

# 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

### APRIL 2010

Temperature (°C / °F)			Anomaly	Rank in the past 129 years			
Mean maximum	15.7	60.3	+2.6	10 <sup>th</sup> highest			
Mean minimum	3.4	38.1	-0.7	51 <sup>st</sup> lowest			
Daily mean	9.5	49.1	+0.9	27 <sup>th</sup> highest			
Highest maximum	21.3	70.3	on 28 <sup>th</sup>	Lowest maximum	10.0	50.0	on 1 <sup>st</sup>
Highest minimum	9.1	48.4	on 25 <sup>th</sup>	Lowest minimum	-1.4	29.5	on 17 <sup>th</sup>
Mean grass minimum	-0.4	31.3	-1.1	Lowest grass minimum	-5.1	22.8	on 23 <sup>rd</sup>
Mean earth @30 cm	9.9	49.8	+0.5	Earth @100 cm	9.1	48.4	
Frost duration (hrs)	5.5			Rain duration (hrs)	15.9		
Rainfall total (mm / in)	25.2	0.99	52 %	28 <sup>th</sup> lowest			
Highest daily fall	10.5	0.41	on 2 <sup>nd</sup>				
Number of: Dry days (<0.2mm)	23	Wet days (>0.9mm)	6	days ≥5mm	1		
Sunshine total (hrs) 216.6	Daily mean 7.22	139 %		Sunniest day 13.4	on 22 <sup>nd</sup>		
N° days with: Air frost 3	Ground frost 19	Snow falling 0	Snow lying 0				
Thunder 0	Hail ≥5mm 0	Small hail/ice 1	Fog @09 0	Nil sun 1			
Air pressure MSL : Mean @09 GMT (mbar/in)	1020.2	+4.9	30.13				
Absolute highest	1034.7		30.55	on 10 <sup>th</sup>			
Absolute lowest	998.6		29.49	on 2 <sup>nd</sup>			

Anomaly = departure from 1971 to 2000 average (degrees C, percent and mbar).

Notes: **Dry and Mild by Day. Very Sunny.**

**Temperature:** The large disparity in the anomalies for mean max and mean min (+2.6° and -0.7° resp.) has resulted in the second largest, after 2007, mean daily temperature range for April since 1946, and 3.3° above average. Despite the mean maximum being 10<sup>th</sup> highest in 129 years, both 2009 and 2007 had a higher value. The mean min is 0.3° below the long-term median and is lowest since 1990. The highest max is 0.6° above the median, and the lowest max is 2.4° above the median. The highest min is 0.8° below the median and the lowest min is 0.5° above its median. The mean grass min is 1.1° below average and the number of ground frosts is 5 above average, and most since 1990, but the lowest grass min is 2.0° above average. Earth temperatures down to 1 m depth are close to normal. **Rainfall:** This has been a dry April, with just over half the average rainfall. There was a long dry period, with only 5 mm of rain between the 3<sup>rd</sup> and the 28<sup>th</sup>, and a 15 day dry spell ending on the 18<sup>th</sup>. The number of dry days is 6 more than average. The duration of measurable rain is 25.3 hours less than normal. Snow pellets fell on the 1<sup>st</sup>, otherwise the month was free of hail, thunder and snow. **Sunshine:** This has been a sunny month and the second sunniest April since 1990, the sunniest being 2007. The period 21<sup>st</sup> to the 24<sup>th</sup> was outstanding, producing a total of 50.9 hours, a mean of 12.7 hours per day, 88 % of the maximum. Overall there were 7 days with <3 hours, 18 with =>6 hours, 12 with =>9 hours and 4 with =>12 hours. **Wind:** The overall mean wind speed of 6.2 mph is 0.8 mph below average. The windiest day was the 12<sup>th</sup>, mean 10.0 mph and lowest since before 1988. The month's highest gust of 32 mph is also the lowest in 23 years, and occurred on the 1<sup>st</sup>. The least windy day was the 9<sup>th</sup>, mean 2.8 mph, and there were 1233 minutes (20.6 hours) with a mean speed of 0.5 mph or less. Daily mean direction/number of days: N,1 NE,10 E,0 SE,0 S,7 SW,5 W,3 NW,4. **Humidity:** The overall mean relative humidity was 68.0 %, and a value of 24 % on the 24<sup>th</sup> was the lowest for the month. The mean water vapour content per kg of air was 5.2 g at 0900 GMT and 4.8 g at 1500 GMT. **Pressure:** The month's highest pressure is highest for April since 1995. **Commentary: From the 1<sup>st</sup> to the 10<sup>th</sup>:** Temperatures were near normal up to the 5<sup>th</sup>, then mainly above. Daily anomalies for max ranged from -1.4° on the 1<sup>st</sup> to +6.3° on the 10<sup>th</sup>, and for min -2.5° on the 8<sup>th</sup> to +3.0° on the 6<sup>th</sup> and 7<sup>th</sup>. Rain fell on the first 3 days, with the month's wettest day on the 2<sup>nd</sup>. Sunshine was mainly below normal up to the 7<sup>th</sup>, then above. Winds from between S and W were light or moderate up to the 4<sup>th</sup>, increasing fresh on the 5<sup>th</sup>, veering N'ly and decreasing light or moderate on the 7<sup>th</sup>. **From the 11<sup>th</sup> to the 20<sup>th</sup>:** Temperatures by day were mainly above normal, with daily anomalies between -1.0° on the 14<sup>th</sup> and +5.3° on the 18<sup>th</sup>, but there were some cold nights, with an anomaly of -5.6° for the min on the 17<sup>th</sup>. Rain fell on the 19<sup>th</sup> only, and amounted to just 0.3 mm. Sunshine was generally above normal. Winds were NE'ly, moderate until the 16<sup>th</sup> then light, veering S'ly on the 19<sup>th</sup> and veering moderate NW'ly on the 20<sup>th</sup>. **From the 21<sup>st</sup> to the 30<sup>th</sup>:** This was the warmest part of the month, with anomalies for daily max up to +6.5° on the 24<sup>th</sup> and +6.7° on the 28<sup>th</sup>. Nights were cold at first, with anomalies between -5.2° on the 22<sup>nd</sup> and +4.5° on the 25<sup>th</sup>. There were 7 dry days, but some rain on the 24<sup>th</sup>, 29<sup>th</sup> and 30<sup>th</sup>. Very sunny up to the 24<sup>th</sup>, then mainly below normal. Light or moderate winds were N'ly on the 21<sup>st</sup>, but settled between S and SW from the 23<sup>rd</sup> on.

