

In addition to the synoptic reporting stations that are necessary to meet international requirements, 2 second-order and 83 third-order stations, which are needed for internal purposes only, were in operation at the end of the year.

New stations established during the year were :—

Surface observations      ..    Paraparaumu Aerodrome ;    Hawera ;    Great Barrier Island.

Pilot-balloon observations    ..    Tarawa Island.

The station at Rongotai Aerodrome was closed on 22nd December, 1947.

The number of separate weather reports prepared by all the above stations during the year exceeded 300,000.

The daily aircraft aerological ascent made at Wellington during the past few years was transferred to Ohakea consequent upon the closing of Rongotai Aerodrome. The accuracy of the temperature soundings was considerably increased in February, 1948, when the latest Air Ministry type of aircraft psychrometer was fitted to the Harvard aircraft making these flights.

The collection of weather reports from ships at sea was reorganized during the year to adapt the system to the prevailing conditions of sea transport. The number of ships serving as New Zealand selected ships and equipped by New Zealand is now 19. Some 40 vessels engaged on time-charter in the South Pacific area also report as opportunity permits. Regular inspections of, and courtesy visits to, ships in the ports of Auckland, Wellington, and Suva have been carried out. The number of reports received from ships during the year was 9,698, the total for the previous year being 5,936.

The number of ships using the shipping broadcast is steadily increasing and the general "weather consciousness" of shipping in the seas around New Zealand is becoming strongly established, to the mutual benefit of the ships and the Meteorological Service. Close co-operation with shipping interests has been fostered by the appointment in June, 1947, of a full-time Port Meteorological Officer at Wellington.

*Meteorological Instruments.*—Although wartime shortages have not yet been entirely overcome, we have been able to meet all regular demands for the supply of meteorological instruments from stocks mostly obtained through the Meteorological Office, Air Ministry, England.

The first of the Australian-made radiosondes came to hand during the year, and these, together with a further supply of recovered and surplus wartime radiosondes that were reconditioned by the Dominion Physical Laboratory, Scientific and Industrial Research Department, enabled the radiosonde stations at Auckland and Hotitika to operate continuously.

The first of four new ME 7 meteorological radar sets being built by the Dominion Physical Laboratory was installed during September, 1947, at Whenuapai Aerodrome in place of the original experimental set. Several minor modifications in the design were found to be desirable, and these have been put in hand. Final acceptance tests have not yet been completed.

The existing arrangement whereby all instrument maintenance requiring special equipment is done by the Dominion Physical Laboratory has been continued. For the maintenance of electronic equipment, however, a maintenance organization consisting of one senior and one inspecting electronic technician, together with one station electronic technician for each radar-wind station, was set up, and the positions were filled during the year. Originally these technicians were under the technical control of radio engineers at the Dominion Physical Laboratory, but when the Civil Aviation Branch established and filled the position of Principal Radio Engineer, the senior and inspecting electronic technicians were transferred to Civil Aviation Branch control,