

# 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

### FEBRUARY 2017

		Anomaly	Rank in the past 136 years
Temperature (°C)			
Mean maximum	9.6	+1.4	26 <sup>th</sup> highest
Mean minimum	3.6	+2.1	15 <sup>th</sup> highest
Daily mean	6.6	+1.7	17 <sup>th</sup> highest
Highest maximum	16.7	on 20 <sup>th</sup>	Lowest maximum 1.7 on 10 <sup>th</sup>
Highest minimum	10.6	on 22 <sup>nd</sup>	Lowest minimum -2.3 on 6 <sup>th</sup>
Mean grass minimum	0.7	+2.5	Lowest grass minimum -7.5 on 6 <sup>th</sup>
Mean earth @30 cm	6.3	+1.0	Earth @100 cm 6.8
Frost duration (hrs)	10.7		Rain duration (hrs) 44.4
Rainfall total (mm)	32.3	75 %	57 <sup>th</sup> lowest
Highest daily fall	6.6	on 6 <sup>th</sup>	
Number of: Dry days (<0.2mm)	12	Wet days (>0.9mm)	9 days ≥5mm 1
Sunshine total (hrs) 55.3	Daily mean 1.98	72 %	Sunniest day 8.8 on 13 <sup>th</sup>
N° days with: Air frost 6	Ground frost 14	Snow falling 4	Snow lying 0
Thunder 0	Hail ≥5mm 0	Small hail/ice 1	Fog @09 0 Nil sun 7
Pressure MSL: Mean @09 GMT, mbar 1014.2	-3.2	Highest 1031.1 on 16 <sup>th</sup>	Lowest 983.9 on 27 <sup>th</sup>
Relative humidity: Mean (%) 86.9	Lowest 42 on 24 <sup>th</sup>	Water vapour (g/kg), mean at 09 and 15 GMT 5.4, 5.3	
Overall mean wind speed (mph) 8.2	Windiest day 18.2 on 23 <sup>rd</sup>	Max gust 63 on 23 <sup>rd</sup>	
Wind direction (days) N 4 NE 3 E 1 SE 1 S 6 SW 10 W 3 NW 0			
Least windy day (mph) 3.7 on 4 <sup>th</sup>	Calm; less than 0.5 mph (minutes) 155		

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

Notes:

