

WOKINGHAM

METEOROLOGICAL

DATA

Wokingham Climatological Station, Emmbrook, Berkshire.

Lat/Long 51°25'N 00°51'W NGR (SU)798701 Altitude 46m ASL.

Monthly Means and Totals

DECEMBER 2019

Temperature (°C)	Anomaly	Rank in the past 138 years
Mean maximum	9.5	+1.5 23 rd highest
Mean minimum	3.0	+0.9 35 th highest
Daily mean	6.2	+1.2 32 nd highest
Highest maximum	13.0	on 19 th Lowest maximum 4.7 on 4 th
Highest minimum	8.3	on 8 th Lowest minimum -3.1 on 2 nd
Mean grass minimum	-0.1	+0.5 Lowest grass minimum -7.8 on 2 nd
Mean earth @30 cm	6.7	+0.1 Earth @100 cm 8.5
Frost duration (hrs)	51.4	Rain duration (hrs) 82.7
Rainfall total (mm)	96.0	153 % 19 th highest
Highest daily fall	16.6	on 19 th Highest rate mm/hr 97 on 19 th
Number of: Dry days (<0.2mm)	10	Wet days (>0.9mm) 13 days ≥5mm 7
Sunshine total (hrs) 88.4	Daily mean 2.85	131 % Sunniest day 7.6 on 2 nd
N° days with: Air frost 8	Ground frost 17	Snow falling 0 Snow lying 0
Thunder 2	Hail ≥5mm 1	Small hail/ice 1 Fog @09 1 Nil sun 6
Pressure MSL: Mean @09 GMT, mbar 1010.0	-5.7	Highest 1037.4 on 28 th Lowest 970.7 on 21 st
Relative humidity: Mean (%) 88.6	Lowest 54 on 9 th	Water vapour (g/kg), mean at 09 and 15 GMT 5.2, 5.6
Overall mean wind speed (mph) 7.5	Windiest day 14.3 on 8 th	Max gust 50 on 14 th
Wind direction (days)	N 1 NE 0 E 1 SE 1 S 7 SW 14 W 7 NW 0	
Least windy day (mph) 1.7	on 4 th	Calm; less than 0.5 mph (minutes) 530

Anomaly = departure from 1981 to 2010 average (degrees C, percent and mbar).

Notes:

Mild, Wet and Sunny

Temperature: The mean this December is 1.2° above the current climatological average, but is 1.1° below that of this month last year. In this millennium 6 Decembers have been milder or the same as this year's, including the current record holder 2015, 4.7° above the mean this December. The highest max is close to the median and the lowest max is 3.1° above its median, and ranks 7th highest in 107 years. The highest min is 1.0° below the median while the lowest min is 2.1° above its median. The mean grass min is 0.5° above average and the lowest grass min is 2.5° above average. Earth temperatures are close to average. The duration of air frost is 39.6 hours below average, but is 21.7 hours more than in last December. The number of days with air frost is 2 below average. Anomalies for daily max were negative until the 4th, and slightly so on the odd day later, with extreme values of -4.5° on the 4th and +4.9° on the 19th. For daily min, anomalies exceeded -4° on the 2nd, 4th and 5th, with an extreme value of -6.2° on the 5th, and were above +4° on the 8th, 20th, 22nd, 24th and 29th, with a peak value of +6.1° on the 20th. **Rainfall:** Yet another wet month, the fourth consecutive one, bringing the 4 month total fall to 361 mm, which is 55% of the annual average. This month's total is highest since 2013, but there have been 4 wetter Decembers in this millennium. The highest daily fall is only 1.5 mm above average, but is also highest since 2013. Rainfall duration is 146 % of average, and highest since 2012. The number of dry days is 5 fewer than average but a 6 day dry spell ended on the 4th. Snow was completely absent this month, but only 1 December in the past 7 has had snow. Thunder was heard on 2 days, the 15th and 19th, the most for any December since 1989, and 36 out of the past 44 Decembers have had none at all. Hail up to 9 mm dia. fell on the 15th, the first incidence of large hail in December since 1983. Ice pellets (small hail) also fell on the 19th. Rainfall rate exceeded the violent threshold on the 10th, 15th and 19th. Daily rainfall accumulation compared with normal was in deficit by 12 mm on the 11th, after a dry start to the month, after which it turned wet leading to a surplus of 13 mm on the 17th, increasing to 48 mm by the 21st, which decreased to 34 mm by the 31st. The 4 day period to the 21st was especially wet, producing a total of 44.4 mm of rain. **Sunshine:** This has been a sunny December, although with a daily average of just over 2 hours, a few sunny days soon inflates the monthly mean. However, this is equal third sunniest December this millennium, after 2001 and 2014. Daily totals over 80% of the maximum occurred on the 2nd, 4th, 15th, 25th and 30th, and the 7.6 hours on the 2nd is equal highest with 2016 for any December day this millennium. There were some fairly short dull spells, and after a sunny 7.1 hours on Christmas day, the following 3 days produced a total of only 0.1 hours. Overall there were 16 days with <3 hours and 6 with =>6 hours. Daily accumulation compared with normal was in surplus throughout, reaching 15 hours by the 5th, 20 hours on the 15th and 22 hours on the 31st. **Wind:** The mean speed and the month's highest gust are close to average. Daily mean directions were mainly SW'ly, but N'ly on the 1st, S'ly on the 16th to 21st, 28th and 29th, and E'ly on the 31st. Speeds were mainly fresh from the 5th to 15th and on the 19th and 26th, becoming strong on the 8th, 10th and 14th, otherwise were light or moderate. **Pressure:** This month's lowest value is lowest for any December since 1989, and is 13 mbar below average.

