

# 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

**MARCH 2010**

Temperature (°C / °F)				Anomaly	Rank in the past 129 Years			
Mean maximum	11.3	52.3	+0.7	39 <sup>th</sup> highest				
Mean minimum	2.3	36.1	-0.6	54 <sup>th</sup> highest				
Daily mean	6.8	44.2	0.0	48 <sup>th</sup> highest				
Highest maximum	17.9	64.2	on 24 <sup>th</sup>	Lowest maximum	6.3	43.3	on 7 <sup>th</sup>	
Highest minimum	10.0	50.0	on 25 <sup>th</sup>	Lowest minimum	-6.3	20.7	on 7 <sup>th</sup>	
Mean grass minimum	-0.9	30.4	-0.8	Lowest grass minimum	-11.1	12.0	on 7 <sup>th</sup>	
Mean earth @30 cm	6.3	43.3	-0.6	Earth @100 cm	6.7	44.1		
Frost duration (hrs)	57.2			Rain duration (hrs)	40.7			
Rainfall total (mm / in)	38.8	1.53	83 %	59 <sup>th</sup> lowest				
Highest daily fall	7.4	0.29	on 29 <sup>th</sup>					
Number of: Dry days (<0.2mm)	18	Wet days (>0.9mm)	12	days ≥5mm	3			
Sunshine total (hrs) 124.3	Daily mean	4.01	118 %	Sunniest day	10.8	on 7 <sup>th</sup>		
N° days with: Air frost 9	Ground frost	19	Snow falling	0	Snow lying	0		
Thunder 1	Hail ≥5mm	0	Small hail/ice	3	Fog @09	0	Nil sun 2	
Air pressure MSL : Mean @09 GMT (mbar/in)	1017.3		+1.7	30.04				
Absolute highest	1034.8				30.56	on 7 <sup>th</sup>		
Absolute lowest	981.6				28.99	on 31 <sup>st</sup>		

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

Notes: **Temperature Near Normal, Rainfall Below Normal, Sunshine Above Normal.**

March was a month with two distinct weather regimes. The first half was anticyclonic, dry, cool and sunny, while the second half was cyclonic, wet, relatively mild, and dull. **Temperature:** The mean maximum this March is lowest only since 2008, but the mean min is lowest since 1996, and the resulting mean is lowest since 2006. The highest max is 1.2° above the median, while the lowest max is 1.8° above its median. The lowest min is 2.2° below the median, but is 4.9° above the record value set in 1947. The highest min is 1.1° above its median. The mean grass min is lowest since 2003, but the lowest grass min is only lowest since 2006. Earth temperatures are well below normal, and lowest since 2006. There were 18.9 more frost hours, and 3 more days with air frost, than average. **Rainfall:** Quite a dry March overall, with 8.9 mm less than the average for the past 35 years. The first 17 days were largely dry, having just one fall of 1.7 mm, and 2 dry spells, the first of 11 days ended on the 11<sup>th</sup> and the second of 5 days ended on the 17<sup>th</sup>. Of the remaining 14 days only 2 were dry. No snow fell this month, but small hail or snow pellets were recorded on 3 days, including the 25<sup>th</sup> when hail fell during a thunderstorm. The highest rainfall rate for the month, 64 mm/hr, also occurred during that storm. The total duration of measurable rain is 2.9 hours below average. **Sunshine:** A reasonably sunny March overall, though the first half was far sunnier than the second, with 97.6 hours up to the 16<sup>th</sup>, and only 26.7 hours thereafter. It was particularly sunny over the first 8 days, with 4 having over 80 % of the maximum, and one 77 %. Contrast this with the final 8 days, 5 having less than 10 % of the max, and the best only 35 %. Overall there were 16 days with <3 hours, 9 with =>6 hours and 5 with =>9 hours. **Wind:** The overall mean wind speed of 7.1 mph is 0.6 mph below average. The 31<sup>st</sup> was the windiest day, mean 12.7 mph, but the month's highest gust of 43 mph was on the 25<sup>th</sup>. The 2<sup>nd</sup> was the calmest day, mean 2.9 mph, and there were 378 minutes, (6.30 hours), with a mean speed of 0.5 mph or less. Daily mean direction/number of days: N,1 NE,7 E,1 SE,1 S,5 SW,10 W,3 NW,3. **Humidity:** The overall mean relative humidity was 76.5 %, and the lowest was 32 % on the 18<sup>th</sup>. Mean water vapour content per kg of air was 4.8 g at 0900 GMT and 4.6 g at 1500 GMT. **Commentary: From the 1<sup>st</sup> to the 17<sup>th</sup>:** For most of this period temperatures by day were below normal, with daily anomalies between -0.7° on the 4<sup>th</sup> and -4.5° on the 7<sup>th</sup>. At night, anomalies were between -0.4° on the 13<sup>th</sup> and -9.4° on the 7<sup>th</sup>. Exceptions were positive anomalies for max on the 1<sup>st</sup> and 2<sup>nd</sup>, and after the 13<sup>th</sup>, with an anomaly of +4.0° on the 17<sup>th</sup>. Rainfall was scarce, 16 dry days and only 1.7 mm falling on the 12<sup>th</sup>. Sunshine was plentiful at first, with 61.6 hours up to the 8<sup>th</sup>, but there were several dull days between the 9<sup>th</sup> and 12<sup>th</sup>. Light or moderate winds, temporarily fresh on the 10<sup>th</sup>, were mostly NE'ly until the 11<sup>th</sup>, then backing SW'ly by the 16<sup>th</sup>. **From the 18<sup>th</sup> to the 31<sup>st</sup>:** Temperatures were mostly above normal, with anomalies for daily max between +0.3° on the 23<sup>rd</sup> and +6.8° on the 24<sup>th</sup>, the 31<sup>st</sup> being an exception with an anomaly of -4.7°. Daily anomalies for the min were between -4.2° on the 23<sup>rd</sup> and +6.5° on the 20<sup>th</sup> and 25<sup>th</sup>. Rainfall was plentiful, with only the 21<sup>st</sup> and 27<sup>th</sup> dry days, though there were no high daily totals. Sunshine was generally poor, with no day having more than 46 % of the max, and 10 having less than 20 %. Winds were mainly S'ly or SW'ly, moderate or fresh.