#### Mild and Dull with Below Average Rainfall. Very Windy at times.

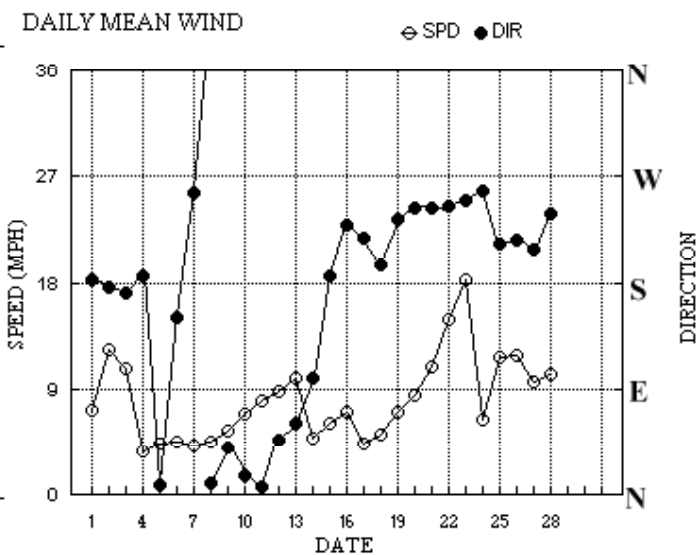
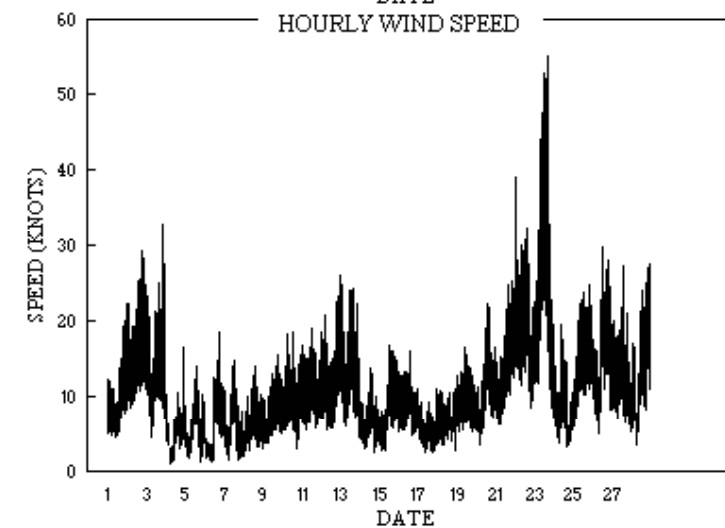
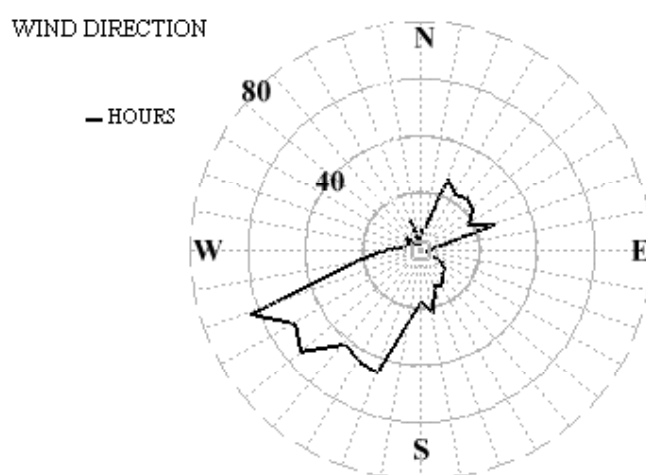
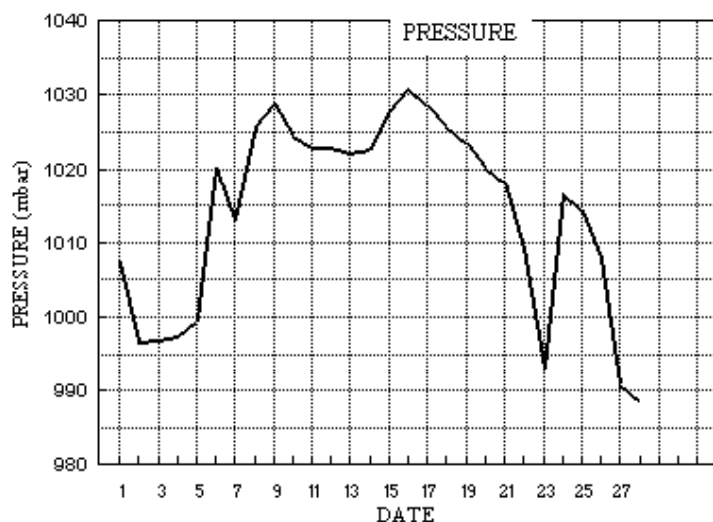
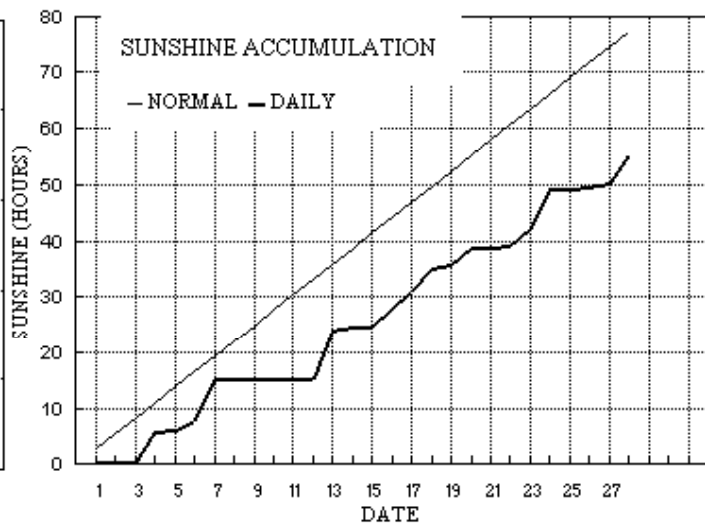
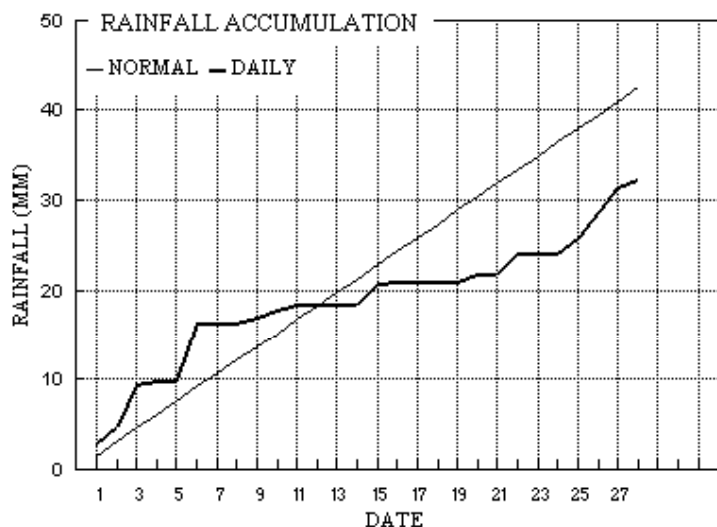
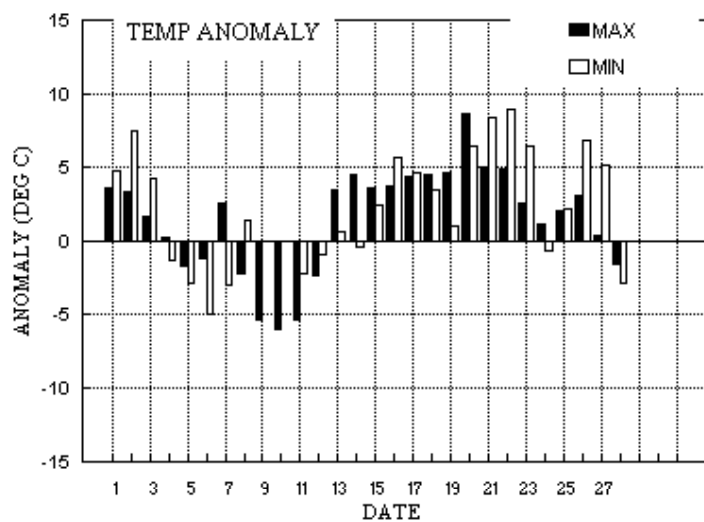
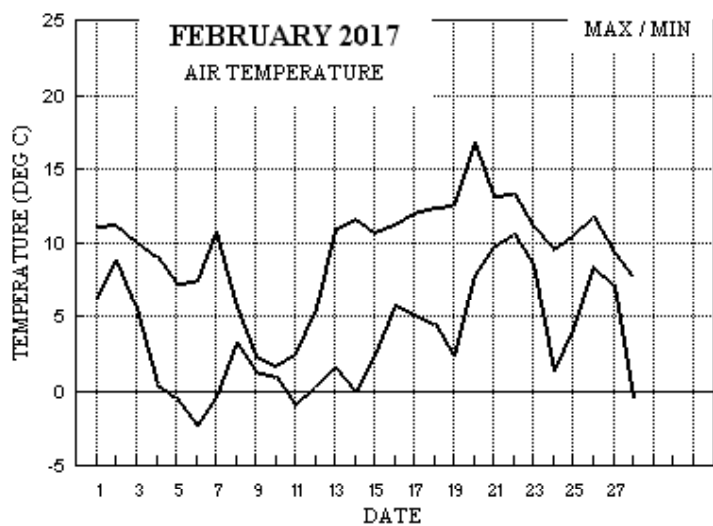
**Temperature:** This has been a mild February overall, though with a cold snap before mid-month. This is the mildest February since 2014, and there have been 7 other milder ones in the past 42 years, with 1990 holding the record with a mean of 8.3°. The highest max is 3.7° above the median and is 6<sup>th</sup> highest in 114 years, while the lowest max is 0.7° below the median. The highest min is 2.6° above the median and is 5<sup>th</sup> highest in 105 years, while the lowest min is 2.5° above its median and is 7<sup>th</sup> highest in 114 years. The mean grass min is equal highest with 2014 since 2011. Mean earth temperature at 30 cm depth is well above average, but at 1 m depth is a little below average. The number of days with air frost is 4 below average, and 3 below average for ground frosts. The duration of air frost is 77.1 hours below average, and only 4 of the past 36 Februaries has had fewer frost hours. The month started on a mild note, with anomalies for daily max over +3° on the 1<sup>st</sup> and 2<sup>nd</sup>, and for min over +7° on the 2<sup>nd</sup>. A cold snap followed from the 5<sup>th</sup> to the 12<sup>th</sup>, with anomalies for daily max over -5° from the 9<sup>th</sup> to the 11<sup>th</sup>, and -5° for the min on the 6<sup>th</sup>. The period 13<sup>th</sup> to 26<sup>th</sup> was generally mild, with anomalies for daily max over +4° on the 14<sup>th</sup>, and from the 17<sup>th</sup> to the 22<sup>nd</sup>, and reaching +8.6° on the 20<sup>th</sup>. For daily min, over +5° on the 16<sup>th</sup> and 26<sup>th</sup> and from the 20<sup>th</sup> to 23<sup>rd</sup>, and reaching +8.9° on the 22<sup>nd</sup>. Temperatures dropped below normal on the final day. **Rainfall:** This February, we have had 25% less rainfall than average, but the total is 7 mm greater than that required for it to fall in the dry category, and in this millennium 5 Februaries have been drier. The total on the wettest day is lowest since 2008. Despite the above, the number of dry days is 3 fewer than average. The total duration of measurable rain is 88 % of average. Snow fell each day from the 9<sup>th</sup> to the 12<sup>th</sup>, but amounts were generally small and flakes melted on contact, it was also often accompanied by rain. Ice pellets fell during a shower on the 27<sup>th</sup>, but there was no thunder this month. The highest rainfall rate was 41 mm/hr at 0754 on the 23<sup>rd</sup>. Rainfall accumulation compared with average reached a surplus of 18 mm by the 6<sup>th</sup>, but the period 7<sup>th</sup> to 24<sup>th</sup> had below normal daily falls leading to a deficit of 13 mm on the 24<sup>th</sup>, though this had reduced to 10 mm by the end of the month. **Sunshine:** Sunshine was poor this month, with the lowest total since 2011, and before that, 1991. The month started with 3 almost sunless days, and although the 4<sup>th</sup> and 7<sup>th</sup> had over 50 % of the maximum, the accumulation was in deficit by 5 hours by the 7<sup>th</sup>. Five more sunless days followed, and by the 12<sup>th</sup> the deficit had reached 17 hours. The 13<sup>th</sup> was a sunny day as was the 24<sup>th</sup>, but the deficit remained near 18 hours, increasing to 21 hours by the 28<sup>th</sup>. **Wind:** The mean wind speed this February is close to average. There was a very windy episode towards the end of the month, culminating in gusts of 63 mph on the 23<sup>rd</sup>, and the highest daily mean wind speed for this month since 2002 on that day. The gust is equal highest with 2014 since 1990 for a February. Winds were moderate or fresh S'ly up to the 3<sup>rd</sup>, then light and variable or N'ly to the 9<sup>th</sup>, then mainly moderate and veering SW'ly by the 16<sup>th</sup>, increasing fresh on the 21<sup>st</sup> and to very strong on the 23<sup>rd</sup>, then persisting moderate or fresh to the end of the month.