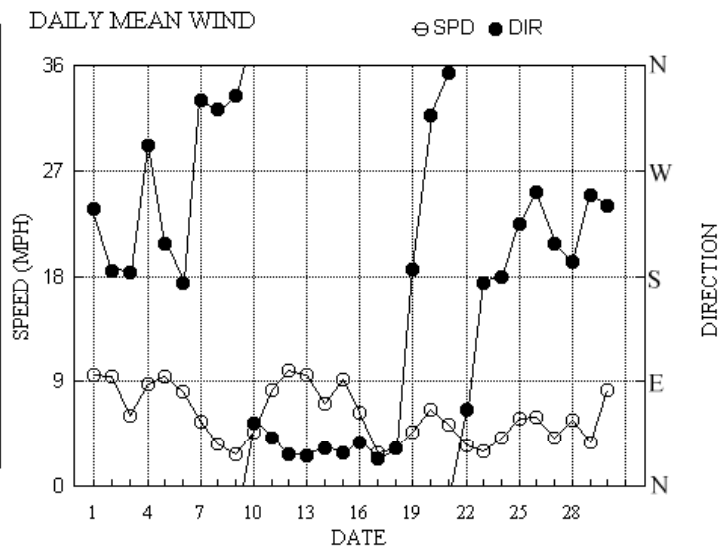
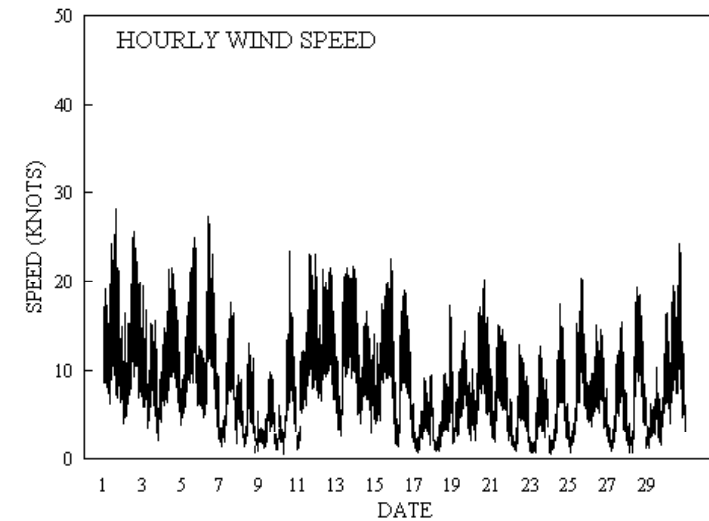
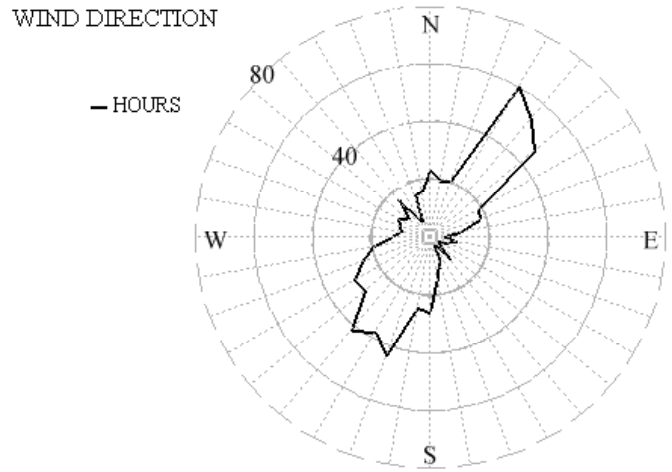
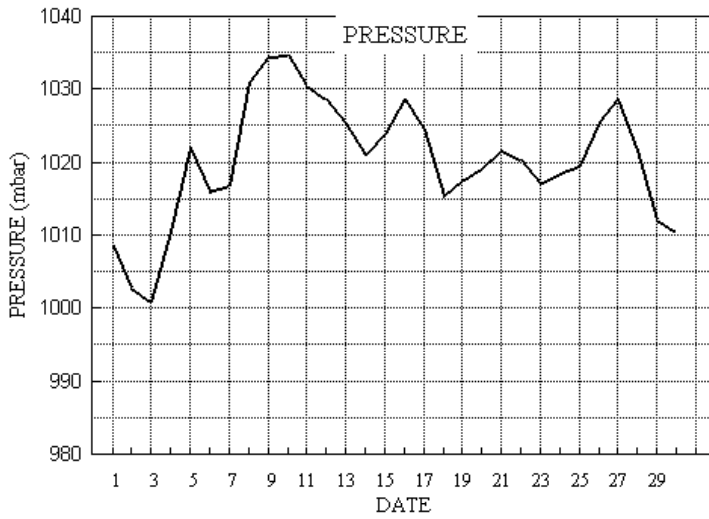
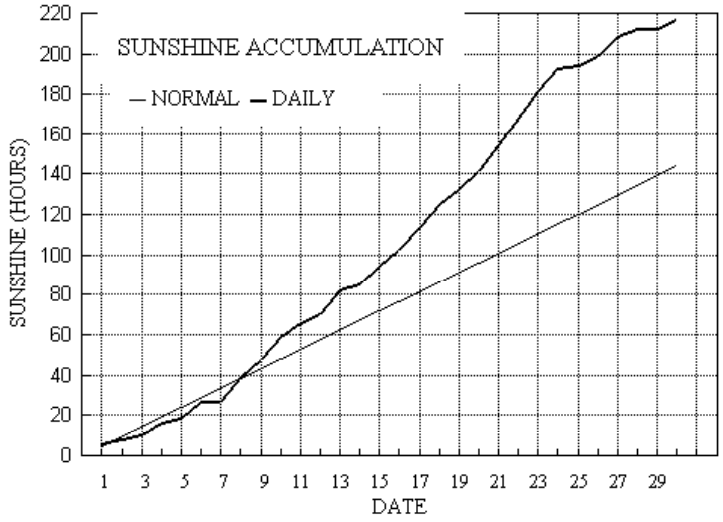