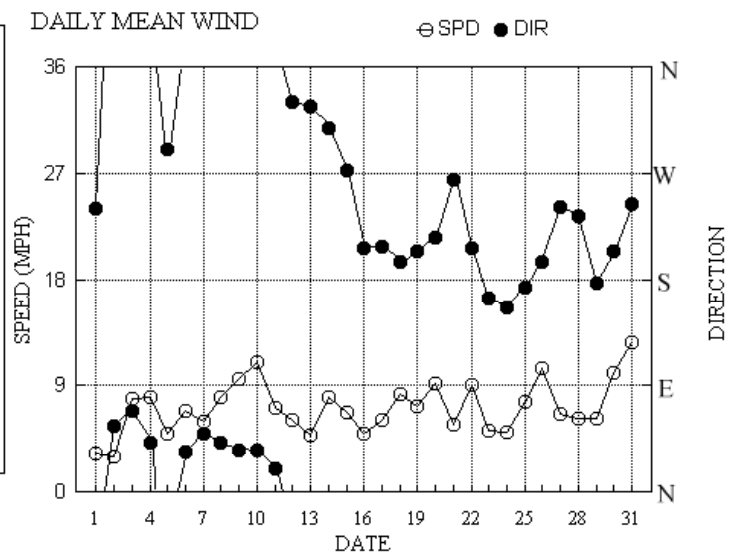
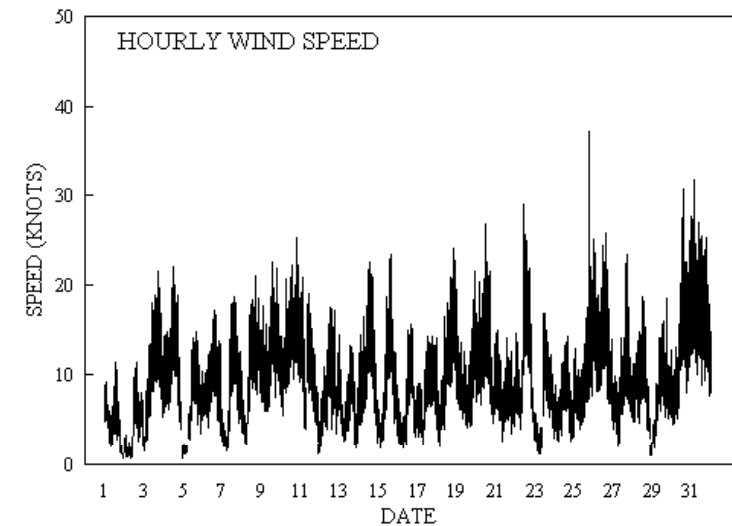
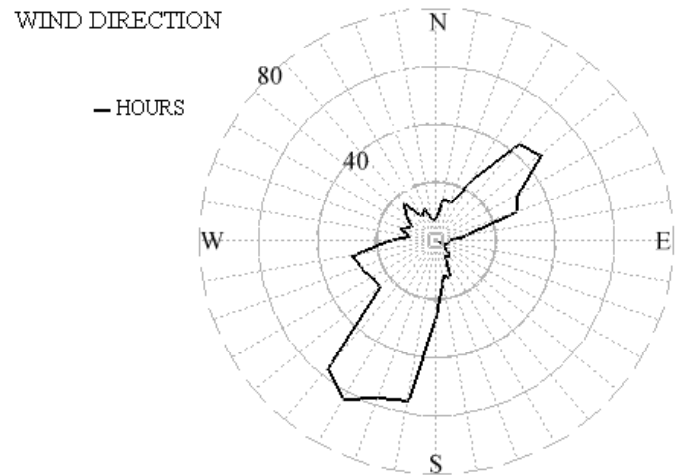
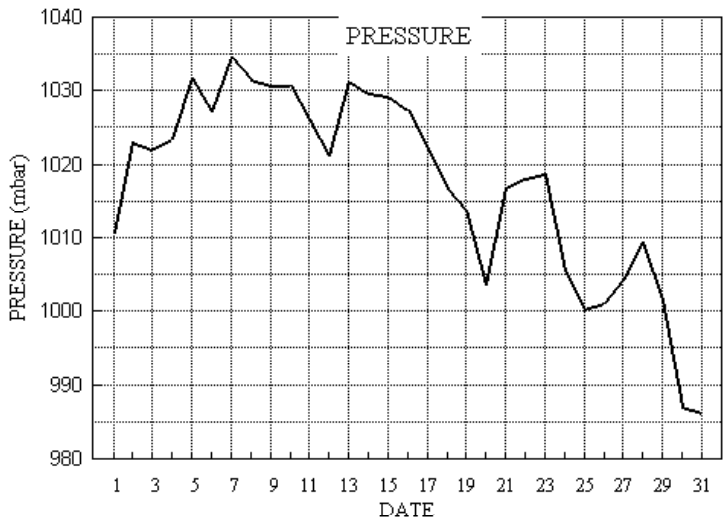
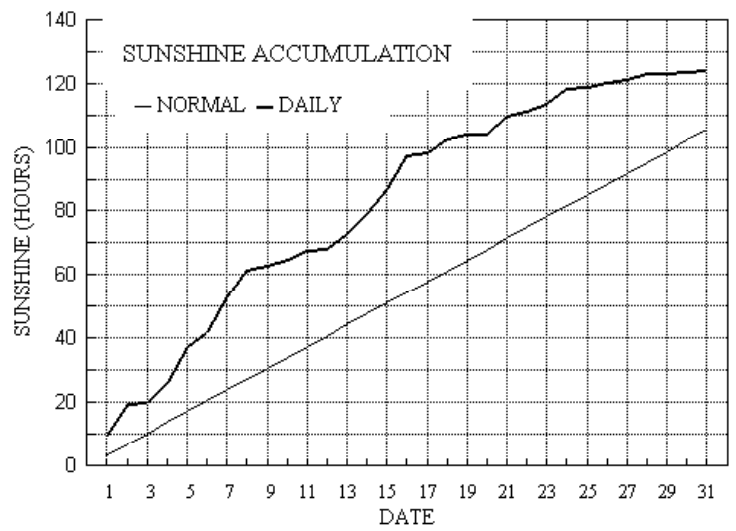
