

RATES OF BOX AND POCKET CHRONOMETERS

ON TRIAL

FOR PURCHASE BY THE BOARD OF ADMIRALTY,

AT THE

ROYAL OBSERVATORY, GREENWICH,

BOX CHRONOMETERS—FROM 1908 JUNE 20 TO 1909 JANUARY 9.

POCKET CHRONOMETERS—FROM 1908 AUGUST 1 TO 1908 NOVEMBER 21.

(L) WEEKLY RATES

NAME of MAKER.	No.	Watch No.	June 20-27	June 27 to July 4	July 4-11	July 11-18	July 18-25	July 25 to Aug. 1	Aug. 1-8	Aug. 8-15	Aug. 15-22	Aug. 22-29	Sept. 2 to Sept. 9	Sept. 9-16	Sept. 16-23	Sept. 23-30
Kullberg	8042	2	+ 1.2	0.0	+ 1.8	+ 1.1	+ 1.1	+ 1.2	+ 1.0	- 1.0	- 0.5	+ 2.1	+ 3.0	+ 2.3	+ 1.1	+ 0.5
Johannes	8076	2	- 9.4	- 7.8	- 8.8	- 7.3	- 9.8	- 8.6	- 7.5	- 9.5	- 13.8	- 14.9	- 10.8	- 9.7	- 12.8	- 8.2
Kullberg	8094	2	- 1.0	- 2.3	- 3.4	- 4.1	- 0.8	- 0.4	- 2.5	- 4.0	- 1.8	- 1.0	- 0.8	- 0.8	- 0.1	- 0.1
Webb	8092	2	- 7.7	- 6.9	- 7.8	- 6.4	- 9.7	- 5.2	- 6.0	- 9.4	- 5.2	- 6.5	- 2.0	- 1.0	- 6.5	- 6.5
Kullberg	8010	2	- 9.8	- 9.9	- 9.4	- 8.8	- 9.7	- 8.3	- 9.4	- 5.2	- 6.5	- 2.0	- 4.4	- 4.6	- 7.9	- 8.8
Kullberg	8015	2	- 2.5	- 3.0	- 2.5	- 5.8	- 9.6	- 5.0	- 2.1	- 3.6	- 5.3	- 4.8	- 3.1	- 4.0	+ 1.0	- 0.5
Johannes	8058	2	- 5.8	- 6.7	- 9.8	- 7.3	- 8.0	- 5.6	- 8.8	- 9.4	- 5.0	- 4.6	- 5.4	- 5.8	- 4.6	- 7.8
Long	8014	2	- 6.9	- 6.9	- 4.6	- 6.6	- 5.8	- 6.4	- 2.5	- 4.0	- 1.8	- 1.0	- 0.8	- 0.8	- 0.1	- 0.1
Webb	8709	2	- 4.8	- 6.2	- 7.0	- 7.0	- 9.6	- 9.0	- 8.6	- 3.0	+ 0.1	+ 2.8	+ 0.4	+ 1.8	+ 3.4	+ 0.7
Webb	8704	2	- 2.8	- 2.2	- 4.0	- 4.9	- 4.7	- 5.1	- 4.4	- 3.1	- 3.8	- 4.6	- 4.5	- 3.5	- 3.4	- 3.4
Johannes	8321	2	- 1.1	- 4.9	- 4.0	- 4.3	- 6.1	- 3.1	- 0.9	- 4.6	- 2.3	- 2.0	- 3.2	- 7.6	- 8.2	- 8.9
Pike	7448	2	- 32.0	- 30.8	- 31.1	- 29.4	- 31.1	- 27.8	- 27.0	- 35.0	- 38.9	- 38.8	- 31.0	- 31.7	- 30.1	- 30.1
Johannes	8337	2	- 0.1	+ 1.0	+ 1.1	+ 2.7	+ 0.4	- 0.2	+ 1.9	- 4.0	- 2.1	- 2.4	- 3.3	+ 3.8	+ 0.8	+ 0.8
Webb	8338	2	- 10.8	- 9.7	- 11.0	- 10.9	- 11.1	- 10.9	- 17.0	- 16.2	- 11.3	- 10.6	- 9.1	- 10.9	- 19.7	- 18.4
Raid & Sons	4308	2	- 2.9	- 3.4	- 3.8	- 3.6	- 3.7	- 5.3	- 0.2	+ 3.0	+ 4.2	+ 4.0	- 2.8	- 4.6	- 1.8	- 1.1
M. F. Dent	32945	2	+ 1.1	- 1.0	- 2.0	- 3.2	- 5.2	- 6.4	- 5.3	- 0.2	- 5.8	- 3.0	+ 0.8	+ 4.4	- 0.1	- 1.0
Webb	5710	2	- 11.0	- 31.0	- 32.3	- 34.3	- 36.4	- 39.6	- 42.4	- 45.2	- 48.0	- 50.8	- 53.6	- 56.4	- 59.2	- 62.0
Kullberg	7858	8	- 11.7	- 10.5	- 10.1	- 7.2	- 7.7	- 5.1	- 4.2	- 2.6	- 1.8	- 0.5	+ 0.6	+ 1.8	+ 3.0	+ 2.6
Usher & Cole	2053	2	- 2.8	- 3.7	+ 4.2	+ 8.8	+ 4.1	+ 3.1	+ 2.8	+ 2.9	+ 1.6	+ 6.3	+ 10.9	+ 17.9	+ 10.5	+ 13.9
Johannes	6384	2	- 1.3	- 2.1	- 1.8	- 2.8	- 3.4	- 5.3	- 3.8	- 1.7	+ 2.6	+ 4.4	+ 2.3	+ 4.4	- 8.3	- 2.8
Curley & Clemence	51793	2	- 0.8	+ 0.6	0.0	- 0.6	+ 0.9	+ 3.7	+ 3.6	+ 12.9	+ 12.9	+ 16.0	+ 15.9	+ 12.9	+ 10.3	+ 8.7
Kelvin & White	7743	2	+ 4.1	+ 3.7	+ 3.0	+ 3.9	+ 4.1	+ 6.1	+ 6.5	+ 8.7	+ 14.7	+ 18.7	+ 21.0	+ 21.9	+ 19.9	+ 16.3
Linaker	1555	2	- 1.1	- 3.0	- 2.2	- 3.3	- 3.4	- 29.6	- 28.4	- 18.3	- 20.2	- 20.4	- 23.4	- 26.3	- 28.5	- 30.4
Kelvin & White	7733	2	- 0.7	- 1.2	- 0.8	+ 0.7	- 0.9	- 0.1	+ 0.3	+ 0.9	+ 4.1	+ 0.7	+ 6.2	+ 11.0	+ 9.7	+ 4.2
Johannes	6371	2	- 5.7	- 1.9	- 2.4	+ 0.2	- 5.1	- 1.6	- 3.6	- 5.1	- 7.5	- 7.7	- 7.4	- 7.7	- 7.6	+ 1.9
Johannes	6359	2	- 1.3	- 2.3	- 2.9	- 6.2	- 7.0	- 3.7	- 6.0	- 14.7	- 14.3	- 19.1	- 13.0	- 7.1	- 11.6	- 12.4
Johannes	6347	2	+ 6.1	+ 4.1	+ 5.0	+ 4.6	+ 5.6	+ 3.7	+ 6.1	+ 15.2	+ 17.5	+ 14.3	+ 13.8	+ 11.0	+ 11.1	+ 6.1
S. Smith & Son	8010	2	- 11.1	- 9.9	- 11.1	- 9.9	- 11.0	- 9.9	- 11.1	- 10.9	- 12.4	- 12.4	- 11.3	- 10.9	- 12.9	- 11.1
Asprey	2007	2	+ 13.7	+ 14.0	+ 11.9	+ 8.8	+ 9.4	+ 10.9	+ 10.9	+ 12.4	+ 12.4	+ 11.3	+ 10.9	+ 12.9	+ 11.1	+ 6.1
Johannes	6380	2	+ 5.8	+ 6.4	+ 4.5	+ 0.4	- 3.8	+ 2.9	+ 1.9	+ 2.0	+ 5.0	+ 5.9	+ 6.4	+ 8.0	+ 9.7	+ 9.1
Webb	5707	2	- 24.7	- 19.1	- 19.0	- 20.3	- 18.9	- 17.7	- 19.3	- 19.0	- 13.8	- 15.7	- 15.4	- 21.5	- 23.7	- 21.1
Webb	5708	2	- 2.9	- 1.9	- 3.1	- 1.1	+ 2.4	+ 0.1	+ 1.3	+ 1.2	+ 6.8	+ 9.7	+ 11.2	+ 10.6	+ 11.4	+ 10.6
Hall	1705	2	+ 13.1	+ 10.9	+ 10.6	+ 10.5	+ 11.3	+ 11.0	+ 14.0	+ 17.3	+ 26.1	+ 31.0	+ 32.2	+ 37.0	+ 34.3	+ 28.7
Chronometrical Thermometer			-527.4	-801.9	-773.2	-654.9	-622.1	-1028.9	-848.8	-1038.2	-839.6	-822.5	-2496.6	-941.9	-223.0	-510.5
Mean Weekly Temperature			64.7	68.0	67.2	66.1	65.8	70.5	68.5	89.1	98.3	95.9	86.9	62.4	61.6	64.9
Extremes of Temperature as shown by the Self-Registering Thermometers			61.2	65.3	68.0	65.0	62.8	68.9	65.4	87.0	90.4	92.8	80.6	58.8	59.0	63.0
			68.3	71.2	68.2	68.1	71.2	71.3	71.6	91.0	100.8	103.6	90.2	65.0	65.3	68.2