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 28 <sup>th</sup>			
-0.5°	+0.6°	118%	54%	+3.0°	+2.1°	26%	87%	+2.2°	+4.3°	85%	76%

B J Burton FRMetS. Hon. Met. Officer to Wokingham Town Council.

# Wokingham climatological graphs for February 2017



Daily meteorological data.

Emmbrook, WOKINGHAM, Berkshire.

Month: FEBRUARY 2017

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	Rain HH hrs	
1	11.2	6.3	2.8	8.3	5.2	5.8	0.3	0.0	1007.4	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	182 6.2 6.3	180 20 2054	193 10	21 5.6	
2	11.3	8.9	2.0	7.4	6.0	5.9	0.0	0.0	996.8	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	176 10.4 10.7	175 29 1956	186 14	19 2.6	
3	10.1	5.6	4.6	1.0	6.4	6.2	0.3	0.0	996.9	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	172 7.7 9.3	246 33 1958	237 15	20 5.2	
4	9.1	0.4	0.4	-4.4	6.3	6.4	5.1	0.0	997.4	0 1 0 0	0 0 0 0	0 0 0 0	0 0 0 0	186 2.0 3.2	195 17 2214	178 6	22 0.3	
5	7.3	-0.5	0.0	-5.0	5.8	6.5	0.3	1.5	999.6	1 1 0 0	0 0 0 0	0 0 0 0	0 0 0 0	8 2.8 3.8	15 14 1454	2 7	14 0.0	
6	7.4	-2.3	6.6	-7.5	5.5	6.6	2.0	7.0	1020.1	1 1 0 0	0 0 0 0	0 0 0 0	0 0 0 0	150 3.0 4.0	196 19 1717	168 8	15 7.8	
7	10.8	-0.4	0.0	-1.3	5.4	6.6	7.3	0.0	1013.1	1 1 0 0	0 0 0 0	0 0 0 0	0 0 0 0	256 2.1 3.7	268 15 1253	278 7	12 0.0	
8	5.7	3.2	tr	-2.0	5.5	6.6	0.0	0.0	1025.9	0 1 0 0	0 0 0 0	0 0 0 0	0 0 0 0	10 3.4 4.0	25 14 1408	30 6	14 0.0	
9	2.3	1.3	0.6	-1.1	5.4	6.6	0.0	0.0	1028.8	0 1 1 0	0 0 0 0	0 0 0 0	0 0 0 0	41 4.8 4.8	46 16 1844	48 7	19 2.9	
10	1.7	0.9	0.9	1.3	5.2	6.6	0.0	1.2	1024.5	0 0 1 0	0 0 0 0	0 0 0 0	0 0 0 0	17 5.8 6.0	27 19 1239	19 8	12 3.0	
11	2.5	-0.9	0.5	-5.5	4.9	6.6	0.0	0.0	1023.0	1 1 1 0	0 0 0 0	0 0 0 0	0 0 0 0	7 6.8 7.0	20 19 1356	21 9	13 1.8	
12	5.6	0.3	tr	0.7	4.7	6.6	0.0	0.0	1022.9	0 0 1 0	0 0 0 0	0 0 0 0	0 0 0 0	47 7.5 7.7	63 26 2311	63 12	20 0.0	
13	10.9	1.6	0.0	-0.4	4.8	6.5	8.8	0.0	1022.2	0 1 0 0	0 0 0 0	0 0 0 0	0 0 0 0	62 8.6 8.6	61 25 0156	64 11	12 0.0	
14	11.7	-0.1	0.0	-5.1	4.8	6.5	0.6	0.3	1022.6	1 1 0 0	0 0 0 0	0 0 0 0	0 0 0 0	100 3.6 4.3	157 14 1434	139 7	14 0.0	
15	10.8	2.3	2.3	2.6	5.2	6.5	0.1	0.0	1027.8	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	186 4.5 5.3	202 17 1340	198 9	13 2.5	
16	11.3	5.8	0.3	0.4	5.6	6.5	3.1	0.0	1030.8	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	228 6.2 6.2	225 16 1407	236 8	14 0.4	
17	12.1	5.2	tr	0.0	6.1	6.5	3.3	0.0	1028.6	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	217 3.6 3.7	234 11 0002	235 6	00 0.0	
18	12.4	4.5	0.0	-1.0	6.4	6.6	3.8	0.0	1025.9	0 1 0 0	0 0 0 0	0 0 0 0	0 0 0 0	195 4.3 4.5	187 11 2105	212 6	15 0.0	
19	12.5	2.4	tr	-2.3	6.4	6.7	0.9	0.0	1023.5	0 1 0 0	0 0 0 0	0 0 0 0	0 0 0 0	234 6.1 6.2	248 17 1039	253 8	10 0.0	
20	16.7	7.8	0.9	8.7	6.9	6.8	3.0	0.0	1020.1	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	243 7.2 7.3	254 22 1344	250 12	14 1.8	
21	13.2	9.8	tr	8.7	7.7	6.9	0.1	0.0	1018.1	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	243 9.5 9.5	233 25 2051	234 13	21 0.0	
22	13.3	10.6	2.2	9.3	8.1	7.1	0.1	0.0	1009.3	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	244 12.8 12.9	246 39 0219	250 16	15 1.1	
23	11.1	8.6	tr	6.9	8.5	7.3	3.2	0.0	993.2	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	250 14.7 15.8	259 55 1629	259 23	13 0.0	
24	9.6	1.3	0.1	-3.5	8.1	7.5	7.1	0.0	1016.7	0 1 0 0	0 0 0 0	0 0 0 0	0 0 0 0	258 4.5 5.6	329 20 1039	312 9	10 0.2	
25	10.5	4.1	1.7	-2.5	7.5	7.6	0.0	0.0	1014.2	0 1 0 0	0 0 0 0	0 0 0 0	0 0 0 0	212 10.2 10.2	200 25 2143	208 12	21 3.1	
26	11.8	8.5	2.8	6.7	7.6	7.7	0.1	0.0	1008.0	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	216 10.1 10.3	222 30 1253	219 15	12 3.1	
27	9.4	7.2	2.8	5.3	8.0	7.7	0.7	0.0	990.8	0 0 0 0	0 0 1 0	0 0 0 0	0 0 0 0	208 8.2 8.4	246 27 1502	212 11	14 2.2	
28	7.7	-0.6	0.8	-5.0	7.6	7.8	5.1	0.7	988.4	1 1 0 0	0 0 0 0	0 0 0 0	0 0 0 0	239 8.8 9.0	258 28 2221	245 15	20 0.8	
Total			32.3				55.3	10.7										44.4
Mean	9.6	3.6		0.7	6.3	6.8	1.98	0.4	1014.2					220 3.1 7.1				
Anom	+1.4	+2.1	75%	+2.5	+1.0	-0.0	72%											
Daily mean		6.6																
Anom		+1.7																
Number of days with:																		
Air frost = 6																		
Ground frost = 14																		
Nil sun = 7																		
Snow falling = 4																		
Snow lying = 0																		
Thunder = 0																		
Hail=>5mm = 0																		
Hail<5mm or ice = 1																		
Fog at 09GMT = 0																		