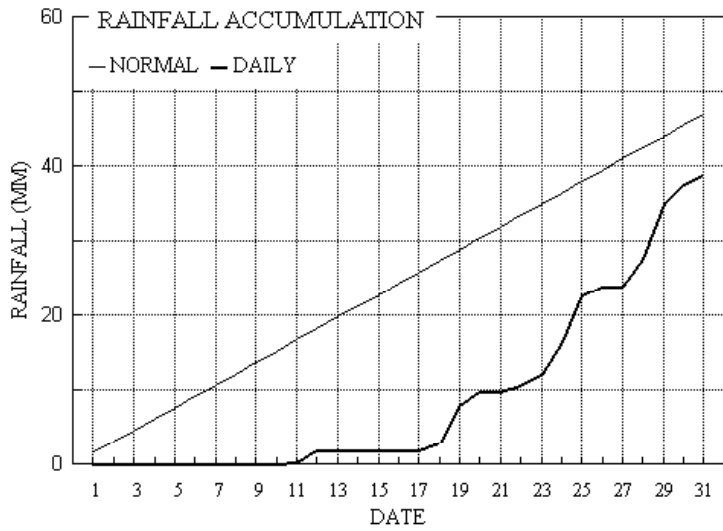
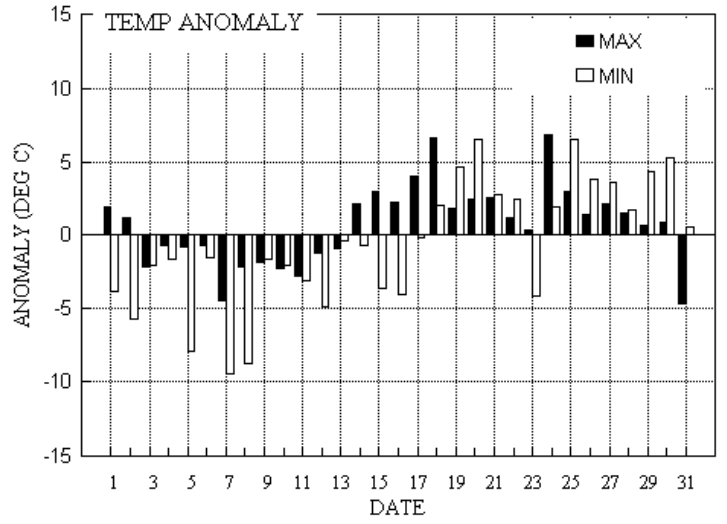
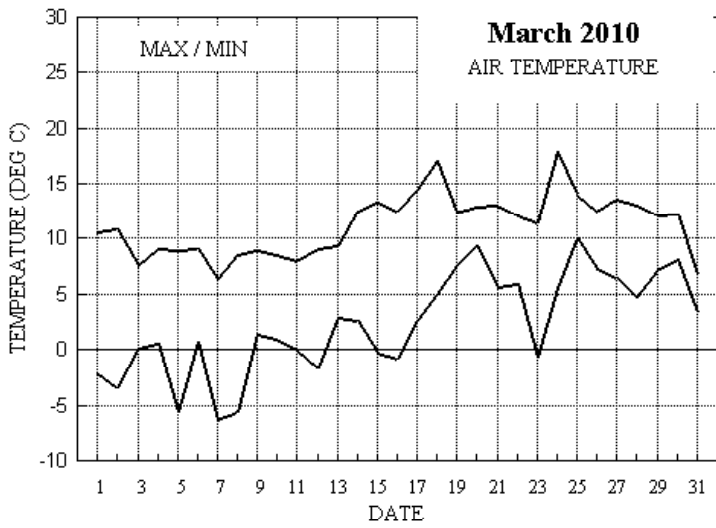
Table 1. Mean anomalies (max, min, rain, sun) for specified periods.