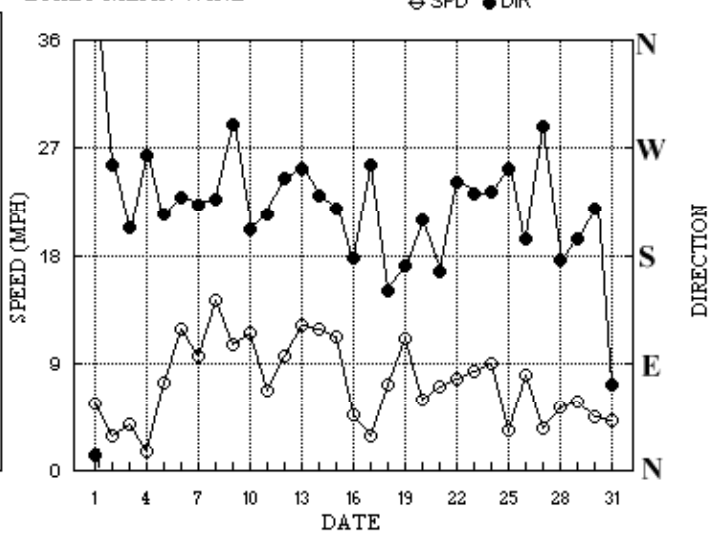
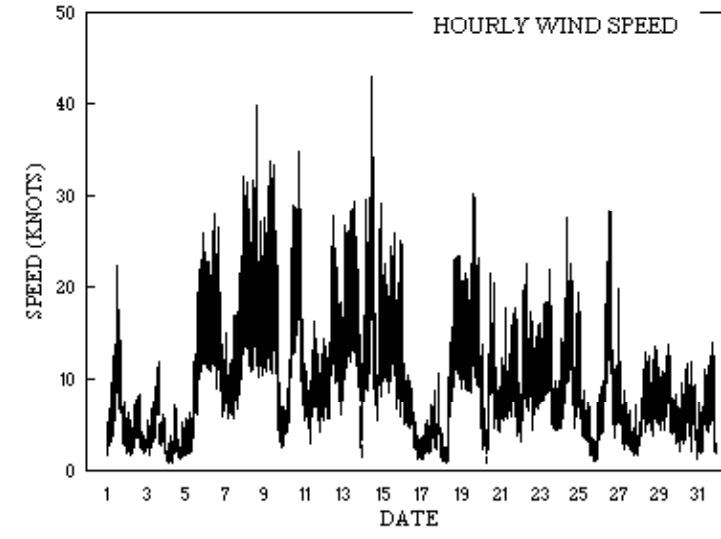
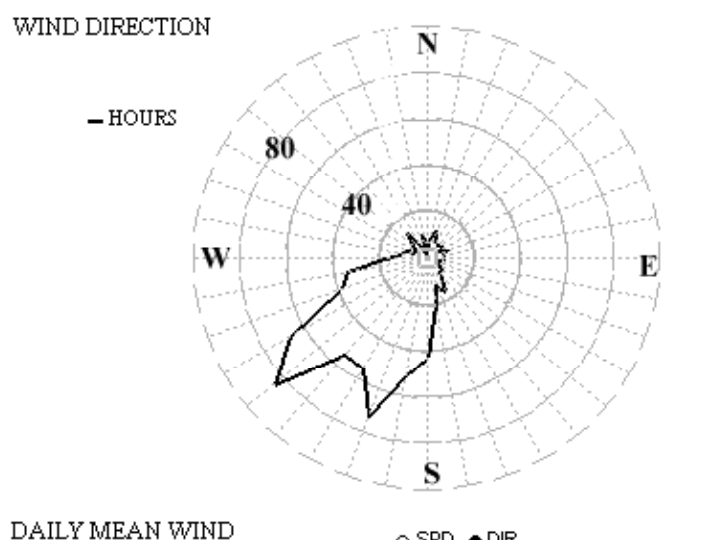
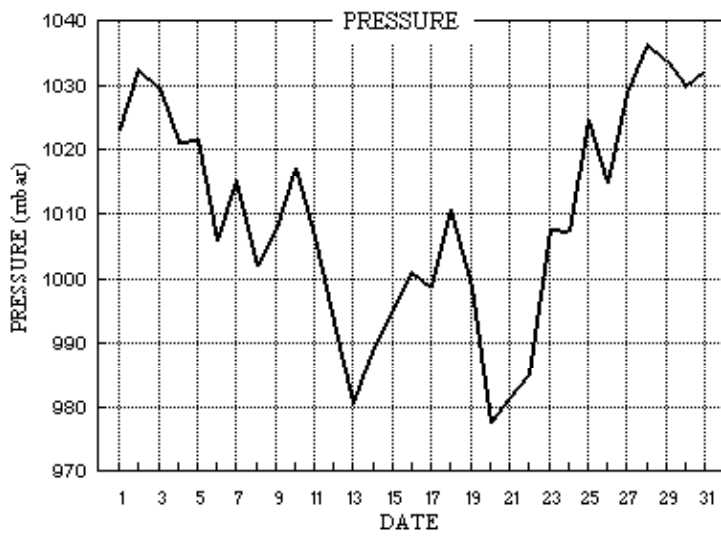
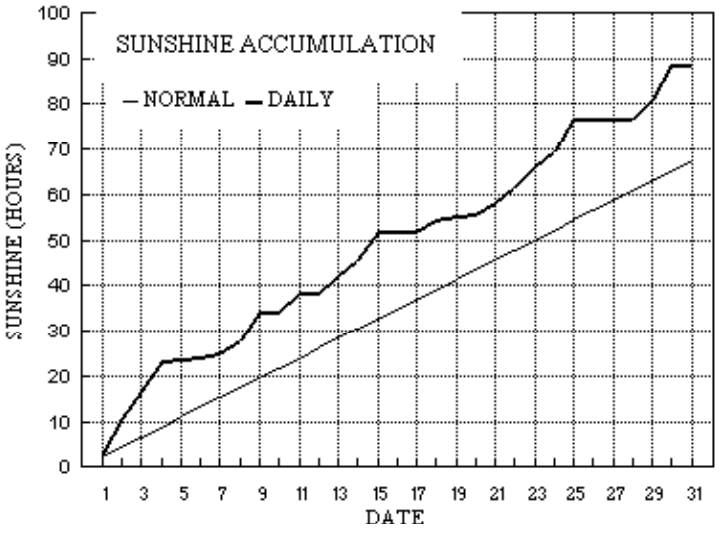
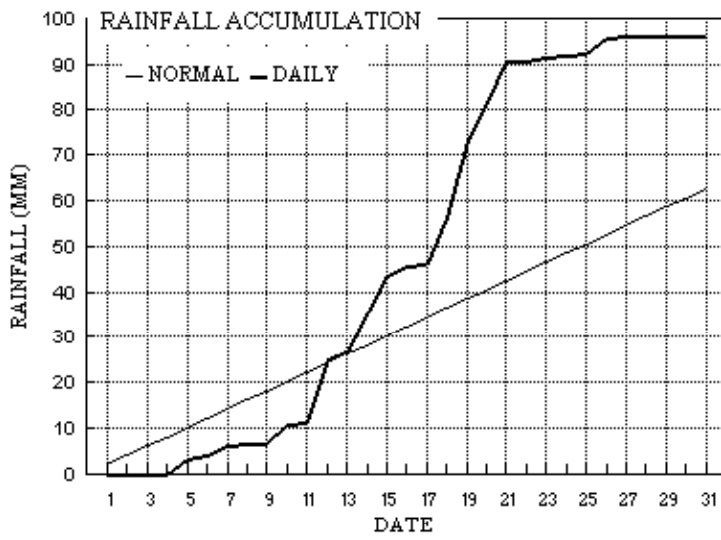
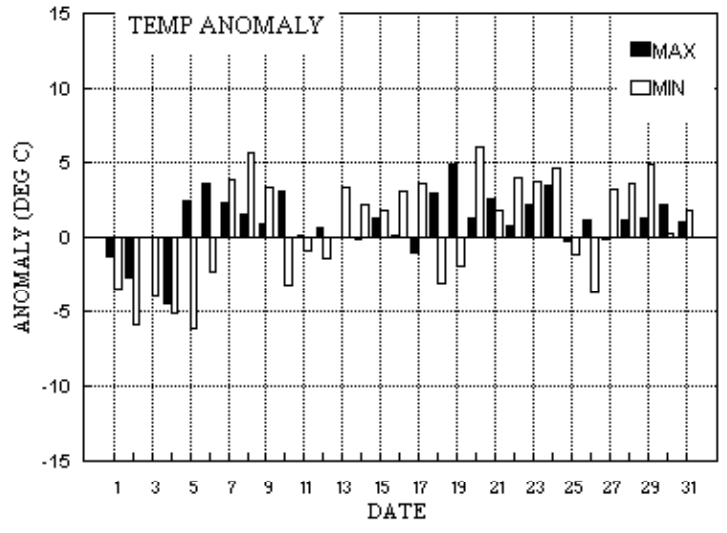
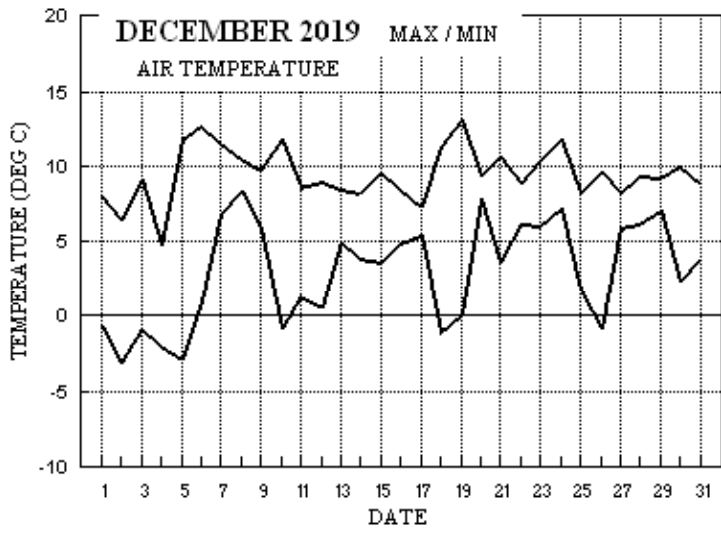
Table 1. Mean anomalies (max, min, rain, sun) for specified periods.

