

1,106 Press telegrams were sent *via* Pacific and 1,574 *via* Eastern, compared with 912 and 1,250 respectively last year.

A system of deferred cable messages instituted on the 1st January, 1912, providing for transmission at half the ordinary charge (such messages being forwarded after ordinary cable messages, but not suffering a longer delay than twenty-four hours) is fully appreciated by the cabling public.

A system providing for the despatch of week-end cable messages between places in New Zealand and the United Kingdom lodged between midnight on Saturdays and noon on Mondays was inaugurated on the 4th January, 1913. The charge for transmission over the cable is 9d. per word, with a minimum of 18s., $\frac{1}{2}$ d. per word being added in each case for transmission over inland lines in the Dominion or in the United Kingdom. Details of the traffic attached to this report indicate that the innovation will be generously supported.

A new deep-sea cable directly connecting Sydney with Auckland has been successfully laid, and is operated by the staff of the Pacific Cable Board, now accommodated in the new Chief Post-office building at Auckland. The ocean cable is run from Bondi, near Sydney, to Muriwai, on the west coast of the Auckland Province. On behalf of the Pacific Cable Board the Department surveyed a route and laid a subterranean cable between Muriwai Beach and Harkin's Point, a distance of $11\frac{1}{2}$ miles. Two cables were drawn into the underground ducts extending from the Ponsonby Reef to the Board's office at Auckland. The cable which formerly landed at Doubtless Bay and connected the Dominion at Norfolk Island with the Pacific cable to Vancouver has been extended to Auckland.

WIRELESS TELEGRAPHY.

The wireless station of $2\frac{1}{2}$ kilowatts erected on Mount Etako, immediately behind the City of Wellington, and designated "Radio-Wellington," was opened on the 14th October, 1912. The station is situated 985 ft. above sea-level. Power is supplied from an extension of the city electric mains. It is open for business continuously. At night signals are exchanged with vessels within a radius of 600 to 1,000 miles, according to the varying atmospheric conditions, and almost nightly with some of the Australian stations.

Telephone and telegraph wires between the station and the city facilitate the prompt handling of messages.

The aerial, which is supported by two masts of Oregon pine 150 ft. high, and about 300 ft. apart, is of the flat-top type, and is composed of four phosphor-bronze wires 4 ft. apart. From the middle of the aerial four wires extend downward to the building. The earth connection consists of 300 copper wires radiating about 300 ft. from the station, situated midway between the masts. The ground is of rocky formation, with irregular surface. The results obtained from the working of the station have exceeded expectations.

The experimental wireless station which was situated in the tower of the General Post Office has been dismantled.

On the 24th October, 1912, a $2\frac{1}{2}$ -kilowatt station, open during certain hours daily, was established on the roof of the new Chief Post-office at Auckland. The tubular steel masts of this station have been erected on the two domes of the building. Excellent results have also been obtained. The range is somewhat less than that of "Radio-Wellington."

The installation of wireless apparatus on the Government cable steamer "Tutanekai" was completed on the 20th June, 1912. The equipment has already proved valuable in aiding the work of repair to submarine cables.

The erection of the Chatham Islands wireless station of $2\frac{1}{2}$ kilowatts is proceeding, and communication will be established shortly.

The high-power station at Awanui of 30 kilowatts has been completed. It will be capable of communicating with Sydney at any hour. This station is provided with a tower 394 ft. in height, from which an umbrella-shaped aerial spreads from summit to base over an area of about 90 acres. A similar station at Awarua, near Bluff, is also completed. These stations are undergoing departmental tests.

At the International Radio-telegraphic Convention at London, in June, 1912, the question of the regulation of wireless communication was reviewed. The Convention emphasized the need of a closer observance of the regulation requiring ships to communicate with the nearest coast station so as to minimize the interference peculiar to wireless communications and to permit of a greater number of radio-telegraphic messages being exchanged simultaneously. The use of minimum power for the distance to be covered has also been enjoined for the same reason. In exceptional cases maximum power may be used and a station other than the nearest one may be communicated with if a special wave-length be employed. The general trend of the amended regulations is in the direction of limiting long-distance working from one ship to another and between a ship and a coast station in order to circumscribe the area of disturbance. Ships are to be graded in three classes, and to observe prescribed hours of attendance, principally to ensure distress signals being observed. The amended regulations come into force in July, 1913.

Sixteen ship stations are registered in New Zealand.

The Telefunken system is used at all New Zealand shore stations.

By the radio-telegraphic service of the Department weather reports from and to vessels are on request transmitted free of charge.

TELEPHONE EXCHANGES.

Twenty new exchanges were opened during the year, the number of subscribers increased by 4,506 and the number of connections by 5,677.

The total number of exchanges now is 213, made up of 60 central and 153 sub-exchanges.