

Weather reports from ships have been well maintained during the year, and grateful acknowledgment is made of the excellent co-operation from the shipping of all nations that visit these waters. Unfortunately, the personal service normally provided to shipping in Wellington was curtailed owing to the resignation of the Marine Meteorological Officer in August, and this vacancy had not been filled by the end of the year. However, a full service was maintained by the Shipping Officer in Auckland, where visits were made to some seven hundred ships during the period under review. Instruments were checked, stationery and publications provided, and advice and instructions given where necessary. In addition, where practicable, all overseas ships were supplied with the latest available synoptic chart immediately prior to sailing.

Two international Aerological Periods were held during the year—namely, 1st to 10th April, and 11th to 20th November. During such periods meteorological services all over the world endeavour to obtain the maximum possible amount of upper-air information. Arrangements were made for an augmented programme of pilot-balloon observations, and special high-level soundings with Mosquito aircraft were carried out at Ohakea by the R.N.Z.A.F.

*Meteorological Instruments.*—Maximum and minimum thermometers have continued in short supply, as manufacturers in England have been unable as yet to catch up with the demand. Replacements for these thermometers have been made available for the main climatological stations by modifying non-standard types. Most other classes of meteorological instruments have been in good supply, and all demands have been met.

Some development work has been done on the design of a suitable whirling psychrometer for shipboard use, and two designs have been completed to a stage which warrants several units being made up and placed in service on trial. Some work has also been done on the modification of one of the obsolescent tipping-bucket rain-gauges as an anemometer recorder, and a successful experimental model has been produced.

The automatic weather station at Chesterfield Reef was purchased from the American Foreign Liquidation Commission. By arrangement with the Aerodromes Branch of the Ministry of Works, assisted by two Meteorological Branch technicians, the equipment was brought back to New Zealand in the "Golden Hind." The essential components of this station proved to be in excellent condition, and, after overhaul and a period of test, it will be available for installation at a new site which has still to be chosen.

Four type M.E. 7 radar sets for determining upper winds have been constructed by the Dominion Physical Laboratory of the Department of Scientific and Industrial Research. The set at Whenuapai passed its final acceptance tests in October. The second M.E. 7 was installed at Nadi Aerodrome, and started operation in November. The other two sets are to be located at Palmerston North and Invercargill respectively. Inquiries regarding the availability of additional radar wind-finding equipment are being made in England.

Investigations were carried out in conjunction with the Dominion Physical Laboratory and the Auckland Industrial Development Laboratory into the design of a suitable radar target for use with the M.E. 7 radar. A specification for this target was drawn up and a contract let for the supply of several thousands. These have proved very satisfactory and economical in use.

Supplies of radiosonde transmitters have been very slow in coming forward from the manufacturers in Australia, and continuity of operation at Hokitika was interrupted on this account. It was possible to keep the Auckland station in continuous operation by supplementing new supplies with repaired and reconditioned recovered transmitters. The station at Nadi began making radiosonde flights in August, but full continuity was not possible until January, 1949, owing to lack of adequate supplies. Spare parts for the Friez radiosonde ground equipment have been difficult to obtain, but supplies of all other items, apart from transmitters, have been well maintained.