From the 1 <sup>st</sup> to the 10 <sup>th</sup>				From the 11 <sup>th</sup> to the 20 <sup>th</sup>				From the 21 <sup>st</sup> to the 31 <sup>st</sup>			
-1.2°	-4.5°	0 %	191 %	+1.8°	-0.4°	66 %	115 %	+1.4°	+2.6°	171 %	53 %

B J Burton FRMetS

Hon. Met. Officer to Wokingham Town Council.

# Wokingham climatological graphs for March 2010



Month: MARCH 2010

Date	Max		Rain	Grass	30cm		100cr		Sun	Frost	pp09	Af	Sf	Th	Ic	Vec mean			Max gust			High hr			Rain	
	C	C			mm	Min	C	C								hrs	hrs	mbar	Gf	SI	Ha	Fg	ddd	ff		sp
1	10.6	-2.0	0.0	-6.6	5.4	6.3	9.6	5.3	1010.5	1	1	0	0	0	0	0	240	2.1	2.9	225	12	1344	236	5	01	0.0
2	10.9	-3.4	0.0	-7.5	5.1	6.3	9.8	8.5	1023.0	1	1	0	0	0	0	0	56	1.7	2.5	63	12	1421	16	5	12	0.0
3	7.6	0.2	0.0	-3.9	4.8	6.3	0.5	0.0	1022.0	0	1	0	0	0	0	0	68	6.8	6.9	69	22	1615	68	10	15	0.0
4	9.1	0.6	0.0	-2.2	4.7	6.3	6.6	2.5	1023.4	0	1	0	0	0	0	0	41	6.8	7.0	46	22	1216	48	11	11	0.0
5	9.0	-5.6	0.0	-10.1	4.5	6.2	10.6	8.8	1031.8	1	1	0	0	0	0	0	291	3.6	4.3	322	15	1606	307	7	12	0.0
6	9.1	0.7	0.0	-2.2	4.3	6.2	4.9	3.6	1027.1	0	1	0	0	0	0	0	34	4.6	6.0	57	17	1438	62	9	15	0.0
7	6.3	-6.3	0.0	-11.1	4.2	6.1	10.8	14.2	1034.6	1	1	0	0	0	0	0	49	5.2	5.2	42	19	1410	49	9	15	0.0
8	8.6	-5.6	0.0	-10.7	3.7	6.1	8.8	8.4	1031.5	1	1	0	0	0	0	0	41	6.8	6.9	32	21	1643	37	10	16	0.0
9	8.9	1.4	tr	-2.2	3.8	6.0	1.4	0.0	1030.7	0	1	0	0	0	0	0	35	8.1	8.3	24	23	1317	30	12	13	0.0
10	8.5	1.0	0.0	-3.3	4.4	5.9	1.7	0.0	1030.7	0	1	0	0	0	0	0	35	9.5	9.6	35	26	1924	32	12	14	0.0
11	8.0	0.0	0.1	-4.0	4.8	5.8	3.1	1.6	1026.1	0	1	0	0	0	0	0	20	5.8	6.2	27	21	0253	33	10	01	0.2
12	9.1	-1.6	1.7	-6.5	4.8	5.8	0.4	0.0	1021.1	1	1	0	0	0	1	0	330	3.2	5.3	8	18	1253	314	8	10	0.8
13	9.4	2.9	0.0	-1.0	5.2	5.9	5.0	0.0	1031.3	0	1	0	0	0	0	0	327	3.7	4.2	13	15	0031	309	7	15	0.0
14	12.5	2.6	0.0	-2.3	5.5	6.0	6.2	0.0	1029.7	0	1	0	0	0	0	0	308	6.6	6.9	308	23	1229	322	12	11	0.0
