

nal. Three distinct indications in addition to the Stop indication are necessary to give this informaton. This, then, is four-position signaling, which I consider justifiable as a general rule.



Lock Releasing

"What are the relative merits of the practice of using one clockwork time-release or one time-release lever for the release of the locking of an entire group of signal levers, as compared with the practice of using a separate release for each lever in the group?"

Levers are Grouped in Terminal Interlocking

L. E. Carpenter

Signal Supervisor, Pennsylvania, Philadelphia, Pa.

In first cost there is little difference, the one-time-release plan being slightly cheaper. The first installation in which we became interested used one time-release lever. We were somewhat opposed to it, as it was on a large terminal plant, and we felt that, if the release should be started for one route and it should be necessary to release a second route, the release must either be restored and started again, thus lengthening the time the first route was held; or, the second route must be held until the first route was released before the release could be started for the second. However, the delays that we feared might result have not been experienced.

However, in later installations, which are practically all in terminal territory, we have grouped the levers, using two or more releases for the entire plant, so as to reduce the number of delays that might result for the reason given. To date, this practice has been very satisfactory.

The advantages of the plan of using one release are: Less apparatus on or near the machine, resulting in neater appearance, as well as reducing the chances of error on the part of the leverman in manipulating the wrong release. Where a release for each lever was installed, one with a latch was used, and the signal controls were passed over the release contacts closed when the release was wound up. Delays and reported failures were not uncommon, due to the release having been manipulated to change a route and then being overlooked and not wound up again. A release without a latch is used where only one is applied; thus, the possibility of the delays mentioned is eliminated.

Group Release Is Less Expensive

E. F. D. Rapelye

Chief Signal Draftsman, Illinois Central, Chicago

Regarding the relative merits of the use of one clockwork time-release or one time-release lever for the release of the locking of an entire group of signal levers, as compared with the use of a separate release for each lever in the group, I would say that the use of the group release is less expensive in first cost and in maintenance. Furthermore, the use of the group release results in an appreciable saving of time in the operation of the machine, and should, therefore, speed up the movement of trains, although at times it may unnecessarily delay the movement of some trains.

However, in some instances, individual releases, especially if they are automatic in operation, perform a very

important function. I have in mind an electric interlocking which was recently installed at a very busy suburban train terminal. A description of this individual automatic releasing circuit, together with a description of a plug box and group clockwork time release circuit, is given under the caption "Time Release Selector," on pages 10 and 11 of *Railway Signaling* for January, 1932.

While the plug box and group clockwork release circuit, as described in the article mentioned above, is used for the release of switches, the same principle can be applied to the release of signals.



Shortening Masts

"When replacing semaphore signals with color-light signals, what is the best method of shortening the masts; how is the mast cut off?"

Acetylene Torch Is Useful

Leroy Wyant

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

When replacing semaphore signals with color-light signals there are usually other problems besides shortening the masts. Where the bottom-post mechanisms have been used they must be removed from the case and the case must be revamped. Usually the ladders should be altered. The battery arrangement for the operation of the color-light signals is frequently changed. Considering these various angles to the matter, my recommendations are as follows:

For miscellaneous signals here and there send out from the store a case, pole and ladder of proper size, length, etc.; replace the semaphore signal and return it to the store or shop where it can be reconditioned and used for the next change. The old case provides a convenient shipping "crate" for the mechanism. At the shop the usable parts can be properly salvaged. The old paint can be removed from the pole and case; rusty and damaged spots or special openings which have been made in the case can be patched; the ladder can be worked over to the type required for color-light signals.

To change out an entire installation of semaphore signals, I would procure a few cases, poles and ladders properly fitted for color-light signals and use these to replace a rotating quantity of the old signals. I would then have these old signals taken to the outfit where the cases could be cleaned, patched and refitted for color-light signals; ladders and poles cut and refitted; then taken out to replace a second batch of old signals, etc.

An acetylene torch is the best for cutting off the poles at the shop or in the field. All signal, maintenance and construction outfits should be equipped with them.

An Efficient Procedure

C. H. Cameron

Canadian Pacific, Toronto, Ont.

It is an easy and simple job to convert any semaphore signal to a light type if the proper procedure is followed. The following method has been used with success: First the light unit is fastened to the existing mast at the proper height above the rail head and then focused and alined. Single-unit searchlight signals are usually fastened at about 14 ft., measured to the center of the lens.

Next, drill the hole in the mast for the control wires