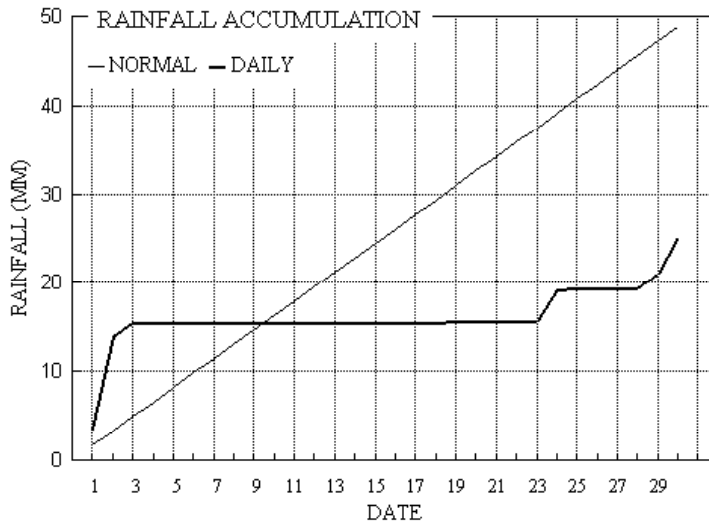
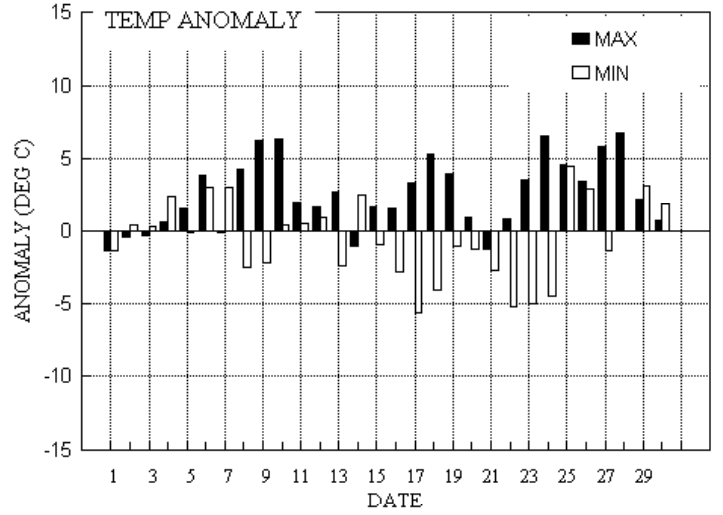
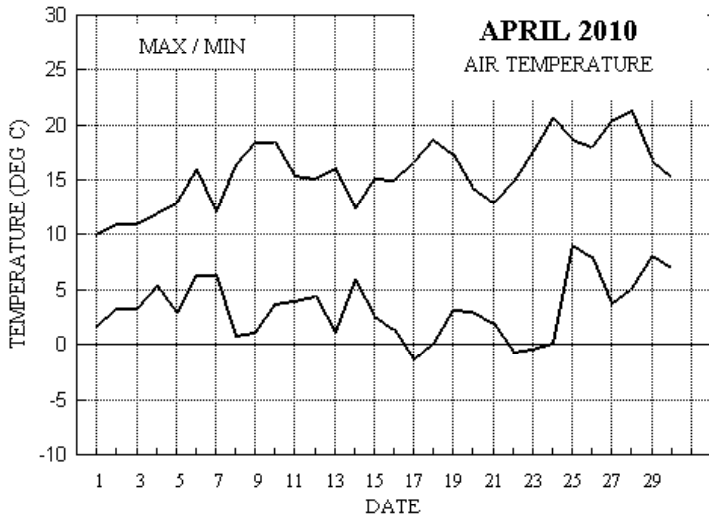
Table 1. Mean anomalies (max, min, rain, sun) for specified periods.