The sign + indicates that the rate is gaining.

† During these weeks the Chronometers were placed in the chamber of 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 none of the injurious products of combustion enter.

The Chronometrical Thermometer differs from an ordinary Chronometer in the construction of the balance only, the position of the metals forming the compensating rim being reversed. By this arrangement the effect of temperature is much magnified.

IN ORDER OF MERIT.

NAME of MAKER.																No.
Sept. 26 to Oct. 3	Oct. 3-10	Oct. 10-17	Oct. 17-24	Oct. 24-31	Oct. 31 to Nov. 7	Nov. 7-14	Nov. 14-21	Nov. 21-28	Nov. 28 to Dec. 5	Dec. 5-12	Dec. 12-19	Dec. 19-26	Dec. 26 to Jan. 2	Jan. 2-9		
- 0.9	- 2.5	- 2.4	- 3.2	+ 0.5	- 2.3	+ 0.8	- 2.0	+ 1.0	- 2.6	- 2.6	+ 1.8	- 1.2	- 2.7	- 3.7	Kullberg.....	8042
- 7.0	- 8.7	- 10.1	- 12.1	- 11.5	- 11.2	- 13.4	- 10.9	- 8.9	- 13.1	- 10.9	- 12.0	- 12.2	- 9.8	- 11.8	Johannes.....	8076
- 10.1	- 10.8	- 11.6	- 12.4	- 9.8	- 10.8	- 10.2	- 9.3	- 9.1	- 11.7	- 11.1	- 9.3	- 13.0	- 11.0	- 14.0	Kullberg.....	8094
- 9.8	- 7.8	- 8.2	- 7.2	- 1.8	- 5.3	- 3.8	- 2.8	- 4.2	- 8.8	- 8.3	- 7.2	- 9.8	- 13.1	- 12.0	Webb.....	7992
- 8.8	- 9.0	- 9.9	- 10.1	- 4.1	- 7.7	- 7.8	- 7.7	- 13.9	- 13.2	- 14.1	- 11.9	- 13.8	- 8.1	- 13.6	Kullberg.....	8010
- 3.8	- 4.2	- 3.8	- 4.0	- 3.0	- 5.2	- 4.8	+ 0.1	0.0	- 7.2	- 9.7	- 7.1	- 5.9	- 5.6	- 8.6	Kullberg.....	8015
- 7.7	- 9.5	- 8.5	- 9.0	- 6.0	- 7.1	- 3.2	- 3.0	- 5.2	- 8.6	- 10.2	- 12.1	- 8.8	- 10.6	- 17.7	Johannes.....	8058
- 9.7	- 9.9	- 8.9	- 9.8	- 1.2	- 4.6	- 4.0	- 5.0	- 6.0	- 4.0	- 5.9	- 7.5	- 9.5	- 9.7	- 11.2	Long.....	2014
- 1.1	+ 1.1	+ 1.8	+ 2.0	+ 0.5	+ 2.5	+ 0.8	+ 0.5	+ 3.7	+ 2.4	+ 3.4	+ 4.0	+ 1.9	+ 1.6	+ 0.6	Webb.....	8709
+ 1.1	- 1.9	- 1.1	- 3.8	- 0.7	+ 2.1	+ 0.8	- 1.8	- 1.5	- 7.6	- 5.0	- 4.2	- 3.2	- 10.6	- 7.8	Webb.....	8704
- 8.1	- 10.8	- 11.9	- 13.3	- 9.9	- 5.7	- 3.8	- 3.3	- 14.9	- 15.0	- 15.9	- 14.5	- 16.3	- 14.6	- 13.5	Fike.....	4308
- 26.4	- 31.1	- 31.1	- 34.0	- 25.1	- 31.8	- 30.3	- 31.0	- 35.6	- 38.8	- 38.7	- 40.9	- 42.7	- 44.8	- 46.9	Johannes.....	7448
- 3.3	- 3.0	- 1.0	+ 2.0	+ 1.1	0.0	- 1.2	- 3.8	- 6.0	- 8.0	- 10.0	- 8.2	- 7.6	- 8.8	- 12.8	Johannes.....	8337
- 15.5	- 21.6	- 22.0	- 21.8	- 16.0	- 17.4	- 19.9	- 19.7	- 21.5	- 22.8	- 20.6	- 22.0	- 22.9	- 25.8	- 28.8	Webb.....	8338
- 1.7	- 4.6	- 4.4	- 4.7	- 1.4	+ 0.2	- 0.3	- 2.9	- 7.1	- 7.8	- 7.0	- 7.1	- 9.7	- 10.9	- 11.3	Raid & Sons.....	4308
- 2.8	- 4.6	- 5.1	- 7.3	+ 1.1	+ 3.4	+ 0.9	+ 5.5	+ 1.5	- 4.3	- 4.6	- 1.0	- 2.8	- 2.8	- 5.1	M. F. Dent.....	32945
