

# 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

### JANUARY 2013

Temperature (°C / °F)			Anomaly	Rank in the past 132 years				
Mean maximum	6.3	43.3	-1.5	37 <sup>th</sup> lowest				
Mean minimum	1.5	34.7	-0.3	60 <sup>th</sup> highest				
Daily mean	3.9	39.0	-0.9	53 <sup>rd</sup> lowest				
Highest maximum	13.4	56.1	on 29 <sup>th</sup>	Lowest maximum	-0.3	31.5	on 16 <sup>th</sup>	
Highest minimum	9.1	48.4	on 4 <sup>th</sup>	Lowest minimum	-6.8	19.8	on 22 <sup>nd</sup>	
Mean grass minimum	-0.3	31.5	+0.8	Lowest grass minimum	-11.8	10.8	on 22 <sup>nd</sup>	
Mean earth @30 cm	5.8	42.4	+0.4	Earth @100 cm	7.6	45.7		
Frost duration (hrs)	151.1			Rain duration (hrs)	86.4			
Rainfall total (mm / in)	57.5	2.26	93 %	64 <sup>th</sup> highest				
Highest daily fall	7.4	0.29	on 31 <sup>st</sup>					
Number of: Dry days (<0.2mm)	14	Wet days (>0.9mm)	12	days ≥5mm	6			
Sunshine total (hrs)	35.7	Daily mean	1.15	57 %	Sunniest day	6.8	on 1 <sup>st</sup>	
N <sup>o</sup> days with: Air frost	14	Ground frost	21	Snow falling	12	Snow lying	9	
Thunder	0	Hail ≥5mm	0	Small hail/ice	2	Fog @09	2	
Pressure MSL : Mean @09 GMT, mbar	1014.0	-2.7	Highest	1038.6	on 4 <sup>th</sup>	Lowest	991.4	on 21 <sup>st</sup>
Relative humidity : Mean (%)	86.6	Lowest	50	on 27 <sup>th</sup>	Water vapour (g/kg), mean at 09 and 15 GMT			4.5, 4.6
Overall mean wind speed (mph)	7.6	Windiest day	15.4	on 30 <sup>th</sup>	Max gust	51	on 30 <sup>th</sup>	
Wind direction (days)	N 4	NE 5	E 3	SE 0	S 3	SW 10	W 4	NW 2
Least windy day (mph)	2.8	on 17 <sup>th</sup>	Calm; less than 0.5 mph (minutes)				371	

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

Notes: **Very Dull with Below Average Temperatures and Near Normal Rainfall, also with a Cold and Snowy Episode.**

Overall, the month was mild and dry until the 9<sup>th</sup>, then cold with significant snowfall, turning mild and wet from the 26<sup>th</sup>. **Temperature:** This has been the coldest January since 2010. A cloudy month overall resulted in temperatures being relatively low by day and less so by night, giving a mean diurnal range of 4.8°, lowest since 1996. The highest max is 1.0° above the long-term median, while the lowest max is 1.1° below the median. The highest min is 0.9° above the median and the lowest min is 0.9° below its median. The mean grass min is highest since 2008. Earth temperatures at 30cm depth are slightly above average, but at 1 m depth are close to average. The number of days with air frost is 3 above average and there were 51 more hours than average with air frost. **Rainfall:** The total for the month is close to average, and is also close to the long-term median. The highest daily fall, however, was quite low and 6.6 mm below the median. Precipitation fell as snow on 12 days, and amounted to a total of 13.2 mm rainfall equivalent. The greatest 24 hour snowfall was on the 18<sup>th</sup> when 6.5 mm was measured, giving a snow depth of 12 cm on the morning of the 19<sup>th</sup>. On the 9 days with at least 50% cover of lying snow, the depth at 0900 hours was (date/depth cm): 14/1, 18/1, 19/12, 20/9, 21/8, 22/6, 23/7, 24/4, 25/3. The Eden Snow Index of 51 is highest for any month since Jan 2010 (151), and 2<sup>nd</sup> highest for January since 1982. 22 of the past 36 Januarys have had no snow cover. **Sunshine:** With a total of just over half the average sunshine this month, it is one of the 10 dullest Januarys in the past 106 years. During the month there were two spells with hardly any sunshine, the 2<sup>nd</sup> to the 8<sup>th</sup>, total 0.5 hours, and 16<sup>th</sup> to the 25<sup>th</sup>, total 0.3 hours. The number of days with nil sun is equal highest with 1997 since 1987. Overall there were 25 days with <3 hours and 1 day with =>6 hours. **Commentary: From the 1<sup>st</sup> to the 9<sup>th</sup>:** Temperatures were above normal by day and night, with anomalies for daily max between +4.0° on the 3<sup>rd</sup> and +0.3° on the 1<sup>st</sup>, and for daily min, +8.0° on the 4<sup>th</sup> and +1.1° on the 1<sup>st</sup>. Apart from 3.7 mm of rain on the 8<sup>th</sup> this period was mainly dry. A sunny day on the 1<sup>st</sup> was the exception, with 7 subsequent days totaling only 0.5 hours. Light or moderate winds were generally SW'ly, veering N'ly on the 9<sup>th</sup>. **From the 10<sup>th</sup> to the 25<sup>th</sup>:** Temperatures were below normal throughout, with anomalies for daily max between -8.2° on the 20<sup>th</sup> and -0.8° on the 11<sup>th</sup>, and a similar range for daily min. 5 days were dry, and there was snow on the 13<sup>th</sup> and 17<sup>th</sup> to 24<sup>th</sup>, laying to a maximum depth of 12cm on the 19<sup>th</sup>. Sunshine was very poor, 14 days having a total of only 0.7 hours, and 3.2 hours on the 15<sup>th</sup> the best on offer. Light N'ly winds became moderate on the 12<sup>th</sup>, backed W'ly on the 14<sup>th</sup>, became mainly NE'ly on the 16<sup>th</sup>, temporarily dropping light S'ly on the 21<sup>st</sup>. **From the 26<sup>th</sup> to the 31<sup>st</sup>:** This period was mild, wet and windy. Anomalies for daily max ranged between +6.2° on the 29<sup>th</sup> and +2.3° on the 27<sup>th</sup>, and for daily min the range was +6.5° on the 30<sup>th</sup> to 0.0° on the 26<sup>th</sup>. This period was wet with a total of 27.2 mm and just one dry day. Sunshine showed an improvement with only one sunless day. Winds were mainly strong SW'ly.