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 30 <sup>th</sup>			
+2.1°	+0.3°	92 %	113 %	+2.2°	-1.4°	2 %	160 %	+3.3°	-0.6°	61 %	144 %

B J Burton FRMetS.

Hon. Met. Officer to Wokingham Town Council.

# Wokingham Climatological Graphs for April 2010



Daily meteorological data.

Emmbrook, WOKINGHAM, Berkshire.

Month: APRIL 2010

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	10.0	1.7	3.4	-1.5	8.0	8.3	5.8	0.0	1008.6	0 1 0 0	0 0 1 0	0 0 1 0	237	7.7	8.3	268	28	1416	237	11	11	1.8	
2	11.0	3.4	10.5	4.0	7.8	8.2	2.7	0.0	1002.7	0 0 0 0	0 0 0 0	0 0 0 0	185	7.7	8.2	139	26	1207	215	12	13	4.1	
3	11.1	3.3	1.5	0.9	7.9	8.2	2.3	0.0	1000.8	0 0 0 0	0 0 0 0	0 0 0 0	184	3.0	5.3	179	20	0005	188	8	11	1.9	
4	12.0	5.4	tr	3.9	8.1	8.1	6.0	0.0	1010.4	0 0 0 0	0 0 0 0	0 0 0 0	292	6.6	7.6	309	22	1242	296	11	08	0.0	
5	13.0	2.9	tr	-3.1	8.1	8.1	1.8	0.0	1022.0	0 1 0 0	0 0 0 0	0 0 0 0	208	8.1	8.2	230	25	1535	215	12	15	0.0	
6	16.0	6.3	tr	3.2	8.3	8.2	8.3	0.0	1015.9	0 0 0 0	0 0 0 0	0 0 0 0	175	6.6	7.1	195	28	0953	195	13	10	0.0	
7	12.1	6.3	tr	4.0	8.6	8.2	0.1	0.0	1016.7	0 0 0 0	0 0 0 0	0 0 0 0	331	3.9	4.8	347	18	1241	332	9	10	0.0	
8	16.4	0.8	0.0	-3.4	8.5	8.3	11.8	0.0	1030.9	0 1 0 0	0 0 0 0	0 0 0 0	323	2.3	3.1	27	13	1050	7	7	10	0.0	
9	18.4	1.1	0.0	-2.6	8.8	8.3	9.1	0.0	1034.3	0 1 0 0	0 0 0 0	0 0 0 0	335	0.7	2.4	266	10	1213	261	4	11	0.0	
10	18.5	3.7	0.0	-0.4	9.3	8.4	11.4	0.0	1034.5	0 1 0 0	0 0 0 0	0 0 0 0	55	3.8	4.1	60	24	1455	40	8	16	0.0	
11	15.4	4.0	0.0	-0.1	9.8	8.5	6.7	0.0	1030.4	0 1 0 0	0 0 0 0	0 0 0 0	41	7.1	7.2	59	23	2052	43	11	14	0.0	
12	15.1	4.4	tr	-0.5	9.9	8.7	4.4	0.0	1028.6	0 1 0 0	0 0 0 0	0 0 0 0	27	8.7	8.7	18	22	1521	23	12	17	0.0	
13	16.1	1.1	tr	-4.2	9.9	8.9	12.3	0.0	1025.3	0 1 0 0	0 0 0 0	0 0 0 0	26	8.3	8.3	35	22	2028	31	12	16	0.0	
14	12.4	6.0	0.0	3.7	10.0	9.0	2.9	0.0	1021.0	0 0 0 0	0 0 0 0	0 0 0 0	32	5.9	6.1	32	21	0011	28	10	00	0.0	
15	15.1	2.6	0.0	-3.0	9.7	9.1	8.6	0.0	1023.9	0 1 0 0	0 0 0 0	0 0 0 0	28	7.9	8.0	27	23	1942	31	11	20	0.0	
16	15.0	1.4	0.0	-4.0	9.8	9.2	8.9	0.0	1028.5	0 1 0 0	0 0 0 0	0 0 0 0	38	5.4	5.5	29	19	1254	38	10	13	0.0	
17	16.7	-1.4	0.0	-5.0	9.7	9.2	10.7	2.4	1024.4	1 1 0 0	0 0 0 0	0 0 0 0	24	0.9	2.5	185	10	2021	192	5	20	0.0	
18	18.7	0.1	0.0	-3.6	10.1	9.3	11.4	0.0	1015.3	0 1 0 0	0 0 0 0	0 0 0 0	32	1.7	2.9	58	17	2027	71	7	21	0.0	
19	17.3	3.2	0.3	-1.1	10.5	9.4	7.6	0.0	1017.4	0 1 0 0	0 0 0 0	0 0 0 0	186	1.6	4.1	265	15	1420	229	7	14	0.4	
20	14.3	3.0	0.0	-1.6	10.8	9.5	9.0	0.0	1019.1	0 1 0 0	0 0 0 0	0 0 0 0	318	5.3	5.7	271	20	1403	307	9	12	0.0	
21	12.9	1.9	0.0	-3.3	10.5	9.6	13.0	0.0	1021.5	0 1 0 0	0 0 0 0	0 0 0 0	354	3.8	4.6	340	15	0825	341	8	08	0.0	
22	14.9	-0.6	0.0	-4.8	10.4	9.7	13.4	1.5	1020.3	1 1 0 0	0 0 0 0	0 0 0 0	66	2.5	3.0	26	13	0926	40	6	10	0.0	
23	17.6	-0.4	0.0	-5.1	10.6	9.8	13.4	1.6	1017.1	1 1 0 0	0 0 0 0	0 0 0 0	175	1.2	2.6	178	13	1259	205	5	19	0.0	
24	20.6	0.1	3.5	-4.6	10.8	9.9	11.1	0.0	1018.5	0 1 0 0	0 0 0 0	0 0 0 0	180	2.6	3.7	174	18	1207	205	8	14	2.8	
25	18.7	9.1	0.1	5.7	11.3	10.0	1.8	0.0	1019.6	0 0 0 0	0 0 0 0	0 0 0 0	225	4.8	5.0	221	21	1452	212	10	14	0.1	
26	18.0	8.0	0.0	2.9	11.5	10.1	4.0	0.0	1025.4	0 0 0 0	0 0 0 0	0 0 0 0	252	4.8	5.2	255	15	0942	256	8	09	0.0	
27	20.4	3.7	0.0	-0.3	11.5	10.2	10.4	0.0	1028.5	0 1 0 0	0 0 0 0	0 0 0 0	208	3.0	3.7	245	16	1601	215	8	15	0.0	
28	21.3	5.1	0.0	1.8	11.8	10.3	3.3	0.0	1021.6	0 0 0 0	0 0 0 0	0 0 0 0	192	4.5	5.0	188	19	1151	194	10	11	0.0	
29	16.8	8.2	1.7	5.4	12.0	10.5	0.0	0.0	1012.0	0 0 0 0	0 0 0 0	0 0 0 0	249	2.5	3.2	265	17	2254	282	7	23	2.5	
30	15.3	7.0	4.2	3.5	12.2	10.6	4.4	0.0	1010.3	0 0 0 0	0 0 0 0	0 0 0 0	240	6.9	7.1	235	25	1634	236	11	16	2.3	
Total			25.2				216.6	5.5															15.9
Mean	15.7	3.4		-0.4	9.9	9.1	7.22	0.2	1020.2					300	0.5	5.4							
Anom	+2.6	-0.7	52%		+0.5	-0.1	139%			+4.9													
Daily mean		9.5																					
Anom		+0.9																					