From the 1 st to the 10 th				From the 11 th to the 20 th				From the 21 st to the 31 st			
+0.5°	-1.8°	53%	158%	+1.0°	+1.3°	351%	98%	+1.4°	+2.1°	65%	138%

B J Burton FRMetS.

Hon. Met. Officer to Wokingham Town Council.

Wokingham climatological graphs for December 2019



Month: DECEMBER 2019

Date	Max	Min	Rain	Grass	30cm	100cm	Sun	Frost	pp09	Af	Sf	Th	Ic	Vec	mean	Max	gust	High	hr	Rain						
	C	C	mm	Min	C	C	hrs	hrs	mbar	Gf	Sl	Ha	Fg	ddd	ff	sp	ddd	gg	HHhh	ddd	ff	HH	hrs			
1	7.9	-0.7	0.0	-5.5	7.3	9.9	3.1	2.4	1023.1	1	1	0	0	0	0	13	4.7	4.9	25	22	1204	23	9	12	0.0	
2	6.4	-3.1	0.0	-7.8	6.7	9.6	7.6	11.5	1032.5	1	1	0	0	0	0	255	1.9	2.6	294	9	1628	309	4	14	0.0	
3	9.1	-0.9	0.0	-4.5	6.0	9.3	5.8	0.9	1029.6	1	1	0	0	0	0	203	3.2	3.3	231	12	1424	228	6	13	0.0	
4	4.7	-2.0	0.0	-6.1	6.0	9.0	6.7	17.3	1021.3	1	1	0	0	0	1	264	0.5	1.5	303	7	1155	307	3	12	0.0	
5	11.7	-2.9	3.2	-6.8	5.5	8.8	0.7	7.4	1021.7	1	1	0	0	0	0	215	6.4	6.4	237	26	2052	219	13	22	2.7	
6	12.7	0.9	0.9	6.7	6.0	8.5	0.1	0.0	1005.9	0	0	0	0	0	0	228	10.2	10.4	239	28	1223	226	13	08	0.7	
7	11.5	6.8	2.2	2.0	6.9	8.4	1.1	0.0	1015.0	0	0	0	0	0	0	223	8.2	8.3	201	32	2359	210	15	23	2.1	
8	10.5	8.3	0.5	6.5	7.4	8.5	2.9	0.0	1002.1	0	0	0	0	0	0	227	12.1	12.4	263	40	1435	239	15	11	0.4	
9	9.7	5.9	tr	2.8	7.4	8.6	6.2	0.2	1007.6	0	0	0	0	0	0	290	7.6	9.2	310	34	0641	316	15	11	0.0	
10	11.7	-0.9	3.9	-5.0	6.8	8.7	0.0	2.4	1017.0	1	1	0	0	0	0	202	9.4	10.1	203	35	1711	200	16	18	4.2	
11	8.6	1.3	0.7	-3.3	7.0	8.6	4.4	0.0	1006.5	0	1	0	0	0	0	215	5.6	5.8	203	16	1221	209	8	14	1.1	
12	9.0	0.5	13.6	-4.5	6.4	8.6	0.0	0.0	993.2	0	1	0	0	0	0	244	8.1	8.4	254	28	1117	244	13	11	10.9	
13	8.4	5.0	1.8	3.8	6.6	8.4	3.5	0.0	980.4	0	0	0	0	0	0	253	10.2	10.6	256	30	1437	260	14	10	3.2	
14	8.2	3.8	9.0	-0.5	6.6	8.4	3.4	0.0	989.6	0	1	0	0	0	0	231	9.1	10.3	253	43	1044	249	18	10	2.8	
15	9.6	3.6	8.0	-0.8	6.4	8.3	6.3	0.0	995.2	0	1	0	1	1	0	219	9.5	9.7	225	26	1425	234	12	03	2.5	
16	8.4	4.9	1.7	2.4	6.3	8.2	0.1	0.0	1001.0	0	0	0	0	0	0	177	3.3	4.0	194	14	0012	189	8	00	7.6	
17	7.3	5.4	0.8	3.6	6.5	8.2	0.0	0.0	998.7	0	0	0	0	0	0	256	1.3	2.5	220	11	2100	253	5	15	2.0	
18	11.2	-1.1	10.0	-4.5	6.5	8.1	2.6	5.1	1010.5	1	1	0	0	0	0	150	5.9	6.3	154	24	1938	153	13	19	9.9	
19	13.0	0.0	16.6	6.6	6.6	8.1	0.8	0.0	998.7	0	0	0	1	0	1	171	9.5	9.6	188	30	1525	180	13	15	9.7	
20	9.3	7.8	8.6	4.3	7.4	8.1	0.2	0.0	977.4	0	0	0	0	0	0	210	3.4	5.2	233	22	1245	224	10	12	6.0	
21	10.6	3.6	9.2	-1.5	7.3	8.2	2.6	0.0	981.4	0	1	0	0	0	0	166	5.3	6.1	193	18	0616	187	8	06	10.4	
22	8.8	6.1	0.1	4.1	7.3	8.3	3.3	0.0	985.1	0	0	0	0	0	0	241	6.3	6.7	262	23	0841	260	9	08	0.2	
23	10.3	6.0	0.8	-0.1	7.1	8.3	4.7	0.0	1007.6	0	1	0	0	0	0	232	6.7	7.3	254	22	1109	250	11	11	1.6	
24	11.8	7.2	0.3	2.2	7.0	8.3	3.6	0.0	1007.2	0	0	0	0	0	0	233	7.1	7.9	234	28	0958	234	11	13	0.5	
25	8.2	1.7	0.3	-2.8	7.2	8.3	7.1	4.1	1024.6	0	1	0	0	0	0	253	1.7	3.0	269	17	0137	281	7	01	0.3	
26	9.6	-0.9	3.6	-4.1	6.3	8.2	0.1	0.1	1014.7	1	1	0	0	0	0	194	3.0	7.0	234	29	1321	236	15	13	3.3	
27	8.2	5.9	0.2	1.8	6.5	8.1	0.0	0.0	1028.8	0	0	0	0	0	0	287	0.4	3.2	316	20	0110	320	7	01	0.6	
28	9.3	6.1	0.0	3.7	6.9	8.1	0.0	0.0	1036.6	0	0	0	0	0	0	176	4.5	4.7	181	14	2105	149	6	06	0.0	
29	9.2	7.1	0.0	6.0	7.2	8.1	4.2	0.0	1033.9	0	0	0	0	0	0	193	5.1	5.1	183	14	1321	193	7	12	0.0	
30	10.0	2.3	0.0	-1.6	7.1	8.1	7.3	0.0	1030.1	0	1	0	0	0	0	219	3.6	3.9	237	12	1828	230	6	12	0.0	
31	8.8	3.9	tr	-1.2	6.9	8.1	0.0	0.0	1032.4	0	1	0	0	0	0	72	3.4	3.7	73	14	1821	93	6	18	0.0	
Total			96.0				88.4	51.4																		82.7
Mean	9.5	3.0		-0.1	6.7	8.5	2.85	1.7	1010.0							219	4.5	6.5								
Anom	+1.5	+0.9	153%	+0.5	+0.1	-0.8	131%																			
Daily mean		6.2																								
Anom		+1.2																								

Number of days with:

Air frost = 8 Ground frost = 17 Nil sun = 6
Snow falling = 0 Snow lying = 0 Thunder = 2
Hail=>5mm = 1 Hail<5mm or ice = 1 Fog at 09GMT = 1

Abbreviations.

Max/min = highest and lowest air temperature at 1.2m in 24 hour period ending at 09 GMT

Rain = total rainfall and melted snowfall in 24 hour period ending at 09 GMT, millimetres. (Tr = trace, <.05mm).

Grass min = Lowest overnight temperature at grass tip level.

Sun = hours of bright sunshine, measured electronically. Frost = Number of hours with air temp below 0 deg C.

pp09 = Air pressure corrected to mean sea level at 0900 GMT, millibars.

Af = Air frost. Gf = Ground frost. Sf = Snow falling. Sl = Snow lying at 09 GMT.

Th = Thunder. Ha = Hail =>5mm. Ic = Hail <5mm or ice. Fg = Fog at 09 GMT.

