

# 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 2020

Temperature (°C)	Anomaly	Rank in the past 139 years
Mean maximum	8.2	+0.2 65 <sup>th</sup> highest
Mean minimum	2.9	+0.8 40 <sup>th</sup> highest
Daily mean	5.5	+0.5 49 <sup>th</sup> highest
Highest maximum	13.6	on 21 <sup>st</sup> Lowest maximum 1.0 on 31 <sup>st</sup>
Highest minimum	9.6	on 22 <sup>nd</sup> Lowest minimum -3.5 on 31 <sup>st</sup>
Mean grass minimum	0.1	+0.7 Lowest grass minimum -7.2 on 28 <sup>th</sup>
Mean earth @30 cm	7.8	+1.2 Earth @100 cm 9.3
Frost duration (hrs)	55.6	Rain duration (hrs) 70.1
Rainfall total (mm)	77.3	123 % 37 <sup>th</sup> highest
Highest daily fall	14.6	on 26 <sup>th</sup> Highest rate mm/hr 102 on 19 <sup>th</sup>
Number of: Dry days (<0.2mm)	11	Wet days (>0.9mm) 17 days ≥5mm 5
Sunshine total (hrs) 67.6	Daily mean 2.18	100 % Sunniest day 7.6 on 1 <sup>st</sup>
N° days with: Air frost 10	Ground frost 18	Snow falling 1 Snow lying 0
Thunder 0	Hail ≥5mm 0	Small hail/ice 0 Fog @09 3 Nil sun 11
Pressure MSL: Mean @09 GMT, mbar 1003.4	-12.3	Highest 1033.5 on 25 <sup>th</sup> Lowest 970.7 on 28 <sup>th</sup>
Relative humidity: Mean (%) 89.2	Lowest 60 on 25 <sup>th</sup>	Water vapour (g/kg), mean at 09 and 15 GMT 5.1, 5.4
Overall mean wind speed (mph) 6.8	Windiest day 13.0 on 18 <sup>th</sup>	Max gust 50 on 27 <sup>th</sup>
Wind direction (days)	N 3 NE 0 E 1 SE 1 S 11 SW 9 W 1 NW 5	
Least windy day (mph) 2.7	on 7 <sup>th</sup>	Calm; less than 0.5 mph (minutes) 248

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

Notes:

#### Wet with Above Average Temperature and Average Sunshine.

**Temperature:** The mean this December is 0.5° above the climatological average, but is lowest since 2017. The mean maximum, however, while still 0.2° above average, is lowest since 2010, and only 4 other Decembers this millennium have been colder in this respect. The highest max is 0.5° above the long-term median, and the lowest max is 0.5° below its median. The highest min is 0.3° above the median while the lowest min is 1.6° above its median. The mean grass min is slightly above average and the lowest value is highest since 2015. The mean earth temperature at 30 cm depth is over 1° above average, but is close to average at 1 m depth. There was 1 more air frost than average and 2 more ground frosts, but the duration of air frost is only 62 % of the 40 year average. Anomalies for daily max were over +4° on the 21<sup>st</sup> and 23<sup>rd</sup>, and exceeded -4° on the 5<sup>th</sup> to 8<sup>th</sup>, 28<sup>th</sup>, 29<sup>th</sup> and 31<sup>st</sup>, with extreme values of +5.5° on 21<sup>st</sup> and -7.7° on the 7<sup>th</sup>. Anomalies for daily min were over +5° on the 16<sup>th</sup>, 19<sup>th</sup>, 22<sup>nd</sup> and 23<sup>rd</sup>, and exceeded -4° on the 6<sup>th</sup> to 9<sup>th</sup> and 31<sup>st</sup>, with extreme values of +7.5° on the 22<sup>nd</sup> and -5.6° on the 31<sup>st</sup>. **Rainfall:** This has been a wet December overall, though not excessively so, the total of 77.3 mm ranking 37<sup>th</sup> highest in the past 139 years. The wettest day with 14.6 mm is only 0.6 mm above the median. The number of wet days is 6 above average, and is equal 2<sup>nd</sup> highest with 2002 since 1999. The number of dry days is 4 fewer than average, and were distributed 5 before the 10<sup>th</sup> and 6 after the 23<sup>rd</sup>, with none in-between., and there were no dry spells. The duration of measurable rain is 13.1 hours above average. Daily rainfall accumulation compared with normal was 5 mm in surplus on the 3<sup>rd</sup>, becoming a deficit of 3 mm by the 9<sup>th</sup>. A surplus was re-established on the 10<sup>th</sup>, increasing to 14 mm by the 23<sup>rd</sup> and to 25 mm on the 26<sup>th</sup>, thence decreasing to 14 mm by the 31<sup>st</sup>. There was no thunder or hail this month, but snow together with rain fell briefly on the 28<sup>th</sup>. **Sunshine:** An average December as far as the total and number of sunless days are concerned. However, up to the 16<sup>th</sup> only 3 days had >50 % of the maximum, including over 90 % on the 1<sup>st</sup>, the month's sunniest day, while after the 16<sup>th</sup> there were 6 days with >50 %, including >80% on the 17<sup>th</sup> and 25<sup>th</sup>. Daily sunshine accumulation compared with normal was in surplus until to 4<sup>th</sup>, then a deficit slowly increased reaching 7 hours by the 14<sup>th</sup>, decreasing to 4 hours by the 23<sup>rd</sup>, becoming a surplus of 5 hours by the 27<sup>th</sup>, then falling back to zero on the 31<sup>st</sup>. Overall there were 19 days with <3 hours and 4 with =>6 hours. **Wind:** The mean speed is 0.6 mph below average, but is lowest only since 2016, and the highest gust is close to normal. The duration of calm is just 46 % of average. Daily mean direction was mostly S'ly or SW'ly except for N'ly on the 6<sup>th</sup>, 7<sup>th</sup>, 24<sup>th</sup> and 28<sup>th</sup>, E'ly on 5<sup>th</sup>, SE'ly on 10<sup>th</sup> and NW'ly on 1<sup>st</sup>, 25<sup>th</sup>, 29<sup>th</sup> and 31<sup>st</sup>. Speeds were light or moderate to the 10<sup>th</sup>, moderate or fresh from the 11<sup>th</sup> to 25<sup>th</sup>, strong on the 26<sup>th</sup> and 27<sup>th</sup>, then light to the 31<sup>st</sup>. **Pressure:** The MSL air pressure fell to a minimum of 970.7 mbar on the 28<sup>th</sup>, equal lowest for December with 2019 since 1989. There was a notable fall in air pressure of 45.1 mbar in the 24 hours to 0900 on the 27<sup>th</sup>.