- 1.6	- 1.8	- 1.6	- 1.8	- 1.1	- 1.0	- 0.9	- 0.7	- 1.1	- 1.9	- 1.9	- 1.9	- 1.9	- 1.9	- 1.9	Webb.....	5710
- 1.4	- 1.4	- 1.4	- 1.4	- 1.4	- 1.4	- 1.4	- 1.4	- 1.4	- 1.4	- 1.4	- 1.4	- 1.4	- 1.4	- 1.4	Kullberg.....	7858
+ 14.9	+ 12.0	+ 10.1	+ 13.9	+ 14.4	+ 12.4	+ 15.2	+ 18.2	+ 17.3	+ 16.1	+ 13.3	+ 14.0	+ 15.9	+ 11.4	+ 12.1	Usher & Cole.....	2053
- 9.2	- 7.0	- 6.7	- 7.3	- 5.1	+ 1.4	+ 4.8	- 1.0	- 9.0	- 9.7	- 11.1	- 11.5	- 8.7	- 8.7	- 12.1	Johannes.....	6384
+ 7.8	+ 6.0	+ 5.6	+ 5.6	+ 12.2	+ 17.4	+ 16.0	+ 12.8	+ 5.7	+ 4.6	+ 2.6	+ 3.8	+ 3.8	+ 4.2	+ 2.9	Curley & Clemence.....	51793
+ 13.0	+ 11.0	+ 8.4	+ 7.2	+ 14.0	+ 19.0	+ 17.8	+ 20.1	+ 11.8	+ 10.4	+ 7.4	+ 14.3	+ 10.1	+ 9.8	+ 9.8	Kelvin & White.....	7743
- 11.4	- 9.8	- 7.0	+ 3.8	- 20.0	- 21.2	- 20.8	- 20.3	- 27.5	- 30.0	- 32.8	- 34.6	- 36.4	- 38.2	- 40.0	Linaker.....	1555
- 1.2	- 3.8	- 5.9	- 6.2	- 0.3	- 8.1	+ 8.2	- 9.4	- 8.6	- 2.5	- 6.0	- 6.1	- 7.2	- 12.3	- 11.6	Kelvin & White.....	7733
+ 7.1	+ 10.9	+ 7.8	+ 6.9	+ 9.8	- 4.4	- 1.8	- 5.8	- 8.7	- 2.9	- 6.0	- 6.7	- 7.4	- 7.1	- 9.5	Johannes.....	6371
- 14.5	- 15.0	- 14.6	- 14.3	- 14.7	- 16.8	- 19.2	- 20.1	- 18.9	- 21.1	- 21.1	- 22.6	- 23.1	- 22.6	- 24.4	Johannes.....	6359
+ 4.2	+ 3.4	+ 2.7	+ 3.7	+ 1.8	+ 2.8	+ 4.7	+ 4.5	+ 3.9	+ 1.8	+ 2.1	+ 4.3	- 1.1	+ 0.2	- 5.1	Johannes.....	6847
- 7.8	- 9.3	- 10.5	- 7.6	- 12.8	- 19.4	- 23.6	- 15.9	- 9.1	- 3.8	- 1.9	- 4.8	- 1.4	- 4.0	- 8.9	S. Smith & Sons.....	2007
- 1.2	- 3.8	- 5.9	- 6.2	- 0.3	- 8.1	+ 8.2	- 9.4	- 8.6	- 2.5	- 6.0	- 6.1	- 7.2	- 12.3	- 11.6	Asprey.....	2007
+ 5.9	+ 1.1	- 5.9	+ 4.9	+ 2.1	+ 1.9	+ 2.7	+ 13.0	+ 5.6	- 2.4	- 1.2	- 3.8	- 8.3	- 4.8	- 10.5	Johannes.....	6360
- 17.1	- 16.5	- 16.4	- 17.6	- 15.0	- 10.1	- 11.0	- 13.9	- 22.2	- 22.9	- 22.9	- 18.4	- 23.8	- 24.8	- 31.7	Webb.....	5707
- 13.9	- 14.0	- 13.1	- 13.2	+ 9.9	+ 13.0	+ 13.6	+ 13.9	+ 13.7	+ 14.4	+ 13.7	+ 13.4	+ 13.7	+ 13.8	+ 12.6	Webb.....	5708
+ 24.2	+ 23.9	+ 23.1	+ 24.0	+ 37.0	+ 42.0	+ 38.5	+ 38.5	+ 37.2	+ 27.7	+ 27.3	+ 24.6	+ 23.7	+ 23.0	+ 22.6	Hall.....	1705
Chronometrical Thermometer.																
- 68.3	- 67.1	- 60.4	- 124.5	- 138.3	- 282.6	- 270.6	- 154.0	+ 130.8	+ 118.7	+ 374.8	+ 246.7	+ 408.5	+ 1143.8	+ 641.0		
66.7	66.0	64.3	60.5	77.1	90.2	90.3	77.9	56.8	57.1	54.4	56.3	53.3	45.9	51.7	Mean Weekly Temperature.	
Extremes of Temperature as shown by the Self-Registering Thermometers.																
53.4	62.6	63.0	57.0	71.4	88.0	87.2	72.0	54.4	59.7	53.0	54.0	49.2	51.0	53.0		