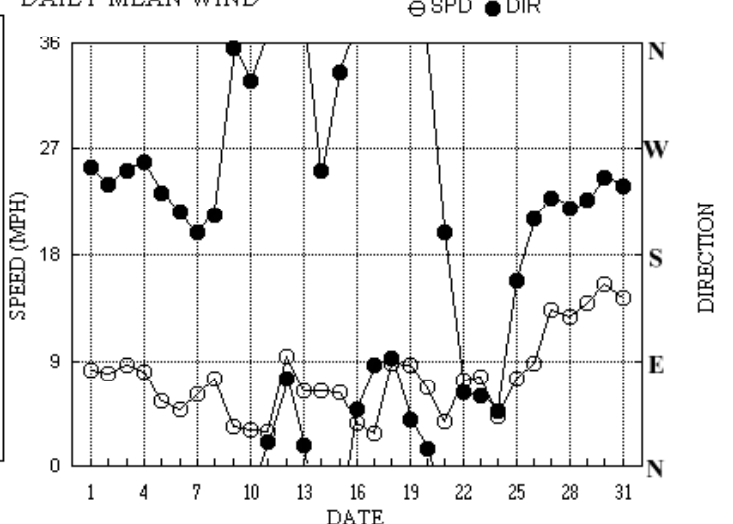
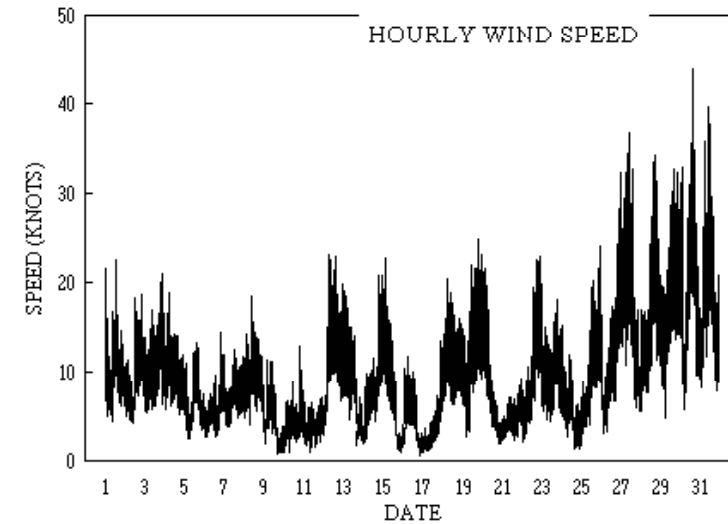
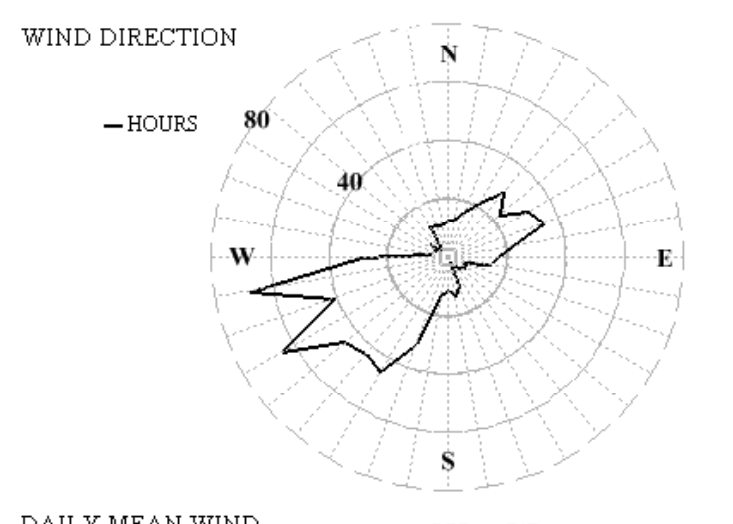
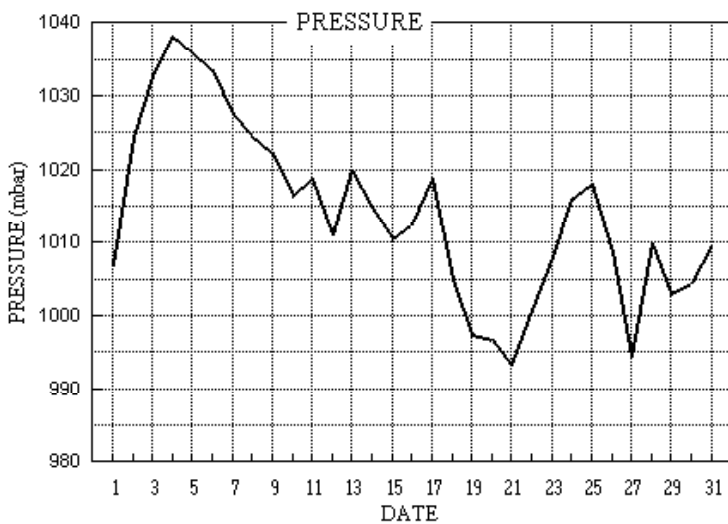
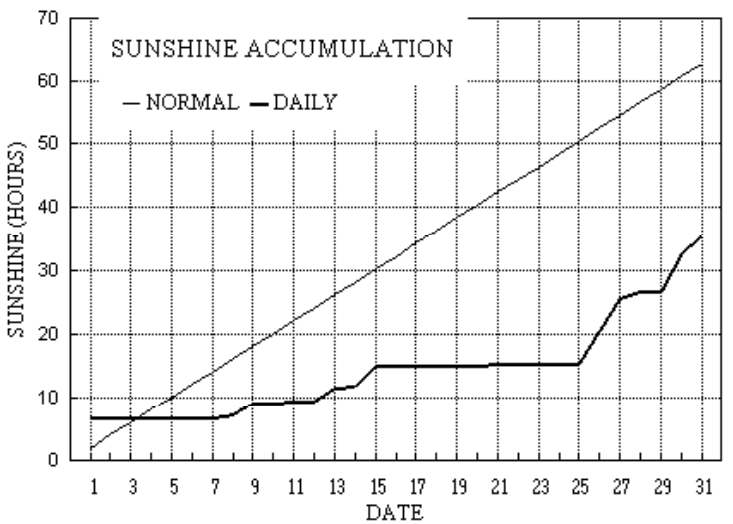
