

RATES OF CHRONOMETERS
ON TRIAL
FOR PURCHASE BY THE BOARD OF ADMIRALTY,
AT THE
ROYAL OBSERVATORY, GREENWICH,
FROM 1902 JULY 5 TO 1903 JANUARY 24.

Astrophysics • Provided by the NASA Astrophysics Data System

Only those Chronometers have been included in this list for which δ did not exceed 12 second

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NAME OF MAKER.	No.	Whether on or days.	ADDRESS OF MAKER.	Construction of Escapement and Balance, from the Description furnished by the Maker.	(III.) ABSTRACT OF	
					Least Weekly Sum.	Extremes of Temperature.
A. Johansson & Co.	5217	2	149, Minorities, London, E.	Auxiliary to balance acting in heat; palladium spring.	- 9.2	60.3 - 66.3
R. Gardner	5218	2	20, Lloyd's Square, London, W.C.	Auxiliary compensation; palladium spring.	+ 5.1	48.4 - 57.6
R. Pike	5219	2	20, King Street, Manchester.	Auxiliary to balance acting in heat and cold; palladium spring.	+ 4.0	75.8 - 85.9
A. Johansson & Co.	4861	2	149, Minorities, London, E.	Auxiliary to balance acting in heat; palladium spring.	- 12.2	55.5 - 69.6
D. Keys, Ltd.	973	2	91, Piccadilly, London, W.	Auxiliary to balance acting in heat; palladium spring.	+ 3.2	48.4 - 57.6
A. Johansson & Co.	5399	2	149, Minorities, London, E.	Auxiliary to balance acting in heat; palladium spring.	- 0.9	65.9 - 73.5
E. Dent & Co.	51944	2	61, Strand, London, W.C.	Dent's balance; steel spring.	+ 10.8	71.7 - 89.2
A. Johansson & Co.	5212	2	149, Minorities, London, E.	Auxiliary to balance acting in heat; palladium spring.	- 6.7	43.4 - 57.6
A. Johansson & Co.	5494	2	149, Minorities, London, E.	Auxiliary to balance acting in heat; palladium spring.	+ 0.7	85.9 - 74.3
R. Gardner	5218	2	20, Lloyd's Square, London, W.C.	Auxiliary compensation; palladium spring.	- 0.5	65.3 - 74.3
C. Frodham & Co.	10047	2	115, New Bond Street, London, W.	Auxiliary compensation to balance; bright steel spring.	+ 8.8	61.2 - 68.3
E. Dent & Co.	51941	2	61, Strand, London, W.C.	Dent's balance; steel spring.	- 8.5	90.8 - 105.2
A. Johansson & Co.	5106	2	149, Minorities, London, E.	Auxiliary to balance acting in heat; palladium spring.	- 6.2	64.3 - 69.3
A. Johansson & Co.	5401	2	149, Minorities, London, E.	Auxiliary to balance acting in heat; palladium spring.	- 6.2	90.8 - 105.2
E. Dent & Co.	50961	2	61, Strand, London, W.C.	Dent's balance; steel spring.	- 3.8	71.7 - 89.2
E. Dent & Co.	51652	2	61, Strand, London, W.C.	Dent's balance; steel spring.	- 39.1	53.0 - 59.6
A. Johansson & Co.	5394	2	149, Minorities, London, E.	Auxiliary to balance acting in heat; palladium spring.	+ 0.2	64.3 - 69.3
A. Johansson & Co.	5750	2	149, Minorities, London, E.	Auxiliary to balance acting in heat; palladium spring.	+ 10.2	65.3 - 74.3
Usher & Cole	6925	2	105, St. John Street Road, London, E.C.	Ordinary balance; palladium spring.	- 1.4	43.4 - 57.6
E. Dent & Co.	51968	2	61, Strand, London, W.C.	Dent's balance; steel spring.	- 1.4	43.4 - 57.6
E. Dent & Co.	51940	2	61, Strand, London, W.C.	Dent's balance; steel spring.	- 6.8	57.1 - 59.5
E. Dent & Co.	51940	2	61, Strand, London, W.C.	Extraordinary balance; palladium spring.	+ 0.2	76.8 - 85.9
Wiggins & Sons	996	2	10, Tower Hill, London, E.	Improved ordinary balance; bright steel spring.	- 13.0	90.8 - 105.2
E. Dent & Co.	50814	2	61, Strand, London, W.C.	Dent's balance; steel spring.	- 14.9	43.4 - 57.6
J. Pyott	1206	2	Minor Lodge, Hyde Vale, Blackheath, S.E.	Improved ordinary balance; bright steel spring.	+ 3.9	83.9 - 103.1
A. Johansson & Co.	5274	2	149, Minorities, London, E.	Auxiliary to balance acting in heat; palladium spring.	+ 1.8	65.3 - 74.3
Usher & Cole	8254	2	105, St. John Street Road, London, E.C.	Auxiliary to balance acting in heat and cold; palladium spring.	+ 2.0	71.7 - 89.2
D. Keys, Ltd.	972	2	91, Piccadilly, London, W.	Auxiliary to balance acting in heat; palladium spring.	+ 3.3	65.3 - 74.3
Usher & Cole	6915	2	105, St. John Street Road, London, E.C.	Auxiliary to balance acting in cold; palladium spring.	+ 2.8	61.2 - 68.3
Usher & Cole	8216	2	105, St. John Street Road, London, E.C.	Auxiliary to balance acting in heat and cold; palladium spring.	- 15.7	83.9 - 103.1
J. Pyott	964	2	Minor Lodge, Hyde Vale, Blackheath, S.E.	Ordinary balance with additions; bright steel spring.	+ 1.9	65.3 - 74.3

