

RATES OF CHRONOMETER WATCHES
ON TRIAL
FOR PURCHASE BY THE BOARD OF ADMIRALTY,
AT THE
ROYAL OBSERVATORY, GREENWICH,
FROM 1907 AUGUST 3 TO 1907 NOVEMBER 23.

RATES OF CHRONOMETER WATCHES ON TRIAL FOR PURCHASE BY THE ADMIRALTY AT THE

(1) WEEKLY RATES IN ORDER OF TIME.

Order of Merit.	Aug. 3-10.	Aug. 10-17.	Aug. 17-24.	Aug. 24-31.	Aug. 31 to Sept. 7.	Sept. 7-14.	Sept. 14-21.	Sept. 21-28.	Sept. 28 to Oct. 1.	Oct. 1-5.	Oct. 5-12.	Oct. 12-19.	Oct. 19-26.	Oct. 26 to Nov. 2.	Nov. 2-9.	Nov. 9-16.	Nov. 16-23.
	Watch Horizontal. Dial up.					Watch Vertical. Pendant up.	Watch Vertical. Pendant right.	Watch Vertical. Pendant left.	Watch Vertical. Pendant up.	Watch Horizontal. Dial up.							
1	-4.1	-1.3	-0.7	-3.9	-7.2	-10.9	-9.8	-15.9	-25.5	+3.5	+0.2	+2.7	-0.8	-4.5	-4.4	-7.7	-9.8
2	-12.3	-11.7	-8.1	-5.2	-2.8	-2.4	-2.8	+0.8	+8.4	+8.4	+8.2	-8.3	-5.9	-3.0	-0.6	-1.9	+0.6
3	+4.9	+10.5	+13.0	+10.1	+13.9	+8.2	+2.4	-7.8	-6.8	-8.6	-4.7	+3.5	+5.1	+9.0	+13.8	+14.6	+13.3
4	+17.0	+21.0	+23.3	+25.5	+22.3	+17.8	+22.7	+16.1	+14.2	+16.3	+20.5	+29.1	+24.3	+21.5	+20.8	+17.8	+22.6
5	-8.6	-9.3	-10.8	-11.4	-10.2	-13.8	-19.0	+1.2	+2.1	+2.8	-14.0	-14.5	-13.5	-11.3	-12.8	-13.3	-14.1
6	+0.3	+2.3	+1.4	+2.1	+1.2	+1.6	+2.8	-18.6	+1.2	-28.3	-14.9	+7.4	+5.9	+4.9	+1.4	+1.1	-0.2
7	+5.0	+7.1	+6.9	+5.1	+9.6	+6.2	+5.2	+6.3	+0.2	+26.4	+4.6	+25.2	+21.6	+19.2	+20.4	+18.7	+19.9
8	+24.9	+22.1	+23.7	+24.3	+27.4	+28.4	+30.1	+19.8	+19.6	+20.8	+25.2	+25.1	+21.8	+22.1	+23.6	+20.9	+16.6
9	-6.0	-4.3	-6.8	-4.8	-7.4	-12.1	-3.3	-19.8	-43.4	-32.4	+2.1	-4.7	-9.9	-10.0	-10.5	-10.1	-10.8
10	-13.6	-22.9	-26.9	-34.6	-24.5	-27.9	-24.3	-41.5	-36.6	-39.2	-36.4	-43.5	-35.0	-39.6	-40.4	-42.8	-38.1