Vec mean = 24 hour mean wind vector, ddd = direction in degrees from true north, ff = speed in knots.

Sp = 24 hour mean wind speed in knots.

Max gust = Highest gust in 24 hours, gg = speed in knots, HHhh = Time, hours and minutes, GMT.

High hr = Highest hourly mean wind, HH = hour commencing. Rain Hrs = Duration of rain, 24 hours to 09 GMT. Excludes snow/hail.

30cm and 100 cm are earth temperatures at those depths, read at 09 GMT.

Anom = Departure from 1981-2010 climatological average.

All temperatures in degrees Celsius.

Weather observations. Emmbrook, Wokingham, Berkshire.

Observations at 0900 GMT for DECEMBER 2019

Date	VV	N	dd	ff	gg	TT	Td	Td	RH	r	PPP	a	ppp	ww	W1	W2	Nh	Cl	h	Cr	Ch	shs	NCh	shs	NCh	shs	Date	Remarks
1	88	7	01	06	13	3.2	2.5	95	4.5	1023.1	2	024	03	1	1	7	8	5	/	1	81825	87645				1	1Sc35 /Ci75 Hoar slt	
2	50	1	24	03	05	-0.7	-1.1	97	3.4	1032.5	2	011	10	0	0	1	0	9	3	1	81365					2	1Ci73 Hoar thk	
3	58	6	20	04	07	3.3	1.7	89	4.2	1029.6	0	001	05	2	2	3	5	7	7	/	83656	86357				3		
4	08	1	33	01	02	-1.5	-1.5	100	3.4	1021.3	0	002	41	4	4	1	6	0	0	0	81701					4	Hoar mod	
5	40	7	19	03	05	0.9	0.8	99	4.0	1021.7	0	001	10	2	2	0	0	9	0	8	87280					5	COTRA Hoar+rime slt	
6	30	8	23	11	25	11.5	10.7	95	8.0	1005.9	6	015	51	6	5	8	5	3	/	/	85708	87711	88620			6		
7	80	7	23	07	11	8.3	5.9	85	5.8	1015.0	1	019	02	2	2	7	5	6	/	/	87635					7		
8	63	4	23	11	24	9.4	5.6	77	5.7	1002.1	2	016	02	1	1	4	8	5	0	0	84827					8	1Sc35 Cu med	
9	84	2	32	11	24	8.2	2.7	68	4.6	1007.6	2	087	01	1	1	2	8	6	0	0	82833					9	1Sc40 Cu hum	
10	63	8	20	11	24	9.1	5.8	80	5.7	1017.0	8	033	60	6	2	7	5	4	2	/	83618	86625	88558			10		
11	60	2	18	05	10	2.4	2.1	98	4.4	1006.5	7	014	03	0	0	2	0	9	6	0	82367					11	Hoar slt	
12	57	8	15	09	17	5.0	4.1	94	5.2	993.2	8	054	63	6	2	7	5	2	2	/	83705	87620	88530			12		
13	75	6	26	12	29	6.6	2.5	75	4.7	980.4	2	042	01	2	2	6	5	5	0	0	81625	86635				13		
14	65	7	22	10	22	6.3	2.8	78	4.7	989.6	0	004	15	1	1	6	5	6	7	/	83635	85645	87358			14	jpN	
15	75	2	21	08	19	5.8	2.8	81	4.7	995.2	3	023	02	1	1	2	5	6	6	3	82630					15	1Ac65 1Ci68	
16	65	7	18	06	10	6.0	4.8	92	5.4	1001.0	3	015	01	2	2	3	0	9	7	8	81358	83463	87270			16		
17	57	8	31	02	05	5.8	5.7	99	5.7	998.7	3	013	61	6	6	6	5	2	2	/	81705	85650	88558			17	2Sc30	
18	59	6	16	05	07	-0.0	-0.0	100	3.8	1010.5	2	007	10	1	1	1	5	6	0	4	81630	86072				18	Hoar slt	
19	62	8	17	09	19	11.2	9.8	91	7.6	998.7	8	003	21	6	2	7	5	3	/	1	81708	83615	87635			19	/Ci75 COTRA	
20	14	8	25	06	11	8.3	8.0	98	6.9	977.4	5	006	65	6	6	8	7	1	/	/	88702					20		
21	70	2	16	06	10	6.1	5.4	95	5.7	981.4	0	001	15	8	1	1	9	5	6	3	81920					21	1Sc50 1Ac62 1Ci68 jpS CbS&E	
22	82	7	26	09	23	7.0	5.2	88	5.6	985.1	2	051	01	6	2	4	5	4	0	2	81712	84638	86072			22		
23	75	3	23	08	16	7.7	4.8	82	5.4	1007.6	2	031	01	1	1	3	5	6	0	0	83648					23		
24	58	1	22	11	18	8.0	6.3	89	5.9	1007.2	1	012	05	0	0	1	8	5	6	3	81820					24	1Sc50 1Ac62 1Ci68 Cu fra	
25	82	1	21	03	06	3.2	2.2	93	4.4	1024.6	2	025	02	0	0	0	0	9	0	1	81080					25	COTRA Hoar slt	
26	57	8	14	09	18	6.6	5.6	93	5.6	1014.7	7	031	61	6	2	8	5	3	/	/	87707	88650				26		
27	58	8	03	04	09	6.2	5.2	93	5.4	1028.8	2	030	05	2	2	8	6	3	/	/	88706					27		
28	56	7	18	04	08	8.2	7.3	94	6.2	1036.6	3	006	05	5	2	7	5	2	/	/	83705	87618				28		
29	65	8	18	03	11	7.2	4.7	84	5.2	1033.9	6	005	02	2	2	7	5	4	/	8	87613					29	/Cs75	
30	25	1	19	03	06	4.0	3.6	97	4.8	1030.1	5	000	11	1	1	1	6	2	0	0	81705					30	Shallow fog near Emm	
31	30	7	06	04	08	5.8	5.7	99	5.5	1032.4	1	011	10	2	2	7	6	2	3	/	87703	83368				31		

Mean vis = 16.1 km

Mean cloud = 5.4 67%

Mean wind speed = 6.6 kn

Mean gust = 14 kn

Mean TT = 5.8 °C

Mean Td = 4.2 °C

Mean RH = 90.3 %

Mean r = 5.2 g/kg

Mean PPP = 1010.0 mbar

See appendix 2 below for full code details

VV = Visibility code (Code FM12-4377)

N = Total cloud amount, oktas

dd = Direction from which wind is blowing, tens of degrees true

ff = 10 minute mean wind speed, knots

gg = Highest gust in past hour, knots

TT = Air temperature at 1.2 m, deg Celsius

Td = Dew point temperature at 1.2 m, deg Celsius

RH = Relative humidity at 1.2 m

r = Humidity mixing ratio at 1.2 m, g/kg

PPP = Air pressure reduced to sea level, mbar

a = Characteristic of pressure tendency (Code FM12-0200)

ppp = 3 hr pressure tendency, tenths of mbar

ww = Present weather code (Code FM12-4677)

W1, W2 = Past weather code (Code FM12-4561)- covers past 3 hours.