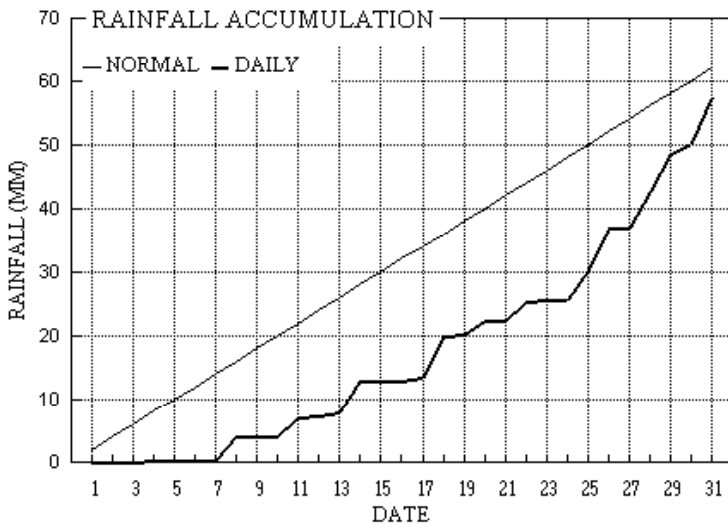
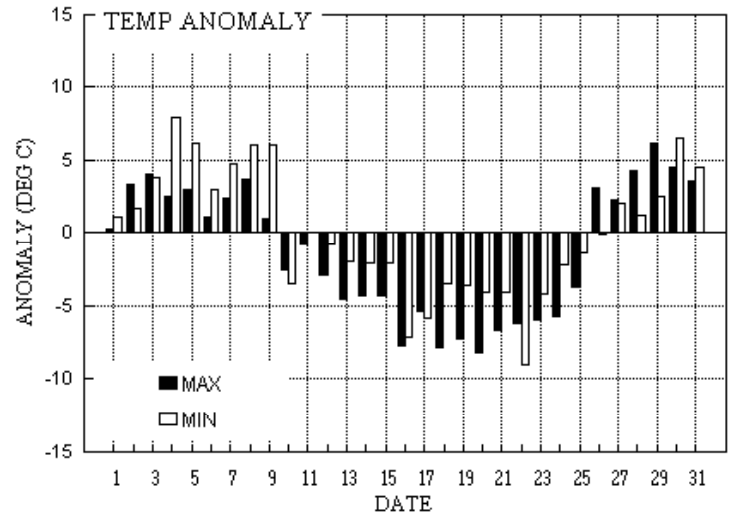
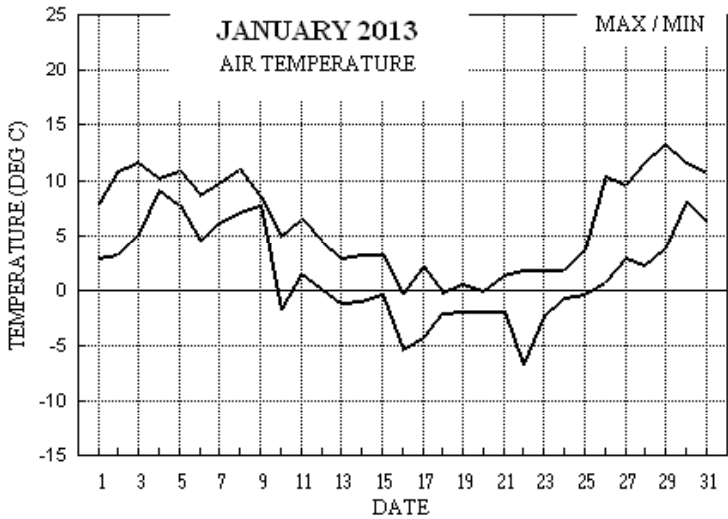
Table 1. Mean anomalies (max, min, rain, sun) for specified periods.

