

DOMINION OBSERVATORY.

REPORT OF THE DOMINION ASTRONOMER AND SEISMOLOGIST FOR THE YEAR
ENDED 31st DECEMBER, 1931.

BUILDINGS AND EQUIPMENT.

The buildings and equipment have been kept in good order and condition. The Observatory ground has been kept in good order by the Wellington City Corporation.

ASTRONOMY.

Astronomical Observations.

Owing to the increase in the seismological work of the Observatory, it has not been possible to carry out as many meridian transit observations as in previous years. The Observatory standard clock is controlled mainly by means of radio time signals.

Reception of Radio Time Signals.

The following long-wave radio time signals have been received for the purpose of checking the observatory standard clock :—

Station.	Call Sign.	Hour (G.M.T.).	Number of Times received.	Greatest Error of Observatory Clock.
Nauen	DFY	00	312	1.28 seconds fast, April 24.
Malabar	PKX	01	68	1.92 seconds fast, April 24.
Annapolis	NSS	08	20	0.38 seconds slow, February 3.
Bordeaux	FYL	08	64	0.87 seconds fast, May 19.
Rugby	GBR	10	42	0.3 seconds fast, July 6.
Nauen	DFY	12	3	
Bordeaux	FYL	20	161	0.58 seconds fast, August 16.
Annapolis	NSS	21	48	0.36 seconds fast, December 6.

The total number of signals received was therefore 718. Annapolis commenced sending signals at 21 hours G.M.T. on October 1st, 1931. The above numbers include both mean-time and rhythmic signals in the case of Nauen, Bordeaux, and Rugby. Malabar and Annapolis transmit mean-time signals only.

By means of a special telephone circuit connected to the Observatory clock it is possible for an officer who has a wireless receiving-set at his residence to check the Observatory clock by W/T time signals at times out of official hours. Since June 23rd the Bordeaux time signals at 20 hours G.M.T. (7.30 a.m. N.Z.M.T.), has been used to check the Observatory clock every day in this manner. The reception of this signal, together with the signal from Annapolis at 21 hours G.M.T., has resulted in a marked improvement in the accuracy of the radio time signals sent out from the Observatory at 23 hours G.M.T.

It is not possible to make much use of the British time signals from Greenwich, transmitted by Rugby Radio, owing to the very unsuitable times of transmission, at 9.30 p.m. and 5.30 a.m. N.Z.M.T.

Time Signals sent out from the Observatory.

The time service has been maintained, and the regular signals have been transmitted daily. The present routine at the Observatory provides for the following time signals, most of which are sent automatically by the Observatory standard clock. The error of the standard clock seldom exceeds one quarter of a second of time :—

Automatic Time Signals—

- (1) To the General Post Office and to the Railways Department, Wellington, by telegraph, daily, except on Government holidays, and on Sundays.
- (2) To ships and to the general public at Wellington, by electric lights at the Observatory daily.
- (3) To the Auckland Harbour Board, by electric lights at Auckland, on Tuesdays and Fridays, except Government holidays.
- (4) To the South Island telegraph-offices, by telegraph, on Tuesdays and Fridays, except Government holidays.
- (5) To the Lyttelton Harbour Board, by dropping the time-ball at Lyttelton, on Tuesdays and Fridays, except on Government holidays.
- (6) Radio time signals through the Wellington Radio Station ZLW, every day at 10.30 a.m. (23 hours G.M.T.).
- (7) Radio time signals through the Wellington Radio Station ZLW, on Tuesday and Friday evenings at 8.30 p.m. (9 hours G.M.T.), except on Government holidays.
- (8) Radio time signals through the Radio Broadcasting Station 2YA, at Wellington, daily at 4 hours G.M.T.