(II.) WEEKLY RATES IN ORDER OF TEMPERATURE

NAME OF MAKER.		No.	Wchks. to 8 Days.	(11) WEEKLY RATES IN ORDER OF TEMPERATURE.												
				Dec. 25 to 2-9	Jan. 19-26	Dec. 5-12	Dec. 12-19	Nov. 21-28	Nov. 28 Dec. 5	Oct. 17-24	Sept. 12-19	Sept. 5-12	Oct. 10-17	Sept. 19-26	June 20-27	Oct. 3-10
				"	"	"	"	"	"	"	"	"	"	"	"	"
Kullberg.....	8042	2	-2.7	-3.7	-1.2	-2.6	+1.8	+1.0	-2.5	-8.2	+1.1	+2.8	-2.4	+0.5	+1.2	-2.8
Johannes.....	8376	2	-9.7	-11.8	-12.2	-10.9	-12.0	-8.9	-13.1	-12.1	-12.8	-9.7	-10.1	-8.2	-9.4	-8.7
Kullberg.....	8004	2	-11.0	-11.2	-9.5	-9.9	-9.1	-11.7	-12.4	-8.4	-1.0	-1.8	-6.0	-1.0	-1.0	-11.2
Kullberg.....	7992	2	-13.1	-12.0	-9.9	-8.8	-7.2	-4.2	-7.2	-12.1	-6.0	-9.8	-8.2	-5.5	-7.7	-8.8
Kullberg.....	8010	2	-8.1	-13.6	-13.6	-13.1	-11.9	-13.9	-13.2	-10.1	-7.9	-4.6	-9.9	-8.8	-9.8	-9.0
Kullberg.....	8015	2	-5.5	-8.6	-5.9	-9.7	-7.1	0.0	-7.2	-4.0	+1.0	+0.9	-2.8	-0.5	-2.5	-4.8
Johannes.....	8388	2	-15.6	-17.7	-14.9	-10.2	-12.1	-9.2	-8.0	-5.4	-6.9	-8.5	-7.8	-5.3	-5.3	-9.5
Long.....	2014	2	-9.7	-11.2	-9.5	-9.9	-7.5	-1.0	-4.0	-8.7	-5.1	-4.0	-8.9	-9.7	-5.9	-9.9
Webb.....	5709	2	+1.6	+0.6	+1.9	+4.0	+0.7	+2.4	+0.0	-3.8	-3.2	-8.5	-1.1	-0.8	-2.9	-1.9
Webb.....	5704	2	-10.6	-7.8	-3.2	-5.0	0.0	-5.1	-7.6	-9.3	-8.2	-9.5	-1.1	-0.3	-2.9	-1.9
Johannes.....	8321	2	-14.6	-13.5	-14.3	-15.0	-14.5	-14.9	-15.0	-13.8	-8.2	-7.6	-11.9	-8.9	-1.1	-10.8
Pike.....	7448	2	-40.9	-42.7	-38.7	-39.8	-36.9	-34.0	-31.7	-30.1	-28.1	-25.6	-23.1	-20.6	-18.1	-15.6
Johannes.....	8387	2	-8.8	-12.4	-7.6	-10.0	-8.2	-6.0	-8.0	+2.0	+3.8	+3.8	-1.0	+0.8	+0.1	-5.0
Kullberg.....	8008	2	-22.8	-20.8	-22.0	-20.6	-19.7	-21.5	-21.8	-19.7	-15.9	-23.0	-19.4	-10.8	-21.6	-21.6
Reid & Sons.....	4308	2	-10.9	-11.3	-9.7	-7.0	-7.1	-7.1	-7.8	-4.7	-1.8	-4.6	-4.4	-1.1	-2.9	-4.6
M. F. Dent.....	32945	2	-2.8	-3.1	-2.8	-4.6	-1.0	+1.5	-4.3	-7.3	-0.1	+4.4	-5.1	-1.0	+1.1	-4.6
Webb.....	5710	2	-13.9	-9.1	-6.9	-9.9	-3.1	-4.7	-7.1	-8.1	-4.3	-2.2	-1.6	-3.8	-6.9	-1.3
Kullberg.....	7956	8	+3.3	-4.2	-0.7	-2.0	-1.6	-4.3	-4.7	-8.1	-4.3	-2.2	-1.6	-3.8	-6.9	-1.3
Usher & Co.....	2533	2	+15.3	+11.4	+1.0	+4.3	+16.1	+17.5	+16.1	+15.9	+15.6	+17.8	+13.1	+15.9	+2.3	+12.0
Johannes.....	8384	2	-8.7	-12.1	-8.7	-11.1	-11.5	-9.0	-9.7	-7.9	-8.8	-4.4	-6.7	-2.8	-1.9	-7.0
Carley & Clemence.....	51793	2	+4.2	+2.9	+3.8	+2.6	+3.9	+5.7	+4.6	+5.6	+10.3	+12.9	+5.6	+8.7	-0.8	+6.0
Kelvin & White.....	7743	2	+10.1	+3.8	+6.4	+7.4	+14.2	+11.8	+10.4	+7.2	+13.5	+21.5	+4.8	+10.3	+4.1	+11.0
Linker.....	1355	2	-26.8	-35.5	-30.4	-30.0	-22.6	-20.3	-27.5	-25.9	-29.9	-4.0	-27.6	-20.4	-31.0	-24.3
Kelvin & White.....	7738	2	-12.3	-11.8	-7.2	-5.0	-6.1	-3.6	-2.9	-6.2	+9.7	+11.0	-7.9	+4.2	+0.2	-8.8
Johannes.....	8371	2	-7.1	-9.5	-7.4	-6.0	-6.7	-8.7	-2.5	-6.9	-7.6	-7.7	-5.8	-1.9	-5.7	-10.9
Johannes.....	8359	2	-22.6	-24.4	-22.1	-21.1	-22.6	-18.9	-21.1	-14.9	-11.6	-7.1	-14.3	-12.4	-1.3	-15.0
Johannes.....	8347	2	+0.2	-5.1	-1.1	+2.1	+0.3	+3.9	+1.8	+2.7	+11.1	+14.2	+3.4	+6.1	+0.1	-6.6
S. Smith & Son.....	8010	2	+2.5	-4.0	+3.0	+1.8	-4.8	-3.1	-7.6	-7.0	-11.5	-10.0	-6.2	-11.4	-9.3	-9.3
Asprey.....	2907	2	+1.0	-8.9	-3.8	-4.2	-2.9	+0.5	-3.1	+12.9	+12.9	+2.8	+11.1	+13.7	-24.4	-24.4
Johannes.....	8360	2	-4.8	-10.5	-8.8	-1.2	-8.8	+6.0	-2.4	-9.7	-8.0	-5.9	-9.1	-5.8	+1.1	+1.1
Webb.....	5707	2	-34.8	-31.7	-23.8	-22.9	-18.4	-22.2	-23.9	-17.6	-23.7	-21.5	-16.4	-21.1	-34.7	-16.5
Webb.....	5708	2	+17.4	+11.4	+16.1	+13.7	+15.5	+13.2	+17.4	+12.1	+11.4	+10.6	+11.1	+13.6	+2.3	+30.9
Hall.....	1705	2	+38.0	+22.6	+23.7	+27.3	+24.6	+37.2	+37.7	+24.0	+34.2	+37.0	+28.1	+36.7	+13.1	+22.9
Chronometrical Thermometer.....	+1143.8	6	+446.5	+474.8	+426.7	+430.8	+418.7	-124.5	-223.0	-341.9	-404.5	-510.5	-527.4	-572.1	-572.1	-572.1
Mean Weekly Temperature.....	45.9	51.7	53.3	54.4	56.3	56.8	57.1	60.5	61.6	62.4	64.3	64.9	64.7	66.0	66.0	66.0
Extremes of Temperature as shown by the Self-Registering Thermometers.....	41.2	49.2	49.2	53.0	54.0	54.8	54.7	57.0	59.0	58.8	63.0	63.0	61.2	62.6	62.6	62.6
	51.0	53.0	55.7	55.8	57.5	56.0	59.4	64.0	65.5	69.0	68.2	68.3	70.0	70.0	70.0	70.0

The sign + indicates that the rate is gaining.

† During these weeks the Chronometers were placed in the chamber of 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 none of the injurious products of combustion can enter.

The Chronometrical Thermometer differs from an ordinary Chronometer in the construction of the balance only, the position of the metals forming the compensating rim being reversed. By this arrangement the effect of temperature is much magnified.

AS DETERMINED GENERALLY BY THE CHRONOMETRICAL THERMOMETER.