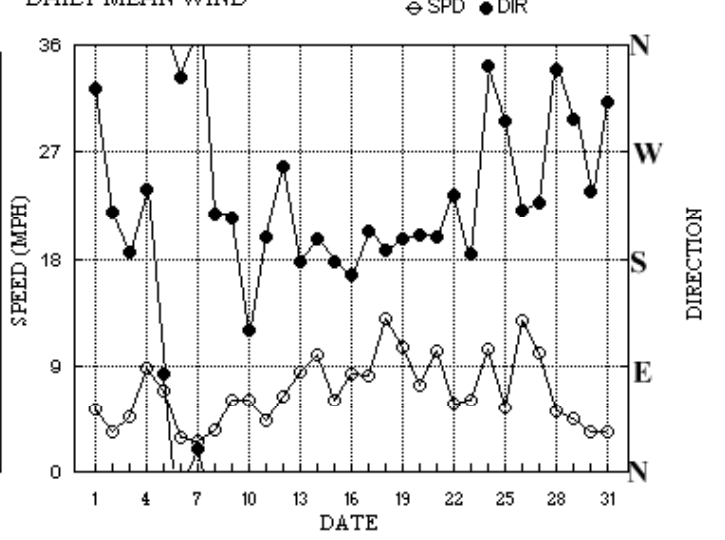
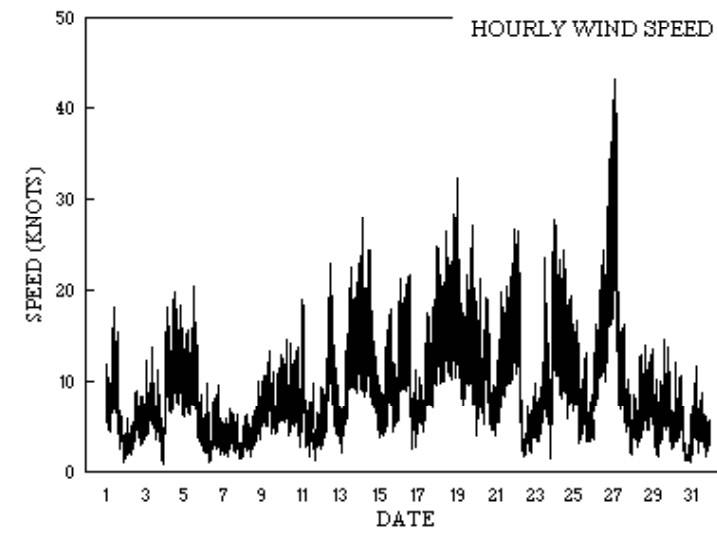
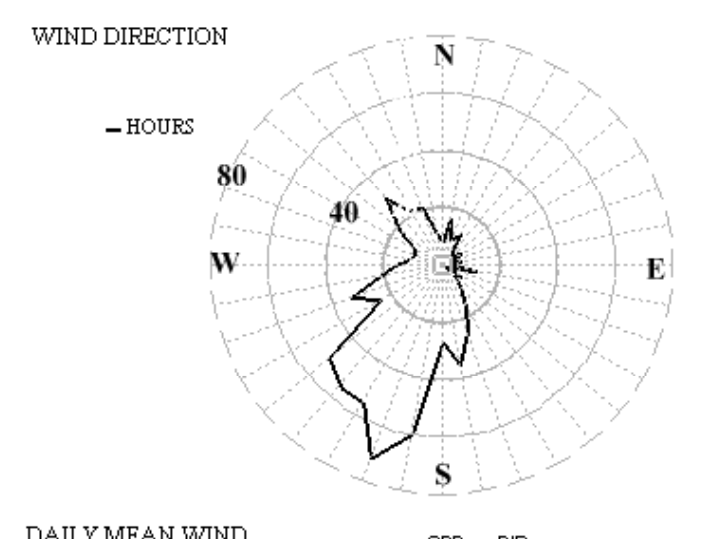
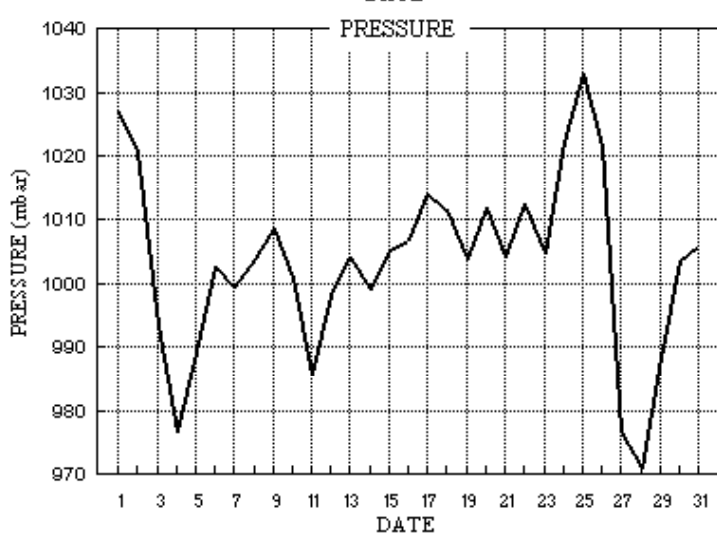
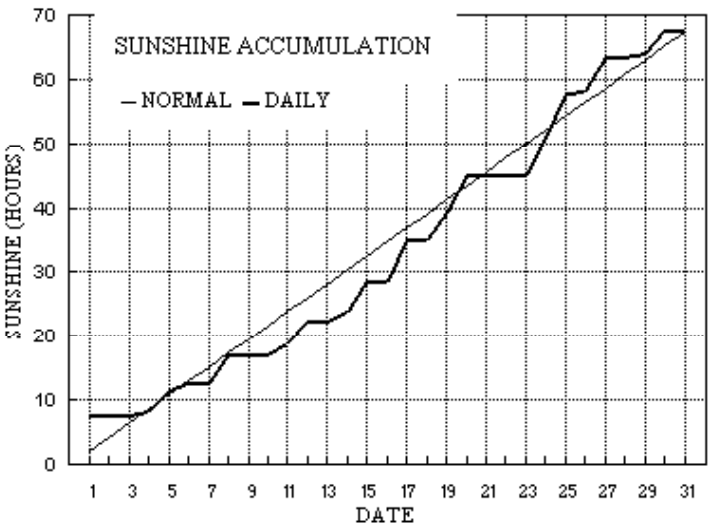