Abbreviations.

Max/min = highest and lowest air temperature at 1.2m in 24 hour period ending at 09 GMT  
 Rain = total rainfall and melted snowfall in 24 hour period ending at 09 GMT, millimetres. (Tr = trace, <.05mm).  
 Grass min = Lowest overnight temperature at grass tip level.  
 Sun = hours of bright sunshine, measured electronically. Frost = Number of hours with air temp below 0 deg C.  
 pp09 = Air pressure corrected to mean sea level at 0900 GMT, millibars.  
 Af = Air frost. Gf = Ground frost. Sf = Snow falling. Sl = Snow lying at 09 GMT.  
 Th = Thunder. Ha = Hail =>5mm. Ic = Hail <5mm or ice. Fg = Fog at 09 GMT.  
 Vec mean = 24 hour mean wind vector, ddd = direction in degrees from true north, ff = speed in knots.  
 Sp = 24 hour mean wind speed in knots.  
 Max gust = Highest gust in 24 hours, gg = speed in knots, HHhh = Time, hours and minutes, GMT.  
 High hr = Highest hourly mean wind, HH = hour commencing. Rain Hrs = Duration of rain, 24 hours to 09 GMT. Excludes snow/hail.  
 30cm and 100 cm are earth temperatures at those depths, read at 09 GMT.  
 Anom = Departure from 1981-2010 climatological average.  
 All temperatures in degrees Celsius.

Weather observations. Emmbrook, Wokingham, Berkshire.