11	-1.1	+3.2	+1.9	+2.4	-0.6	-0.8	-8.8	-1.6	-26.1	-44.3	+3.0	-5.0	-3.6	-4.0	-7.0	-7.3	-8.7
12	+0.6	-7.6	-8.8	-14.0	-6.2	-8.6	-3.0	+11.7	-3.5	+10.3	+6.8	+2.9	+5.6	+3.1	+0.7	+0.9	+2.7
13	-1.7	-5.2	-3.0	-3.1	+7.4	+6.2	+1.8	-3.9	+25.0	-15.9	-4.0	+0.2	+8.4	-1.5	+0.4	-0.7	+2.1
14	-3.4	-1.8	-1.0	-1.7	-0.2	+2.3	-7.6	-13.0	-18.4	-35.2	-2.8	-5.0	-1.9	-3.5	-2.3	-1.7	-3.4
15	-0.9	+3.0	-2.9	-0.5	-2.5	-0.1	-3.1	-2.6	-3.5	-2.8	-5.8	-16.2	-16.1	-14.0	-15.3	-14.6	-20.7
16	-13.3	-13.9	-12.3	-12.2	-11.7	-11.7	-22.1	-21.0	-17.0	-14.5	-8.4	-4.7	-0.1	-1.6	-5.2	-7.1	-6.9
17	+10.3	+0.4	+6.5	+4.8	+8.4	+9.9	+3.6	-27.8	-23.8	-25.0	-19.1	+4.9	+7.1	+3.8	+1.7	+3.1	+2.3
18	+16.6	+22.4	+22.7	+22.5	+23.0	+23.4	+14.5	+24.6	-9.3	-7.9	+26.8	+21.1	+30.2	+27.2	+27.2	+26.7	+24.4
19	-9.9	-9.9	-6.5	-7.4	-6.3	-13.9	-20.0	-8.1	-23.7	-21.7	-20.8	-19.7	-8.6	-12.6	-10.2	-15.2	-14.1
20	-9.7	-9.2	-7.1	-8.6	-5.6	-9.3	-6.3	+10.0	+11.4	+13.5	+15.1	+15.1	+9.0	+1.0	+0.2	+0.1	+0.3
21	-16.7	-15.6	-11.1	-16.2	-15.6	-15.6	-26.2	-26.8	-23.8	-22.9	-22.6	-18.2	-27.4	-32.6	-36.5	-28.8	-24.9
22	+3.2	+2.8	-1.0	-1.9	-8.6	-11.1	-10.1	-19.3	-42.0	-48.7	-10.9	-22.1	-24.0	-19.8	-18.3	-15.7	-23.6
23	-7.3	-5.1	-5.8	-4.0	+0.9	-2.2	-11.6	-89.2	-26.8	-40.8	-19.3	-3.7	-2.9	-4.6	-6.1	-9.1	-7.8
24	-9.0	-8.3	-6.6	-5.2	-6.7	-4.1	+0.2	+2.8	-13.1	-47.6	+7.5	+6.7	+10.9	+3.2	+3.6	+12.3	+11.1
25	+16.9	+13.6	+15.5	+12.4	+18.0	+20.9	+10.3	+23.3	-0.5	+43.4	+40.4	+15.0	+15.3	+9.1	+7.8	+6.9	+5.8
67.4	68.3	65.6	65.2	64.4	65.3	68.2	85.7			88.1	86.6	59.7	59.2	57.1	58.2	57.4	54.6
65.1	67.0	63.9	62.8	61.3	68.5	80.9	77.0			84.0	79.0	53.4	56.9	55.0	57.2	59.2	52.7
69.4	70.0	68.2	67.8	67.0	66.9	66.9	91.5			91.1	90.2	61.2	61.8	58.8	59.3	63.0	55.9