Nh = Amount of low cloud present, oktas

Cl = Type of low cloud (Code Fm12-0513)

h = Height of low cloud (Code FM12-1600)

Cm = Type of medium cloud (Code FM12-0515)

Ch = Type of high cloud (Code FM12-0509)

8 groups. 8 = indicator for cloud detail

N = Amount of cloud, oktas

C = Type of cloud (FM12-0500)

hshs = Height of cloud (FM12-1677)

Remarks : COTRA = persistent condensation trails present

	Hour	01-Dec	02-Dec	03-Dec	04-Dec	05-Dec	06-Dec	07-Dec	08-Dec	09-Dec	10-Dec	11-Dec	12-Dec	13-Dec	14-Dec	15-Dec	16-Dec		
Sunshine Hourly analysis 2019	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
	1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
	2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	8	0.25	0.84	0.00	0.45	0.15	0.00	0.00	0.00	0.00	0.22	0.00	0.31	0.00	0.00	0.02	0.09	0.00	0.00
	9	0.15	1.00	0.22	1.00	0.15	0.00	0.00	0.00	0.48	1.00	0.00	1.00	0.00	0.47	0.12	0.87	0.06	0.00
	10	0.95	1.00	0.95	1.00	0.00	0.00	0.00	0.00	0.62	1.00	0.00	0.76	0.00	0.74	0.53	1.00	0.00	0.00
	11	1.00	1.00	0.90	1.00	0.00	0.02	0.00	0.00	1.00	1.00	0.00	0.95	0.00	0.77	1.00	1.00	0.00	0.00
	12	0.20	1.00	1.00	0.62	0.25	0.00	0.67	0.30	0.90	0.00	0.53	0.00	0.83	0.66	0.80	0.00	0.00	0.00
	13	0.16	1.00	1.00	1.00	0.15	0.01	0.45	0.21	0.42	0.00	0.25	0.00	0.01	0.39	1.00	0.00	0.00	0.00
	14	0.42	1.00	1.00	1.00	0.00	0.06	0.00	0.10	0.92	0.00	0.50	0.00	0.20	0.68	1.00	0.00	0.00	0.00
	15	0.00	0.72	0.78	0.67	0.00	0.02	0.00	0.19	0.73	0.00	0.10	0.00	0.54	0.00	0.57	0.00	0.00	0.00
	16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tot		3.14	7.56	5.84	6.73	0.71	0.10	1.12	2.89	6.19	0.00	4.41	0.00	3.54	3.40	6.32	0.06		

	Hour	17-Dec	18-Dec	19-Dec	20-Dec	21-Dec	22-Dec	23-Dec	24-Dec	25-Dec	26-Dec	27-Dec	28-Dec	29-Dec	30-Dec	31-Dec	Mean
	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	8	0.00	0.41	0.00	0.00	0.40	0.00	0.37	0.34	0.47	0.00	0.00	0.00	0.00	0.36	0.00	0.15
	9	0.00	0.08	0.22	0.00	0.04	0.94	1.00	0.64	1.00	0.00	0.01	0.00	0.00	1.00	0.00	0.37
	10	0.00	0.80	0.55	0.00	0.78	0.57	1.00	0.36	1.00	0.00	0.00	0.00	0.02	1.00	0.00	0.47
	11	0.00	0.74	0.01	0.09	1.00	0.98	1.00	0.39	1.00	0.00	0.00	0.00	0.57	1.00	0.00	0.53
	12	0.00	0.56	0.03	0.00	0.42	0.52	0.91	0.91	1.00	0.00	0.00	0.00	0.92	1.00	0.00	0.45
	13	0.00	0.05	0.00	0.09	0.00	0.02	0.30	0.30	1.00	0.00	0.00	0.00	0.88	1.00	0.00	0.31
	14	0.00	0.00	0.00	0.05	0.00	0.15	0.12	0.40	1.00	0.11	0.00	0.00	0.98	1.00	0.00	0.34
	15	0.00	0.00	0.00	0.00	0.00	0.13	0.00	0.26	0.67	0.00	0.00	0.00	0.77	0.89	0.00	0.23
	16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tot		0.00	2.64	0.82	0.23	2.64	3.30	4.71	3.60	7.14	0.11	0.01	0.00	4.15	7.25	0.00	88.60

DECEMBER 2019	T mn	Tx	Time	Tn	Time	RHmn	RH x	Time	RH n	Time	Tdmn	r mn	r x	Time	r n	Time	p mn	p x	Time	p n	Time	R tot
1	2.76	7.9	1202	-1.3	2357	91.9	100.0	248	73.3	1204	1.5	4.2	4.9	1202	3.3	2357	1024.23	1030.2	2352	1020.1	504	0
2	0.68	6.4	1309	-3.1	638	91.3	99.5	247	68.9	1300	-0.7	3.6	4.2	1434	2.9	638	1031.65	1032.9	1010	1029.8	14	0
3	3.37	9.1	1237	-0.4	2358	89.1	98.7	2343	65.2	1237	1.6	4.2	4.8	1243	3.6	2358	1027.65	1031.9	8	1023.7	2358	0
4	-0.22	4.7	1432	-2.0	552	99.4	100.0	2329	95.7	1446	-0.3	3.7	5.1	1432	3.2	552	1021.32	1023.8	0	1019.6	1522	0
5	3.81	10.1	2254	-2.9	158	94.4	100.0	835	80.4	2016	2.9	4.8	7.0	2357	3.0	158	1018.75	1022.2	830	1011.7	2359	0.3
6	10.51	12.7	1132	7.0	2202	89.5	95.7	659	78.0	1324	8.8	7.1	8.3	1211	5.5	2218	1006.72	1011.9	1	1001.9	1455	3.5
7	9.27	11.0	1313	6.8	731	82.2	89.9	811	72.1	1315	6.4	6.0	7.0	2317	5.4	731	1012.28	1015.3	936	1004.8	2358	0
8	8.68	11.5	450	5.9	1524	79.5	95.2	425	61.3	1304	5.3	5.7	8.1	430	4.5	2028	999.43	1005.0	1	990.7	2356	2.7
9	6.69	9.7	1203	-0.1	2359	73.2	96.4	2352	54.0	1300	2.0	4.4	5.8	453	3.5	2359	1011.01	1026.1	2250	990.8	4	0
10	6.78	11.7	1917	-0.9	145	90.9	97.8	218	80.2	900	5.4	5.7	8.1	1917	3.4	145	1013.61	1025.6	4	1002.8	1903	3.7
11	4.38	8.6	1207	1.0	2359	88.9	98.4	857	74.4	1213	2.7	4.6	5.4	1203	3.8	2351	1005.07	1009.3	207	1000.9	1359	0.3
12	5.54	9.0	1358	0.5	321	93.8	96.8	345	90.0	1424	4.6	5.5	6.9	1340	3.8	220	988.05	1004.0	0	971.7	2355	11.9
13	6.69	8.4	1251	4.9	2255	77.2	97.5	2350	61.9	1429	2.9	4.8	6.0	13	4.1	1651	980.10	985.4	1555	971.4	44	3
14	5.98	8.2	2059	3.6	1817	77.9	97.5	5	56.2	1252	2.3	4.6	6.3	2136	3.6	1252	989.97	995.2	1615	982.1	0	8.3
15	6.78	9.6	1317	4.4	427	79.2	94.8	2249	62.6	1442	3.3	4.9	5.8	1953	4.1	426	995.43	999.7	2208	987.0	40	7.5
16	6.72	8.4	1356	5.7	2310	92.5	99.0	2356	85.5	1402	5.6	5.7	6.0	1521	5.2	22	999.75	1001.7	1023	997.9	2353	0.5
17	5.81	7.3	1214	4.0	1816	97.8	99.4	448	94.1	1604	5.5	5.7	6.1	1213	5.0	1816	1000.98	1007.6	2354	996.8	409	1.9
18	5.33	9.9	2227	-1.1	640	93.3	100.0	915	79.1	1645	4.3	5.3	6.9	2352	3.5	640	1007.06	1010.7	917	1001.5	2358	4.1
19	10.86	13.0	1212	8.8	2358	87.8	94.1	319	77.2	2112	8.9	7.2	7.7	1515	6.2	2324	995.16	1001.8	1	986.4	2356	12.2
20	7.24	9.3	1151	3.6	2159	94.8	98.5	857	86.4	0	6.4	6.2	7.1	1150	4.8	2159	981.07	986.5	25	976.8	818	11.1
21	7.70	10.6	1214	5.8	2	92.6	96.5	2231	80.8	1218	6.6	6.2	6.8	1408	5.5	653	978.28	984.3	2	970.7	2041	9
22	7.43	8.8	1231	6.0	2324	89.4	97.4	329	78.5	1117	5.8	5.9	6.8	6	5.2	1027	985.98	997.8	2359	972.5	5	2.1
23	7.94	10.3	1242	6.0	34	81.2	90.6	3	63.1	1159	4.9	5.4	5.8	2359	4.8	1157	1007.68	1012.2	1947	997.8	0	0.1
24	8.95	11.8	1240	7.4	816	86.1	95.9	444	70.4	1253	6.7	6.1	6.7	1957	4.8	2347	1009.06	1017.7	2359	1005.2	445	1.1
25	3.99	8.2	1249	-0.9	2213	85.6	98.9	2324	68.8	1302	1.7	4.2	4.9	1	3.4	2248	1023.67	1026.1	1115	1017.6	0	0
26	6.52	9.6	1456	-0.4	0	92.9	99.6	10	82.3	1522	5.4	5.6	6.8	1214	3.6	0	1016.23	1023.3	11	1009.8	1209	3.2
27	6.59	7.9	7	5.9	349	91.7	96.0	2359	88.6	302	5.3	5.4	6.0	0	5.1	338	1029.54	1035.7	2357	1019.9	1	0
28	8.04	9.3	1342	6.8	42	89.4	97.0	107	80.2	1331	6.4	5.8	6.2	1048	5.3	2357	1036.25	1037.4	1100	1035.3	41	0.1
29	6.82	9.2	1259	4.1	2147	86.7	96.7	2359	76.0	1301	4.7	5.2	5.5	1258	4.7	2147	1033.45	1036.0	1	1031.5	2302	0
30	6.47	10.0	1243	2.3	342	93.6	98.5	347	80.1	1306	5.5	5.5	6.2	1821	4.3	342	1029.82	1031.6	4	1027.7	1547	0.1
31	6.63	8.8	1805	2.7	2345	93.9	98.7	902	82.3	2128	5.7	5.6	6.3	1537	4.3	2345	1031.52	1033.1	1033	1030.0	32	0
Total																						86.7
Mean	6.28	9.39		2.89		88.6	97.26		75.73		4.45	5.32	6.30		4.31		1009.38	1014.89		1002.78		
Max	10.86	13.03		8.80		99.4	100.00		95.70		8.91	7.20	8.28		6.18		1036.25	1037.42		1035.26		
Min	-0.22	4.71		-3.15		73.2	89.90		53.96		-0.68	3.55	4.19		2.90		978.28	984.30		970.70		

