

cation suitably outlined. The need for such conferences becomes greater as the work becomes more highly specialized. Considerable attention is paid to this aspect of things by the organizations already referred to, where it is recognized that a complex art having many overlapping phases cannot function to the best advantage unless the overlapping sections are dovetailed together by practical co-operation and a mutual understanding of the activities of other related workers. A greater all-round efficiency ensues where such means are adopted, and as a result works are executed with a greater regard to the best practice and experience.

DECENTRALIZATION.

In our New Zealand Engineering Division a good deal has already been done towards the avoidance of overcentralization of authority with a view to facilitating the smooth running and conduct of works requiring a considerable measure of local supervision and initiative. From observation and discussions *re* similar engineering organizations abroad, where large works are efficiently executed, the importance of a judicious decentralization of administrative responsibility was very evident. Decentralization, or functional delegation of executive authority, becomes at a certain stage of development a paramount necessity if the demands of a rapidly expanding electro-mechanical enterprise are to be promptly and efficiently met. The main point to be safeguarded under such a scheme of organization is to ensure that the officers to whom such authority is delegated are fully competent to exercise the same. For the successful execution of such a scheme it is obvious that provision must be made for unification of the broad lines of policy and procedure, and for suitable consultation and conference on matters that involve any essential modification of the principles and policy laid down. It is claimed by privately-conducted communication systems that much of their success in the development of the telephone business as compared with that achieved by certain Government-controlled organizations is due to a liberal recognition of such principles, no less than to the standardization of tried and tested methods and practices.

STAFF CONDITIONS.

Information was obtained as widely as possible of the conditions of employment and remuneration pertaining to officers engaged in all phases of engineering and associated works, enabling suitable comparisons to be made with the conditions obtaining in our service.

RECRUITING OF TELEGRAPH AND TELEPHONE ENGINEERS AND TECHNICIANS.

A comparison of the British, American, and New Zealand practices with respect to the recruiting of Engineers was the subject of a useful and profitable study. The subject is one that has given considerable thought and concern to large administrations faced with big developments requiring professional supervision of a highly specialized character. The general practice has been to enlist the services of degree men from Universities, who are then placed in different sections of the organization and become more or less specialized in some phases of electrical communication engineering.

The New Zealand practice differs fundamentally from that generally in force elsewhere, and consists in taking lads with Engineering Preliminary qualifications, appointing them as Engineering Cadets, and giving them facilities for the acquirement of University degrees, during which period useful work is done and experience gained in different sections of telegraph and telephone engineering. The system is working out well in practice, and was very favourably commented upon by administrations and corporations with whom the subject was discussed. It has the advantage that engineering-work and theoretical study synchronize and are to a large extent mutually helpful. By the time degree work is finished, a splendid foundation—both theoretical and practical—has been laid for the more serious study of telegraph and telephone engineering problems. I am more than ever satisfied that the principle is a sound one, and that the Department is already reaping and will continue to derive a maximum benefit from the system adopted.

Special attention was also paid to the recruiting of skilled workers, which are the backbone of any electrical organization. The subject was discussed in all its bearings with organizing Engineers responsible for the execution of telegraph and telephone construction and maintenance works. The general aim, it was found, was to provide and maintain an adequate permanent staff of skilled workers, rather than be faced with the losses and interruptions of service which inevitably result from the casual employment of unskilled workers with insufficient knowledge of and training in the various processes involved.

STANDARDIZATION.

It was not surprising to find that considerable divergences of practice existed in different countries, and, in fact, in different parts of the same country. In this respect my visit has emphasized the great advantage of personal inspection and discussion, and has shown how unsafe it is to accept isolated printed references to telephone or telegraph development as indicative of standard practice. In some cases these differences were found to exist even in various parts of the same organization. Inquiry, however, frequently disclosed that differences of the latter kind could be accounted for by considerations such as the non-availability of certain classes of material or apparatus at the time of the installation, by the existence of special conditions of a local nature, and by the fact that large organizations with standardized practices nevertheless permit reasonable scope to the individuality and initiative of executive officers so long as fundamental principles are not violated. In this way helpful experimentation, within due limits, is encouraged, and fruitful ideas are given an opportunity of proving their adaptability or otherwise.