that used at our radio beacon, and it would appear that at some later date, the spark system may be entirely discarded. Concerning the installation of our first radio fog-beacon it is opportune to note this Dominion is the first country in the Southern Hemisphere to install one of these modern aids to navigation. Although this radio-beacon fog-signal has been in existence for only a few months, it is shown that during the months of December, January, and February it has been put into operation on twenty-six occasions during foggy weather, totalling 168¾ hours of transmitting fog-signals. The two longest continuous periods of operation were one of thirty and a half hours, and one of twenty hours, the balance of the occasions being periods of operation varying between half an hour and nineteen hours.

It is as yet too early to be able to state how many ships equipped with a suitable receiving-device have made use of this radio beacon during foggy weather, but only one ship has made a special request for service.

Having regard to the difference of opinion, previously referred to as to whether spark or interrupted continuous wave will emerge as the better system, and knowing that the Canadian authorities had established stations with the former system but were experimenting with the latter, we communicated with them in order to ascertain their experience and opinion. Their reply was to the effect that difficulty was being experienced with the spark system owing to interruption, and that, so far as experiments with the interrupted continuous-wave system had gone, it was proving satisfactory, but that the experiments had not been continued over a sufficiently long period to justify a conclusive pronouncement in its favour. They indicated that they did not intend to install any more spark stations until they had come to a proved conclusion as to which system was definitely the better, or, to use their own expression, "until we have our feet on the ground."

In view of all the circumstances it has been decided in the meantime not to proceed further with the proposed installations at Wellington and Lyttelton.

Coastal Survey.

Question has been raised from time to time by navigators and others as to the correctness of Admiralty charts of certain portions of our coasts. The existing Admiralty charts have been produced mainly from the earlier surveys by H.M. ships during the years 1848–55. These charts, which were comprehensive and sufficiently correct for the class of ship and method of navigation in vogue many years ago, have been found in later years to be in error to some extent. Some parts of the coast have, since 1848–55 undergone re-examination, but from a survey point of view the only work of any real value is that of the H.M.S. "Penguin" in 1901–5, towards which the New Zealand Government contributed a total amount of £29,698. The result of this work enabled the Admiralty to republish charts of the localities resurveyed—namely, Poverty Bay to Mercury Bay, and Hauraki Gulf within a line from Te Arai Point to Port Abercrombie (Great Barrier). These charts are quite satisfactory. In 1911–12 some surveying-work of modified extent was carried out by the "Terra Nova" in the localities of French Pass and Three Kings Islands. This was at the expense of the New Zealand Government, and charts of these localities were republished by the Admiralty.

The resurvey of those portions of the coast which have had no later survey than that of the period 1848–55 is admittedly desirable. The Naval authorities have estimated that with a properly equipped vessel and specially trained personnel the annual cost would be approximately £50,000, and that the work would take twenty years to complete. The total estimated cost on this basis would therefore be £1,000,000. As this did not seem a practicable proposition within our means, it became necessary to explore other possibilities of getting the work completed within reasonable time and within our means. The matter was taken up with the Admiralty authorities by the Right Hon. the Prime Minister during the last Imperial Conference. The essential information gathered from this discussion may be noted as follows:—

(1) No Admiralty survey-ship is available for the work.
(2) It is inadvisable to attempt the work unless with a ship specially designed and equipped for the purpose.
(3) The Admiralty would not accept for Admiralty chart purposes any survey data not the work of specially Admiralty-trained personnel.
(4) Tenders were invited for a vessel of a type allegedly suitable for the work, and these tenders ranged from £50,000 to £58,000 exclusive of the cost of surveying and other special apparatus. I use the words "allegedly suitable" because the designs on which tenders were called were subjected to considerable criticism by an Admiralty officer.
(5) Admiralty advised that the actual cost of maintenance of a survey-vessel of 800 tons displacement was £33,000 at Home, and estimated that it would be £37,000 abroad. The actual cost of maintaining a survey-vessel of 1,750 tons displacement was £50,400 at Home, and estimated at £56,300 abroad. These estimates are doubtless based on Naval rates of pay, but rates of pay and costs generally would, of course, be considerably higher here.
(6) The previous estimate that it would take a vessel twenty years to do the work required if the whole of her time were devoted to it was confirmed. "Whole time" does not mean whole time surveying, but only eight months of the twelve at sea on survey work. Weather conditions more adverse than usual would, of course, reduce the period at sea.

As a new ship for lighthouse work is now becoming a necessity, consideration has been given to the question as to whether the new ship could be designed for dual purpose of lighthouse tender and survey work. While, doubtless, that could be done so far as design is concerned, it does not appear to be a practicable proposition at present. The lighthouses must be served regularly and at reasonable