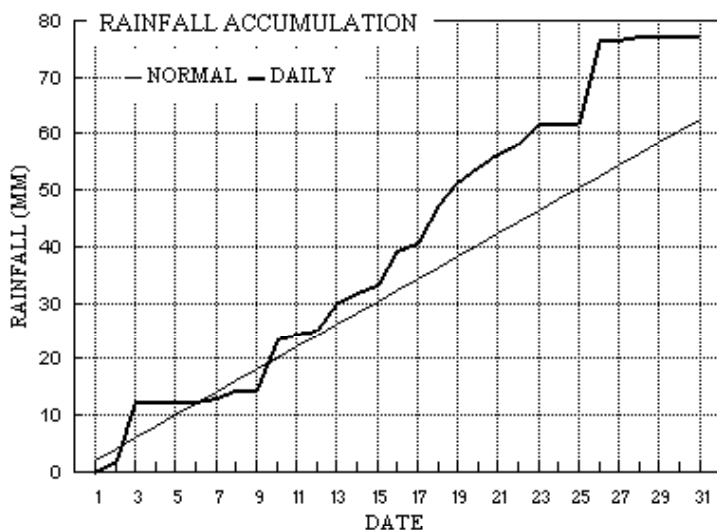
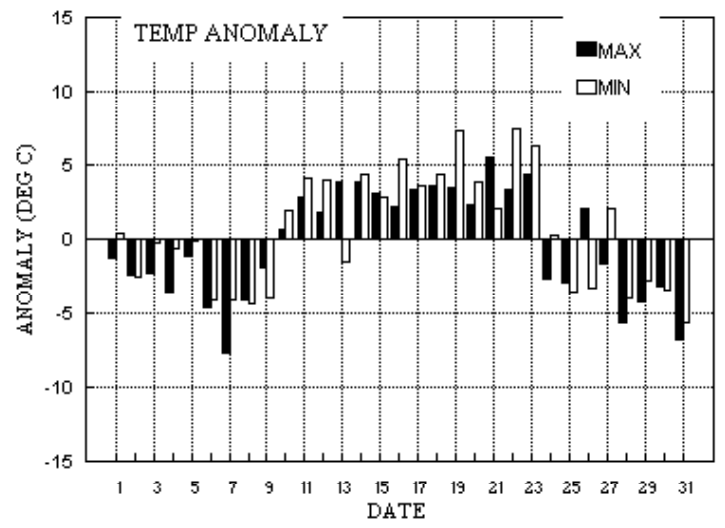
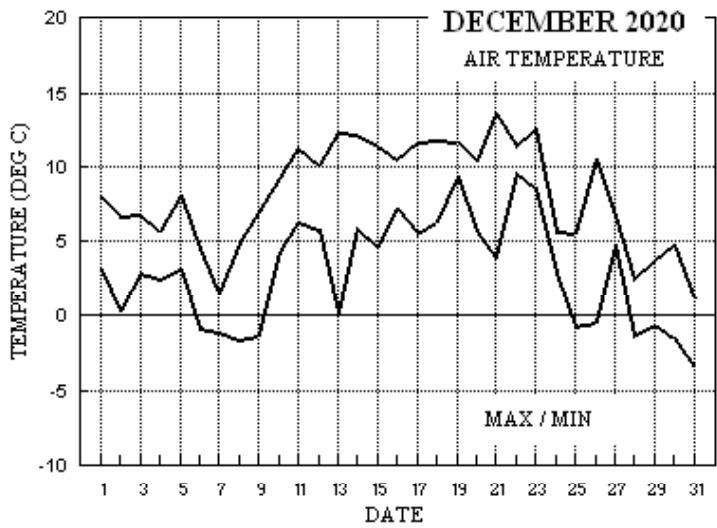
Table 1. Mean anomalies (max, min, rain, sun) for specified periods.