Number of days with:

Air frost = 3      Ground frost = 19      Nil sun = 1  
Snow falling = 0      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 1971-2000 climatological average.  
All temperatures in degrees Celsius.

Weather observations. Emmbrook, Wokingham, Berkshire.

Observations at 0900 GMT for April 2010

Date	VV	N	dd	ff	gg	TT	TdDd	RH	r	PPP	a	pppwwW1W2	NhCl	hCrCl	NChshs	NChshs	NChshs	Date	Remarks									
1	86	1	26	15	27	6.8	-0.6	59	3.6	1008.6	2	024	03	0	0	1	1	5	0	2	81825	1	1Ci72	Cu hum	Ci edge	W		
2	82	7	17	07	18	8.1	4.7	79	5.3	1002.7	7	015	02	2	2	7	8	4	/	1	81815	87620	2	/Ci75	COTRA	Cu fra		
3	80	6	20	06	10	7.6	4.9	83	5.4	1000.8	1	007	03	1	1	5	8	4	0	2	83815	83635	3	4Ci72	Cu med			
4	80	5	30	11	22	7.6	3.3	74	4.8	1010.4	2	035	03	2	2	5	8	4	0	0	84818		4	2Sc35	Cu hum			
5	73	8	21	09	18	9.4	5.9	79	5.7	1022.0	2	008	03	2	2	8	8	4	/	/	83815	88640	5	Cu fra	/hum			
6	81	7	18	12	22	12.5	3.8	55	4.9	1015.9	7	013	02	2	2	1	0	9	4	8	81365	85273	87078	6	COTRA			
7	62	7	31	06	11	9.9	6.7	80	6.0	1016.7	1	021	21	6	2	7	5	5	7	/	87625	84362	7					
8	84	1	32	03	07	10.2	2.1	57	4.4	1030.9	1	013	02	0	0	0	0	9	0	1	81080		8					
9	75	3	02	02	05	10.6	4.8	67	5.2	1034.3	1	006	03	0	0	2	0	9	8	1	81364		9	2Ac66	2Ci80	COTRA	Ac cas	vir
10	63	6	02	02	05	12.9	6.2	64	5.9	1034.5	0	001	02	2	2	0	0	9	0	1	81075	86080	10	COTRA				
11	80	8	04	08	13	9.0	4.1	71	5.0	1030.4	2	003	02	2	2	1	1	4	7	7	81818	83465	88270	11	1Ac61	COTRA	Cu fra	Halo 22° part
12	65	3	03	10	19	9.7	3.5	65	4.5	1028.6	0	002	01	1	1	3	5	5	0	0	83625		12					
13	80	6	03	11	19	10.5	3.7	63	4.8	1025.3	8	002	03	1	1	1	1	5	0	1	81825	85072	13	2Ci80	COTRA	Cu hum	Halo 22° part	
14	61	8	03	09	15	8.3	3.8	73	4.9	1021.0	4	000	01	5	2	8	8	4	/	/	83818	88630	14	Cu med				
15	62	4	03	09	17	8.8	3.7	70	5.0	1023.9	2	010	01	1	1	2	1	5	0	2	82820	83075	15	COTRA	Cu fra	/hum		
16	78	5	04	09	17	9.4	2.8	63	4.6	1028.5	2	007	03	1	1	4	8	5	0	1	83828		16	2Sc35	1Ci75	Cu hum		
17	30	2	36	02	06	6.4	4.7	89	5.2	1024.4	7	007	28	4	1	2	6	2	0	1	82703		17	1Ci80	Fg	till	0810	
18	59	1	36	02	06	11.3	4.4	62	5.5	1015.3	7	002	05	0	0	0	0	9	0	1	81080		18					
19	70	2	13	05	10	11.6	2.3	53	4.6	1017.4	1	001	01	1	1	2	5	7	0	1	82656		19	1Ci75				
20	80	1	33	08	17	10.3	0.9	52	3.9	1019.1	1	008	03	0	0	1	1	6	0	0	81835		20	Cu hum				
21	84	2	33	09	15	8.0	-0.1	57	3.8	1021.5	0	002	03	0	0	1	1	6	0	1	81830		21	2Ci80	COTRA	Cu hum		
22	72	3	06	03	08	9.6	1.0	55	4.0	1020.3	8	003	03	0	0	1	1	6	0	1	81830	83080	22	COTRA	Cu hum			
23	80	5	06	02	07	11.5	-1.8	39	3.2	1017.1	7	001	02	1	1	0	0	9	0	1	85080		23	COTRA				
24	60	7	11	02	06	13.0	3.7	53	4.9	1018.5	0	001	05	2	2	0	0	9	0	1	87078		24	COTRA	U/a	cont		
25	20	8	23	06	11	12.1	11.1	93	8.1	1019.6	1	009	60	6	2	8	5	3	/	/	87706	88625	25					
26	70	8	25	07	13	12.2	8.7	79	6.9	1025.4	1	011	03	2	2	8	8	4	/	/	84815	88620	26	Cu hum				
27	67	4	33	01	05	15.1	7.8	62	6.5	1028.5	0	005	03	0	0	0	0	9	0	4	81077	84080	27	COTRA	U/a	cont		
28	62	7	19	06	11	16.6	8.4	58	6.8	1021.6	8	016	03	2	2	0	0	9	7	8	82363	87272	28	1Ac68	COTRA	Halo 22° part		
29	57	8	28	03	06	13.6	9.7	77	7.5	1012.0	7	004	05	2	2	8	0	9	8	/	81359	83362	88465	29	Ac cas			
30	80	6	26	08	16	12.9	7.1	67	6.2	1010.3	1	006	03	1	1	2	2	5	0	1	82822	85073	30	COTRA	Cu med	Halo 22° part		