Wokingham Automatic Weather Station
 AWS samples taken every 0.5 seconds
 x and n refer to maximum and minimum respectively

Readings taken at Wokingham Climatological Station, Emmbrook, Berkshire
Lat 51.425 N, Long 0.853 W, NGR (SU) 798701
Altitude 45 m ASL.

Tmn = 00 to 24 GMT mean air temperature at 1.2 m, deg C
 RHmn = 00-24 GMT mean relative humidity at 1.2 m, percent
 Tdmn = 00-24 GMT mean dew point at 1.2 m, deg C
 rmn = 00-24 GMT mean humidity mixing ratio, g/kg
 pmn = 00-24 GMT mean air pressure reduced to mean sea level, mbar
 Time = hours and minutes in GMT of extreme values

Temperature and humidity are from an aspirated Vaisala HMP45 unit
 Pressure is from a Setra CS100 sensor
 Data is logged on a Campbell Scientific CR10X measurement and control system

Explanation and definition of some of the terms used in the Wokingham Weather Reports.

Average: Generally refers to the 30 year climatological average, currently 1981 to 2010. This will be next updated in 2020. For some parameters, notably wind, the climatological average is not available, and if the word average is used in the context of wind, it refers to the average for the period for which data is held, namely 1988 to present.

For sunshine, there was a change, in July 1999, in the type of instrument used to detect sunshine amount, making the climatological average based on the old instrument of little use. In general, the new instrument produces higher values in the winter half year, and lower ones in the summer half, than the old type, due to a combination of faster reaction and higher sensitivity than the old type. The average used in this case is based on a theoretical equivalent 1981 to 2010 average, drawn from comparison with the Met Office published tables of departure from climatological average sunshine in the months since 2000 for their area 'Southern England'. Users of the Wokingham Monthly Weather reports should be aware of this, and regard anomalies for sunshine published therein as a guide only, until such time has elapsed since the introduction of the new instrument that a genuine average becomes available.

Mean: The mean of the data under discussion, often the monthly mean of daily data. The mean is obtained by summation of the individual values and dividing by the number of values. The term 'daily mean' in respect of temperature is defined as '(max + min) / 2'. A true daily 24 hour (00 to 24 GMT) mean temperature is available from the Automatic Weather Station (AWS), and is currently published on page 7 of the Wokingham Monthly Weather report, on the Wokingham Weather web site, page 1. <http://www.woksat.info/wwp1.html>

Anomaly: When a value is given for anomaly, this will have one of the following meanings:

- a): The departure of a mean from the current climatological average.
- b): The departure of a value on a particular day from the average for that day, (this need not be a climatological average).

When the word anomaly is used in respect of temperature, any values given are in °C. In respect of rainfall or sunshine, percent. In respect of wind, mph. In respect of pressure, millibars (hpa).

Categories: Reference may be made in the reports to 'categories'. Each category has a strict statistical range, as outlined below.

Temperature: The terms cold/mild are used in the winter half year, and cool/warm in the summer half. The term 'normal' is used when the individual mean (monthly, seasonal or annual) value is within 20 % of the median of all ranked values for that month/season/year.

Mild/warm: The value lies between 10 % and 30 % below the highest value in the ranked series.

Very mild/very warm: The value lies within 10 % of the highest value in the ranked series.

Cold/cool: The value lies between 10 % and 30 % above the lowest value in the ranked series.

Very cold/very cool: The value lies within 10 % of the lowest value in the ranked series.

Sunshine: The terms for sunshine are very sunny, sunny, normal, dull and very dull.

The definition of these terms follow the same rules as for temperature.

Rainfall: The terms for rainfall are very dry, dry, normal, wet and very wet.

The definition of the term 'normal' follows the same rule as for temperature and sunshine.

Wet: The value lies between 10 % and 30% of the highest value in the ranked series.

Very wet: The value lies within 10 % of the highest value in the ranked series.

Dry: The value lies between 10 % and 30 % above the lowest value in the ranked series.

Very dry: The value lies within 10 % of the lowest value in the ranked series.

Long-term: Mention may be made in the reports to the 'long-term'. The long-term record comprises a temperature/rainfall/sunshine data series compiled from records of various weather stations in the Wokingham area in the years prior to the establishment of the weather station at Emmbrook in 1976 together with data from this station.

In the case of monthly max, min and mean temperature and of rainfall total the series starts in 1882. For temperature extremes, the highest max and lowest min go back to 1904, and lowest max and highest min to 1913.

Rank: The word rank refers to the position of a value for a particular month/season/year in the ranked series, and may be expressed relative to either the highest or lowest value in the series. The central value in the ranked series is known as the **median**. This value may be different from the average of the whole series if the population is skewed. It can also be different from the climatological average which only refers to a 30 year period.

Month: Calendar month.

Season: Spring, March to May.

Summer, June to August

Autumn, September to November

Winter, December to February.

When discussing 'winter', if a single year is given this refers to the year in which the January/February fall.

Annual or Year: The calendar year, 1st January to 31st December.

The climatological day: runs from 0900 to 0900 GMT. The max temperature and rainfall read at 0900 hours are attributed to the previous day (thrown back), as is the duration of measurable rain. The min temperature and grass min read at 0900 hours are attributed to the day of reading. Pressure read at 0900 GMT, and the monthly mean pressure is the mean of the 0900 GMT readings. Sunshine data, wind data, rainfall rate data and 24 hour data from the AWS use the normal 00-24 GMT day.

Frost: An air frost day is recorded when the minimum temperature read at 0900 GMT on that day is -0.1°C or below. A ground frost day is recorded when the grass minimum temperature read at 0900 GMT on that day is -0.1°C or lower.

Duration of air frost is defined as the number of minutes that the AWS one minute average temperature is below 0.0°C , and the day runs from midnight to midnight.

Snow: A day with snow falling is triggered if snow falls at any time in the 24 hours from midnight on that day. A day with snow lying is entered if there is at least 50% snow cover at the 0900 GMT observation.

Snow depth is the depth of undrifted snow. Snow that collects in the raingauge funnel is melted and the amount recorded as rainfall.

