



SUPPLEMENT
TO THE
NEW ZEALAND GAZETTE
OF THURSDAY, MAY 18, 1876.
Published by Authority.

WELLINGTON, NONDAY, MAY 22, 1876.

Computation of Longitude between Sydney and Wellington.

Colonial Secretary's Office,
Wellington, 15th May, 1876.

THE following Letter and Enclosures are published for general information.

DANIEL POLLEN.

SIR,—

I have the honor to enclose, for the information of the Government, a copy of tables recently received by the Ven. Archdeacon Stock from the Astronomer Royal, Sydney, containing the computations of longitude based on signals exchanged between this Observatory and the Sydney Observatory, by electric cable, on the 26th March ultimo.

Wellington, 1st May, 1876.

The Hon. the Colonial Secretary, Wellington.

I have, &c.,
W. B. D. MANTELL.

Computations of Longitude by Signals sent from Sydney to Wellington, New Zealand, 26th March, 1876.

	H. M.	S.	
No. 1.—9	29	14	Wellington time of receiving Sydney signals.
	9	13	Correction for Wellington time.
	9	38	27-906
	8	4	11-317 Sydney time of sending.
	1	34	16-589 Longitude.
No. 2.—9	40	35	250 Wellington time of receiving Sydney signals.
	9	13	269 Correction for Wellington time.
	9	49	48-519
	8	15	31-946 Sydney time of sending.
	1	34	16-573 Longitude.
No. 3.—10	23	35	619 Wellington time of receiving Sydney signals.
	9	13	669 Correction for Wellington time.
	10	32	48-888
	9	58	32-331 Sydney time of sending.
	1	34	16-557 Longitude.

THE NEW ZEALAND GAZETTE.

No. 4.—10 " 37 " 33.500 9 " 13.269 <hr/> 10 " 46 " 46.769 9 " 12 " 30.107 <hr/> 1 " 34 " 16.662	Wellington time of receiving Sydney signals. Correction for Wellington time. Sydney time of sending. Longitude.
No. 5.—10 " 50 " 46.344 9 " 13.269 <hr/> 10 " 59 " 59.613 9 " 25 " 42.842 <hr/> 1 " 34 " 16.771	Wellington time of receiving Sydney signals. Correction for Wellington time. Sydney time of sending. Longitude.
No. 6.—11 " 3 " 59.081 9 " 13.269 <hr/> 11 " 13 " 12.350 9 " 38 " 55.658 <hr/> 1 " 34 " 16.692	Wellington time of receiving Sydney signals. Correction for Wellington time. Sydney time of sending. Longitude.
No. 7.—11 " 16 " 41.833 9 " 13.269 <hr/> 11 " 25 " 55.102 9 " 51 " 38.555 <hr/> 1 " 34 " 16.547	Wellington time of receiving Sydney signals. Correction for Wellington time. Sydney time of sending. Longitude.
No. 8.—11 " 28 " 32.550 9 " 13.269 <hr/> 11 " 37 " 45.819 10 " 3 " 29.092 <hr/> 1 " 34 " 16.727	Wellington time of receiving Sydney signals. Correction for Wellington time. Sydney time of sending. Longitude.

Sydney Observatory, 26th March, 1876.

H. C. RUSSELL,
Government Astronomer

Results of Longitude Signals, Wellington, New Zealand, to Sydney, New South Wales.

No. of Series.	Time.
2	1 " 34 " 15.281
3	1 " 34 " 15.340
4	1 " 34 " 15.333
5	1 " 34 " 15.388
6	1 " 34 " 15.408
7	1 " 34 " 15.401
8	1 " 34 " 15.349
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1 " 34 " 15.3500 Mean Time.	

Results of Longitude Signals, Sydney, New South Wales, to New Zealand (Wellington)

No. of Series.	Time.
1	1 " 34 " 16.589
2	1 " 34 " 16.573
3	1 " 34 " 16.557
4	1 " 34 " 16.662
5	1 " 34 " 16.771
6	1 " 34 " 16.692
7	1 " 34 " 16.547
8	1 " 34 " 16.727
<hr/>	
1 " 34 " 16.6398 Mean time.	
<hr/>	
1 " 34 " 15.3500	
<hr/>	
3 " 8 " 31.9898	
<hr/>	
1 " 34 " 15.9949 Longitude.	

New Zealand to Sydney

Mean of both

Sydney Observatory, 26th March, 1876.

H. C. RUSSELL,
Government Astronomer.

Signals from Wellington to Sydney.