From the 1 <sup>st</sup> to the 10 <sup>th</sup>				From the 11 <sup>th</sup> to the 20 <sup>th</sup>				From the 21 <sup>st</sup> to the 31 <sup>st</sup>			
-2.9°	-1.8°	115%	80%	+3.0°	+3.8°	152%	129%	-1.1°	-0.4°	104%	94%

B J Burton FRMetS.

Hon. Met. Officer to Wokingham Town Council.

# Wokingham climatological graphs for December 2020



Month: DECEMBER 2020

Date	Max C	Min C	Rain mm	Grass Min	30cm C	100cm C	Sun hrs	Frost hrs	pp09 mbar	Af Gf	Sf Sl	Th Ha	Ic Fg	Vec ddd	mean ff	sp	Max gust ddd	gg HHhh	High hr ddd	ff	Rain HH	hrs					
1	7.9	3.1	0.0	-0.2	9.3	10.6	7.6	0.0	1027.0	0	1	0	0	0	0	0	323	4.4	4.6	334	18	0920	328	7	07	0.0	
2	6.7	0.3	1.8	-3.0	8.4	10.6	0.0	0.0	1020.7	0	1	0	0	0	0	0	219	2.9	3.0	234	9	1343	231	5	14	4.6	
3	6.8	2.8	10.5	-1.5	8.3	10.4	0.0	0.0	993.4	0	1	0	0	0	0	0	185	3.5	4.1	129	14	0907	158	6	09	7.9	
4	5.6	2.5	0.1	-1.6	8.1	10.2	0.6	0.0	976.7	0	1	0	0	0	0	0	238	5.8	7.7	256	20	1205	243	10	11	0.5	
5	8.1	3.1	tr	1.0	7.8	10.0	3.4	0.0	989.1	0	0	0	0	0	0	0	83	4.8	6.0	65	21	1101	81	8	11	0.3	
6	4.5	-0.8	0.1	-4.3	7.4	9.9	1.2	2.3	1002.5	1	1	0	0	0	0	1	332	2.2	2.6	285	10	0404	285	4	15	0.1	
7	1.5	-1.1	0.6	-2.4	7.2	9.6	0.0	8.1	999.4	1	1	0	0	0	0	1	20	2.1	2.3	57	7	0745	24	4	11	1.7	
8	4.9	-1.6	1.2	-1.1	7.1	9.4	4.5	6.4	1003.7	1	1	0	0	0	0	1	218	2.9	3.2	209	10	2010	212	5	20	1.8	
9	6.9	-1.4	tr	-1.7	6.9	9.3	0.0	0.0	1008.5	1	1	0	0	0	0	0	214	3.6	5.3	260	13	1040	249	7	09	0.0	
10	9.2	4.2	9.0	2.6	7.1	9.1	0.0	0.0	1000.7	0	0	0	0	0	0	0	120	4.9	5.3	115	15	0612	143	7	19	7.6	
11	11.3	6.3	1.1	0.7	7.5	9.0	1.8	0.0	985.5	0	0	0	0	0	0	0	198	3.2	3.8	182	19	0150	172	9	02	1.9	
12	10.1	5.8	0.7	0.2	7.7	9.0	3.4	0.0	998.2	0	0	0	0	0	0	0	258	5.3	5.5	269	23	1142	274	10	11	1.0	
13	12.2	0.2	4.6	-3.6	7.4	9.0	0.0	0.0	1004.2	0	1	0	0	0	0	0	178	6.9	7.4	160	23	1438	206	11	22	5.5	
14	12.1	5.9	2.3	7.6	7.8	9.0	1.6	0.0	998.9	0	0	0	0	0	0	0	196	8.5	8.6	215	28	0318	199	11	10	1.6	
15	11.4	4.6	1.3	-0.6	8.1	9.0	4.5	0.0	1005.3	0	1	0	0	0	0	0	177	5.1	5.4	182	18	1457	195	8	12	0.5	
16	10.5	7.2	5.9	3.4	7.9	9.1	0.1	0.0	1006.6	0	0	0	0	0	0	0	166	7.0	7.2	170	22	1326	163	10	04	4.2	
17	11.6	5.5	1.5	-0.1	8.0	9.1	6.5	0.0	1014.3	0	1	0	0	0	0	0	203	7.0	7.1	193	25	2347	193	11	23	1.8	
18	11.8	6.3	6.5	8.3	8.1	9.0	0.0	0.0	1011.6	0	0	0	0	0	0	0	187	11.3	11.3	194	29	2017	188	14	20	5.0	
19	11.6	9.3	4.1	8.6	8.7	9.1	4.0	0.0	1003.6	0	0	0	0	0	0	0	196	9.1	9.2	184	32	0115	186	12	01	1.3	
20	10.3	5.6	2.8	2.9	8.6	9.2	6.0	0.0	1011.9	0	0	0	0	0	0	0	200	6.1	6.5	192	21	0401	230	11	12	6.0	
21	13.6	3.9	2.2	-0.6	8.1	9.2	0.0	0.0	1004.0	0	1	0	0	0	0	0	198	7.4	8.9	226	27	2320	227	13	22	2.1	
22	11.4	9.6	1.8	8.8	8.8	9.2	0.0	0.0	1012.4	0	0	0	0	0	0	0	233	2.6	5.0	248	27	0351	243	13	03	2.5	
23	12.5	8.6	3.8	4.5	9.1	9.3	0.1	0.0	1004.6	0	0	0	0	0	0	0	184	3.0	5.4	14	24	2257	14	12	23	3.8	
24	5.7	2.9	0.0	1.3	9.2	9.4	5.5	0.0	1022.2	0	0	0	0	0	0	0	342	8.8	9.1	7	28	0057	2	12	03	0.0	
25	5.5	-0.7	tr	-3.9	8.2	9.5	7.1	4.0	1032.9	1	1	0	0	0	0	0	295	3.6	4.8	348	17	0350	334	8	03	0.0	
26	10.5	-0.5	14.6	-3.7	7.2	9.3	0.1	0.2	1021.7	1	1	0	0	0	0	0	221	11.1	11.2	228	36	2111	216	17	23	7.1	
27	6.7	4.8	0.0	4.2	7.6	9.1	5.4	0.8	976.6	0	0	0	0	0	0	0	227	8.2	8.8	237	43	0334	222	20	02	0.0	
28	2.5	-1.4	0.8	-7.2	7.1	9.0	0.0	9.9	971.1	1	1	1	0	0	0	0	338	1.4	4.4	12	14	1604	299	6	23	1.3	
29	3.7	-0.6	tr	-2.5	6.6	8.8	0.6	0.5	988.4	1	1	0	0	0	0	0	298	3.6	4.0	323	15	1554	327	6	16	0.0	
30	4.7	-1.5	0.0	-5.9	6.3	8.6	3.6	9.0	1003.4	1	1	0	0	0	0	0	236	2.6	3.0	252	12	0520	254	6	12	0.0	
31	1.0	-3.5	0.0	-7.1	5.7	8.4	0.0	14.4	1005.7	1	1	0	0	0	0	0	311	2.4	3.0	327	12	0714	318	5	04	0.0	
Total			77.3				67.6	55.6																			70.1
Mean	8.2	2.9		0.1	7.8	9.3	2.18	1.8	1003.4								211	3.2	5.9								
Anom	+0.2	+0.8	123%	+0.7	+1.2	+0.0	100%		-12.3																		
Daily mean		5.5																									
Anom		+0.5																									