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>			
+1.9°	+3.7°	20%	45%	-5.3°	-3.1°	90%	30%	-0.4°	-0.4°	160%	94%

B J Burton FRMetS.

Hon. Met. Officer to Wokingham Town Council.

# Wokingham Climatological Graphs for January 2013



Month: JANUARY 2013

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 mean ddd ff sp	Max gust ddd gg HHhh	High hr ddd ff HH	Rain hrs					
1	7.9	3.0	0.0	-1.0	7.4	8.1	6.8	0.0	1006.7	0 1 0 0	0 0 0 0	0 0 0 0	254	7.0	7.2	262	23	1348	268	10	13	0.0
2	10.9	3.2	0.1	-0.5	6.7	8.2	0.0	0.0	1024.3	0 1 0 0	0 0 0 0	0 0 0 0	240	6.6	6.9	260	19	2035	262	12	20	0.3
3	11.7	5.1	0.0	6.8	6.9	8.2	0.1	0.0	1032.6	0 0 0 0	0 0 0 0	0 0 0 0	252	7.4	7.4	253	21	2124	258	11	21	0.0
4	10.2	9.1	0.1	8.0	7.5	8.1	0.0	0.0	1038.1	0 0 0 0	0 0 0 0	0 0 0 0	259	7.0	7.0	263	19	0601	261	9	05	0.1
5	10.9	7.8	tr	7.8	7.8	8.2	0.0	0.0	1036.0	0 0 0 0	0 0 0 0	0 0 0 0	232	4.5	4.8	216	13	1443	238	7	14	0.0
6	8.7	4.5	0.1	-0.5	7.7	8.3	0.0	0.0	1033.4	0 1 0 0	0 0 0 1	217	4.0	4.1	220	15	1944	228	8	20	0.1	
7	9.8	6.2	tr	6.4	7.8	8.3	0.0	0.0	1027.5	0 0 0 0	0 0 0 0	199	5.2	5.3	199	13	1230	196	7	12	0.0	
8	11.0	7.2	3.7	3.8	7.9	8.4	0.4	0.0	1024.7	0 0 0 0	0 0 0 0	214	6.4	6.5	205	19	1005	213	8	10	8.9	
9	8.5	7.7	tr	7.9	8.2	8.4	2.1	3.0	1022.3	0 0 0 0	0 0 0 0	355	1.7	2.9	319	12	0316	24	5	11	0.0	
10	4.9	-1.7	0.1	-7.2	7.6	8.5	0.0	3.7	1016.3	1 1 0 0	0 0 0 0	328	1.8	2.7	344	13	2054	347	5	21	0.4	
11	6.5	1.5	2.9	-1.4	7.2	8.5	0.1	0.0	1018.7	0 1 0 0	0 0 0 0	21	0.7	2.5	295	8	0053	63	4	23	2.6	
12	4.5	0.2	0.2	-4.2	6.8	8.5	0.0	0.0	1011.0	0 1 1 0	0 0 0 0	74	8.0	8.1	78	23	0737	77	11	15	0.5	
13	3.0	-1.2	0.7	-6.0	6.6	8.4	2.1	2.8	1019.9	1 1 1 0	0 0 0 0	18	5.2	5.6	38	20	0030	38	9	02	2.3	
14	3.3	-0.9	5.2	-3.5	6.0	8.3	0.3	5.9	1014.8	1 1 1 1	0 0 0 0	251	3.8	5.5	324	21	1817	297	10	20	5.0	
15	3.2	-0.4	0.0	-1.0	5.6	8.1	3.2	6.7	1010.5	1 1 0 0	0 0 0 0	335	4.6	5.5	334	23	0316	322	10	02	0.0	
16	-0.3	-5.3	tr	-11.1	5.0	8.0	0.1	24.0	1012.3	1 1 0 0	0 0 0 0	48	2.7	3.1	41	12	0621	63	5	05	0.0	
17	2.1	-4.3	0.5	-9.3	4.5	7.8	0.0	13.5	1018.8	1 1 1 0	0 0 0 0	87	1.9	2.4	138	14	2229	131	6	22	2.2	
18	-0.2	-2.1	6.5	-1.5	4.3	7.6	0.0	17.0	1005.0	1 1 1 1	0 0 0 0	92	7.2	7.6	109	21	0633	102	10	07	10.9	
19	0.6	-1.9	0.2	-1.5	4.3	7.4	0.0	18.1	997.5	1 1 1 1	0 0 1 0	40	7.4	7.5	33	25	1950	30	12	20	2.3	
20	-0.1	-1.9	2.1	-1.9	4.3	7.2	0.0	24.0	996.6	1 1 1 1	0 0 0 0	14	5.2	5.8	37	23	0020	38	11	00	9.8	
21	1.4	-1.9	tr	-1.6	4.3	7.1	0.2	18.3	993.1	1 1 1 1	0 0 0 0	199	2.9	3.3	134	9	2229	154	5	21	0.0	
22	1.8	-6.8	3.0	-11.8	4.2	6.9	0.0	10.9	1000.8	1 1 1 1	0 0 0 1	63	5.9	6.3	59	23	2350	65	11	23	7.3	
23	1.8	-2.3	0.2	-0.3	4.0	6.8	0.0	0.0	1007.9	1 1 1 1	0 0 0 0	60	6.5	6.6	65	20	0010	66	10	00	2.3	
24	1.9	-0.7	tr	-2.7	3.9	6.7	0.0	1.6	1016.0	1 1 1 1	0 0 1 0	47	2.6	3.6	57	15	0132	57	6	01	0.3	
25	3.7	-0.4	4.7	-2.1	3.9	6.6	0.0	1.6	1018.0	1 1 1 1	0 0 0 0	158	6.2	6.4	145	24	2216	168	10	15	6.2	
26	10.4	0.8	6.6	-1.2	3.9	6.5	5.2	0.0	1008.7	0 1 0 0	0 0 0 0	211	6.7	7.6	195	33	2327	198	15	23	6.4	
27	9.6	2.9	0.1	5.0	4.5	6.4	5.1	0.0	994.3	0 0 0 0	0 0 0 0	229	10.7	11.6	260	37	1021	254	16	10	0.1	
28	11.7	2.3	5.6	-0.9	4.8	6.4	1.1	0.0	1009.8	0 1 0 0	0 0 0 0	220	10.7	11.1	211	34	1715	202	18	16	5.8	
29	13.4	3.9	6.1	7.5	5.0	6.4	0.0	0.0	1003.1	0 0 0 0	0 0 0 0	227	12.0	12.1	228	33	1641	231	16	16	6.0	
30	11.7	8.1	1.4	5.1	6.1	6.5	5.9	0.0	1004.4	0 0 0 0	0 0 0 0	246	13.2	13.4	253	44	1506	255	20	15	0.7	
31	10.7	6.2	7.4	3.0	6.2	6.6	3.0	0.0	1009.7	0 0 0 0	0 0 0 0	239	11.9	12.5	261	40	1010	263	18	12	5.9	
Total			57.5				35.7	151.1														86.4
Mean	6.3	1.5		-0.3	5.8	7.6	1.15	4.9	1014.0					233	2.1	6.6						
Anom	-1.5	-0.3	93%	+0.8	+0.4	+0.1	57%															
Daily mean		3.9																				
Anom		-0.9																				

Number of days with:

Air frost = 14      Ground frost = 21      Nil sun = 16  
Snow falling = 12      Snow lying = 9      Thunder = 0  
Hail=>5mm = 0      Hail<5mm or ice = 2      Fog at 09GMT = 2

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.