15	13.3	-0.3	0.0	-4.6	5.6	6.1	7.7	0.2	1029.2	1	1	0	0	0	0	0	272	5.6	5.9	266	24	1432	274	11	14	0.0
16	12.6	-0.8	0.0	-5.3	5.6	6.2	10.5	1.4	1027.3	1	1	0	0	0	0	0	206	4.1	4.3	216	16	1555	210	8	15	0.0
17	14.5	2.7	0.1	-1.6	5.8	6.3	1.0	0.0	1022.1	0	1	0	0	0	0	0	208	5.1	5.2	248	15	1241	213	7	19	0.2
18	17.1	5.0	1.0	1.6	6.3	6.3	4.0	0.0	1016.6	0	0	0	0	0	0	0	195	6.9	7.2	196	24	1920	206	12	20	2.9
19	12.4	7.6	5.0	3.9	7.0	6.5	1.4	0.0	1013.8	0	0	0	0	0	0	0	204	6.0	6.3	201	22	2207	202	10	21	5.2
20	13.0	9.4	1.8	10.3	7.4	6.7	0.0	0.0	1003.6	0	0	0	0	0	0	0	216	6.7	7.9	210	27	1141	211	11	11	3.4
21	13.1	5.7	0.0	4.7	7.9	6.8	5.7	0.0	1016.9	0	0	0	0	0	0	0	265	2.6	4.9	342	15	0122	350	7	02	0.0
22	12.2	6.0	0.9	3.0	8.0	7.0	1.5	0.0	1018.0	0	0	0	0	0	0	0	207	7.7	7.8	209	29	1038	209	14	10	1.4
23	11.4	-0.7	1.4	-5.2	7.7	7.2	2.6	2.7	1018.6	1	1	0	0	0	0	0	164	4.0	4.5	160	17	1022	165	9	12	1.7
24	17.9	5.5	4.3	4.6	7.7	7.3	4.4	0.0	1005.4	0	0	0	0	0	0	0	156	3.3	4.4	142	14	1536	163	8	15	3.5
25	14.1	10.0	6.3	9.3	8.5	7.4	0.7	0.0	1000.3	0	0	0	0	1	0	1	173	6.2	6.6	204	37	1707	201	12	23	2.0
26	12.6	7.3	1.2	5.3	8.7	7.6	1.6	0.0	1001.2	0	0	0	0	0	0	0	195	9.1	9.1	204	26	1436	192	13	11	1.0
27	13.7	6.5	tr	2.9	8.7	7.8	0.7	0.0	1004.1	0	0	0	0	0	0	0	242	5.0	5.8	266	24	1723	253	9	15	0.0
28	13.1	4.7	3.8	-0.6	8.7	7.9	1.8	0.0	1009.4	0	1	0	0	0	0	0	234	5.1	5.4	262	19	1215	247	9	12	7.4
29	12.1	7.2	7.4	7.0	8.9	8.1	0.0	0.0	1001.5	0	0	0	0	0	0	0	177	5.0	5.4	164	19	1716	179	8	12	4.9
30	12.3	8.2	2.6	8.1	9.1	8.2	0.8	0.0	987.1	0	0	0	0	0	0	0	204	8.3	8.7	221	31	1328	218	14	13	5.4
31	6.8	3.4	1.2	2.6	8.8	8.3	0.5	0.0	986.3	0	0	0	0	0	1	0	244	10.2	11.0	221	32	0348	215	13	03	0.7
Total			38.8				124.3	57.2																		40.7
Mean	11.3	2.3		-0.9	6.3	6.7	4.01	1.8	1017.3								222	1.1	6.2							
Anom	+0.7	-0.6	83%		-0.6	-0.8	118%		+1.7																	
Daily mean	6.8																									
Anom	+0.0																									