Number of days with:

Air frost = 10      Ground frost = 18      Nil sun = 11  
Snow falling = 1      Snow lying = 0      Thunder = 0  
Hail=>5mm = 0      Hail<5mm or ice = 0      Fog at 09GMT = 3

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, &lt;.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 =&gt;5mm. Ic = Hail &lt;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 2020

Date	VV	N	dd	ff	gg	TT	TdTd	RH	r	PPP	a	ppp	ww	W1	W2	Nh	Cl	h	Cr	Ch	shs	NChs	NChshs	Date	Remarks
1	82	4	33	07	16	4.1	1.0	80	4.0	1027.0	2	012	02	1	1	1	0	9	4	1	81363	84075	1	COTRA	
2	68	7	22	02	04	2.8	1.8	93	4.3	1020.7	7	014	02	2	2	7	0	9	7	1	81360	87363	2	/Ci72 COTRA	
3	58	8	16	05	12	5.5	4.6	94	5.4	993.4	7	056	61	6	6	6	5	3	2	/	81708	86620	88535	3	
4	56	8	25	07	13	3.1	2.4	95	4.7	976.7	1	017	61	6	2	8	5	3	/	/	83706	86710	88615	4	
5	80	7	08	07	12	4.7	2.7	87	4.7	989.1	2	032	02	6	2	1	2	5	7	2	81825	85463	86068	5	1Ac65 Cu med
6	07	3	32	01	03	-0.7	-0.8	99	3.6	1002.5	0	011	41	4	1	2	6	0	3	1	82701			6	1Sc45 1Ac62 2Ci70 Hoar slt
7	02	9	07	03	07	-0.7	-0.7	100	3.6	999.4	5	000	49	5	4	9	/	/	/	/				7	Vis 250m Rime slt
8	01	9	20	03	05	-1.4	-1.4	100	3.4	1003.7	3	016	49	4	4	9	/	/	/	/				8	Rime slt vv 180m
9	80	7	25	07	12	4.9	3.1	88	4.7	1008.5	2	014	02	2	2	7	5	6	/	/	83632	87638		9	
10	59	8	09	05	10	6.5	4.7	88	5.3	1000.7	2	014	51	5	2	8	5	4	/	/	83711	86615	88620	10	
11	40	7	16	02	06	7.6	7.3	98	6.5	985.5	6	004	28	4	6	7	7	3	/	/	86706	85612		11	/Sc50 f 300m 0745-0815
12	82	7	27	07	13	8.4	6.2	86	6.0	998.2	2	032	21	6	2	7	5	4	/	/	81712	83635	87642	12	2Sc18
13	60	8	14	07	11	5.9	5.0	94	5.5	1004.2	6	016	61	6	2	4	5	4	2	/	82615	83645	88550	13	
14	60	5	21	09	17	10.4	7.6	83	6.6	998.9	3	015	25	8	1	4	8	5	3	1	81822	83635		14	3Ac62 1Ci75 Cu med jpN
15	75	5	20	06	14	7.8	6.3	90	5.9	1005.3	3	020	80	8	1	2	9	5	2	3	81925	81828	83558	15	1Sc50 1Ci68
16	82	7	15	10	17	9.6	6.5	81	6.0	1006.6	1	004	02	2	2	4	5	4	7	1	84618	87358		16	/Ci75
17	62	0	21	07	11	6.3	5.7	96	5.7	1014.3	2	021	02	0	0	0	0	9	0	0				17	
18	40	8	19	11	21	10.9	10.1	95	7.7	1011.6	0	000	51	6	5	8	5	2	/	/	85705	87707	88612	18	
19	30	7	21	11	18	9.3	7.9	91	6.7	1003.6	3	018	81	8	6	3	3	3	2	/	81706	83915	87535	19	Vio ra sh 0840 Clearance to NW
20	80	2	19	04	10	5.9	4.5	91	5.2	1011.9	3	017	15	1	1	1	8	6	6	3	81830			20	1Sc48 1Ac60 1Ci68 Cb tops S jpS
21	40	8	18	08	18	10.3	9.5	95	7.4	1004.0	6	036	51	6	5	8	5	2	/	/	83705	87707	88615	21	
22	64	7	31	03	06	9.6	7.7	88	6.5	1012.4	2	027	01	5	2	7	5	4	/	8	86612	87625		22	/Cs70 COTRA
23	60	8	14	05	09	11.2	10.7	97	8.1	1004.6	7	021	60	6	2	8	7	2	/	/	84704	87706	88710	23	
24	83	2	33	10	21	2.9	0.1	82	3.8	1022.2	2	044	01	1	1	2	5	4	0	0	82615			24	
25	84	2	27	02	09	-0.5	-3.2	82	2.9	1032.9	1	010	03	0	0	1	5	6	4	1	81640			25	1Ac68 2Ci78 Hoar slt
26	60	7	23	09	20	5.5	4.3	92	5.1	1021.7	6	021	60	6	2	7	5	3	/	/	86706	87615		26	/Sc50
27	65	7	25	06	19	4.9	3.6	91	5.1	976.6	6	018	25	8	2	6	8	4	7	2	82810	84620	85459	27	/Ac62 /Ci70 Cu med jpSE vv60k NW
28	58	7	07	03	08	-0.6	-0.7	99	3.7	971.1	4	000	10	2	2	1	5	7	7	/	81650	85463	87366	28	Hoar mod
29	59	8	11	01	05	1.0	-0.2	92	3.8	988.4	2	027	05	2	2	8	5	4	/	/	83712	88615		29	
30	75	5	22	04	07	0.7	0.1	96	3.9	1003.4	2	014	02	2	2	1	5	6	4	9	81635	83168		30	1Sc56 1Ac65 1Cs75 Hoar slt
31	50	8	32	03	07	-1.0	-1.7	95	3.4	1005.7	3	012	10	2	2	8	6	2	/	/	88705			31	Hoar slt