## Emmbrook, Wokingham, Berkshire.

Observations at 1500 GMT for JANUARY 2013

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	84	1	26	08	17	6.9	1.1	67	4.1	1010.5	1	017	02	0	0	1	8	5	0	8	81828			1	1Sc35 1Cs75 Cu hum Cs edge W
2	63	8	24	08	17	8.9	7.3	89	6.3	1024.1	5	002	20	5	2	8	5	3	/	/	83708	88610		2	
3	82	7	26	09	14	11.0	8.7	85	6.8	1034.5	3	006	02	2	2	7	5	4	/	/	87610			3	COTRA
4	68	8	26	08	14	9.7	7.4	86	6.2	1037.3	6	007	02	2	2	8	6	4	/	/	88710			4	
5	81	8	24	07	13	10.1	7.5	84	6.3	1034.5	7	012	02	2	2	8	5	4	/	/	88612			5	
6	58	7	21	04	06	7.5	7.1	97	6.1	1031.6	7	017	10	2	2	7	6	2	/	2	87705			6	/Ci70
7	61	8	21	07	12	8.7	6.8	88	6.1	1025.5	7	010	02	5	2	8	5	3	/	/	82708	85612	88625	7	
8	66	8	21	07	12	10.8	7.9	82	6.5	1023.7	6	011	02	2	2	7	5	4	1	/	87615			8	/As65
9	78	5	35	03	08	8.1	4.0	75	5.0	1020.9	6	011	01	2	2	1	8	5	0	1	81820	84075		9	1Sc25 Cu hum
10	30	8	01	03	06	4.1	3.4	95	4.8	1014.1	6	015	10	2	2	8	6	2	/	/	83703	87704	88706	10	
11	68	7	02	02	05	6.2	3.1	80	4.7	1017.9	7	008	02	2	2	7	8	4	/	/	81815	87620		11	Cu fra
12	65	7	07	12	21	4.4	-2.0	63	3.3	1011.0	3	003	21	7	6	6	5	5	0	1	81625	86645	87075	12	Sleet 1210-1330
13	65	7	36	07	13	1.9	-1.6	78	3.4	1020.4	3	001	14	2	2	6	8	5	3	2	81820	86645	85070	13	/Ac66 COTRA
14	58	8	26	04	09	2.2	1.6	96	4.3	1007.6	6	031	58	7	6	1	8	4	2	/	81710	87530		14	1Cu15 1Sc20 /Ac60 Ns edge W
15	80	3	33	05	10	2.9	-1.7	72	3.3	1011.1	5	003	02	1	1	3	8	5	0	1	83820			15	1Sc40 1Ci75 Cu med
16	50	7	01	04	09	-1.2	-2.3	92	3.2	1014.2	3	013	05	2	2	7	6	3	3	/	87706			16	/Ac65
17	50	8	09	02	05	1.0	-0.6	90	3.6	1017.1	6	015	05	2	2	8	5	5	/	/	82625	87635	88645	17	
18	25	8	10	07	17	-1.6	-2.8	91	3.1	999.0	6	031	71	7	7	7	7	4	2	/	87710	88518		18	Snly 11cm 100%
19	59	8	04	08	19	0.2	-1.3	89	3.5	997.7	3	008	20	7	5	8	5	4	/	/	81710	84712	88618	19	Thaw slow. Snly 10cm
20	20	8	35	04	08	-0.4	-1.3	93	3.5	994.3	7	010	71	7	7	8	7	3	/	/	88706			20	Snly 10cm
21	60	7	25	03	06	1.1	-2.1	79	3.3	995.3	3	010	05	2	2	7	8	4	3	/	81815	87650		21	/Ac62 Cu fra Thaw Snly 7cm
22	57	8	06	10	20	1.7	0.6	93	4.0	1000.5	5	001	05	2	2	2	6	4	2	/	82712	88550		22	Snly 5cm Thaw
23	45	8	06	07	12	1.6	-0.1	88	3.8	1007.3	6	008	05	7	2	8	5	4	/	/	83712	86620	88625	23	Snly 5cm 95% Thaw
24	70	8	07	04	07	1.4	-2.0	78	3.3	1018.4	2	008	27	8	2	8	8	5	/	/	83825	88635		24	Snly 3cm Thaw Cu med
25	78	7	18	08	18	2.1	-3.0	69	3.0	1012.4	7	035	02	2	2	7	5	5	7	/	87625			25	/Ac60 Snly 2cm 70%
26	65	7	23	08	15	8.5	3.1	69	4.7	1010.1	7	006	03	2	2	2	5	6	3	1	82645	85365	86078	26	COTRA
27	65	5	24	10	24	8.8	1.1	58	4.2	998.7	1	010	15	1	1	3	9	6	0	1	81930	83835	83073	27	1Sc50 jpN
28	63	8	20	14	28	8.2	6.1	86	5.9	1004.8	8	045	58	6	5	7	5	4	2	/	81715	87620	88558	28	
29	70	8	23	15	30	13.3	10.9	86	8.2	1002.6	8	007	50	5	2	8	5	4	/	/	83712	88615		29	vv40k NW
30	70	2	26	21	36	10.6	1.2	52	4.2	1009.6	2	025	01	1	1	2	1	6	0	0	82840			30	Cu hum
31	72	7	25	14	29	10.1	2.2	58	4.4	1012.5	1	012	02	8	2	4	8	6	0	1	83835	85078		31	2Sc45 Cu med

Mean vis = 16.3 km

Mean cloud = 6.9 86%

Mean wind speed = 7.5 kn

Mean gust = 15 kn

Mean TT = 5.4 °C

Mean TdTd = 2.3 °C

Mean RH = 80.9 %

Mean r = 4.6 g/kg

Mean PPP = 1013.5 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 0900 GMT for JANUARY 2013