Mean vis = 23.5 km

Mean cloud = 5.0 62%

Mean wind speed = 6.4 kn

Mean gust = 13 kn

Mean TT = 10.5 °C

Mean TdDd = 4.4 °C

Mean RH = 66.6 %

Mean r = 5.2 g/kg

Mean PPP = 1020.2 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

TdDd = 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 April 2010

Date	VV	N	dd	ff	gg	TT	Td	RH	r	PPP	a	ppp	ww	W1	W2	Nh	Cl	h	Cr	Ch	shs	NChs	hshs	NChs	Date	Remarks
1	65	8	28	11	23	6.7	2.8	76	4.6	1009.6	5	000	25	8	2	6	8	6	2	/	81830	84650	88460	1	2Cu38 Cu med jpW	
2	82	6	21	12	21	9.8	3.8	66	5.0	999.7	6	006	15	6	2	5	8	5	6	1	83825	83650		2	1Ac57 2Ci72 Cu med jpW	
3	60	8	17	08	16	9.0	4.0	70	5.0	999.4	6	010	60	6	2	6	8	5	2	/	81822	83828	88550	3	4Sc40 Cu hum/fra	
4	84	5	30	11	20	10.2	-1.9	43	3.3	1014.8	1	018	15	2	2	4	8	6	6	0	82845	83656		4	1Ac58 Cu med/isol con jpSW	
5	82	7	22	13	24	12.2	4.7	60	5.3	1021.4	8	006	02	8	2	7	8	5	/	1	83828	85645		5	/Ci75 Cu med	
6	86	8	16	12	19	15.0	2.5	43	4.5	1012.6	7	016	03	2	2	4	0	9	7	7	81365	84467	88272	6		
7	80	7	36	09	16	11.5	4.4	62	5.1	1019.7	1	015	01	6	2	7	8	5	/	/	81825	83640	87650	7	Cu med	
8	86	2	30	04	10	15.2	1.3	39	4.1	1030.8	8	004	02	0	0	1	1	7	0	1	81850			8	2Ci80 COTRA Cu hum	
9	80	6	36	04	09	17.8	3.8	39	4.9	1032.7	7	011	02	1	1	1	1	7	7	1	81850	84366	86078	9	2Ac63 COTRA Cu hum	
10	78	7	04	08	25	17.9	3.8	39	5.0	1031.7	7	017	02	2	2	1	1	7	0	8	81850	83271	87075	10	COTRA Cu hum	
11	82	5	04	12	21	14.7	1.8	42	4.1	1027.3	6	020	01	2	2	2	1	6	0	1	82845	84075		11	COTRA Cu hum	
12	68	6	02	10	21	14.5	5.5	55	5.7	1025.6	7	018	15	2	2	6	8	6	/	/	83835	85650		12	Cu med Absent, vv, wx&cld est	
13	84	7	02	10	20	14.7	-0.4	35	3.5	1022.7	6	016	03	2	2	1	1	7	0	2	81856	87072		13	COTRA Cu hum 22° halo part+U/a and L/a contact	
14	70	7	06	06	15	10.4	3.9	64	4.9	1021.3	8	001	02	2	2	7	8	5	/	/	82825	87630		14	Cu hum	
15	65	7	03	10	16	13.4	1.8	45	4.5	1023.3	8	004	02	2	2	3	8	6	0	1	83845	87075		15	1Sc50	
16	65	2	04	10	19	14.5	2.7	45	4.6	1027.1	8	013	01	1	1	2	4	6	0	0	82645			16		
17	78	0	06	03	09	15.6	-0.0	34	4.1	1019.6	8	026	02	0	0	0	0	9	0	0					17	
18	65	1	06	03	09	18.0	-0.3	29	3.8	1013.6	8	008	02	0	0	1	4	7	0	0	81850			18	1Sc56	
19	60	7	22	07	15	16.8	3.2	40	4.9	1015.8	7	010	05	1	1	2	2	7	6	1	82850	86072		19	1Ac59 Cu med Sky turbid U/a cont	
20	80	3	31	08	21	12.7	-0.4	40	3.6	1018.9	6	006	02	1	1	3	4	7	0	0	81850	83650		20	Cu hum	
21	83	5	36	06	13	12.0	-4.7	31	3.0	1020.4	6	007	03	1	1	1	1	7	0	1	81856	85080		21	COTRA	
22	75	5	14	04	12	13.4	-3.1	32	3.0	1016.6	7	020	02	1	1	0	0	9	0	1	81073	85080		22	COTRA	
23	65	3	20	03	12	16.7	-0.5	31	3.8	1015.5	7	008	02	1	1	0	0	9	0	1	83080			23	COTRA	
24	62	7	21	09	15	19.7	0.8	28	3.9	1017.3	7	005	02	2	2	0	0	9	0	1	84075	87080		24	COTRA Absent, vv&cld est	
25	80	5	21	12	20	18.0	8.8	55	6.8	1019.5	7	004	15	2	2	5	8	6	0	0	84835			25	2Sc50 Cu med jpW	
26	80	7	28	07	15	17.2	7.4	52	6.2	1025.4	6	003	02	2	2	2	8	6	1	2	82838	87070		26	1Sc56 2As65 COTRA Cu med Halo 22° part	
27	80	8	22	08	15	19.3	6.9	45	6.2	1026.1	8	014	03	2	2	1	4	7	7	7	81850	86465	88270	27	1Sc50 2Ac62 Cu hum	
28	80	7	20	09	18	19.9	5.3	38	5.6	1018.0	7	018	03	2	2	7	0	9	8	8	82362	87366	87275	28	Ac cas vir	
29	59	8	06	02	07	14.3	12.3	87	8.9	1008.7	8	022	05	6	2	3	5	3	7	/	81708	83656	88358	29	vv 20k SW	
30	80	7	23	10	19	14.7	7.7	63	6.8	1009.2	8	010	25	8	2	6	8	5	3	/	82828	85650		30	2Sc40 /Ac62 Cu med	
																									31	