Observations at 0900 GMT for FEBRUARY 2017

Date	VV	N	dd	ff	gg	TT	Td	Td	RH	r	PPP	a	ppp	ww	W1	W2	Nh	Cl	h	Cr	Cl	NCh	shs	NCh	shs	NCh	shs	Date	Remarks	
1	25	8	19	05	10	9.9	9.4	97	7.3	1007.4	6	003	60	6	5	8	7	2	/	/	84703	87705	88710					1		
2	60	8	15	09	19	9.8	8.4	91	6.8	996.8	7	015	21	6	2	8	5	4	/	/	86710	87635	88650					2		
3	62	7	15	06	14	7.7	5.8	88	5.7	996.9	8	002	03	1	1	7	5	4	/	/	87612								3	
4	58	7	33	01	03	2.4	2.3	99	4.4	997.4	3	025	10	2	2	6	5	6	7	/	84635	85650	87460					4	/Ac58 Cl edge NW	
5	57	7	36	03	07	3.9	3.6	98	4.9	999.6	3	017	10	2	2	4	5	6	3	2	84635	87070							5	2Ac65
6	28	6	28	01	04	-0.4	-0.5	99	3.6	1020.1	2	008	10	1	1	4	0	9	3	1	85369	84078							6	COTRA Hoar slt Gnd frzn
7	40	1	25	05	10	6.1	6.0	99	5.7	1013.1	2	013	40	1	1	1	6	1	3	0	81702								7	1Ac62 jfNW vv>10k ex NW
8	50	8	31	04	08	5.2	3.5	89	4.9	1025.9	2	020	05	2	2	8	6	3	/	/	86709	88712							8	
9	61	8	04	05	11	1.5	-0.4	87	3.6	1028.8	7	008	70	7	2	8	5	5	/	/	83620	88630							9	
10	11	8	03	07	16	1.0	0.9	99	4.0	1024.5	2	008	51	5	4	8	7	2	/	/	87704	88705							10	
11	35	8	01	06	14	0.3	-0.7	93	3.6	1023.0	1	006	71	7	5	8	5	3	/	/	87709	88612							11	Dusting of sn on cars/roofs
12	50	8	04	06	14	1.6	0.4	92	3.9	1022.9	0	005	05	6	2	8	5	3	/	/	87709	88615							12	
13	35	2	06	08	18	4.7	2.9	88	4.6	1022.2	3	005	05	0	0	1	6	3	0	1	81708								13	2Ci75
14	50	7	06	04	07	2.3	1.3	93	4.1	1022.6	2	018	05	1	1	2	5	6	7	/	82640	87357							14	/Ac63
15	30	8	15	05	10	8.9	8.0	94	6.6	1027.8	1	007	05	4	2	8	6	2	/	/	88704								15	
16	30	7	23	06	13	6.6	6.0	96	5.8	1030.8	3	006	10	2	2	7	6	1	/	/	87702								16	
17	62	7	25	02	06	7.3	6.1	92	5.8	1028.6	3	005	02	2	2	7	5	6	/	/	81630	87640							17	Absent vv&cld est
18	35	8	18	03	07	6.1	5.7	97	5.6	1025.9	1	003	10	2	2	8	6	2	/	/	88703								18	Absent vv&cld est
19	58	7	24	07	13	7.8	5.9	88	5.7	1023.5	1	012	05	2	2	1	5	6	7	8	81630	87273							19	1Ac58 COTRA
20	56	8	24	06	11	11.2	10.4	95	7.8	1020.1	3	010	10	2	2	8	6	2	/	/	83704	87705	88708					20		
21	62	8	24	08	14	11.0	9.9	93	7.5	1018.1	3	004	01	6	2	7	6	3	/	8	85707	87709							21	/Cs75 COTRA
22	80	8	25	11	24	11.5	9.2	86	7.2	1009.3	4	000	50	5	2	8	5	4	/	/	86612	88618							22	
23	65	3	24	18	38	9.8	4.2	68	5.1	993.2	6	022	01	8	1	3	8	5	0	0	82825								23	2Sc35 CF 0754
24	80	6	28	08	14	5.4	0.4	70	3.9	1016.7	2	025	02	1	1	1	5	6	0	1	81645	86080							24	COTRA
25	75	8	21	12	21	8.8	5.7	81	5.7	1014.2	5	010	02	2	2	7	5	4	1	/	82615	87625	88468					25		
26	86	7	23	07	13	9.8	7.6	86	6.4	1008.0	0	006	02	8	2	7	5	4	/	1	81710	83625	87630					26	/Ci75	
27	65	8	19	06	16	7.9	6.5	91	6.0	990.8	7	035	25	8	2	4	8	4	7	/	82810	83656	88462					27	2Ac58 Cu med jp S&W	
28	82	1	23	07	12	3.2	0.9	85	4.0	988.4	2	020	02	0	0	1	1	4	3	1	81815								28	1Ac65 1Ci72 Cu fra Hoar slt

Mean vis = 12.2 km  
 Mean cloud = 6.7 83%  
 Mean wind speed = 6.3 kn  
 Mean gust = 13 kn  
 Mean TT = 6.1 °C  
 Mean TdTd = 4.6 °C  
 Mean RH = 90.5 %  
 Mean r = 5.4 g/kg  
 Mean PPP = 1014.2 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 FEBRUARY 2017

Date	VV	N	dd	ff	gg	TT	TdTd	RH	r	PPP	a	ppp	ww	W1	W2	Nh	Cl	h	Cr	Cf	NChs	hshs	NChs	Date	Remarks
1	84	6	18	06	13	10.9	8.5	85	6.8	1004.4	7	021	01	8	2	4	8	4	0	1	81712	83815	1	2Sc45 3Ci75 COTRA Cu med	
2	68	7	18	13	25	11.2	8.4	83	6.8	993.2	6	015	02	2	2	7	8	4	/	6	86815	85275	2	2Sc25 Cu hum	
3	50	8	13	11	23	8.1	6.2	88	5.9	991.9	6	034	63	6	2	7	5	4	2	/	82712	86515	88540	3	
4	86	2	25	04	10	8.6	1.1	59	4.1	998.7	3	005	02	0	0	1	1	6	0	2	81830		4	2Ci70 Cu hum	
5	64	7	01	07	14	6.1	3.1	81	4.7	1005.2	2	027	02	2	2	2	8	4	7	8	81812	83365	87268	5	1Sc35 1Sc45 Cu hum
6	72	8	17	08	14	6.9	2.4	73	4.5	1016.8	7	021	03	2	2	1	1	4	2	/	81818	88457	6	Cu fra	
7	80	5	31	06	11	10.4	2.0	56	4.4	1014.7	3	002	03	1	1	2	2	6	3	1	82833	83070	7	1Ac63 Cu med	
8	30	8	03	04	14	3.8	2.8	93	4.6	1028.2	2	011	21	6	5	8	5	4	/	/	81710	88625	8	2Sc15	
9	58	8	05	05	13	2.2	-0.4	83	3.7	1026.3	7	016	50	5	2	8	5	4	/	/	86612	88625	9		
10	20	8	02	06	11	1.3	0.6	95	3.9	1023.9	5	004	68	7	6	8	5	2	/	/	87705	88610	10		
11	40	8	02	08	17	2.1	0.2	87	3.8	1022.8	7	004	71	7	7	8	5	4	/	/	81712	85615	88620	11	pptn v slt
12	35	8	05	06	14	3.0	1.7	91	4.2	1021.6	6	009	60	6	5	8	5	2	/	/	83705	88807	88615	12	
13	58	1	07	10	24	10.3	2.9	60	4.6	1019.5	6	024	05	0	0	0	0	9	0	1	81075		13		
14	60	7	12	05	14	10.7	5.9	72	5.7	1023.7	2	007	05	2	2	7	5	4	/	/	85618	87635	14		
15	59	8	21	07	11	8.9	7.8	93	6.5	1026.9	3	003	61	6	2	7	5	4	2	/	83710	87640	88550	15	2Sc25
16	20	8	09	03	08	5.0	4.7	98	5.3	1028.0	3	003	51	6	5	8	7	2	/	/	84703	87705	88708	16	
17	75	6	20	03	09	11.5	6.2	70	5.9	1027.4	6	012	02	2	2	1	1	5	7	1	81825	85358	85075	17	Absent vv&cl est
18	60	2	21	06	10	12.1	5.9	66	5.7	1023.9	6	017	01	1	1	2	1	5	0	0	82820		18	Absent vv&cl est	
19	80	8	25	07	14	11.1	7.2	77	6.3	1022.0	6	014	03	2	2	8	5	4	/	/	86618	88625	19		
20	81	7	24	10	22	14.3	10.5	78	7.8	1018.1	6	009	02	2	2	2	5	4	3	2	82615	85369	87072	20	
21	62	8	25	11	20	12.6	9.8	83	7.5	1015.5	8	019	50	5	2	8	5	4	/	/	85713	87618	88640	21	
22	75	7	25	15	32	13.0	9.8	81	7.5	1007.8	8	013	50	5	2	7	5	4	/	/	82710	87613	22		
23	82	5	26	21	52	9.9	0.8	53	4.0	996.1	3	020	15	1	1	5	2	6	0	0	85842		23	Cu med jpN	
24	82	5	31	07	14	8.1	-0.4	55	3.7	1018.6	3	003	02	1	1	4	8	6	4	1	82840	83650	24	1Ac65 2Ci75 Cu med	
25	60	8	22	12	24	9.6	6.5	81	6.0	1011.3	7	019	60	6	2	7	5	5	2	/	83620	87625	88540	25	
26	80	7	21	10	23	10.2	7.1	81	6.2	1004.5	8	024	60	6	2	7	5	4	/	/	83618	87625	26		
27	50	7	21	15	23	7.5	3.9	78	5.0	984.4	6	022	87	8	6	7	9	4	6	/	87912		27	/Sc30 /Ac58 Ice pellets 1-2 mm	
28	62	8	24	14	24	4.1	2.8	91	4.6	990.3	3	008	61	6	2	7	5	4	2	/	81712	87615	88530	28	