AS DETERMINED GENERALLY BY THE CHRONOMETRICAL THERMOMETER.																	NAME or MAKER.	No.
July 15-25	Sept. 26 to Oct. 3	July 11-18	July 4-11	June 27 to July 4	Aug. 1-8	July 25 to Aug. 1	Nov. 14-21	Oct. 24-31	Aug. 29 to Sept. 5	Aug. 15-22	Nov. 7-14	Oct. 31 to Nov. 7	Aug. 22-29	Aug. 15-22				
+ 1.1 - 0.8 - 0.3 - 0.8 - 0.9 - 0.9 - 0.7	- 0.8 - 7.8 - 7.8 - 7.8 - 7.8 - 7.8 - 7.8	+ 1.1 - 7.8 - 7.8 - 7.8 - 7.8 - 7.8 - 7.8	+ 1.8 - 8.4 - 8.4 - 8.4 - 8.4 - 8.4 - 8.4	0.0 - 7.8 - 7.8 - 7.8 - 7.8 - 7.8 - 7.8	+ 1.0 - 7.5 - 7.5 - 7.5 - 7.5 - 7.5 - 7.5	+ 1.2 - 8.6 - 8.6 - 8.6 - 8.6 - 8.6 - 8.6	- 2.0 - 10.9 - 11.5 - 10.8 - 10.8 - 10.8 - 10.8	+ 0.5 - 10.9 - 11.5 - 10.8 - 10.8 - 10.8 - 10.8	+ 3.0 - 10.8 - 11.5 - 10.8 - 10.8 - 10.8 - 10.8	- 1.0 - 9.5 - 10.4 - 10.2 - 10.2 - 10.2 - 10.2	+ 0.8 - 10.4 - 11.2 - 10.8 - 10.8 - 10.8 - 10.8	- 2.8 - 14.9 - 15.2 - 14.9 - 14.9 - 14.9 - 14.9	+ 2.1 - 18.9 - 18.9 - 18.9 - 18.9 - 18.9 - 18.9	- 0.5 - 14.9 - 14.9 - 14.9 - 14.9 - 14.9 - 14.9	Kullberg.....	8042		
+ 1.1 - 0.8 - 0.3 - 0.8 - 0.9 - 0.9 - 0.7	- 0.8 - 7.8 - 7.8 - 7.8 - 7.8 - 7.8 - 7.8	+ 1.1 - 7.8 - 7.8 - 7.8 - 7.8 - 7.8 - 7.8	+ 1.8 - 8.4 - 8.4 - 8.4 - 8.4 - 8.4 - 8.4	0.0 - 7.8 - 7.8 - 7.8 - 7.8 - 7.8 - 7.8	+ 1.0 - 7.5 - 7.5 - 7.5 - 7.5 - 7.5 - 7.5	+ 1.2 - 8.6 - 8.6 - 8.6 - 8.6 - 8.6 - 8.6	- 2.0 - 10.9 - 11.5 - 10.8 - 10.8 - 10.8 - 10.8	+ 0.5 - 10.9 - 11.5 - 10.8 - 10.8 - 10.8 - 10.8	+ 3.0 - 10.8 - 11.5 - 10.8 - 10.8 - 10.8 - 10.8	- 1.0 - 9.5 - 10.4 - 10.2 - 10.2 - 10.2 - 10.2	+ 0.8 - 10.4 - 11.2 - 10.8 - 10.8 - 10.8 - 10.8	- 2.8 - 14.9 - 15.2 - 14.9 - 14.9 - 14.9 - 14.9	+ 2.1 - 18.9 - 18.9 - 18.9 - 18.9 - 18.9 - 18.9	- 0.5 - 14.9 - 14.9 - 14.9 - 14.9 - 14.9 - 14.9	Kullberg.....	8042		
+ 1.1 - 0.8 - 0.3 - 0.8 - 0.9 - 0.9 - 0.7	- 0.8 - 7.8 - 7.8 - 7.8 - 7.8 - 7.8 - 7.8	+ 1.1 - 7.8 - 7.8 - 7.8 - 7.8 - 7.8 - 7.8	+ 1.8 - 8.4 - 8.4 - 8.4 - 8.4 - 8.4 - 8.4	0.0 - 7.8 - 7.8 - 7.8 - 7.8 - 7.8 - 7.8	+ 1.0 - 7.5 - 7.5 - 7.5 - 7.5 - 7.5 - 7.5	+ 1.2 - 8.6 - 8.6 - 8.6 - 8.6 - 8.6 - 8.6	- 2.0 - 10.9 - 11.5 - 10.8 - 10.8 - 10.8 - 10.8	+ 0.5 - 10.9 - 11.5 - 10.8 - 10.8 - 10.8 - 10.8	+ 3.0 - 10.8 - 11.5 - 10.8 - 10.8 - 10.8 - 10.8	- 1.0 - 9.5 - 10.4 - 10.2 - 10.2 - 10.2 - 10.2	+ 0.8 - 10.4 - 11.2 - 10.8 - 10.8 - 10.8 - 10.8	- 2.8 - 14.9 - 15.2 - 14.9 - 14.9 - 14.9 - 14.9	+ 2.1 - 18.9 - 18.9 - 18.9 - 18.9 - 18.9 - 18.9	- 0.5 - 14.9 - 14.9 - 14.9 - 14.9 - 14.9 - 14.9	Kullberg.....	8042		
+ 1.1 - 0.8 - 0.3 - 0.8 - 0.9 - 0.9 - 0.7	- 0.8 - 7.8 - 7.8 - 7.8 - 7.8 - 7.8 - 7.8	+ 1.1 - 7.8 - 7.8 - 7.8 - 7.8 - 7.8 - 7.8	+ 1.8 - 8.4 - 8.4 - 8.4 - 8.4 - 8.4 - 8.4	0.0 - 7.8 - 7.8 - 7.8 - 7.8 - 7.8 - 7.8	+ 1.0 - 7.5 - 7.5 - 7.5 - 7.5 - 7.5 - 7.5	+ 1.2 - 8.6 - 8.6 - 8.6 - 8.6 - 8.6 - 8.6	- 2.0 - 10.9 - 11.5 - 10.8 - 10.8 - 10.8 - 10.8	+ 0.5 - 10.9 - 11.5 - 10.8 - 10.8 - 10.8 - 10.8	+ 3.0 - 10.8 - 11.5 - 10.8 - 10.8 - 10.8 - 10.8	- 1.0 - 9.5 - 10.4 - 10.2 - 10.2 - 10.2 - 10.2	+ 0.8 - 10.4 - 11.2 - 10.8 - 10.8 - 10.8 - 10.8	- 2.8 - 14.9 - 15.2 - 14.9 - 14.9 - 14.9 - 14.9	+ 2.1 - 18.9 - 18.9 - 18.9 - 18.9 - 18.9 - 18.9	- 0.5 - 14.9 - 14.9 - 14.9 - 14.9 - 14.9 - 14.9	Kullberg.....	8042		
+ 1.1 - 0.8 - 0.3 - 0.8 - 0.9 - 0.9 - 0.7	- 0.8 - 7.8 - 7.8 - 7.8 - 7.8 - 7.8 - 7.8	+ 1.1 - 7.8 - 7.8 - 7.8 - 7.8 - 7.8 - 7.8	+ 1.8 - 8.4 - 8.4 - 8.4 - 8.4 - 8.4 - 8.4	0.0 - 7.8 - 7.8 - 7.8 - 7.8 - 7.8 - 7.8	+ 1.0 - 7.5 - 7.5 - 7.5 - 7.5 - 7.5 - 7.5	+ 1.2 - 8.6 - 8.6 - 8.6 - 8.6 - 8.6 - 8.6	- 2.0 - 10.9 - 11.5 - 10.8 - 10.8 - 10.8 - 10.8	+ 0.5 - 10.9 - 11.5 - 10.8 - 10.8 - 10.8 - 10.8	+ 3.0 - 10.8 - 11.5 - 10.8 - 10.8 - 10.8 - 10.8	- 1.0 - 9.5 - 10.4 - 10.2 - 10.2 - 10.2 - 10.2	+ 0.8 - 10.4 - 11.2 - 10.8 - 10.8 - 10.8 - 10.8	- 2.8 - 14.9 - 15.2 - 14.9 - 14.9 - 14.9 - 14.9	+ 2.1 - 18.9 - 18.9 - 18.9 - 18.9 - 18.9 - 18.9	- 0.5 - 14.9 - 14.9 - 14.9 - 14.9 - 14.9 - 14.9	Kullberg.....	8042		