Hail: A day of hail is recorded if hailstones 5 mm or more in diameter are observed or recorded on the hail pad in a 24 hour period starting at midnight.

A day of small hail is recorded if hailstones less than 5 mm diameter are observed or recorded in a 24 hour period starting at midnight. The term small hail also includes various other types of ice meteor such as ice pellets, snow grains and some types of snow pellets.

Fog: A day with fog is recorded if the horizontal visibility at 0900 GMT is below 1000 m.

Thunder: A day of thunder is recorded if thunder is heard in the 24 hour period from midnight on that day. The appearance of lightning without thunder being heard does not qualify as a thunder day.

Trace of rainfall: A trace of rain, entered as 'tr' in the daily log, is recorded if rain is observed to fall but is of insufficient quantity to collect in the raingauge, or if the amount of rain in the gauge is less than 0.05 mm.

Dry spell: A dry spell is defined as a period of 5 or more consecutive dry days.

Dry day: A dry day is one with less than 0.2 mm of rainfall.

Rain day: A rain day is one with 0.2 mm or more of rainfall.

Wet day: A wet day is one having 1.0 mm or more of rainfall.

Appendix 2.

Explanation and decode for code figures used in the Wokingham 0900 and 1500 GMT observations

VV : Visibility.

Code figures 00 to 50 are in km and tenths e.g. 01 = 0.1 km = 100 m, 33 = 3.3 km, 50 = 5.0 km

Code figures 60 to 80. Subtract 50 to obtain visibility in km. e.g. 56 = 6 km, 65 = 15 km, 77 = 27 km.

Code figures 81 to 89. Subtract 50 and add 5 for every one above 80. e.g. 83 = 45 km, 86 = 60 km.

Code figure 89 = visibility above 70 km.

N : Total cloud amount in okta (eighths of sky covered). 9 = sky obscured (e.g. by fog or snow)

dd : Wind direction in tens of degrees from true north. Wind is measured at a height of 10 m, and the direction is the mean over a period of 10 minutes ending at the observation time.

ff : Wind speed in knots, measured at 10 m, and is the mean over a period of 10 minutes ending at observation time.

gg : Wind gust in knots at 10 m. The highest gust in the 60 minutes up to observation time.

TT : Air temperature at 1.2m, degrees C and tenths.

TdTd : Dew point temperature at 1.2m, degrees C and tenths.

RH : Relative humidity at 1.2m, %.

r : Humidity mixing ratio (amount of water vapour per kg of air), grams and tenths.

PPP : Air pressure reduced to MSL, millibars and tenths.

a : Characteristic of pressure tendency during the past 3 hours.

Code figures 0 to 3, pressure higher than 3 hours ago, 5 to 8, pressure lower than 3 hours ago

Code figure 0 = Increasing then decreasing, pressure the same as or higher than 3 hours ago

1 = Increasing then steady or increasing more slowly

2 = Increasing steadily or unsteadily

3 = Decreasing or steady then increasing, or increasing then increasing more rapidly

4 = Steady, pressure the same as 3 hours ago

5 = Decreasing then increasing, pressure lower than 3 hours ago

6 = Decreasing then steady or decreasing more slowly

7 = Decreasing steadily or unsteadily

8 = Steady or increasing then decreasing, or decreasing then decreasing more rapidly

ppp : 3 hour pressure tendency in tenths of a millibar

ww : Present weather code figures, 00 to 99.

Present weather decode:

00 = Cloud development not observed or not observable

01 = Clouds generally dissolving or becoming less developed

02 = State of sky on the whole unchanged

03 = Clouds generally increasing or becoming more developed

04 = Visibility reduced by smoke, e.g. veldt or forest fires, industrial smoke or volcanic ashes.

05 = Haze, visibility reduced by extremely small dry particles (RH less than appx. 95 %)

06 = Widespread dust in suspension, not raised by the wind near the station at the time of the observation

07 = Dust or sand raised by the wind at or near the station at the time of the observation, but no well-developed dust whirls or sand whirls, and no duststorm or sandstorm seen: In marine environments, blowing spray at the station.

08 = Well-developed dust or sand whirls seen at or near the station during the preceding hour or at the time of the observation, but no duststorm or sandstorm.

09 = Duststorm or sandstorm within sight at the time of the observation, or at the station during the preceding hour

10 = Mist
11 = Patches of shallow fog not deeper than 2 metres on land
12 = More or less continuous shallow fog not deeper than 2 metres on land
13 = Lightning visible, no thunder heard
14 = Precipitation within sight, not reaching the ground
15 = Precipitation within sight, reaching the ground more than 5 km from the station
16 = Precipitation within sight, reaching the ground, near to but not at the station
17 = Thunderstorm, but no precipitation at the time of the observation
18 = Squalls at or within sight of the station at the time of the observation or during the preceding hour
19 = Funnel cloud(s) at or within sight of the station at the time of the observation or during the preceding hour

20 = Drizzle (not freezing) at the station during the preceding hour but not at the time of the observation
21 = Rain (not freezing) at the station during the preceding hour but not at the time of the observation
22 = Snow at the station during the preceding hour but not at the time of the observation
23 = Rain and snow or ice pellets at the station during the preceding hour but not at the time of the observation
24 = Freezing drizzle or freezing rain at the station during the preceding hour but not at the time of the observation
25 = Shower(s) of rain at the station during the preceding hour but not at the time of the observation
26 = Shower(s) of snow or rain and snow at the station during the preceding hour but not at the time of the observation
27 = Shower(s) of hail or rain and hail at the station during the preceding hour but not at the time of the observation
28 = Fog or ice fog at the station during the preceding hour but not at the time of the observation
29 = Thunderstorm, with or without precipitation at the station during the preceding hour but not at the time of the observation

30 = Slight or moderate duststorm or sandstorm has decreased during the preceding hour
31 = Slight or moderate duststorm or sandstorm with no appreciable change during the past hour
32 = Slight or moderate duststorm or sandstorm has begun or increased during the past hour
33 = Severe duststorm or sandstorm has decreased during the preceding hour
34 = Severe duststorm or sandstorm with no appreciable change during the past hour
35 = Severe duststorm or sandstorm has begun or increased during the past hour
36 = Slight or moderate drifting snow generally below eye level
37 = Heavy drifting snow generally below eye level
38 = Slight or moderate blowing snow generally above eye level
39 = Heavy blowing snow generally above eye level

40 = Fog or ice fog at a distance at the time of the observation, but not at the station during the preceding hour, the fog extending to a level above that of the observer.
41 = Fog or ice fog in patches
42 = Fog or ice fog, sky visible has become thinner during the past hour
43 = Fog or ice fog, sky invisible has become thinner during the past hour
44 = Fog or ice fog, sky visible no appreciable change during the past hour
45 = Fog or ice fog, sky invisible no appreciable change during the past hour
46 = Fog or ice fog, sky visible has begun or become thicker during the past hour
47 = Fog or ice fog, sky invisible has begun or become thicker during the past hour
48 = Fog, depositing rime, sky visible
49 = Fog depositing rime, sky invisible

50 = Drizzle, not freezing, intermittent slight at time of observation
51 = Drizzle, not freezing, continuous slight at time of observation
52 = Drizzle, not freezing, intermittent moderate at time of observation
53 = Drizzle, not freezing, continuous moderate at time of observation
54 = Drizzle, not freezing, intermittent heavy at time of observation
55 = Drizzle, not freezing, continuous heavy at time of observation
56 = Drizzle, freezing, slight
57 = Drizzle, freezing, moderate or heavy (dense)
58 = Drizzle and rain, slight
59 = Drizzle and rain, moderate or heavy

60 = Rain, not freezing, intermittent slight at time of observation
61 = Rain, not freezing, continuous slight at time of observation
62 = Rain, not freezing, intermittent moderate at time of observation
63 = Rain, not freezing, continuous moderate at time of observation
64 = Rain, not freezing, intermittent heavy at time of observation
65 = Rain, not freezing, continuous heavy at time of observation
66 = Rain, freezing, slight
67 = Rain, freezing, moderate or heavy
68 = Rain or drizzle and snow, slight
69 = Rain or drizzle and snow, moderate or heavy