Mean vis = 18.7 km  
 Mean cloud = 6.6 83%  
 Mean wind speed = 8.6 kn  
 Mean gust = 18 kn  
 Mean TT = 8.3 °C  
 Mean TdTd = 4.6 °C  
 Mean RH = 78.3 %  
 Mean r = 5.3 g/kg  
 Mean PPP = 1013.1 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	Hour	01-Feb	02-Feb	03-Feb	04-Feb	05-Feb	06-Feb	07-Feb	08-Feb	09-Feb	10-Feb	11-Feb	12-Feb	13-Feb	14-Feb	15-Feb	
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	
Hourly	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	
analysis	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	
2017	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	
	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	
	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	
	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	
	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	
	8	0.00	0.00	0.00	0.00	0.03	0.40	0.93	0.00	0.00	0.00	0.00	0.00	0.00	0.92	0.00	0.00
	9	0.00	0.00	0.00	0.00	0.26	0.83	1.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	
	10	0.00	0.00	0.25	0.26	0.00	0.26	1.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	
	11	0.00	0.00	0.00	1.00	0.00	0.42	0.90	0.00	0.00	0.00	0.00	0.00	1.00	0.43	0.00	
	12	0.00	0.00	0.07	1.00	0.00	0.01	0.66	0.00	0.00	0.00	0.00	0.00	1.00	0.01	0.00	
	13	0.00	0.00	0.00	1.00	0.00	0.04	0.63	0.00	0.00	0.00	0.00	0.00	1.00	0.06	0.00	
	14	0.32	0.00	0.00	1.00	0.00	0.00	0.87	0.00	0.00	0.00	0.00	0.00	1.00	0.09	0.00	
	15	0.01	0.00	0.00	0.69	0.00	0.00	0.76	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	
	16	0.00	0.00	0.00	0.14	0.00	0.00	0.51	0.00	0.00	0.00	0.00	0.00	0.86	0.00	0.11	
	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	
	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	
	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	
	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	
	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	
	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	
	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	
	Tot		<b>0.33</b>	<b>0.00</b>	<b>0.33</b>	<b>5.07</b>	<b>0.28</b>	<b>1.96</b>	<b>7.26</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>8.77</b>	<b>0.60</b>	<b>0.11</b>

Hour	16-Feb	17-Feb	18-Feb	19-Feb	20-Feb	21-Feb	22-Feb	23-Feb	24-Feb	25-Feb	26-Feb	27-Feb	28-Feb	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
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
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
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
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
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
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
7	0.00	0.22	0.00	0.20	0.00	0.00	0.00	0.00	0.47	0.00	0.00	0.00	0.52	0.05
8	0.00	0.09	0.00	0.00	0.00	0.00	0.00	0.39	1.00	0.00	0.01	0.00	1.00	0.17
9	0.30	0.00	0.00	0.14	0.00	0.00	0.00	0.25	1.00	0.00	0.06	0.00	0.99	0.21
10	0.01	0.17	0.00	0.23	0.54	0.00	0.01	0.33	1.00	0.00	0.00	0.13	0.90	0.22
11	0.36	0.90	0.00	0.00	0.72	0.00	0.00	0.40	0.75	0.00	0.04	0.01	0.89	0.28
12	0.80	0.60	0.07	0.23	0.69	0.04	0.00	0.11	0.42	0.00	0.02	0.00	0.29	0.22
13	0.82	0.39	0.47	0.14	0.57	0.00	0.00	0.35	0.62	0.00	0.00	0.00	0.00	0.22
14	0.78	0.19	0.90	0.00	0.34	0.00	0.00	0.31	0.25	0.00	0.00	0.03	0.00	0.22
15	0.04	0.43	1.00	0.00	0.09	0.00	0.00	0.28	0.86	0.00	0.00	0.01	0.00	0.18
16	0.00	0.25	1.00	0.00	0.05	0.00	0.00	0.59	0.50	0.00	0.00	0.51	0.46	0.18
17	0.00	0.02	0.32	0.00	0.00	0.00	0.00	0.18	0.22	0.00	0.00	0.00	0.05	0.03
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
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
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
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
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
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
Tot	<b>3.13</b>	<b>3.26</b>	<b>3.76</b>	<b>0.94</b>	<b>3.01</b>	<b>0.05</b>	<b>0.01</b>	<b>3.19</b>	<b>7.08</b>	<b>0.00</b>	<b>0.13</b>	<b>0.67</b>	<b>5.11</b>	<b>55.05</b>