The sign + indicates that the rate is gaining.

THE PRINCIPAL CHANGES OF RATE DURING THE 29 WEEKS.								NAME or MAKER.		No.
Mean Temperature.	Greatest Weekly Sum.	Extremes of Temperature.	Mean Temperature.	Difference between the Greatest and Least. (a)	Greatest Difference between one Week and the next. (b)	Mean Temperatures for these two Weeks.	Mean Temperatures for these two Weeks.	Tri No. a + 2b.		
62.9	- 2.2	{ 43.4 - 66.9 45.3 - 65.0 50.1 }	50.1	7.0	3.2	62.9 - 66.8	13.4	A. Johanssen & Co.	5217	
50.2	+ 12.8	{ 71.7 - 89.2 45.3 - 65.0 50.1 }	77.7	7.7	3.0	57.8 - 75.9	13.7	R. Gardner	5218	
85.5	+ 9.5	{ 71.7 - 89.2 45.3 - 65.0 50.1 }	77.7	5.5	4.7	68.8 - 85.5	14.9	E. Pike	5219	
58.1	- 0.9	{ 65.3 - 74.3 45.3 - 65.0 50.1 }	70.1	11.3	5.0	50.1 - 54.5	21.3	A. Johanssen & Co.	4861	
50.2	+ 14.8	{ 55.3 - 63.7 45.3 - 65.0 50.1 }	58.6	11.6	5.1	39.1 - 91.9	21.8	D. Keys, Ltd.	973	
70.1	+ 10.9	{ 43.4 - 66.9 45.3 - 65.0 50.1 }	50.1	11.8	5.4	39.1 - 91.9	22.6	A. Johanssen & Co.	5399	
77.7	+ 24.2	{ 45.3 - 65.0 45.3 - 65.0 50.1 }	51.8	13.4	6.2	91.9 - 81.0	23.8	E. Dent & Co.	51944	
50.2	+ 3.9	{ 55.5 - 62.6 45.3 - 65.0 50.1 }	59.9	10.6	5.7	57.8 - 75.9	24.0	A. Johanssen & Co.	5212	
70.1	+ 15.7	{ 43.4 - 66.9 45.3 - 65.0 50.1 }	50.1	15.0	6.2	57.8 - 75.9	27.4	A. Johanssen & Co.	5494	
70.1	+ 15.1	{ 43.4 - 66.9 45.3 - 65.0 50.1 }	50.1	15.6	6.1	{ 68.8 - 85.5 81.0 - 56.2 }	27.8	R. Gardner	5218	
63.6	+ 24.3	{ 45.3 - 65.0 45.3 - 65.0 50.1 }	51.8	15.5	6.2	81.0 - 56.2	27.9	C. Frodham & Co.	10047	
99.1	+ 2.7	{ 65.9 - 73.5 45.3 - 65.0 50.1 }	70.1	11.2	8.5	99.1 - 91.9	23.2	E. Dent & Co.	51941	
66.8	+ 5.9	{ 51.5 - 68.1 45.3 - 65.0 50.1 }	54.5	12.1	9.3	58.1 - 58.3	30.7	A. Johanssen & Co.	5106	
99.1	+ 9.4	{ 65.9 - 85.0 45.3 - 65.0 50.1 }	75.9	14.3	8.4	81.0 - 66.2	31.1	A. Johanssen & Co.	5401	
77.7	+ 9.9	{ 55.3 - 61.4 45.3 - 65.0 50.1 }	57.8	13.7	8.7	57.8 - 75.9	31.1	E. Dent & Co.	50961	