Date	VV	N	dd	ff	gg	TT	TdTd	RH	r	PPP	a	ppp	ww	W1	W2	Nh	Cl	h	Cr	Ch	NCh	shs	NCh	shs	Date	Remarks
1	80	1	23	05	08	3.3	1.6	88	4.3	1006.7	3	030	02	0	0	1	5	6	0	0	81635				1	
2	70	8	20	05	09	5.3	3.0	85	4.6	1024.3	1	021	03	2	2	5	5	7	7	/	82650	84656	88357	2		
3	67	7	25	07	14	9.8	8.5	92	6.8	1032.6	2	026	02	2	2	7	6	3	/	1	82706	87708		3	/Ci78	
4	80	7	25	05	13	9.2	5.4	77	5.4	1038.1	2	008	02	2	2	7	5	5	/	1	87620			4	/Ci75	
5	59	8	20	04	06	9.2	8.6	96	6.8	1036.0	2	006	10	5	2	8	5	4	/	/	81710	86615	88618	5		
6	06	8	21	03	08	6.5	6.2	98	5.7	1033.4	7	003	50	5	4	8	6	0	/	/	88701			6		
7	56	8	19	04	08	7.3	6.6	95	5.9	1027.5	0	001	10	5	2	8	5	3	/	/	82706	86615	88620	7		
8	67	7	22	07	12	9.5	7.4	86	6.3	1024.7	2	008	02	1	1	7	5	4	3	1	87612			8	/Ac68 /Ci75 COTRA	
9	50	8	02	05	09	7.7	7.2	97	6.2	1022.3	2	009	20	5	2	8	5	2	/	/	82705	85707	87612	9	8Sc20	
10	35	8	35	01	05	1.7	1.4	98	4.2	1016.3	7	007	40	6	5	8	6	2	/	/	82703	85705	88708	10	jf NW	
11	45	7	06	02	05	4.5	3.7	94	4.9	1018.7	2	019	21	6	2	7	5	2	/	/	82705	85707	87615	11	Cld edge E	
12	62	8	09	11	20	3.4	2.0	91	4.4	1011.0	3	001	62	6	2	8	5	4	/	/	81710	88630		12	2Sc20	
13	61	1	01	05	11	-0.7	-3.2	83	3.0	1019.9	2	021	02	0	0	1	5	6	0	1	81645			13	1Ci70 Hoar slt	
14	40	8	18	04	10	-0.4	-1.4	93	3.4	1014.8	7	020	70	7	2	8	5	3	/	/	82706	88612		14	Snly 90% 1cm	
15	62	7	34	08	14	0.9	-1.4	84	3.4	1010.5	2	029	02	6	1	7	6	4	/	/	87712			15		
16	38	8	06	05	10	-1.9	-2.3	97	3.2	1012.3	2	016	10	2	2	8	6	2	/	/	87704	88705		16	Hoar mod Gnd sfc frzn	
17	35	7	02	02	03	-2.0	-2.5	96	3.1	1018.8	2	007	22	7	2	6	5	6	7	/	82635	86650	87358	17	Cld edge E Hoar mod Gnd frzn	
18	11	8	09	09	17	-1.4	-3.1	88	3.0	1005.0	6	020	71	7	2	7	7	4	2	/	87712	88520		18	Snly 1cm. Gnd frzn.	
19	35	8	05	03	10	-0.2	-1.0	95	3.6	997.5	3	013	77	7	2	8	7	3	/	/	82708	88712		19	Snly 12cm 100%	
20	18	8	03	09	17	-1.7	-3.2	90	3.1	996.6	7	004	71	7	2	8	7	3	/	/	88708			20	Snly 9cm 100%	
21	35	8	21	04	07	-0.9	-1.8	94	3.4	993.1	2	017	05	2	2	8	5	3	/	/	83708	88625		21	Snly 8cm	
22	03	9	06	04	11	-2.2	-2.7	97	3.2	1000.8	1	006	49	4	2	9	/	/	/	/				22	Snly 6cm 95%	
23	50	8	05	06	13	0.6	-0.8	90	3.6	1007.9	2	013	70	7	2	8	5	4	/	/	86615	88625		23	Snly 7cm 95% Thaw	
24	58	7	03	04	08	0.6	-1.1	88	3.5	1016.0	2	025	05	2	2	7	5	6	/	/	87640			24	Snly 4cm 90%	
25	80	8	16	05	11	0.9	-3.3	74	3.0	1018.0	7	010	02	2	2	8	5	6	/	/	83630	88635		25	Snly 3cm 75%	
26	68	7	23	04	06	2.9	2.1	95	4.4	1008.7	2	037	02	1	1	1	5	5	0	1	81620	87078		26	COTRA Snly 1cm 10% Thaw	
27	70	3	25	12	35	8.1	3.4	72	4.9	994.3	3	028	25	8	6	2	8	5	6	2	81820			27	2Sc40 1Ac58 2Ci75 Cu med	
28	72	7	22	08	14	4.0	1.2	82	4.1	1009.8	2	019	03	1	1	0	0	9	0	6	87275			28	COTRA Hoar slt	
29	63	8	23	11	19	11.6	10.7	94	8.1	1003.1	5	002	21	6	5	5	7	3	7	/	81708	85710	88465	29	2Ac62	
30	82	6	24	12	19	9.2	6.8	85	6.2	1004.4	2	025	15	1	1	1	8	4	7	0	81715	85359		30	1Cu020 1Sc040 Cu hum jpWNW	
31	65	2	25	11	27	9.1	4.0	70	5.1	1009.7	3	002	03	6	1	1	8	5	0	1	81822			31	1Sc40 2Ci78 COTRA Cu hum	

Mean vis = 11.9 km

Mean cloud = 6.8 85%

Mean wind speed = 6.0 kn

Mean gust = 12 kn

Mean TT = 3.7 °C

Mean TdTd = 2.0 °C

Mean RH = 89.2 %

Mean r = 4.5 g/kg

Mean PPP = 1014.0 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

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)

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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		Hour	01-Jan	02-Jan	03-Jan	04-Jan	05-Jan	06-Jan	07-Jan	08-Jan	09-Jan	10-Jan	11-Jan	12-Jan	13-Jan	14-Jan	15-Jan	16-Jan
Sunshine		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
Hourly analysis		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
2013		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	0.37	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.23	0.00	0.00	0.00
		9	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
		10	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.16	0.00	0.00	0.03	0.00	0.83	0.00	0.55	0.00
		11	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.29	0.00	0.00	0.00	0.00	0.01	0.00	0.74	0.00
		12	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.68	0.00
		13	0.62	0.00	0.12	0.00	0.00	0.00	0.00	0.00	0.51	0.00	0.00	0.00	0.00	0.00	0.79	0.08
		14	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.48	0.00	0.00	0.00	0.00	0.00	0.39	0.02
		15	0.78	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.30	0.04	0.00
		16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.00	0.00	0.00	0.00	0.01	0.05	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>6.76</b>	<b>0.00</b>	<b>0.12</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.45</b>	<b>2.06</b>	<b>0.00</b>	<b>0.04</b>	<b>0.00</b>	<b>2.08</b>	<b>0.31</b>	<b>3.25</b>	<b>0.10</b>
		Hour	17-Jan	18-Jan	19-Jan	20-Jan	21-Jan	22-Jan	23-Jan	24-Jan	25-Jan	26-Jan	27-Jan	28-Jan	29-Jan	30-Jan	31-Jan	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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.55	0.01	0.82	0.00	0.24	0.59	0.09
		9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.88	0.30	0.00	0.43	0.40	0.16
		10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	0.94	0.34	0.19
		11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	0.90	0.20	0.17
		12	0.00	0.00	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.92	0.96	0.00	0.00	0.63	0.65	0.16
		13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.36	0.53	0.00	0.00	0.91	0.44	0.14
		14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.12	0.39	0.00	0.00	0.93	0.23	0.11
		15	0.00	0.00	0.00	0.00	0.14	0.00	0.00	0.00	0.00	0.21	0.04	0.00	0.00	0.67	0.12	0.11
		16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.34	0.00	0.00	0.21	0.00	0.02
		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>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.18</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>5.15</b>	<b>5.13</b>	<b>1.12</b>	<b>0.00</b>	<b>5.86</b>	<b>2.98</b>	<b>35.61</b>

