

TELEPHONY: AUTOMATIC AND MANUAL.

STATISTICAL.

New Zealand holds a prominent place in the world statistics of telephones in proportion to the population. The latest figures available show the following results:—

	Telephones per 100 of Population.
United States of America	14·8
Canada	12·2
Denmark	9·2
New Zealand	9·2
Australia	6·1
United Kingdom	3·0

In the application of automatic-telephone switching methods New Zealand also holds a relatively high position. It was somewhat of a surprise to many telephone authorities to learn that our telephone system had already made such an extensive use of machine-switching methods. Of the 136,000 telephone-stations now connected with the Government system in New Zealand, 62,000 are working on the automatic system, and when present installations are completed there will be more than 68,000 automatic telephones in operation, giving a ratio of automatic telephones to the total number of stations of slightly over 50 per cent.

RIVAL SYSTEMS.

Our principal centres, with the exception of Christchurch, have already been converted to the "rotary" automatic system, and the latter installation is well under way. This particular type of automatic system has been manufactured to a large extent in Belgium. Apart from two small exchanges in the United Kingdom giving a very satisfactory service, its use is confined mainly to the Continent, where it is undergoing considerable extension. The system is being highly developed to meet the most exacting needs of telephone communities. In fundamental circuits and principles it is related closely to the "panel" system now being introduced by the American Telephone and Telegraph Co. for use in the largest cities of the United States of America by its associated Bell telephone companies. While the panel system has certain inherent advantages for the interconnection of networks consisting of a large number of full-sized branch exchanges, the rotary system provides at a much lower cost the same advantages for cities comparable to those found in this country. My investigation into the present state of the rotary system and its extension on the Continent enables me to state that this system, which was adopted for the four principal as well as four of our smaller centres, is fully competent to give the highest grade of automatic-telephone service to our urban communities. The same may equally be said of the somewhat smaller automatic installations which have been provided in other parts of New Zealand and which belong to what is technically known as the "step-by-step" system, which originated in the United States of America and has extended to all parts of the world.

TYPES OF AUTOMATIC TELEPHONE EXCHANGE EQUIPMENT.

Several types of automatic exchange systems have now been developed. Opportunity was taken of visiting manufacturers of the same, discussing the relative merits and demerits, and obtaining the latest bulletins regarding their distinguishing features and operation. The following systems came under observation:—

Rotary system of Standard Telephones and Cables, Ltd. (late Western Electric Co.), London (works visited at Antwerp).

Step-by-step systems:—

Automatic Electric Co., Chicago.

Automatic Telephone Manufacturing Co., Liverpool.

Peel Connor (General Electric Co.), Coventry.

Siemens Bros., Woolwich, London.

Standard Telephones and Cables, Ltd., London.

Ericsson system of the L. M. Ericsson Co., Stockholm (system inspected at Rotterdam, Holland).

Relay Automatic Telephone Co., Ltd., London.

Panel system of the Automatic Telephone and Telegraph Co., New York.

London Automatic Exchange network, consisting of a step-by-step Director system.

TELEPHONE-MANUFACTURE IN THE UNITED KINGDOM.

In the United Kingdom telegraph and telephone factories have of recent years undergone considerable extension and modification. Plant has in many cases been redesigned with a view to mass production on a sound manufacturing basis. These changes have been brought about by such factors as the automatic telephoning of London, the heavy post-war demand for catching up with arrears of telephone plant, and by the rapid changes which of recent years have occurred in telegraph and telephone methods and practice, necessitating extensive alterations to plant, machinery, and previously-standardized methods.