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+ 1.1 - 0.8 - 0.3 - 0.8 - 0.9 - 0.9 - 0.7	- 0.8 - 7.8 - 7.8 - 7.8 - 7.8 - 7.8 - 7.8	+ 1.1 - 7.8 - 7.8 - 7.8 - 7.8 - 7.8 - 7.8	+ 1.8 - 8.4 - 8.4 - 8.4 - 8.4 - 8.4 - 8.4	0.0 - 7.8 - 7.8 - 7.8 - 7.8 - 7.8 - 7.8	+ 1.0 - 7.5 - 7.5 - 7.5 - 7.5 - 7.5 - 7.5	+ 1.2 - 8.6 - 8.6 - 8.6 - 8.6 - 8.6 - 8.6	- 2.0 - 10.9 - 11.5 - 10.8 - 10.8 - 10.8 - 10.8	+ 0.5 - 10.9 - 11.5 - 10.8 - 10.8 - 10.8 - 10.8	+ 3.0 - 10.8 - 11.5 - 10.8 - 10.8 - 10.8 - 10.8	- 1.0 - 9.5 - 10.4 - 10.2 - 10.2 - 10.2 - 10.2	+ 0.8 - 10.4 - 11.2 - 10.8 - 10.8 - 10.8 - 10.8	- 2.8 - 14.9 - 15.2 - 14.9 - 14.9 - 14.9 - 14.9	+ 2.1 - 18.9 - 18.9 - 18.9 - 18.9 - 18.9 - 18.9	- 0.5 - 14.9 - 14.9 - 14.9 - 14.9 - 14.9 - 14.9	Kullberg.....	8042		
+ 1.1 - 0.8 - 0.3 - 0.8 - 0.9 - 0.9 - 0.7	- 0.8 - 7.8 - 7.8 - 7.8 - 7.8 - 7.8 - 7.8	+ 1.1 - 7.8 - 7.8 - 7.8 - 7.8 - 7.8 - 7.8	+ 1.8 - 8.4 - 8.4 - 8.4 - 8.4 - 8.4 - 8.4	0.0 - 7.8 - 7.8 - 7.8 - 7.8 - 7.8 - 7.8	+ 1.0 - 7.5 - 7.5 - 7.5 - 7.5 - 7.5 - 7.5	+ 1.2 - 8.6 - 8.6 - 8.6 - 8.6 - 8.6 - 8.6	- 2.0 - 10.9 - 11.5 - 10.8 - 10.8 - 10.8 - 10.8	+ 0.5 - 10.9 - 11.5 - 10.8 - 10.8 - 10.8 - 10.8	+ 3.0 - 10.8 - 11.5 - 10.8 - 10.8 - 10.8 - 10.8	- 1.0 - 9.5 - 10.4 - 10.2 - 10.2 - 10.2 - 10.2	+ 0.8 - 10.4 - 11.2 - 10.8 - 10.8 - 10.8 - 10.8	- 2.8 - 14.9 - 15.2 - 14.9 - 14.9 - 14.9 - 14.9	+ 2.1 - 18.9 - 18.9 - 18.9 - 18.9 - 18.9 - 18.9	- 0.5 - 14.9 - 14.9 - 14.9 - 14.9 - 14.9 - 14.9	Kullberg.....	8042		
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+ 1.1 - 0.8 - 0.3 - 0.8 - 0.9 - 0.9 - 0.7	- 0.8 - 7.8 - 7.8 - 7.8 - 7.8 - 7.8 - 7.8	+ 1.1 - 7.8 - 7.8 - 7.8 - 7.8 - 7.8 - 7.8	+ 1.8 - 8.4 - 8.4 - 8.4 - 8.4 - 8.4 - 8.4	0.0 - 7.8 - 7.8 - 7.8 - 7.8 - 7.8 - 7.8	+ 1.0 - 7.5 - 7.5 - 7.5 - 7.5 - 7.5 - 7.5	+ 1.2 - 8.6 - 8.6 - 8.6 - 8.6 - 8.6 - 8.6	- 2.0 - 10.9 - 11.5 - 10.8 - 10.8 - 10.8 - 10.8	+ 0.5 - 10.9 - 11.5 - 10.8 - 10.8 - 10.8 - 10.8	+ 3.0 - 10.8 - 11.5 - 10.8 - 10.8 - 10.8 - 10.8	- 1.0 - 9.5 - 10.4 - 10.2 - 10.2 - 10.2 - 10.2	+ 0.8 - 10.4 - 11.2 - 10.8 - 10.8 - 10.8 - 10.8	- 2.8 - 14.9 - 15.2 - 14.9 - 14.9 - 14.9 - 14.9	+ 2.1 - 18.9 - 18.9 - 18.9 - 18.9 - 18.9 - 18.9	- 0.5 - 14.9 - 14.9 - 14.9 - 14.9 - 14.9 - 14.9	Kullberg.....	8042		
+ 1.1 - 0.8 - 0.3 - 0.8 - 0.9 - 0.9 - 0.7	- 0.8 - 7.8 - 7.8 - 7.8 - 7.8 - 7.8 - 7.8	+ 1.1 - 7.8 - 7.8 - 7.8 - 7.8 - 7.8 - 7.8	+ 1.8 - 8.4 - 8.4 - 8.4 - 8.4 - 8.4 - 8.4	0.0 - 7.8 - 7.8 - 7.8 - 7.8 - 7.8 - 7.8	+ 1.0 - 7.5 - 7.5 - 7.5 - 7.5 - 7.5 - 7.5	+ 1.2 - 8.6 - 8.6 - 8.6 - 8.6 - 8.6 - 8.6	- 2.0 - 10.9 - 11.5 - 10.8 - 10.8 - 10.8 - 10.8	+ 0.5 - 10.9 - 11.5 - 10.8 - 10.8 - 10.8 - 10.8	+ 3.0 - 10.8 - 11.5 - 10.8 - 10.8 - 10.8 - 10.8	- 1.0 - 9.5 - 10.4 - 10.2 - 10.2 - 10.2 - 10.2	+ 0.8 - 10.4 - 11.2 - 10.8 - 10.8 - 10.8 - 10.8	- 2.8 - 14.9 - 15.2 - 14.9 - 14.9 - 14.9 - 14.9	+ 2.1 - 18.9 - 18.9 - 18.9 - 18.9 - 18.9 - 18.9	- 0.5 - 14.9 - 14.9 - 14.9 - 14.9 - 14.9 - 14.9	Kullberg.....	8042		
+ 1.1 - 0.8 - 0.3 - 0.8 - 0.9 - 0.9 - 0.7	- 0.8 - 7.8 - 7.8 - 7.8 - 7.8 - 7.8 - 7.8	+ 1.1 - 7.8 - 7.8 - 7.8 - 7.8 - 7.8 - 7.8	+ 1.8 - 8.4 - 8.4 - 8.4 - 8.4 - 8.4 - 8.4	0.0 - 7.8 - 7.8 - 7.8 - 7.8 - 7.8 - 7.8	+ 1.0 - 7.5 - 7.5 - 7.5 - 7.5 - 7.5 - 7.5	+ 1.2 - 8.6 - 8.6 - 8.6 - 8.6 - 8.6 - 8.6	- 2.0 - 10.9 - 11.5 - 10.8 - 10.8 - 10.8 - 10.8	+ 0.5 - 10.9 - 11.5 - 10.8 -										

