossing.

### Time Interval Is a Factor

H. A. Franklin

Engineer, Iowa Board of Railroad Commissioners, Des Moines, Iowa

The Board of Railroad Commissioners of Iowa has adopted an arbitrary rule that signals at automatic interlocking plants shall not be placed closer than 250 ft. from the crossing. The reason therefor was the designating of some distance which would serve as a minimum, and that practically all plants in Iowa have no enforced time interval between the changing from a given route to an opposing route. It was the thought that the distance from the home signal to the crossing would serve the purpose