Mean vis = 28.7 km

Mean cloud = 5.7 71%

Mean wind speed = 8.0 kn

Mean gust = 17 kn

Mean TT = 14.5 °C

Mean Td = 2.9 °C

Mean RH = 47.6 %

Mean r = 4.8 g/kg

Mean PPP = 1018.8 mbar

See appendix 2 below for full code details

VV = Visibility code (Code FM12-4377)

N = Total cloud amount, oktas

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

ff = 10 minute mean wind speed, knots

gg = Highest gust in past hour, knots

TT = Air temperature at 1.2 m, deg Celsius

Td = Dew point temperature at 1.2 m, deg Celsius

RH = Relative humidity at 1.2 m

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

PPP = Air pressure reduced to sea level, mbar

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

ppp = 3 hr pressure tendency, tenths of mbar

ww = Present weather code (Code FM12-4677)

W1, W2 = Past weather code (Code FM12-4561)-

covers past 3 hours.

Nh = Amount of low cloud present, oktas

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

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

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

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

8 groups. 8 = indicator for cloud detail

N = Amount of cloud, oktas

C = Type of cloud (FM12-0500)

hshs = Height of cloud (FM12-1677)

Remarks : COTRA = persistent condensation

trails present.



April 2010	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	5.39	10.0	1311	1.7	518	69.4	87.1	1542	42.8	1003	0.04	3.84	5.1	1628	2.9	936	1007.82	1011.0	1518	1002.5	0	3.1
2	7.26	11.1	1520	4.9	2342	80.0	90.6	1302	59.0	1528	3.97	5.10	6.0	1326	4.0	0	1002.06	1007.9	21	998.6	1302	3.4
3	6.99	11.0	1337	3.3	601	81.8	94.2	1917	50.1	1354	3.91	5.09	6.0	1853	4.0	1354	1000.06	1001.2	2359	998.9	1629	7.6
4	7.36	12.1	1406	2.8	2325	67.2	88.8	523	35.7	1407	1.17	4.19	5.3	206	2.8	1415	1012.31	1021.6	2358	1001.2	0	0.5
5	8.81	13.1	1444	3.0	36	72.3	86.3	615	57.8	1557	4.02	5.05	6.1	1106	3.6	108	1021.42	1022.3	917	1020.1	2357	0.0
6	11.45	15.9	1307	6.3	519	60.5	81.8	500	40.1	1644	3.67	4.93	5.6	1048	4.1	1631	1014.77	1020.3	2	1011.4	1840	0.0
7	9.08	12.0	1520	5.9	2359	74.8	88.0	238	60.4	2145	4.78	5.32	6.2	913	3.8	2227	1018.64	1026.3	2359	1012.4	0	0.0
8	9.14	16.6	1550	1.0	604	63.4	93.3	627	33.4	1601	1.89	4.28	5.4	1200	3.6	536	1030.53	1033.0	2228	1026.2	4	0.0
9	10.30	18.4	1520	1.2	526	65.7	96.4	530	30.7	1242	3.17	4.68	6.1	1141	3.6	1242	1033.40	1034.5	919	1032.1	1705	0.0
10	11.09	18.3	1319	3.9	520	67.6	95.9	626	38.0	1459	4.66	5.19	6.7	1248	4.4	2219	1032.91	1034.7	721	1030.7	1750	0.0
11	8.81	15.4	1443	4.2	153	65.8	90.7	235	36.5	1327	2.27	4.40	5.4	1528	3.5	1126	1029.10	1031.7	9	1026.5	1617	0.0
12	9.04	15.1	1508	4.3	2359	68.8	84.6	2357	49.8	1415	3.43	4.79	6.5	1306	4.2	715	1026.95	1028.8	716	1024.6	1654	0.0
13	8.83	16.0	1422	1.2	517	65.8	96.9	543	33.4	1454	2.02	4.35	5.4	939	3.4	1653	1024.15	1025.7	655	1022.1	1808	0.0
14	8.12	12.5	1543	4.2	2357	69.7	91.1	2357	53.2	1632	2.81	4.61	5.4	1542	3.7	217	1021.48	1023.1	20	1020.2	1718	0.0
15	8.10	15.4	1343	2.8	100	71.1	94.8	302	41.4	1344	2.69	4.56	5.8	1123	3.9	2316	1023.84	1027.2	2357	1022.1	140	0.0
16	8.19	14.9	1509	1.6	334	68.2	92.1	422	40.8	1506	2.14	4.37	5.4	1351	3.8	325	1027.38	1029.0	928	1025.9	1739	0.0
17	8.05	16.9	1607	-1.0	520	67.2	98.0	825	28.5	1621	1.01	4.07	5.6	911	3.2	1050	1021.75	1026.7	1	1017.2	1907	0.0
18	10.09	18.7	1551	0.3	459	62.1	96.9	602	26.4	1503	1.95	4.37	5.8	848	3.3	1503	1015.15	1017.4	24	1013.3	1550	0.0
19	11.19	17.3	1354	3.3	205	62.1	87.4	2355	30.6	1641	3.48	4.89	6.7	2003	3.5	1641	1016.44	1017.6	650	1014.6	1805	0.1
20	9.14	14.5	1554	2.7	501	57.9	90.8	503	34.3	1530	0.65	3.99	5.7	0	3.0	2315	1019.16	1021.8	2213	1016.9	16	0.0
21	7.11	13.0	1538	1.7	325	54.8	85.3	2353	28.6	1507	-1.98	3.27	4.2	2353	2.4	1450	1021.02	1021.7	739	1019.9	1707	0.0
22	7.59	15.0	1508	-0.1	516	62.3	97.1	548	29.4	1514	-0.28	3.71	5.0	715	2.9	1359	1018.65	1021.6	0	1015.9	1730	0.0
23	9.53	17.6	1535	-0.2	519	56.1	94.6	531	26.9	1435	-0.17	3.75	4.8	1444	2.8	922	1016.57	1018.1	2322	1014.9	1655	0.0
24	11.52	20.4	1347	0.3	501	56.0	95.9	531	24.1	1502	1.46	4.20	5.7	1300	3.4	1502	1018.01	1018.8	2324	1016.9	1550	0.0
25	12.15	18.7	1503	8.8	621	78.6	94.7	817	49.5	1506	8.37	6.82	8.6	1106	4.9	454	1020.09	1023.3	2358	1017.8	356	3.3
26	12.70	18.1	1522	7.5	2359	74.5	95.1	341	46.3	1646	7.88	6.53	7.8	1013	5.8	1646	1025.46	1028.2	2352	1023.0	33	0.1
27	12.84	20.2	1331	3.7	511	68.3	97.6	550	34.6	1331	6.24	5.84	7.5	945	4.7	511	1027.07	1028.7	735	1025.2	1822	0.0
28	13.83	21.5	1358	5.3	416	66.7	97.2	501	35.8	1358	6.83	6.11	7.5	741	5.2	1457	1019.86	1025.7	4	1014.7	2351	0.0
29	12.86	16.6	1106	8.1	413	84.0	93.6	434	64.2	1215	10.17	7.77	9.4	1625	6.2	411	1010.39	1015.1	29	1006.6	1922	1.3
30	11.27	15.2	1516	7.0	452	78.6	94.6	2354	55.1	1022	7.49	6.47	7.9	1411	5.4	956	1009.44	1010.6	957	1008.1	0	3.9