70 = Intermittent fall of snowflakes slight at time of observation
71 = Continuous fall of snowflakes slight at time of observation
72 = Intermittent fall of snowflakes moderate at time of observation
73 = Continuous fall of snowflakes moderate at time of observation
74 = Intermittent fall of snowflakes heavy at time of observation
75 = Continuous fall of snowflakes heavy at time of observation
76 = Diamond dust (with or without fog)
77 = Snow grains (with or without fog)
78 = Isolated star-like snow crystals (with or without fog)
79 = Ice pellets

80 = Rain shower(s), slight
81 = Rain shower(s), moderate or heavy
82 = Rain shower(s), violent
83 = Shower(s) of rain and snow mixed, slight
84 = Shower(s) of rain and snow mixed, moderate or heavy
85 = Snow shower(s), slight
86 = Snow shower(s), moderate or heavy
87 = Shower(s) of snow pellets or small hail, with or without rain or rain and snow mixed, slight
88 = Shower(s) of snow pellets or small hail, with or without rain or rain and snow mixed, moderate or heavy
89 = Shower(s) of hail, with or without rain or rain and snow mixed, not associated with thunder, slight
90 = Shower(s) of hail, with or without rain or rain and snow mixed, not associated with thunder, moderate or heavy

91 = Slight rain at time of observation, thunderstorm during the past hour but not at time of observation
92 = Moderate or heavy rain at time of observation, thunderstorm during the past hour but not at time of observation
93 = Slight snow, or rain and snow mixed, or hail at time of observation, thunderstorm during the past hour but not at time of observation
94 = Moderate or heavy snow, or rain and snow mixed, or hail at time of observation, thunderstorm during the past hour but not at time of observation
95 = Thunderstorm, slight or moderate, without hail but with rain and or snow at time of observation
96 = Thunderstorm, slight or moderate, with hail at time of observation
97 = Thunderstorm, heavy, without hail but with rain and or snow at time of observation
98 = Thunderstorm combined with duststorm or sandstorm at time of observation
99 = Thunderstorm, heavy, with hail at time of observation

Hail includes large hail, small hail and snow pellets.

W1, W2 : Past weather (for 0900 and 1500 GMT observations, the period covered is 3 hours)

Code figures:

- 0 = Cloud covering half or less of the sky throughout the period
- 1 = Cloud covering more than half the sky during only part of the period
- 2 = Cloud covering more than half the sky throughout the period
- 3 = Sandstorm, duststorm or blowing snow
- 4 = Fog or ice fog or thick haze (visibility less than 1000 m)
- 5 = Drizzle
- 6 = Rain
- 7 = Snow or rain and snow mixed
- 8 = Shower(s)
- 9 = Thunderstorm(s) with or without precipitation

Nh : Amount of low cloud, or medium cloud if no low cloud present, okta

Cl : Type of low cloud

- 0 = No low cloud
- 1 = Cumulus with little vertical extent and seemingly flattened, or ragged Cumulus other than bad weather, or both
- 2 = Cumulus of moderate or strong vertical extent, either accompanied or not by other Cumulus or Stratocumulus all having their bases at the same level
- 3 = Cumulonimbus whose summits, at least partially, lack sharp outline, but are neither clearly fibrous (cirriform), nor in the form of an anvil; Cumulus, Stratocumulus or Stratus may also be present
- 4 = Stratocumulus formed by the spreading out of Cumulus; Cumulus may also be present
- 6 = Stratus in a more or less continuous sheet or layer, or ragged shreds, or both, but no Stratus fractus of bad weather
- 7 = Stratus fractus of bad weather or Cumulus fractus of bad weather or both (pannus), usually below Altostratus or Nimbostratus
- 8 = Cumulus and Stratocumulus other than that formed by the spreading out of Cumulus, the bases of the Cumulus and Stratocumulus are not at the same level.
- 9 = Cumulonimbus, the upper part of which is clearly fibrous (cirriform), often in the form of an anvil, either accompanied or not by any other type(s) of low cloud
- / = Types of low cloud invisible due to darkness, fog, blowing dust or sand or other similar phenomena.

'Bad weather' denotes the conditions which generally exist during precipitation and a short time before and after.

Cm : Type of medium cloud.

- 0 = No medium cloud.
- 1 = Altostratus, the greater part of which is semi-transparent; through this part the sun or moon may be weakly visible, as through ground glass
- 2 = Altostratus, the greater part of which is sufficiently dense to hide the sun or moon, or Nimbostratus
- 3 = Altocumulus, the greater part of which is semi-transparent; the various elements of the cloud change only slowly and are all at a single level
- 4 = Altocumulus in patches (often in the form of almonds or fishes), the greater part of which is semi-transparent ; the clouds occur at one or more levels and the elements are continually changing in appearance
- 5 = Altocumulus in bands semi-transparent, of Altocumulus in one or more fairly continuous layers (semi-transparent or opaque), progressively invading the sky; these Altocumulus clouds generally thicken as a whole
- 6 = Altocumulus resulting from the spreading out of Cumulus (or Cumulonimbus)
- 7 = Altocumulus in two or more layers, usually opaque in places, and not progressively invading the sky; or opaque layer of Altocumulus not progressively invading the sky; or Altocumulus together with Altostratus or Nimbostratus
- 8 = Altocumulus with sproutings in the form of small towers or battlements, or Altocumulus having the appearance of cumuliform tufts
- 9 = Altocumulus of a chaotic sky, generally at several levels
- / = Types of medium cloud invisible owing to darkness, fog, blowing dust or sand or other similar phenomena, or more often because of the presence of a continuous layer of lower clouds.

Ch : Type of high cloud

0 = No high cloud

1 = Cirrus in the form of filaments, strands or hooks, not progressively invading the sky.

2 = Dense cirrus, in patches or entangled sheaves, which usually do not increase and sometimes seem to be the remains of the upper part of a Cumulonimbus; or Cirrus with sproutings in the form of small turrets or battlements, or Cirrus having the appearance of cumuliform tufts

3 = Dense Cirrus, often in the form of an anvil, being the remains of the upper part of Cumulonimbus, or where the rest of the Cumulonimbus is below the horizon

4 = Cirrus in the form of hooks or filaments, or both, progressively invading the sky; they generally become denser as a whole

5 = Cirrus (often in bands converging towards one or two opposite points on the horizon) and Cirrostratus, or Cirrostratus alone; in either case they are progressively invading the sky, and generally growing denser as a whole, but the continuous veil does not reach 45 degrees above the horizon.

6 = Cirrus (often in bands converging towards one or two opposite points on the horizon) and Cirrostratus, or Cirrostratus alone; in either case they are progressively invading the sky, and generally growing denser as a whole; the continuous veil extends more than 45 degrees above the horizon, without the sky being totally covered

7 = Veil of Cirrostratus covering the celestial dome.

8 = Cirrostratus not progressively invading the sky and not completely covering the celestial dome

9 = Cirrocumulus alone, or accompanied by Cirrus or Cirrostratus, or both, but Cirrocumulus is predominant.

/ = Types of high cloud invisible owing to darkness, fog, blowing dust or sand or other similar phenomena, or more often because of the presence of a continuous layer of lower clouds.

8 Groups

N = Amount of cloud reported by C, okta.

C = Type of cloud

0 = Cirrus (Ci)

1 = Cirrocumulus (Cc)

2 = Cirrostratus (Cs)

3 = Altocumulus (Ac)

4 = Altostratus (As)

5 = Nimbostratus (Ns)

6 = Stratocumulus (Sc)

7 = Stratus (St)

8 = Cumulus (Cu)

9 = Cumulonimbus (Cb)

/ = Cloud type not visible owing to darkness, fog, duststorm, or other analogous phenomena.

hshs = Height of cloud above station level reported by type C

00 to 50 = Height in hundreds of feet

51 to 55 Not used

56 to 80 = Subtract 50 to obtain cloud height in thousands of feet

81 to 88 = Height of cloud between 35000 and 70000 ft in 5000 ft steps.