

manner. The building of the line is handled by the general line foreman, who reports to the superintendent of construction.

The gangs now organized will be increased to take care of the drilling and bonding, trunking, wiring, setting of battery chutes, cable post foundations and battery wells, tagging, connecting and stringing cables, trimming signals, setting up battery, painting, putting on insulated joints, and behind this gang two men are kept busy inspecting, testing and placing signals in operation.

Where existing interlocking plants are encountered on a large job, a smaller gang is organized for doing the parts of the special work within the plant limits, which cannot be done advantageously by the larger gangs. No inspectors are used with the different gangs, as each foreman is held responsible for the quality of the work turned out under his supervision.

The concrete gangs should now be sufficiently far ahead with their work so that one of them may be turned back to handle the grading around locations, and the distribution of material from worktrains and other work which may be designated. As each gang completes its part of the work on each stretch, it keeps moving ahead until the job is completed—the gangs always maintaining the same relative positions in respect to each other, by being increased or decreased in size as found necessary.

The headquarters of a gang at times are changed every day, i. e., the work between two stations having been completed in one day, the outfit moves so as always to have camp as near as possible to the work. The headquarters of the superintendent are moved as the progress of the work warrants. Each camp behind the line construction gang is equipped with a telephone connected with the superintendent's office and the other camps make use of the signal common and ground.

Each foreman has a timekeeper whose duty it is to handle the correspondence, check tools and material and make the necessary reports. A combined daily time and work report is sent to the superintendent's office each night showing the number of men worked, hours worked, rates of pay, amount of each kind of work done and cost, also the unit cost on each class of work. The information as shown on these reports is compiled in the superintendent's office so at the completion of the work very accurate unit costs are obtained. Monthly time rolls are made up in the foreman's office, balanced against the daily work reports and forwarded to the superintendent's office, who, in turn, forwards them to the signal engineer. The superintendent of construction furnishes the signal engineer a weekly progress report showing the completion of the different parts of the work by mile post location.

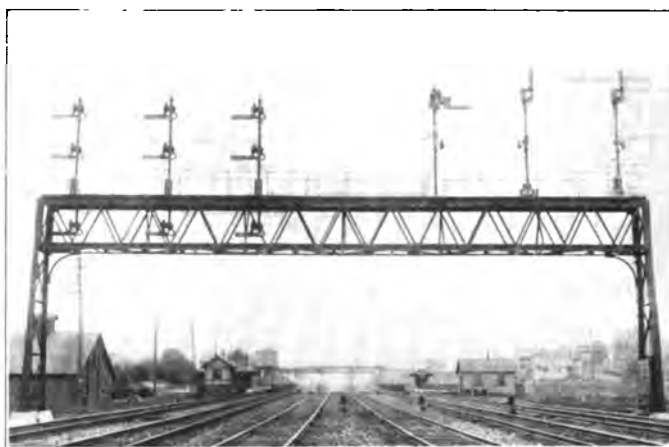
The work under ordinary conditions is so standardized that a special circuit plan is not necessary. On the straight line plan which shows the pole line, track, signals and cut section locations only, each signal or cut section is designated by a letter or a number which refers to a certain location wiring plan from which this location, and all others bearing the same number or letter, can be wired. The connecting of line circuits and mechanism wiring is shown on this plan in full detail; in addition, the exact position taken by each wire on the terminals is shown and the placing of terminals, so each location bearing the same letter or number may be wired identically. This aids maintainers in locating trouble, after becoming familiar with the scheme. Special circuit plans are used through interlockings and under other conditions which cannot be standardized.

NEW RED LIGHT ON THE NEW YORK CENTRAL.—The New York Central reports a signal failure from a cause never before experienced, so far as is known. Signal No. 93 was reported as having its light out, and upon investigation the lamp was found to be filled with tomatoes.

FOUR TYPES OF SIGNALS ON ONE BRIDGE

The accompanying photograph of the westerly bridge at the Parkesburg interlocking on the Philadelphia division of the Pennsylvania Railroad is of interest, as it shows on a single bridge four types of signals used on this system. The three signals on the right are for westbound trains and those on the left are the eastbound home signals.

The signal on the extreme right is an automatic signal, but equipped with vertical light and square-end arms, indicating "stop and stay." This is used at this point for the reason that a switch located beyond the bridge is not included in the interlocking, but is electrically locked from the cabin. The second signal, over the number 441, which is the bridge number, is a standard automatic "stop and proceed" signal. The third signal is a permissive block signal, which, in the 45-deg. position, displays two horizontal green lights over the red light. This is the signal which may be



An Interlocking Bridge on the Pennsylvania Carrying Four Types of Signals.

accepted by freight trains when in the 45-deg. position, indicating "block occupied," but which may not be accepted by passenger trains. The track which it governs and the one next on the left are the tracks of the double-track freight line, which leaves the four-track main line at this point and crosses under it about one-half mile west.

The other three signals are the eastbound home signals for the interlocking, the top arm indicating high speed, the second arm, medium speed over the No. 20 crossovers, and the bottom arm low speed. The distant for the first home signal on the right is a two-arm fish tail. The distant signals for the other two home signals, which are for the main line, are the standard automatics. The only other type of signal used on the Pennsylvania Railroad not mentioned above is the position-light signal, recently developed.

'S'NOUGH, MAWRUSS.—"How often does your road kill a man?" asked an inquisitive passenger of the conductor. "Just once."—*New York Railway Employees' Magazine.*

LONGER RAILS.—At least two or three roads, in ordering rails for the present season, have specified a length of 39 ft., and one road has ordered 40-ft. rails. These and other indications show a tendency toward the use of longer rails. If additional arguments in favor of this change are needed, doubtless every man engaged in bonding track could be enlisted in support of the movement, for a change from 33 ft. to 39 ft. in the standard length of rails would result in a reduction of the number of joints to be bonded of about 16 per cent. The only dissenting voice would be expected from the manufacturers of channel pins and bond wires, and even in this case, the effect would probably not be a clear loss as a saving in the cost of signal installation would tend to increase the total mileage installed.