

those required for that of a divisional system and perhaps I might add even more so, because to those already mentioned should be added that of "administration." It has been observed that in the case of a divisional system the signal and telegraph engineer of the system acts as a technical advisor to his chief; he rarely has however any administrative responsibilities. These duties are delegated to the divisional officers. On the other hand, in a departmental organization the chief of the department must have all of the technical knowledge of the former, but in order to be a successful officer he must have as well keen administrative ability, and this is perhaps as important, if not more so than purely technical knowledge.

Telephones and telegraphs should be the responsibility of the signaling officer of a departmental sys-

required—a certain number of each trade being earmarked for this work.

As mentioned for a divisional organization, the efficiency of the actual maintenance staff will largely depend upon the opportunity given them of learning their trade and keeping up to date. It is both uneconomical and inefficient to have various classes of linemen or maintainers with their inevitable overlapping of duties; it would appear therefore to be the obvious course to establish schools of instruction and to promote according to ability.

Constructional work and heavy repairs would be the responsibility of the outside principal assistant and such work carried out by gangs under inspectors or foremen.

Miller Train Control On the Monon

THE Interstate Commerce Commission on April 11 made public an order entered by Division 1 authorizing the Chicago, Indianapolis & Louisville to change the type of train-stop device installed under its first order, of June 13, 1922, between Hammond and Monon, Ind. This action was taken in response to a petition filed by the railroad on March 9 asking authority to stop operating and to take out the intermittent induction train-stop device of the Sprague Safety Control & Signal Corporation, which had been installed on that division under the first order of the commission and had been approved by the commission, and to substitute in lieu thereof the intermittent induction type of the Miller Train Control Corporation. It also asked for additional time within which to equip its line with the Miller device from Hammond to Indianapolis in compliance with the requirements of the first and second orders, but the commission has denied the petition as to any extension beyond July 1 under its order of January 14, 1924.

The installation is to be made under a contract between the railroad and the General Railway Signal Company, which, as previously announced, has a co-license agreement to manufacture and sell the Miller device, and this is to be the first installation of the Miller device made by the G. R. S. Company under that agreement. Work is now in progress on the 163 miles of line involved in the two orders and provision is also made in the contract for an extension beyond the two divisions. The system selected by the Monon embraces the same principles employed in the installation on the Toledo-Detroit division of the New York Central, as described in the May, 1926, issue of *Railway Signaling*.

As a result of its investigations and negotiations, the petition says, the road has decided that for various reasons it would be better to adopt the Miller device, and has made an arrangement with the manufacturer whereby it can install that system between Hammond and Indianapolis and equip all its locomotives operating over those divisions, "for little more than it would cost to go ahead and install any other reputable system of train control between Monon and Indianapolis." The petition says that in its opinion the Miller device "is better suited to applicant's requirements than any other train-stop device with which it is familiar, and applicant is also of the opinion that the expense of maintaining said Miller device will be less than the expense of maintaining the system which it now has installed between Hammond and Monon."

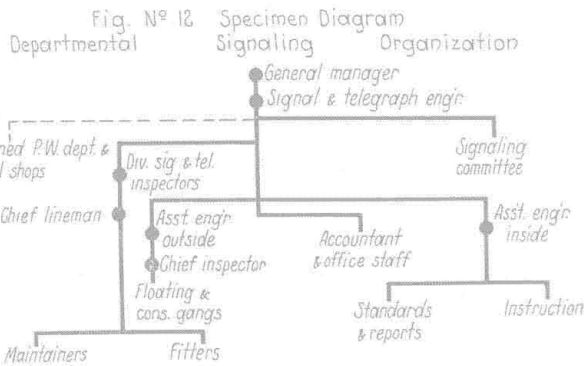


Fig. 12—Typical Chart for departmental signal organization

tem for precisely the same reason as that given for a divisional organization.

On a railway of considerable importance the title of this officer, I suggest, should be signal and telegraph engineer. On a less important system the title might be signal and telegraph superintendent. In the former case, the signal and telegraph department should be an independent one, the engineer of which should report direct to the chief executive officer, probably the general manager; in the latter instance he may report to the chief engineer or to the chief operating officer.

The signal and telegraph engineer should have two principal assistants; one for outside work and one for the office. The line should be divided into sections or divisions with an inspector in charge of each who should be directly responsible for the discipline and efficiency of the maintenance staff. Reports of failures, time sheets of maintenance staff, etc., should reach the head office each morning by 9:30 and be dealt with by the principal office assistant. Failure reports should be recorded on charts, one for each division; this graph is very useful for the purpose of making yearly comparisons.

As a general rule I doubt if it is advisable in a departmental system to have separate shops and stores for the signal and telegraph department. The stores should remain under the general stores superintendent and only those sufficient for current needs kept at the linemen's depots. Shop work, such as light repairs, fitting, locking, etc., should be done in the permanent way shops by skilled signal fitters under a signal fitter inspector, the shops themselves probably being in charge of an engineer of the last named department and, in a like manner, painters and carpenters would be drawn from this department as