* The Weekly Rates have been computed from the rates of three days. During the period Sept. 14 to Oct. 12, the watches were placed in an oven heated by jets of gas, the temperature being regulated by Kullberg's automatic governor, which controls the supply of gas. The gas flames are exterior to the chamber, into which some of the injurious products of combustion can enter.

† The Weekly Rates have been computed from the rates of four days.

ROYAL OBSERVATORY, GREENWICH, FROM 1907 AUGUST 3 TO 1907 NOVEMBER 23.

(2) ABSTRACT OF THE PRINCIPAL CHANGES OF RATES.

Difference between greatest and least Weekly Rates. Dial up. a.	Greatest difference between one week and the next. Dial up. b.	Difference of Weekly Rates.			a + 2b + $\frac{1}{2}(c + d + e)$	Trial Number. a + 2b + $\frac{1}{2}(c + d + e)$	NAME OF MAKER.	No.	ADDRESS OF MAKER.
		Pendant up. Dial up. c.	Pendant right. Dial up. d.	Pendant left. Dial up. e.					
13.6	3.7	- 4.3	-31.9	+ 7.1	21.0	23-7	H. White & Co.	1784	63 Chespaide, London, E.C.
14.3	3.6	+13.1	+14.0	+14.0	21.5	32-8	Owen & Robinson	7697	4 Briggate, Leeds.
12.2	6.2	- 9.3	- 9.8	-11.6	24.6	32.9	J. Player & Son.	31385	Bedford Street, Coventry.
12.1	7.3	- 7.6	-11.7	- 9.6	26.7	34.1	J. Player & Son.	30294	Bedford Street, Coventry.
10.4	5.2	+16.7	+16.8	+16.8	20.8	34.8	Owen & Robinson	5943	4 Briggate, Leeds.
9.7	3.5	-21.9	- 3.9	-43.4	16.7	35.6	Halford & Son	5181	129 Fenchurch Street, London, E.C.
20.2	4.5	- 9.7	-15.0	+11.2	29.2	38.5	Brown & Son	39700	65 Market Place, Sheffield.
21.1	7.6	- 1.3	- 8.3	- 7.3	36.3	39.6	J. Player & Son	30813	Bedford Street, Coventry.
9.1	8.8	- 4.9	-39.4	-28.4	26.7	40.5	H. White & Co.	1650	63 Chapside, London, E.C.
23.9	8.5	- 0.1	+ 2.3	- 0.3	40.9	41.4	Thornele	1052	13-17 Stanton Street, Coventry.
13.6	8.0	+ 7.6	-19.2	-37.4	29.6	42.8	Stanley	1668	46 Chancery Lane, London, W.C.
19.6	8.2	+ 9.4	- 3.4	+10.4	36.0	43.0	Carroll	152374	20 London Street, London, E.C.
13.8	10.5	- 3.2	+24.0	-16.9	34.6	43.0	J. Hewitt	60433	Holyhead Road, Coventry.
9.9	9.9	-13.7	-13.6	-30.4	29.7	43.9	H. White & Co.	1645	63 Chespaide, London, E.C.
27.2	7.9	+ 1.5	+ 2.2	+ 2.9	43.0	44.7	Thornele	73933	13-17 Stanton Street, Coventry.
23.0	10.4	- 1.3	- 3.6	- 1.1	43.8	45.3	S. Lyon, Junr.	57494	8, 10 and 57 Church Street, Blackpool.
11.5	5.3	-27.8	-28.1	-29.3	22.1	45.6	J. Hewitt	65849	Holyhead Road, Coventry.
15.7	9.1	+ 7.9	-27.1	-25.7	33.9	46.7	Brown & Son.	41028	65 Market Place, Sheffield.
13.7	11.1	-16.2	- 8.8	-11.8	35.9	47.3	Story	145725	214 Dalton Road, Barrow-in-Furness.
24.8	8.0	+ 8.2	+ 7.0	+ 9.1	40.8	47.6	Yeomans	82315	48 Spon Street, Coventry.
25.4	10.6	- 2.5	- 1.6	- 0.7	46.6	48.8	Polland	51610	18 High Street, Coventry.
27.2	7.3	+ 1.0	-25.9	-22.6	41.8	50.4	Ollivant & Botaford.	31180	12 and 14 St Ann Street, Manchester.
12.5	9.4	-21.6	-19.1	-33.1	31.3	50.8	Usher & Cole	30502	339 St John Street, Clerkenwell, E.C.
21.8	8.7	+ 1.7	-16.6	-51.1	38.7	50.9	Yeomans	80984	48 Spon Street, Coventry.
15.1	10.6	+19.2	-13.2	+30.7	36.3	53.2	J. Hewitt	60450	Holyhead Road, Coventry.
Mean Weekly Temperature.							The sign + indicates a gaining rate. The quantities a, b, c, d, e, in the formula a + 2b + $\frac{1}{2}(c + d + e)$, are taken numerically, without regard to sign.		
Extremes of Temperature as shown by the Self-Registering Thermometer.									