Mean vis = 16.6 km

Mean cloud = 6.2 78%

Mean wind speed = 5.6 kn

Mean gust = 12 kn

Mean TT = 5.0 °C

Mean TdTd = 3.7 °C

Mean RH = 91.5 %

Mean r = 5.1 g/kg

Mean PPP = 1003.4 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

TdTd = 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

Weather observations. Emmbrook, Wokingham, Berkshire.

Observations at 1500 GMT for December 2020

Date	VV	N	dd	ff	gg	TT	TdTd	RH	r	PPP	a	pppww	W1W2	NhCl	hCrCl	NChshs	NChshs	NChshs	Date	Remarks											
1	83	7	32	04	12	6.8	2.1	72	4.3	1026.5	5	006	02	1	1	1	1	5	4	1	81825	87080	1	1Ac62	COTRA						
2	56	8	22	04	09	5.8	4.8	93	5.3	1015.2	6	026	61	6	5	8	5	3	/	/	81706	86615	88630	2							
3	57	8	19	07	11	6.2	5.3	94	5.7	980.6	6	058	63	6	6	3	7	2	2	/	83705	88525		3	2Sc15						
4	82	8	23	09	18	5.1	0.9	74	4.2	978.7	3	009	01	2	2	2	5	7	7	7	82650	83358	88270	4	3Ac63	Parhelion, upper tan arc, sun pilar					
5	88	6	06	09	17	6.7	2.8	76	4.7	993.4	3	023	03	1	1	6	8	5	0	0	82825	83635		5	3Sc50	Cu med					
6	59	6	26	04	08	3.6	1.6	87	4.3	1002.9	5	001	05	2	2	6	5	2	0	1	81705	86642		6	1Sc35	/Ci70					
7	05	8	36	02	04	0.6	0.5	99	4.0	998.1	6	004	50	5	4	8	6	0	/	/	88701			7							
8	59	6	24	03	07	4.3	2.5	88	4.6	1004.4	3	002	05	1	1	1	5	6	7	4	81645	85072		8	2Ac62						
9	80	7	20	04	09	5.2	2.7	84	4.6	1006.4	6	011	03	2	2	7	0	9	7	/	87363			9	Cld	edge E					
10	63	8	16	04	11	7.4	5.9	90	5.8	999.2	7	018	20	5	2	8	5	3	/	/	83707	87611	88620	10							
11	67	3	23	03	10	9.6	7.9	89	6.8	985.7	3	007	01	6	8	2	8	4	4	3	81812			11	2Sc25	1Sc50	1Ac62	1Ci68	Cu con	Cb top	NE
12	84	1	27	07	17	8.4	3.3	70	4.8	1003.0	2	023	01	1	1	1	8	5	0	0	81828			12	1Sc50	Cu	hum				
13	50	8	17	10	23	10.0	9.2	95	7.3	997.8	7	033	51	5	5	8	7	2	/	/	87705	88708		13							
14	65	7	20	09	17	11.2	8.6	84	7.0	999.7	3	003	02	2	2	3	8	4	7	/	82817	87363		14	2Sc45	/Ac68	Cu	hum			
15	81	2	19	10	18	10.2	6.5	78	6.1	1006.3	2	001	02	8	1	1	8	5	6	4	81820			15	1Sc50	1Ac62	2Ci78	Cu	med		
16	56	8	19	07	16	9.1	7.9	92	6.6	1005.2	5	004	63	6	6	7	5	3	2	/	83708	86612	88540	16							
17	68	7	21	08	17	10.6	6.9	78	6.2	1015.6	5	001	03	1	1	1	1	4	7	1	81818	87078		17	1Ac58	COTRA	Cu	hum	Halo	22°	part
18	35	8	19	11	22	11.5	10.4	93	7.9	1008.9	8	010	51	6	5	8	5	3	/	/	85706	87708	88615	18							
19	70	4	20	10	20	10.6	6.9	78	6.2	1005.2	1	010	15	8	1	2	9	5	0	3	82920	81825	83068	19	jpS	vv35k	ex	p			
20	82	4	23	09	15	9.6	4.4	70	5.2	1013.3	3	011	03	1	1	4	8	5	0	3	82825	83650		20	1Ci68	Cu	med	Cb	top	dist	S
21	59	8	21	10	20	13.4	12.1	92	8.8	1003.3	7	004	20	5	2	8	5	3	/	/	87708	88618		21							
22	60	8	06	04	06	10.0	8.4	90	6.9	1011.8	8	017	05	2	2	8	5	3	/	/	86709	88612		22							
23	70	7	19	06	19	10.6	9.0	90	7.2	1001.0	5	010	25	8	2	7	8	4	/	/	85815	86625		23	Cu	med	jp	W&N	vv40k	ex	p
24	86	4	33	06	22	4.3	-0.3	72	3.7	1025.1	3	014	00	1	1	4	8	5	0	0	82825	83650		24	Cu	hum					
25	86	3	32	06	13	3.1	-2.8	65	3.0	1031.7	6	011	03	0	0	1	0	9	4	1	81365	83078		25							
26	65	8	22	10	19	9.2	7.2	87	6.3	1012.9	8	048	50	5	2	8	5	4	/	/	87615	88625		26	jp	NW&S	vv	40k	ex	p	
27	82	1	23	07	11	5.4	0.2	69	4.0	974.5	1	016	02	0	0	1	8	6	0	1	81825			27	1Sc40	1Ci75	Cu	hum			
28	62	7	01	03	11	2.5	1.8	95	4.5	975.4	3	028	61	6	6	7	5	2	/	8	81705	87635		28	/Cs68						
29	61	8	31	06	12	3.4	0.6	82	4.0	992.6	3	024	02	2	2	8	5	4	/	/	87615			29	/Sc20						
30	81	6	24	03	07	3.3	0.4	81	3.9	1003.2	6	004	14	1	1	6	0	9	7	/	81359	84364		30	2Ac68	Ac	vir				
31	60	7	32	04	09	0.7	-0.7	90	3.6	1006.2	3	004	05	2	2	7	6	3	/	/	87707			31							