JANUARY 2013	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	5.46	8.7	3	3.0	758	80.4	93.4	113	61.0	1313	2.29	4.52	6.5	113	3.9	1314	1008.73	1018.5	2359	999.7	1	1.0
2	7.37	10.9	2117	3.4	0	88.1	94.3	1815	81.6	1103	5.54	5.66	7.4	1918	4.1	0	1023.70	1027.9	2357	1018.5	0	0.1
3	10.45	11.7	1351	9.4	744	89.0	94.0	610	83.5	2359	8.71	6.84	7.3	1338	6.2	2359	1033.29	1037.6	2353	1027.7	0	0.0
4	9.32	10.2	2	8.0	2116	83.3	91.7	2357	75.1	735	6.62	5.91	6.3	1442	5.3	753	1037.56	1038.6	901	1036.8	2311	0.1
5	8.91	10.9	1153	5.3	2353	90.6	96.4	830	81.6	1239	7.44	6.27	7.0	1000	5.1	2353	1035.27	1037.0	2	1033.8	2347	0.0
6	7.05	8.7	2001	4.5	148	96.2	98.5	1145	90.7	2044	6.49	5.89	6.4	1912	4.9	148	1032.18	1034.3	354	1029.7	2123	0.1
7	8.01	9.4	2152	6.6	343	91.1	95.7	612	86.0	2231	6.65	5.99	6.4	2027	5.5	137	1026.54	1029.8	0	1024.4	2320	0.1
8	9.76	11.0	1404	8.0	717	87.3	96.1	2343	81.3	1430	7.75	6.47	7.1	2355	5.9	712	1023.96	1025.4	902	1022.2	2355	1.6
9	5.96	9.8	246	-1.5	2343	92.6	98.4	2334	74.1	1527	4.82	5.43	7.2	311	3.3	2343	1021.32	1022.8	1003	1019.0	2352	1.4
10	2.28	4.3	1540	-1.7	34	95.8	98.6	49	90.3	2213	1.67	4.28	4.9	1541	3.3	34	1015.94	1019.2	0	1013.8	1728	0.0
11	3.59	6.5	1256	0.2	2115	91.8	97.9	2335	79.6	1442	2.35	4.48	5.2	1133	3.7	2113	1017.59	1019.4	936	1015.2	2358	0.1
12	3.16	4.5	1450	1.1	4	85.4	97.9	141	60.5	1503	0.83	4.05	4.8	555	3.1	1503	1012.31	1015.3	4	1010.4	1311	2.4
13	1.28	3.3	19	-1.2	754	79.3	87.1	1742	69.7	1257	-1.92	3.28	4.0	2	2.8	749	1019.40	1021.7	1906	1014.8	5	0.1
14	1.02	3.3	1811	-0.9	602	90.5	96.0	1450	73.4	330	-0.38	3.72	4.5	1811	2.9	327	1011.36	1020.1	8	1004.6	2347	4.5
15	0.53	3.2	1333	-4.3	2359	84.5	96.7	2316	69.8	1519	-1.83	3.34	3.8	6	2.7	2359	1009.92	1012.2	2142	1004.4	32	0.0
16	-2.39	-0.3	1308	-5.3	304	95.6	97.7	323	91.7	1439	-3.00	3.05	3.6	1308	2.5	304	1013.52	1017.5	2355	1010.7	511	0.0
17	-0.85	2.1	2229	-3.7	324	90.9	97.2	337	68.9	2359	-2.20	3.22	3.8	1413	2.8	324	1017.07	1019.1	946	1011.7	2359	0.1
18	-0.59	2.1	18	-1.9	1102	84.6	93.6	1145	66.5	239	-2.95	3.08	3.3	2100	2.8	748	1002.73	1011.7	0	996.7	2359	4.5
19	-0.51	0.6	1354	-1.3	133	88.8	95.6	1020	79.4	2121	-2.15	3.30	3.7	1114	2.8	2121	997.48	999.3	2307	995.9	341	0.1
20	-1.05	-0.1	1536	-1.9	846	89.1	95.2	1815	78.0	221	-2.64	3.19	3.6	1540	2.7	222	995.29	998.7	12	992.1	2354	0.7
21	-0.67	1.4	1441	-3.6	2356	89.8	94.9	2311	78.1	1434	-2.17	3.30	3.5	1143	2.8	2356	994.73	999.6	2358	991.4	355	0.0
22	-1.31	1.8	1430	-6.8	352	94.3	97.1	1006	86.9	2335	-2.11	3.34	4.1	1403	2.2	351	1001.26	1005.3	2355	999.4	41	1.7
23	1.14	1.8	1333	0.4	917	87.2	93.3	338	77.5	2050	-0.76	3.61	3.8	200	3.3	2053	1007.55	1009.7	2347	1005.2	0	0.0
24	0.84	1.9	1300	-0.7	703	83.1	92.4	424	74.0	2312	-1.73	3.33	3.7	423	2.9	2317	1016.85	1021.2	2124	1009.6	0	0.1
25	1.47	3.5	2126	-0.4	350	76.9	91.0	2358	68.1	1447	-2.17	3.26	4.4	2359	2.8	525	1013.29	1020.5	37	1000.6	2359	1.1
26	5.55	8.7	1507	2.2	827	84.6	96.0	537	67.6	1503	3.08	4.77	5.7	2029	4.2	827	1006.21	1010.8	1152	999.9	2359	3.6
27	7.65	10.4	612	3.5	2337	75.6	93.3	239	50.3	1403	3.43	5.04	7.4	636	3.7	1403	997.81	1003.8	2359	991.4	619	4.6
28	6.61	10.8	2311	2.3	611	83.1	92.9	1825	72.0	2004	3.92	5.15	7.1	1847	3.9	454	1005.17	1010.2	926	999.3	1836	4.0
29	11.70	13.4	1447	9.0	444	88.4	96.3	742	75.1	111	9.83	7.64	8.5	1250	5.9	111	1003.01	1004.8	409	1000.3	2335	1.3
30	9.54	12.8	0	6.2	2251	74.6	93.0	640	50.3	1338	5.02	5.58	8.3	232	4.1	1509	1007.86	1018.1	2335	999.3	240	4.4
31	8.57	10.7	1236	6.4	114	71.6	86.3	641	55.0	1237	3.65	4.94	6.1	617	4.2	1515	1012.47	1018.0	0	1009.2	810	1.9
Total																						39.6
Mean	4.19	6.39		1.43		86.6	94.79		74.12		2.07	4.58	5.46		3.75		1013.59	1017.68		1009.27		
Max	11.70	13.42		9.40		96.2	98.60		91.70		9.83	7.64	8.49		6.20		1037.56	1038.61		1036.76		
Min	-2.39	-0.29		-6.82		71.6	86.30		50.25		-3.00	3.05	3.26		2.20		994.73	998.72		991.35		

