One coastal steamer, the "Opua," became a total loss by stranding during weather of low visibility.

One large oversea steamer, the s.s. "Northumberland," sustained serious damage on our coast as the result of striking a submerged obstruction at a position which is shown by Admiralty charts to have been well surveyed and clear of obstruction. A search for the obstruction at the position supplied by the master of the damaged steamer has been made, and depths corresponding closely to those shown on the charts were found to exist. Endeavour is being made to have this locality minutely examined as soon as a suitable vessel can be arranged for. In the meantime shipping has been notified that the locality should be avoided.

Notices to Mariners.

Authentic navigational information of importance, mainly relating to alterations or additions to the several descriptions of "aids" to navigation on our coasts and at our harbours and at more remote parts of the world frequented by our ships, also information concerning newly discovered obstructions, derelicts, wreckage, &c., or other dangers which might affect shipping in general, has been published and circulated throughout the Dominion and overseas where such has been deemed necessary.

Such information is published in the form of a notice to mariners conveying the information in a prescribed form suitable for use on ships and in Hydrographic offices for amending charts used by navigators. During the year seventy-nine such notices to mariners were issued.

Information of a similar nature, but requiring more prompt publication, has been broadcasted by wireless telegraphy when such has been considered necessary.

The issue and circulation of notices to mariners is to some extent an international system of exchanging world-wide information concerning matters affecting the safe navigation of ships. New Zealand, being a comparatively small country having little information of this nature to circulate, benefits to a greater extent in this direction than do larger countries, as we receive copious information from them for which we, owing to our comparative size, have little to send in return.

Radio Direction-finding for Navigational Purposes.

The application of radio in a form suitable for use in connection with the navigation of ships has proceeded slowly, and the time has arrived when it may be said to have passed the purely experimental stage. Its application at present may be divided into two general directions, the first comprising methods by which ships are told by a shore station where they are or where they should be, and the second that of some system by which a ship may itself observe a line or lines of bearing from signals emitted from a radio apparatus situated in a known position, either alone or in conjunction or in combination with some other form of signalling. The former methods, each in some measure resembling one another, are in use in some parts of Europe and North America; but their use does not appear to have been much extended during the past two years, and it is difficult to foresee if those methods will be pursued in the near future, mainly on account of installation expenditure and the costs of subsequent upkeep. The second system has been considerably developed and extended in its application in such forms as the emission of radio signals in conjunction with some descriptive sound signals, and by the emission of radio signals alone. The latter system has been largely adopted as being both cheap and efficient over comparatively short distances; and, furthermore, this system rightly places the responsibility of finding where the ship is on the shoulders of those who are responsible for its safe navigation. The commonest and most widely used form of this system is that now known as the "radio beacon," located at a known salient point (as is a lighthouse), which transmits, either manually or automatically, prescribed identification radio signals at definite periods. This system is particularly useful during fog, as it provides an efficient fog-signal covering distances far exceeding those of any fog-signal transmitted by sound-waves. Such radio signals are, however, of use only to such ships as are fitted with a suitable radio receiving-device. A few overseas ships are now so fitted, and it is hoped the use of this receiving-device will become more common when it is obtainable at a more reasonable cost, and when the responsible officers who may use it in ships have had more opportunities of understanding its use and dependability.

Resulting from this Department's tests with experimental radio beacons which have been carried out at Three Kings Islands, on Motu Opao (the small island on which the lighthouse known as Cape Maria Van Diemen is situated), and at Tiritiri, it was decided that an agitation for the provision of an efficient fog-signal for the use of ships when in the locality of Three Kings Islands would best be satisfied by installing a radio beacon on Motu Opao (Cape Maria Van Diemen) as near as practicable to the existing lighthouse. The distance separating the lighthouse and Three Kings Islands is about thirty miles, and the maximum effective range at which the radio beacon fog-signals may be used is fifty miles. This appeared the best method of providing a fog-signal to serve Three Kings Islands, and arrangements made in 1925 for this to be carried out were somewhat delayed owing to difficulty in procuring some portion of the equipment of a sufficiently robust nature. However, this difficulty being surmounted, the radio beacon was erected during July and August, 1926, and after being subjected to practical tests it commenced operations as a fog-signal on the 1st December, 1926. The radio beacon is attended to and operated by members of the lighthouse staff, who are qualified in wireless telegraphy; but the actual radio fog-signals which are sent out by it are transmitted by means of an automatic interrupter.

The development of the use of radio beacons as fog-signals in other countries is being closely watched, as there has already arisen a divergence of opinion of experts as to the relative efficiency of the spark and the interrupted continuous-wave system of transmission, but it is yet too early to decide this point. The system most widely used in radio beacons at present is the spark system, similar to