Mean vis = 23.3 km

Mean cloud = 6.2 77%

Mean wind speed = 6.4 kn

Mean gust = 14 kn

Mean TT = 7.0 °C

Mean TdTd = 4.4 °C

Mean RH = 83.8 %

Mean r = 5.4 g/kg

Mean PPP = 1002.7 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

TdTd = 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

Wokingham Sunshine Hourly analysis  2020	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
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	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	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
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
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
8	0.86	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	0.04	0.12	0.01
9	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.80	0.29	0.00
10	1.00	0.00	0.00	0.00	0.88	0.00	0.00	0.34	0.00	0.00	0.00	0.05	0.09	0.00	0.61	0.76	0.01
11	1.00	0.00	0.00	0.00	0.78	0.15	0.00	1.00	0.00	0.00	0.11	0.73	0.00	0.07	0.81	0.00	0.00
12	1.00	0.00	0.00	0.00	0.42	0.96	0.00	1.00	0.00	0.00	0.00	0.16	0.00	0.10	1.00	0.00	0.00
13	1.00	0.00	0.00	0.00	0.70	0.06	0.00	1.00	0.00	0.00	0.61	0.83	0.00	0.00	0.34	0.00	0.00
14	1.00	0.00	0.00	0.16	0.37	0.00	0.00	1.00	0.00	0.00	0.74	1.00	0.00	0.00	1.00	0.00	0.00
15	0.70	0.00	0.00	0.40	0.19	0.04	0.00	0.15	0.00	0.00	0.26	0.61	0.00	0.00	0.13	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
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
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
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
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
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
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
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
Tot	<b>7.56</b>	<b>0.00</b>	<b>0.00</b>	<b>0.55</b>	<b>3.35</b>	<b>1.22</b>	<b>0.00</b>	<b>4.49</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>1.80</b>	<b>3.43</b>	<b>0.00</b>	<b>1.60</b>	<b>4.46</b>	<b>0.02</b>

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	0.54	0.00	0.00	0.20	0.00	0.00	0.00	0.05	0.34	0.00	0.00	0.00	0.00	0.20	0.00	0.08
9	1.00	0.00	0.26	0.84	0.00	0.00	0.00	0.94	1.00	0.00	0.00	0.00	0.00	0.83	0.00	0.23
10	1.00	0.00	0.96	0.75	0.00	0.00	0.05	1.00	1.00	0.05	0.96	0.00	0.00	1.00	0.00	0.34
11	1.00	0.00	0.62	1.00	0.00	0.00	0.02	1.00	1.00	0.09	1.00	0.00	0.06	0.98	0.00	0.37
12	1.00	0.00	0.60	1.00	0.00	0.00	0.03	0.97	0.92	0.00	1.00	0.00	0.48	0.35	0.00	0.35
13	0.79	0.00	0.96	0.79	0.00	0.00	0.00	0.64	1.00	0.00	0.99	0.00	0.02	0.25	0.00	0.32
14	0.91	0.00	0.55	0.84	0.00	0.00	0.00	0.16	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.31
15	0.28	0.00	0.00	0.53	0.00	0.00	0.00	0.77	0.80	0.00	0.49	0.00	0.00	0.00	0.00	0.17
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	<b>6.52</b>	<b>0.00</b>	<b>3.95</b>	<b>5.97</b>	<b>0.00</b>	<b>0.00</b>	<b>0.10</b>	<b>5.52</b>	<b>7.06</b>	<b>0.14</b>	<b>5.44</b>	<b>0.00</b>	<b>0.57</b>	<b>3.62</b>	<b>0.00</b>	<b>67.36</b>