NAME OF MAKER.	No.	Whether a or b Days.	ADDRESS OF MAKER.	Construction of Escapement, Balance, and Spring, from a Description furnished by the Maker.	(III.) ABSTRACT OF	
					Least Weekly Sum.	Extremes of Temperature.
Kullberg.....	8042	2	105, Liverpool Road, London, N.	Reversed detent, Kullberg's auxiliary balance; palladium spring.	- 9-7	49-2 - 53-0
Johannsen.....	8376	2	149, Minories, London, E.	Auxiliary acting in heat; palladium spring.	- 14-9	32-2 - 103-8
Kullberg.....	8004	2	105, Liverpool Road, London, N.	Reversed detent, Kullberg's auxiliary balance; palladium spring.	- 14-0	49-2 - 53-0
Kullberg.....	7992	2	105, Liverpool Road, London, N.	Reversed detent, Kullberg's auxiliary balance; palladium spring.	- 15-1	41-2 - 51-0
Kullberg.....	8010	2	105, Liverpool Road, London, N.	Reversed detent, Kullberg's auxiliary balance; palladium spring.	- 14-1	53-0 - 55-8
Kullberg.....	8015	2	105, Liverpool Road, London, N.	Reversed detent, Kullberg's auxiliary balance; palladium spring.	- 9-7	53-0 - 55-8
Johannsen.....	8386	2	149, Minories, London, E.	Auxiliary acting in heat; palladium spring.	- 17-7	49-2 - 53-0
Long.....	2014	2	2, St. Mary's Street, Cardiff.	Auxiliary acting in heat and cold; palladium spring.	- 11-2	49-2 - 53-0
Webb.....	5705	2	69, Charlton Road, Blackheath, S.E.	Auxiliary compensation balance; bright steel spring.	- 9-5	68-9 - 71-3
Webb.....	5704	2	69, Charlton Road, Blackheath, S.E.	Auxiliary compensation balance; bright steel spring.	- 10-6	41-2 - 51-0
Johannsen.....	8321	2	149, Minories, London, E.	Auxiliary acting in heat; palladium spring.	- 16-3	49-2 - 55-7
Pike.....	7448	2	26, King Street, Manchester.	Auxiliary to balance acting in heat and cold; palladium spring.	- 42-7	49-2 - 53-0
Johannsen.....	8387	2	149, Minories, London, E.	Auxiliary acting in heat; palladium spring.	- 12-4	49-2 - 53-0
Kullberg.....	8038	2	105, Liverpool Road, London, N.	Reversed detent, ordinary compensation balance; palladium spring.	- 23-8	49-2 - 53-0
Reid & Sons.....	4308	2	Ocm Edge, Blackett St., Newcastle-on-Tyne.	Loose's auxiliary compensation.	- 11-3	49-2 - 53-0
M. F. Dent.....	32945	2	34, Cockspur Street, London, S.W.	Auxiliary to balance acting in heat.	- 7-3	57-0 - 64-0
Webb.....	5710	2	69, Charlton Road, Blackheath, S.E.	Auxiliary compensation balance; bright steel spring.	- 13-9	41-2 - 51-0
Johannsen.....	7666	2	105, Liverpool Road, London, N.	Reversed detent, Kullberg's auxiliary balance; palladium spring.	- 11-7	61-2 - 68-3
Unter & Cole.....	3058	2	339, St. John Street, Clerkenwell, N.	Auxiliary acting in heat and cold; palladium spring.	+ 1-8	50-4 - 100-8
Johannsen.....	6384	2	149, Minories, London, E.	Auxiliary acting in heat; palladium spring.	- 12-1	49-2 - 53-0
Carley & Clemence.....	51793	2	30, Ely Place, Holborn Circus, E.C.	Palladium spring.	- 0-8	61-2 - 68-3
Kelvin & White.....	7748	2	16, 15 & 39, Canongate Street, Glasgow.	Auxiliary acting in heat and cold; palladium spring.	+ 3-0	66-0 - 68-2
Linaker.....	1955	2	19, Cannon Street, Manchester.	Auxiliary acting in heat and cold; palladium spring.	- 37-6	68-0 - 68-0
Kelvin & White.....	7738	2	16, 15 & 39, Canongate Street, Glasgow.	Auxiliary acting in heat and cold; palladium spring.	- 12-3	41-2 - 51-0
Johannsen.....	6371	2	149, Minories, London, E.	Auxiliary acting in heat; palladium spring.	- 9-5	49-2 - 53-0
Johannsen.....	6359	2	149, Minories, London, E.	Auxiliary acting in heat; palladium spring.	- 24-4	49-2 - 53-0
Johannsen.....	6347	2	149, Minories, London, E.	Plain balance; palladium spring.	- 5-1	49-2 - 53-0
S. Smith & Son.....	8010	2	9, Strand, London, W.C.	Auxiliary acting in cold; palladium spring.	- 23-6	49-2 - 53-0
Asprey.....	2307	2	165 & 166, New Bond Street, London, W.	Auxiliary acting in heat and cold; palladium spring.	- 8-9	49-2 - 53-0
Johannsen.....	6360	2	149, Minories, London, E.	Auxiliary acting in heat; palladium spring.	- 10-5	49-2 - 53-0
Webb.....	5707	2	69, Charlton Road, Blackheath, S.E.	Auxiliary compensation balance; bright steel spring.	- 34-3	41-2 - 51-0
Webb.....	5708	2	69, Charlton Road, Blackheath, S.E.	Auxiliary compensation balance; bright steel spring.	- 3-1	65-0 - 68-2
Hall.....	1705	2	17, Mercer Row, Louth, Lincolnshire.	Invar balance; palladium spring.	+ 10-5	65-0 - 68-1