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  
 Rtot = 00-24 GMT rainfall total from AWS tipping bucket raingauge, mm  
 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

## Appendix 1.

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 2010. 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 instrument used to detect sunshine amount in July 1999, and the data produced by the new instrument is not strictly comparable with that obtained prior to July 1999, 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 of instrument, due to a combination of faster reaction and higher sensitivity than the old type. Thus the average used in this case is for a theoretical equivalent average for the 1981 to 2010 climatological period for this new instrument, based on comparisons with Met Office published tables of departure from the 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 the 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 "half (max+min)". A true daily 24 hour (00 to 24 GMT) mean temperature is available from the AWS, and is currently published on page 7 of the Wokingham Monthly Weather Report on the Wokingham Weather Web Site, page1. <http://www.woksat.info/wwp1.html>

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

- a): The departure of a mean from the current climatological average.
- b): The departure of a value from the a long-term average for a particular day.

When the word anomaly is used in respect to temperature, any values given are in degrees C. In respect to rainfall, percent. In respect of sunshine, percent. In respect to wind, mph. In respect to 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 mild/cold are used in the winter half year, and warm/cool in the summer half.

The term normal is defined as being 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 for sunshine follow the same rules as for temperature.

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

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

The term wet is used for values lying between 10% and 30% below the highest value in the ranked series.

the term very wet is used for values lying within 10% of the highest value in the ranked series.

The term dry is used for values lying between 10% and 30% of the lowest value in the ranked series.

The term very dry is used for values lying 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 the records of various station in the Wokingham area in the years prior to the establishment of a weather station at Emmbrook in 1976.

In the case of monthly max, min and mean temperature and of rainfall total the 'long-term' goes from the present back to 1882. For extremes of temperature, highest max and lowest min are back to 1904, and for 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 values of the entire series. The central value in the ranked series is known as the median. This value may be different from the 'average' if the population of values is skewed. Also, as the median considers all values in the series, and the average refers to a 30 year climatological period, during periods of climatic change, the median will also be expected to differ from the average.

**Month:** Calendar month.

**Season:** Spring, March to May.

Summer, June to August

Autumn, September to November

Winter, December to February.

The year number given when discussing 'winter' is usually the year in which the majority of the period lies, i.e. January/February

**Annual or Year :** The calendar year, 1<sup>st</sup> January to 31<sup>st</sup> December.

**The climatological day :** runs from 09 to 09 GMT. The max temperature and rainfall read at 0900 are attributed to the previous day, as is the duration of measurable rain calculated up to 0900 GMT. The min temperature and grass min read at 0900 are attributed to the day of reading. Pressure is read at 0900 GMT, and the monthly mean pressure is the mean of the 0900 readings. Sunshine data, wind data, rainfall rates and 24 hour data from the AWS use the normal 00 to 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 % cover of snow at the 0900 GMT observation.

**Hail :** A day of hail is recorded if hailstones of 5 mm diameter or more are observed or recorded on the hail pad on 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. Note, various types of other ice meteors such as ice pellets, snow grains, and some types of snow pellets are included in this category.

**Fog:** A day of 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.

**Rainfall :** Rainfall is given in mm and tenths. "tr" ( trace) is entered when: a) precipitation has occurred but there is no water in the gauge. b) There is water in the gauge but it is less than 0.05 mm.

**Dry Spell :** A dry spell, for the purposes of the Wokingham climatological data and reports, is defined as a period of 5 or more consecutive dry days. A dry day is defined as one where the 24 hour precipitation measured at 09 GMT is not greater than 0.1 mm.

**Wind:** The following abbreviations may be used to denote wind directions :

Degrees are from true north

N = North =  $360^{\circ}$  and  $22.5^{\circ}$  either side.

NE = NorthEast =  $045^{\circ}$  and  $22.5^{\circ}$  either side.

E = East =  $090^{\circ}$  and  $22.5^{\circ}$  either side.

SE = SouthEast =  $135^{\circ}$  and  $22.5^{\circ}$  either side.

S = South =  $180^{\circ}$  and  $22.5^{\circ}$  either side.

SW = SouthWest =  $225^{\circ}$  and  $22.5^{\circ}$  either side.

W = West =  $270^{\circ}$  and  $22.5^{\circ}$  either side.

NW = NorthWest =  $315^{\circ}$  and  $22.5^{\circ}$  either side.

**Wind – terms for speed used in monthly reports:** When the following terms are used in the monthly reports, they will be based on the following unofficial criteria, (the day runs from 00 to 24 GMT) :

Term	Daily mean speed, knots		Highest hourly mean speed, knots		24 hour maximum gust, knots
Very light	3 or less	and	4 or less	and	8 or less
Light	3 to 6	or	4 to 8	or	8 to 16
Moderate	6 to 9	or	8 to 12	or	16 to 24
Fresh	9 to 12	or	12 to 16	or	24 to 32
Strong	12 to 15	or	16 to 20	or	32 to 40
Very strong	15 to 18	or	20 to 24	or	40 to 48
Near gale	18 to 21	or	24 to 28	or	48 to 56
Gale	21 to 24	or	28 to 32	or	56 to 64
Severe gale	24 to 27	or	32 to 36	or	64 to 72

B.J.Burton. 3 August 2009  
 Updated 8 Sept 2009,  
 4 Nov 2011

## 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 = Altcumulus (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.