Total																						23.3
Mean	9.59	15.70		3.32		68.0	92.38		40.58		3.33	4.88	6.15		3.87		1019.53	1022.46		1016.68		
Max	13.83	21.51		8.75		84.0	98.00		64.18		10.17	7.77	9.38		6.21		1033.40	1034.68		1032.15		
Min	5.39	9.99		-1.03		54.8	81.80		24.05		-1.98	3.27	4.18		2.45		1000.06	1001.23		998.63		

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

## 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 1971 to 2000. 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 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 1971 to 2000 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/www1.html>

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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



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

**Month:** Calendar month.

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

Summer, June to August

Autumn, September to November

Winter, December to February.

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

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

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

**Frost:** An air frost day is recorded when the minimum temperature read at 0900 GMT on that day is  $-0.1^{\circ}\text{C}$  or below. A ground frost day is recorded when the grass minimum temperature read at 0900 GMT on that day is  $-0.1^{\circ}\text{C}$  or lower.

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

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

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

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

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

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

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

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

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

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

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

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

## Appendix 2.

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

**VV** : Visibility.

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

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

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

Code figure 89 = visibility above 70 km.

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

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

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

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

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

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

**RH** : Relative humidity at 1.2m, %.

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

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

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

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

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

1 = Increasing then steady or increasing more slowly

2 = Increasing steadily or unsteadily

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

4 = Steady, pressure the same as 3 hours ago

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

6 = Decreasing then steady or decreasing more slowly

7 = Decreasing steadily or unsteadily

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

**ppp** : 3 hour pressure tendency in tenths of a millibar

**ww** : Present weather code figures, 00 to 99.

Present weather decode:

00 = Cloud development not observed or not observable

01 = Clouds generally dissolving or becoming less developed

02 = State of sky on the whole unchanged

03 = Clouds generally increasing or becoming more developed

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Hail includes large hail, small hail and snow pellets.

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

Code figures:

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

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

**Cl :** Type of low cloud

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

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

**Cm :** Type of medium cloud.

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

**Ch :** Type of high cloud

0 = No high cloud

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

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

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

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

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

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

7 = Veil of Cirrostratus covering the celestial dome.

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

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

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

**8 Groups**

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

**C** = Type of cloud

0 = Cirrus (Ci)

1 = Cirrocumulus (Cc)

2 = Cirrostratus (Cs)

3 = Altocumulus (Ac)

4 = Altostratus (As)

5 = Nimbostratus (Ns)

6 = Stratocumulus (Sc)

7 = Stratus (St)

8 = Cumulus (Cu)

9 = Cumulonimbus (Cb)

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

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

00 to 50 = Height in hundreds of feet

51 to 55 Not used

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

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