The sign + indicates a gaining rate.

THE PRINCIPAL CHANGES OF RATE DURING THE 29 WEEKS.

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.	Trial No. a + 2b.	NAME OF MAKER.	No.
51-7	+ 3-0	80-6 - 95-2	86-9	6-7	4-4	54-4 - 56-3	15-5	Kullberg.....	8042
90-9	- 7-0	83-4 - 69-8	66-7	7-9	4-2	66-5 - 57-1	18-3	Johannsen.....	8376
51-7	- 1-0	61-2 - 68-3	64-7	13-0	3-8	50-5 - 56-9	19-8	Kullberg.....	8004
45-9	0-9	92-8 - 100-6	95-9	12-3	5-4	60-5 - 77-1	33-0	Kullberg.....	7992
54-4	- 2-0	92-8 - 100-6	95-9	12-1	6-2	77-9 - 56-8	24-5	Kullberg.....	8010
54-4	+ 1-0	59-0 - 65-3	61-6	10-7	7-2	56-8 - 57-1	25-1	Kullberg.....	8015
51-7	+ 2-2	87-2 - 95-0	90-3	15-9	4-9	60-1 - 50-5	35-3	Johannsen.....	8386
51-7	+ 2-4	72-0 - 84-2	77-9	13-6	6-1	60-5 - 77-1	25-8	Long.....	2014
70-5	+ 6-4	83-0 - 55-8	54-4	15-9	5-6	68-5 - 59-1	27-1	Webb.....	5705
45-9	+ 2-1	98-0 - 90-5	90-3	12-7	7-4	53-5 - 45-9	27-5	Webb.....	5704
53-3	- 0-9	65-4 - 71-6	68-5	15-4	6-1	77-9 - 56-8	27-6	Johannsen.....	6321
51-7	- 27-6	65-4 - 71-6	68-5	15-1	6-4	89-1 - 68-3	28-1	Pike.....	7448
51-7	+ 3-8	59-0 - 65-3	61-6	10-2	6-0	68-5 - 59-1	28-2	Johannsen.....	8387
51-7	- 9-1	80-6 - 95-2	86-9	14-7	6-8	68-5 - 62-4	28-3	Kullberg.....	8038
51-7	+ 4-2	95-4 - 100-8	98-3	15-5	6-8	95-9 - 86-9	29-1	Reid & Sons.....	4308
60-5	+ 5-5	72-0 - 84-2	77-9	12-8	8-4	60-5 - 77-1	29-6	M. F. Dent.....	32945
45-9	+ 2-1	98-0 - 90-5	90-3	16-9	7-0	53-3 - 45-9	30-0	Webb.....	5710
64-7	+ 3-3	41-2 - 51-0	45-9	15-0	7-0	45-9 - 51-7	30-9	Kullberg.....	7666
98-3	+ 18-2	72-0 - 84-2	77-9	16-4	7-2	95-9 - 86-9	30-8	Unter & Cole.....	3058
51-7	+ 4-8	87-2 - 96-0	90-3	16-9	7-0	77-9 - 56-8	30-0	Johannsen.....	6384
64-7	+ 17-4	88-0 - 95-5	90-2	18-2	7-1	77-9 - 56-8	32-4	Carley & Clemence.....	51793
67-2	+ 21-5	58-8 - 65-0	62-4	18-5	8-3	77-9 - 56-8	35-1	Kelvin & White.....	7748
64-8	- 19-3	72-0 - 84-2	77-9	18-3	10-1	68-5 - 56-1	38-5	Linaker.....	1955
45-9	+ 11-0	58-8 - 65-0	62-4	20-3	7-9	77-1 - 80-9	38-0	Kelvin & White.....	7738
51-7	+ 10-9	62-6 - 70-0	66-0	20-4	9-8	60-5 - 77-1	40-5	Johannsen.....	6371
51-7	- 1-3	61-2 - 68-3	64-7	23-1	8-7	68-5 - 89-1	40-5	Johannsen.....	6359
51-7	+ 17-3	95-4 - 100-8	98-3	22-4	9-1	68-5 - 89-1	40-6	Johannsen.....	6347
90-3	+ 2-5	41-2 - 51-0	45-9	23-0	7-7	30-3 - 77-9	41-5	S. Smith & Son.....	8010
51-7	+ 14-0	65-3 - 71-2	68-0	22-9	9-9	45-9 - 51-7	42-7	Asprey.....	2307
51-7	+ 13-0	72-0 - 84-2	77-9	23-5	10-3	50-3 - 77-9	44-1	Johannsen.....	6360
45-9	- 10-1	88-0 - 95-5	90-2	24-2	10-5	53-3 - 45-9	45-2	Webb.....	5707
67-2	+ 20-9	88-0 - 95-5	90-2	24-0	11-0	77-1 - 90-2	46-0	Webb.....	5708
66-1	+ 38-5	72-0 - 84-2	77-9	23-0	10-4	45-9 - 51-7	48-8	Hall.....	1705

The Chronometers are placed in order of merit, their respective positions being determined by consideration of the irregularities of rate exhibited in the above Table. 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.

(1) WEEKLY RATES IN ORDER OF TIME.

(1) WEEKLY RATES IN ORDER OF TIME.																		
Order of Merit.	Aug. 1—8	Aug. 8—15	Aug. 15—22	Aug. 22—29	Aug. 29 to Sept. 5	Sept. 5—12	Sept. 12—19	Sept. 19—23	Sept.— 23—26	Sept.— 26—29	Sept. 29 to Oct. 3	Oct. 3—10	Oct. 10—17	Oct. 17—24	Oct. 24—31	Oct. 31 to Nov. 7	Nov. 7—14	Nov. 14—21
	Pocket Chronometer Horizontal. Dial up.							Chron. Vertical. Pendant up. +	Chron. Vertical. Pendant right. +	Chron. Vertical. Pendant left. +	Chron. Vertical. Pendant up. +	Pocket Chronometer Horizontal. Dial up.						
1	+ 5.5	+ 3.4	- 1.1	+ 0.8	+ 6.9	+ 6.0	+ 7.5	+ 8.2	+ 4.2	+ 6.8	+11.9	- 1.6	+ 5.8	+ 4.2	+ 1.6	+ 2.6	+ 1.0	- 5.9
2	+ 0.1	- 1.4	+ 1.7	+ 2.8	+ 1.9	- 1.1	+ 5.2	-15.4	-14.9	+ 0.5	-11.0	+14.9	+15.2	+12.2	+ 7.0	+ 3.1	+ 1.6	- 4.0
3	- 7.9	- 3.3	+ 1.7	+ 7.3	- 7.9	- 8.5	- 8.6	- 6.8	- 4.4	- 7.2	- 4.2	- 3.2	+ 9.6	+ 9.8	- 0.8	- 7.9	- 7.4	-10.3
4	+10.5	+10.9	+ 2.3	- 0.5	+ 2.1	+ 5.5	- 6.0	+11.0	-31.0	- 5.1	+14.0	+13.2	+10.5	+ 4.8	+ 4.3	+12.4	+15.7	+12.4
5	-11.5	-12.8	- 8.2	-10.2	-11.0	-15.9	-18.2	-40.3	-61.6	-15.6	-38.0	-21.6	-13.3	-11.7	-10.3	-22.6	-16.2	-21.6
	68.5	65.7	64.9	66.5	61.8	62.4	87.5	88.1		89.9	89.4	64.3	60.5	56.8	58.9	54.7	55.5	
	65.4	64.2	63.8	64.8	58.0	58.8	81.8	82.3		82.8	82.0	63.0	57.0	53.3	56.0	51.4	53.2	
	71.6	69.0	67.2	68.3	65.9	65.0	90.0	91.1		92.0	92.2	69.0	64.0	62.0	61.4	59.4	59.8	

+ The weekly rates have been computed from the rates for four days.
During the period Sept. 12 to Oct. 10, the Pocket Chronometers were placed in the chamber of 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 none of the injurious products of combustion can enter.

* The weekly rates have been computed from the rates for three days.

(2) ABSTRACT OF THE PRINCIPAL CHANGES OF RATE.

(3) ABSTRACT OF THE PRINCIPAL CHANGES OF RATE.							NAME OF MAKER.	No.	ADDRESS OF MAKER.
Differences between actual and last Weekly Rate. Dial up.	Greatest difference between one week and the next Dial up.	Differences of Weekly Rates.			Trial Number.				
		Pendant up — Dial up.	Pendant right — Dial up.	Pendant left — Dial up.					
a.	b.	c.	d.	e.	a+2b	$a + 2b + \frac{1}{2} \left(c + \frac{d+e}{3} \right)$			
13.4	7.4	-13.1	+ 1.2	+ 3.8	23.2	32.6	Thorneley.....	57048	Stanton House, Coventry.
19.2	6.3	-23.3	-26.0	- 9.6	31.8	49.2	Kullberg.....	7455	105, Liverpool Road, London, N.
20.1	15.2	+ 0.4	+ 1.5	- 1.8	50.5	51.2	Kullberg.....	7452	105, Liverpool Road, London, N.
21.7	11.5	+ 8.9	-84.6	- 8.7	44.7	56.4	Kullberg.....	745	105, Liverpool Road, London, N.
23.4	15.4	-19.3	-31.7	+ 4.3	54.2	69.9	Kullberg.....	7457	105, Liverpool Road, London, N.
Mean Weekly Temperature.							The sign + indicates a gaining rate.		
Extremes of Temperature as shown by the Self-Registering Thermometers.									

The quantities a, b, c, d, e, in the formula $a + 2b + \frac{1}{2} \left(c + \frac{d+e}{3} \right)$ are taken numerically without regard to sign.
Only those Pocket Chronometers have been included in this list for which "b" did not exceed 18 seconds or for which "a + 2b" did not exceed 60.