FEBRUARY 2017	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
1	10.35	11.4	44	9.2	1707	93.5	99	16	84	1405	9.3	7.3	8.2	44	6.5	1658	1005.95	1010.1	0	1001.5	2358
2	10.26	11.4	1502	8.8	745	88.1	96	0	79	1909	8.4	6.9	7.4	401	6.2	2356	996.17	1001.6	0	992.6	1556
3	7.49	10.2	1229	3.4	2359	86.2	96	718	73	1230	5.3	5.6	6.2	0	4.5	2352	994.21	997.7	903	988.4	1911
4	3.99	9.2	1440	0.3	253	88.0	100	423	56	1444	2.0	4.5	5.7	1207	3.9	1518	997.35	999.6	1824	994.4	345
5	3.82	7.5	1226	-0.6	417	92.3	100	335	81	1459	2.7	4.6	5.6	1226	3.7	417	1004.18	1016.6	2358	997.6	505
6	3.00	7.5	1348	-2.4	744	90.8	100	419	70	1429	1.5	4.3	5.4	2356	3.1	744	1017.06	1020.1	854	1012.0	2352
7	6.57	10.9	1322	3.1	2027	87.3	100	840	54	1457	4.4	5.2	6.1	1030	4.2	1457	1014.53	1020.5	2359	1011.1	353
8	4.29	5.8	1133	2.0	2359	87.9	95	103	80	1315	2.5	4.5	5.1	519	3.6	2348	1026.56	1030.7	2335	1020.5	11
9	1.65	2.4	1324	0.9	2348	88.1	98	2358	79	1342	-0.1	3.7	4.0	2335	3.5	1242	1027.66	1030.6	9	1024.7	2352
10	0.98	1.8	1206	-1.0	1821	95.2	100	323	85	2338	0.3	3.8	4.1	1206	3.3	1821	1024.26	1024.8	3	1023.7	557
11	1.33	2.6	2241	0.1	753	89.8	97	624	84	1534	-0.2	3.7	4.2	2343	3.4	50	1022.87	1024.1	0	1022.0	2348
12	2.82	5.7	2302	1.2	724	91.7	97	354	81	1702	1.6	4.2	5.1	2232	3.8	638	1022.34	1023.1	1056	1021.2	1518
13	5.50	11.0	1349	2.3	2358	83.7	94	716	54	1352	2.8	4.6	5.4	1243	4.1	2347	1021.22	1022.6	1016	1019.2	1603
14	5.93	11.8	1400	-0.2	715	86.0	98	738	67	1359	3.7	5.0	6.6	2359	3.6	706	1023.12	1026.8	2359	1020.2	307
15	8.63	10.9	1135	7.4	1916	94.2	99	707	87	1346	7.8	6.5	7.1	1057	5.9	2321	1027.71	1030.1	2359	1026.1	1334
16	8.13	11.4	1419	5.7	508	86.2	99	548	64	1617	5.8	5.6	6.6	1238	4.9	1633	1029.70	1031.1	955	1028.4	1441
17	8.00	12.3	1546	4.5	2150	86.6	98	2203	62	1525	5.8	5.6	6.8	1137	4.9	2149	1027.96	1029.0	1114	1026.6	1616
18	7.20	12.6	1446	2.3	2354	87.2	99	2359	60	1622	5.1	5.4	6.4	1257	4.3	2354	1025.09	1027.2	0	1023.1	1618
19	8.51	12.6	1316	2.8	0	88.1	99	1	65	1317	6.6	6.0	7.1	2358	4.5	0	1022.62	1024.2	1	1021.2	2248
20	11.95	16.9	1403	9.3	239	87.7	97	5	68	1405	9.9	7.5	8.7	1236	6.8	251	1019.20	1021.9	17	1017.7	1614
21	11.33	13.3	1223	9.6	453	87.6	97	653	80	1212	9.3	7.3	7.9	1134	6.8	2053	1016.20	1019.1	32	1011.4	2350
22	11.61	13.4	1444	10.1	2354	85.5	96	2255	77	201	9.3	7.3	7.8	1928	6.5	225	1008.59	1011.6	0	1005.0	2359
23	9.07	11.2	1357	5.2	2313	71.9	95	13	49	1438	4.0	5.3	7.4	13	3.8	1618	999.21	1009.4	2359	992.1	748
24	5.34	9.8	1336	1.2	604	67.7	89	601	42	1548	-0.4	3.7	4.2	1250	2.9	1548	1016.64	1019.9	1942	1009.3	0
25	8.49	10.6	1351	5.1	35	84.3	93	2214	71	1149	6.0	5.8	6.7	2355	3.9	1	1013.20	1018.9	0	1008.7	2355
26	9.83	11.9	1157	7.9	2150	87.2	96	629	69	1218	7.8	6.6	7.4	624	5.7	1218	1005.56	1009.0	2	1000.3	2345
27	6.20	9.5	1055	1.9	0	87.0	94	1337	74	1057	4.2	5.3	6.3	913	4.0	2358	989.62	1000.5	0	983.9	1457
28	4.38	7.8	2122	-0.7	645	82.7	98	646	58	1203	1.6	4.4	5.2	1605	3.6	645	989.21	996.0	2359	984.4	105

Total

Mean	6.67	9.76		3.55		86.9	97.10		69.67		4.53	5.36	6.24		4.49		1013.86	1017.75		1010.26	
Max	11.95	16.85		10.06		95.2	100.00		87.00		9.90	7.52	8.73		6.81		1029.70	1031.14		1028.39	
Min	0.98	1.78		-2.39		67.7	89.20		41.54		-0.39	3.68	4.02		2.90		989.21	995.96		983.94	

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

# WOKINGHAM METEOROLOGICAL DATA

Wokingham Climatological Station, Emmbrook, Berkshire.

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

## Seasonal Means and Totals

WINTER 2016/17

Temperature (°C)				Rank in the past 135 years					
Mean maximum	8.8	(+0.7)		23 <sup>rd</sup> highest					
Mean minimum	1.6	(-0.2)		65 <sup>th</sup> highest					
Daily mean	5.2	(+0.2)		42 <sup>nd</sup> highest					
Rainfall total (mm)	110.5	(66 %)		21 <sup>st</sup> lowest					
Sunshine total (hours)	214.9	(110 %)							
N° of:	Dry days	53 (+8)	Wet days	24 (-7)					
Days with:	Air frost	37 (+6)	Ground frost	57 (+6)	Snow falling	7 (-3)	Snow lying	0 (-5)	
Thunder	0 (-1)	Hail ≥5mm	0 (-1)	Small hail/ice	2 (-1)	Fog @09 GMT	10 (+4)	Nil sun	31 (+2)
Air pressure MSL : Mean @09 GMT (mbar)	1022.3			( +5.7)					

Departure from 1981 to 2010 average shown in brackets.