56.2	- 25.5	{ 71.7 - 89.2 43.4 - 66.9 50.1 }	77.7	13.6	8.9	77.7 - 50.1	31.4	E. Dent & Co.	51652	
57.8	+ 9.4	{ 43.4 - 66.9 43.4 - 66.9 50.1 }	50.1	13.1	9.7	57.8 - 75.9	31.5	A. Johanssen & Co.	5394	
66.8	+ 18.7	{ 43.4 - 66.9 43.4 - 66.9 50.1 }	50.1	18.5	6.9	50.1 - 54.5	33.3	A. Johanssen & Co.	5750	
70.1	+ 27.8	{ 71.7 - 89.2 43.4 - 66.9 50.1 }	77.7	17.6	9.8	77.7 - 50.1	36.2	Usher & Cole	6925	
50.2	+ 17.0	{ 72.0 - 88.1 43.4 - 66.9 50.1 }	81.0	18.4	9.0	81.0 - 56.2	36.4	E. Dent & Co.	51968	
58.3	+ 11.2	{ 72.0 - 88.1 71.7 - 89.2 50.1 }	81.0	18.0	9.7	99.1 - 91.9	37.4	E. Dent & Co.	51940	
85.5	+ 9.4	{ 71.7 - 89.2 64.3 - 69.3 66.8 }	77.7	16.8	10.9	91.9 - 81.0	38.6	E. Dent & Co.	51940	
99.1	+ 5.5	{ 64.3 - 69.3 55.3 - 61.4 57.8 }	66.8	18.5	10.6	50.1 - 54.5	39.7	Wiggins & Sons	996	
50.2	+ 3.9	{ 55.3 - 61.4 43.4 - 66.9 50.1 }	61.1	18.8	10.7	77.7 - 50.1	40.2	E. Dent & Co.	50814	
91.9	+ 25.0	{ 43.4 - 66.9 43.4 - 66.9 50.1 }	51.6	21.1	9.8	85.5 - 99.1	40.7	J. Pyott	1206	
70.1	+ 27.3	{ 43.4 - 66.9 75.8 - 85.9 85.0 }	50.1	25.5	7.8	50.1 - 54.5	41.1	A. Johanssen & Co.	5274	
77.7	+ 21.1	{ 75.8 - 85.9 43.4 - 66.9 50.1 }	85.0	19.1	11.3	77.7 - 50.1	41.7	Usher & Cole	8254	
70.1	+ 23.9	{ 43.4 - 66.9 74.5 - 85.0 88.0 }	50.1	26.6	7.9	57.8 - 75.9	42.4	D. Keys, Ltd.	972	
63.6	+ 26.6	{ 74.5 - 85.0 43.4 - 66.9 50.1 }	88.0	23.8	10.3	68.8 - 85.5	44.4	Usher & Cole	6915	
91.9	+ 1.1	{ 65.5 - 66.4 43.4 - 66.9 50.1 }	64.8	32.3	11.7	62.9 - 66.8	46.2	Usher & Cole	8216	
70.1	+ 35.3	{ 43.3 - 55.3 43.3 - 55.3 50.1 }	51.6	33.4	11.3	77.7 - 50.1	56.0	J. Pyott	964	

The Chronometers are placed in order of merit, their respective positions being determined by consideration of the irregularities of rate exhibited in the Table above. The Trial No. a + 2b is taken as a measure of the irregularities of rate.

Only those Chronometers have been included in this list for which b did not exceed 12 seconds.