DECEMBER 2020	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	4.06	7.9	1256	0.3	2326	82.6	97.3	2328	67.0	1306	1.3	4.1	4.4	1254	3.7	2326	1026.21	1027.4	1008	1023.8	0	0
2	4.13	6.7	1316	0.8	10	92.0	97.3	31	80.9	1042	2.9	4.7	5.6	2017	3.8	10	1017.83	1025.9	1	1008.6	2359	0.5
3	4.63	6.8	1321	3.0	2032	94.5	98.3	2332	89.3	529	3.8	5.1	6.0	1345	4.4	30	988.80	1008.8	18	974.8	2359	9.6
4	3.78	5.2	1208	2.5	700	84.0	98.3	0	70.2	1353	1.3	4.3	5.0	0	3.8	2023	977.88	982.8	2358	973.8	324	0.3
5	4.50	8.1	1132	1.0	2314	82.7	95.8	2229	67.9	250	1.7	4.4	5.1	1133	3.8	239	991.16	999.4	2358	982.7	36	0.1
6	1.35	4.5	1415	-0.8	803	95.4	99.0	950	83.2	1400	0.7	4.0	4.5	1157	3.5	802	1002.13	1003.5	1809	999.3	0	0
7	0.33	1.5	2230	-1.1	819	99.4	100.0	752	98.2	2356	0.2	3.9	4.2	2230	3.5	819	999.41	1001.9	2	997.9	1535	0.6
8	1.65	4.6	1439	-1.6	805	96.4	100.1	711	87.2	1437	1.1	4.2	5.0	2358	3.4	806	1003.70	1006.2	2317	1000.0	27	1
9	4.97	6.5	2358	3.8	122	86.7	95.7	0	76.9	1339	2.9	4.7	5.0	2359	4.5	1943	1005.82	1008.6	952	1000.2	2359	0.1
10	6.92	7.9	2359	6.3	217	89.3	97.7	2319	80.6	108	5.3	5.6	6.6	2359	5.0	108	998.44	1001.5	1025	991.0	2357	3.7
11	8.24	11.3	1349	5.8	1836	95.8	98.7	918	86.6	1417	7.6	6.6	7.7	1349	5.7	1836	986.97	991.1	0	984.8	1324	4.4
12	6.64	10.1	1135	1.4	2355	85.7	97.6	349	66.9	1317	4.3	5.3	6.3	121	4.0	2348	1000.14	1007.9	2337	990.3	0	0
13	7.20	11.9	2059	0.2	234	93.8	98.3	253	85.1	2358	6.3	6.1	8.1	1931	3.8	234	1001.53	1007.9	219	996.3	2356	2
14	10.39	12.2	242	6.8	2359	85.8	94.5	2232	76.4	1214	8.1	6.8	7.6	316	5.8	2359	998.91	1001.6	2359	995.7	242	3.9
15	7.80	11.4	1258	4.6	643	90.3	98.4	704	71.8	1226	6.3	5.9	6.6	1403	5.1	643	1005.57	1008.7	2138	1001.4	2	1.5
16	8.76	10.5	1133	6.6	2354	87.4	96.9	2359	77.8	1137	6.7	6.1	6.7	1518	5.7	2148	1006.79	1009.1	2338	1004.4	1402	5.2
17	8.76	11.3	2357	5.5	641	87.7	97.0	38	75.7	1241	6.8	6.1	6.8	2357	5.4	813	1013.90	1016.2	1647	1009.0	0	0.3
18	11.15	11.8	2214	10.5	329	90.8	95.3	827	81.3	106	9.7	7.5	8.0	1517	6.8	1	1009.59	1013.8	4	1004.3	2353	2.1
19	9.72	11.7	16	7.0	2357	84.5	94.2	533	75.2	1411	7.2	6.4	7.4	553	5.5	1832	1004.71	1009.3	2355	1001.2	447	8.6
20	7.01	10.2	1311	3.9	2149	85.5	95.7	27	69.0	1451	4.7	5.3	6.0	106	4.7	2127	1012.57	1016.0	2144	1008.9	118	0.5
21	11.06	13.6	1442	5.4	0	93.4	96.6	703	88.2	2357	10.0	7.7	8.9	1314	5.1	0	1005.98	1014.7	6	1002.9	1429	3.8
22	10.68	13.6	39	8.6	1914	90.1	98.5	2112	79.5	349	9.1	7.2	8.5	1	6.4	1034	1010.59	1013.8	1150	1004.6	0	1.3
23	10.21	12.5	1152	6.4	2353	93.7	98.0	25	80.7	1409	9.2	7.3	8.4	1043	5.3	2340	1004.65	1009.7	9	1000.8	1437	2.9
24	4.26	6.5	319	1.9	2350	77.6	91.6	36	64.6	1305	0.7	4.0	5.4	0	3.3	2350	1022.52	1030.9	2357	1008.2	0	0.5
25	1.30	4.1	1321	-0.7	847	76.8	89.8	2221	60.1	1325	-2.4	3.1	3.4	2339	2.9	1109	1031.48	1033.5	1105	1028.9	2344	0
26	6.59	10.5	2117	-0.0	105	86.9	92.6	247	75.9	2118	4.5	5.3	6.7	2316	3.4	36	1015.23	1029.2	1	991.6	2359	0.7
27	5.23	9.6	102	-0.7	2357	85.5	97.9	2359	64.6	1332	2.9	4.9	6.7	44	3.6	2357	977.02	992.3	0	972.2	2258	12.7
28	0.69	2.7	1518	-1.5	555	94.6	98.2	824	88.9	2201	-0.1	3.9	4.5	1518	3.4	555	975.03	983.3	2358	970.7	652	0.8
29	2.02	3.7	2030	-0.4	613	88.5	95.5	622	80.4	1448	0.3	4.0	4.4	1904	3.6	609	990.97	1000.4	2359	983.2	5	0
30	0.73	4.7	1216	-3.0	2351	92.3	98.7	316	76.2	1312	-0.4	3.7	4.3	1134	3.0	2351	1002.81	1003.9	1020	1000.3	15	0
31	-0.58	1.0	1311	-3.5	114	95.0	98.8	2358	89.0	1316	-1.3	3.5	3.7	1152	2.9	125	1006.13	1009.8	2358	1003.5	5	0
Total																						67.1
Mean	5.62	8.20		2.54		89.2	96.85		77.91		3.92	5.22	6.06		4.35		1003.05	1008.68		997.25		
Max	11.15	13.56		10.50		99.4	100.10		98.20		10.02	7.75	8.91		6.76		1031.48	1033.51		1028.85		
Min	-0.58	0.99		-3.45		76.8	89.80		60.05		-2.40	3.12	3.45		2.88		975.03	982.81		970.73		

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, 1<sup>st</sup> January to 31<sup>st</sup> 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  $-0.1^{\circ}\text{C}$  or below. A ground frost day is recorded when the grass minimum temperature read at 0900 GMT on that day is  $-0.1^{\circ}\text{C}$  or lower.

Duration of air frost is defined as the number of minutes that the AWS one minute average temperature is below  $0.0^{\circ}\text{C}$ , 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 of 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.