Only those watches have been included in this list for which "b" did not exceed 15 seconds or for which $a + 2b$ did not exceed 50.

(2) ABSTRACT OF THE PRINCIPAL CHANGES OF RATES

Difference between greatest and least Weekly Rates.	Greatest difference between one week and the next.	Difference of Weekly Rates.				Trial Number.	NAME OF MAKER.	No.	ADDRESS OF MAKER.
		Pendant Dial up. b.	Pendant Right Dial up. c.	Pendant Left Dial up. d.	Pendant Right Dial up. e.				
					$a + 2b$	$a + 2b + \frac{1}{2}(c + \frac{d+e}{2})$			
17-5	12-8	+ 9-3	+17-3	+19-4	49-1	53-9	J. Player & Son.....	31386	Belford Street, Coventry.
27-2	8-5	- 7-4	-17-9	+13-8	44-2	54-0	J. Player & Son.....	33987	Belford Street, Coventry.
21-8	8-9	-18-6	-18-0	-18-5	89-1	54-5	J. Player & Son.....	33519	Belford Street, Coventry.
20-9	8-1	-18-4	-31-5	-22-1	37-1	55-2	Wright & Craighall.....	8940	319 St John Street, Clerkenwell, E.C.
17-4	9-2	+27-2	+21-3	+27-2	35-8	57-5	Sims.....	05150	2 Green Terrace, Rosebery Avenue, E.C.
15-8	8-5	-14-9	+36-5	-70-1	32-8	58-1	J. Player & Son.....	35241	Belford Street, Coventry.
26-8	10-1	-12-5	-15-4	-13-1	47-0	58-1	Armstrong Bros.....	149	88 and 90 Deansgate, Manchester.
22-8	10-9	+19-7	+28-5	+ 5-1	44-6	60-1	J. Hewitt.....	60022	Holyhead Road, Coventry.
15-7	14-6	+20-8	+18-7	+25-0	44-9	62-6	Kendal & Duck.....	16096	106 Chesapeake, London, E.C.
11-3	9-7	-38-7	-23-2	-45-0	30-7	63-1	J. Player & Son.....	33938	Belford Street, Coventry.
24-6	11-7	+ 9-8	-25-2	-44-6	48-0	64-5	H. White & Co.....	15653	63 Chesapeake, London, E.C.
22-0	12-7	+ 2-7	-37-7	-56-8	47-4	64-6	Halford & Son.....	5179	129 Fenchurch Street, London, E.C.
19-8	11-4	+24-6	+22-9	-24-5	42-6	64-8	J. Hewitt.....	60023	Holyhead Road, Coventry.
21-7	13-4	-28-2	-23-8	-21-9	45-9	68-7	Birch & Gaydon.....	3568	153 Fenchurch Street, London, E.C.
20-7	9-1	+40-0	-33-7	+49-3	38-9	72-7	George.....	51341	6 Western Road, Brighton.
13-3	9-4	+59-1	+46-7	-35-7	32-1	75-4	J. Hewitt.....	60452	Holyhead Road, Coventry.
20-4	11-1	+48-6	+27-6	+25-2	42-6	75-7	Stanley.....	1667	46 Chancery Lane, London, W.C.
19-6	14-5	-33-8	-29-7	-66-3	48-6	81-5	Usher & Cole.....	30574	339 St. John Street, Clerkenwell, E.C.
Mean Weekly Temperature.							The sign + indicates a gaining rate. The quantities a, b, c, d, e, in the formula $a + 2b + \frac{1}{2}(c + \frac{d+e}{2})$, are taken numerically, without regard to sign.		
Extremes of Temperature as shown by the Self-Registering Thermometer.									

Only those watches have been included in this list for which "b" did not exceed 15 seconds or for which $a + 2b$ did not exceed 50.

The quantities a, b, c, d, e , in the formula $a + 2b + \frac{1}{2}(c + \frac{d+e}{3})$, are taken numerically, without regard to sign.

Extremes of Temperature as shown by the Self-Registering Thermometer.