Notes: **Dry with Near Average Mean Temperature and Above Average Sunshine.**

**Temperature:** The mean temperature this winter season is close to the climatological average. In this millennium, 10 winters have been milder and 6 colder with 1 the same. While the mean maximum is 0.7° above average, it is 1.2° above the long-term median. The mean minimum is 0.2° below average, but is exactly equal to the long-term median. The mean daily temperature range of 7.2° is equal second highest with 2015 and 1949 in the past 135 years, with only 2008 being higher. The highest temperature this season was 16.7° on the 20<sup>th</sup> February, 2.8° above the median and highest since 1998, also 6<sup>th</sup> highest in 135 years. The lowest maximum was 0.9° on the 26<sup>th</sup> January, 0.6° above the median. The highest min was 11.5° on the 9<sup>th</sup> December, 1.6° above the median, while the lowest min was -6.7° on the 22<sup>nd</sup> January, 0.8° above the median. The mean grass minimum, -1.5°, is 0.4° below average, but the lowest value at grass tip level was -10.4° on the 21<sup>st</sup> January, 2.6° above average. The mean earth temperatures at 30 cm and 1 m depth were 5.7° and 7.7°, close to average at 30cm but a little below average at 1 m depth. Both the number of air frosts and ground frosts are above average, and the duration of air frost at 324.5 hours is 44 hours or 16 % above average. January was the coldest month, mean 3.4°, anomaly -1.4°, while February, mean 6.6°, anomaly +1.7°, was the mildest. **Rainfall:** This has been a dry winter overall, with a total rainfall about one third less than average. The total is lowest since 2005, and before that, 1997. To remind us just how wet winter can be, we have only to look back to 2013/14 when we had 378.5 mm or 268 mm more than in this winter. January with 65.9 mm, anomaly 106%, was this season's wettest month, and December with 12.3 mm, anomaly 20 %, was the driest. The wettest day was the 29<sup>th</sup> January with 14.0 mm. There were 8 more dry days than average, and there were 4 dry spells, in December, 13 days to the 9<sup>th</sup>, 6 days to 18<sup>th</sup> and 5 days to the 30<sup>th</sup>, and 10 days to the 26<sup>th</sup> January. Snow or sleet occurred on 7 days, 12<sup>th</sup> 13<sup>th</sup> and 25<sup>th</sup> January, and 9<sup>th</sup> to 12<sup>th</sup> February, but there were no days with lying snow at 0900 hours. Snow grains fell on the 26<sup>th</sup> January, and ice pellets on the 27<sup>th</sup> February, but there was no thunder. The highest rainfall rate was 41 mm/hr on the 23<sup>rd</sup> February. **Sunshine:** This winter had a reasonable amount of sunshine, though less than in 10 other winters this millennium. Despite a poor showing in February, daily mean 1.98 hours, anomaly 72%, both December with 2.27 hours and January with 2.88 hours had a good surplus, resulting in a seasonal anomaly of 110 %. The sunniest day was the 13<sup>th</sup> February, 8.8 hours, but 3 days in January had 8 or more hours, and the period 17<sup>th</sup> to 22<sup>nd</sup> January was outstandingly sunny with a daily mean of 7.6 hours, conversely the 5 day period to the 12<sup>th</sup> February had nil sun. A seasonal total of 31 days without sun is 2 above average. Overall there were 55 days with <3 hours, anomaly -5, and 18 days with =>6 hours, anomaly +7. **Wind:** The overall mean wind speed is 6.0 mph, 1.8 mph below average and the lowest winter value since before 1988. The 23<sup>rd</sup> February was the windiest day, mean 18.1 mph, and that day also saw the highest gust of 63 mph. The 29<sup>th</sup> December was the least windy day, mean 1.5 mph, and there were 3277 minutes of calm. Daily mean direction/number of days; N,7 NE,11 E,7 SE,8 S,15 SW,29 W,12 NW,1. Compared with average, NW winds were 5.9%, and SW 2.8%, less frequent, while E and SE combined were 6.8%, and W 1.9%, more frequent. **Pressure:** The mean pressure at 0900 hours was 1022.3 mbar, anomaly +5.7. This is the highest winter mean since 1993. The highest pressure was 1045.6 mbar on the 27<sup>th</sup> December and is the highest winter value since before 1977. The lowest was 983.9 mbar on the 27<sup>th</sup> February, a total span of 61.7 mbar, compared with an average of 63.8 mbar. **Humidity:** The overall mean relative humidity was 90.1 %. The lowest value was 41 % on the 17<sup>th</sup> January. The mean water vapour content per kg of air was 5.0 g at 0900 and 5.3 g at 1500 hours.

**December:** Very dry and sunny with temperature above average. Lowest max 6<sup>th</sup> highest in 104 years. Driest since 1988 and before that 1933. Number of dry days equal highest with 2008 since 1991. Mean wind speed lowest since before 1987. Mean pressure highest since 1991. Most days with fog since 1962.

**January:** Cold and sunny with rainfall above average. Mean daily temperature range equal highest with 2015 in the past 42 years. Mean grass min equal lowest with 2010 since 1997. Notable 10 day dry spell. Mean wind speed lowest since before 1988. Duration of calm about 1000 minutes above normal.

**February:** Mild and dull with below average rainfall. Very windy spell. Highest max 6<sup>th</sup> highest and lowest min 7<sup>th</sup> highest in 114 years. Highest min 5<sup>th</sup> highest in 105 years. Least sun since 2011 and before that 1991. Very windy late month with 63 mph gusts, equal highest with 2014 since 1990.

Month	Mean	Anom	Mean	Anom	Rain	Anom	Sun	Anom	Mean	Max	Mean	Anom
	Max		Min		mm	%	hrs	%	Wind mph	gust	pressure	
December	9.6°	+1.6°	1.8°	-0.3°	12.3	20%	70.3	127%	5.0	35	1028.2	+12.5
January	7.3°	-0.5°	-0.4°	-2.2°	65.9	106%	89.3	143%	5.1	38	1023.9	+7.2
February	9.6°	+1.4°	3.6°	+2.1°	32.3	75%	55.3	72%	8.2	63	1014.2	-3.2



## **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 or sand or other similar phenomena, or more often because of the presence of a continuous layer of lower clouds.

**8 Groups**

**N** = Amount of cloud reported by C, okta.

**C** = Type of cloud

0 = Cirrus (Ci)

1 = Cirrocumulus (Cc)

2 = Cirrostratus (Cs)

3 = Altocumulus (Ac)

4 = Altostratus (As)

5 = Nimbostratus (Ns)

6 = Stratocumulus (Sc)

7 = Stratus (St)

8 = Cumulus (Cu)

9 = Cumulonimbus (Cb)

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

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

00 to 50 = Height in hundreds of feet

51 to 55 Not used

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

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