No. 2.		No. 5.	
Mean of series by New Zealand clock	9 „ 34 „ 52.500	Mean of series by New Zealand clock	10 „ 44 „ 30.000
Correction for average time and clock rate combined ...	9 „ 13.269	Correction for average time and clock rate combined ...	9 „ 13.269
	9 „ 44 „ 5.769		10 „ 53 „ 43.269
Mean of signals received on Sydney chronograph ...	8 „ 9 „ 50.488	Mean of signals received on Sydney chronograph ...	9 „ 19 „ 27.931
Longitude	1 „ 34 „ 15.281	Longitude	1 „ 34 „ 15.338
No. 3.		No. 6.	
Mean of series by New Zealand clock	10 „ 17 „ 30.000	Mean of series by New Zealand clock	10 „ 57 „ 30.000
Correction for average time and clock rate combined ...	9 „ 13.269	Correction for average time and clock rate combined ...	9 „ 13.269
	10 „ 26 „ 43.269		11 „ 6 „ 43.269
Mean of signals received on Sydney chronograph ...	8 „ 52 „ 27.929	Mean of signals received on Sydney chronograph ...	9 „ 32 „ 27.861
Longitude	1 „ 34 „ 15.340	Longitude	1 „ 34 „ 15.408
No. 4.		No. 7.	
Mean series by New Zealand clock	10 „ 30 „ 30.000	Mean of series by New Zealand clock	11 „ 10 „ 30.000
Correction for average time and clock rate combined ...	9 „ 13.269	Correction for average time and clock rate combined ...	9 „ 13.269
	10 „ 39 „ 43.269		11 „ 19 „ 43.269
Mean of signals received on Sydney chronograph ...	9 „ 5 „ 27.936	Mean of signals received on Sydney chronograph ...	94 „ 5 „ 27.868
Longitude	1 „ 34 „ 15.333	Longitude	1 „ 34 „ 15.401
No. 8.			
Mean of series by New Zealand clock	11 „ 23 „ 30.000		
Correction for average time and clock rate combined ...	9 „ 13.269		
	11 „ 32 „ 43.269		
Mean of signals received on Sydney chronograph ...	9 „ 58 „ 27.920		
Longitude	1 „ 34 „ 15.349		

Sydney Observatory, 26th March, 1876.

H. C. RUSSELL,
Government Astronomer.

Further Report by Major Palmer, on the Longitude of various places in New Zealand.

Colonial Secretary's Office,
Wellington, 18th May, 1876.

THE following further Report by Major Palmer, on the telegraphic differences of longitude between various points in the colony, is published for general information.

DANIEL POLLEN.

No. 1.

The AGENT-GENERAL to the Hon. the COLONIAL SECRETARY.

SIR,— 7, Westminster Chambers, Victoria Street, Westminster, S.W.
Referring to my letters of the 21st and 22nd September (Nos. 635 and 641), I now have the honor to forward copy of a further communication received from Major Palmer, on the subject of differences of longitude in New Zealand.

I have, &c.,
I. E. FEATHERSTON,
Agent-General.

The Hon. the Colonial Secretary, Wellington.

SIR,—

Barbadoes, West Indies, 10th January, 1876.

In continuation of the subject of differences of longitude in New Zealand, on which I addressed you in September last, I have the honor now to submit the details as regards Rockside, Dunedin, which have been delayed in consequence of my not having received sooner Mr. McKerrow's observations.

The instrument used at Rockside by Mr. McKerrow was a two-foot portable transit instrument, mounted on a stone pedestal at the residence of its owner Mr. J. T. Thomson. The time-keeper was an eight-day chronometer (Barraud No. 2432), adjusted to sidereal time.

Following the same system of notation that was used in my last letter, and putting R for Rockside and McK for McKerrow, the results may be expressed as follows:—

Date. 1874.	Details of Signalling.	Result.	Time, determined by.		
			M.	S.	
Dec. 26	McK at R sends to D at B ...	R west of B	7	19.08	} McK at R; D at B
	D at B sends to McK at R ...		7	19.39	
Dec. 27	McK at R sends to C at B ...	"	7	18.24	} McK at R; C at B
	C at B sends to McK at R ...		7	18.19	
Dec. 28	McK at R sends to D at B ...	"	7	18.54	} McK at R; D at B
	D at B sends to McK at R ...		7	18.71	
Dec. 29	McK at R sends to P at B ...	"	7	18.64	} McK at R; P at B
	P at B sends to McK at R ...		7	18.74	
Mean R west of B ...			7	18.69	

The Hon. the Colonial Secretary, New Zealand.

H. S. PALMER,
Major R.E.