Number of days with:

Air frost = 9      Ground frost = 19      Nil sun = 2  
 Snow falling = 0      Snow lying = 0      Thunder = 1  
 Hail=>5mm = 0      Hail<5mm or ice = 3      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. SI = 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 March 2010

Date	VV	N	dd	ff	gg	TT	Td	RH	r	PPP	a	ppp	ww	W1	W2	Nh	Cl	hCr	Cl	NCh	shs	NCh	shs	NCh	shs	Date	Remarks	
1	75	1	25	03	05	3.4	1.6	88	4.2	1010.5	2	019	02	0	0	0	0	0	0	2	81075					1	Ci edge SSW Hoar slt	
2	62	1	00	00	02	2.1	0.9	91	4.0	1023.0	2	028	02	0	0	1	1	6	0	1	81845					2	1Ci75 COTRA Cu hum Hoar mod Gnd frzn	
3	65	8	09	07	13	3.5	-0.1	77	3.7	1022.0	6	006	02	2	2	1	1	4	1	7	81818	83465	88270			3	COTRA Halo 22° part	
4	80	7	05	09	15	3.6	0.4	79	3.8	1023.4	2	024	03	2	2	5	8	4	0	2	81815	85625	87070			4	COTRA Cu fra Halo 22° part. Parhelion	
5	80	0	25	04	07	0.7	-2.9	77	3.0	1031.8	5	000	02	0	0	0	0	0	0	0	0						5	Elev hz lyr Hoar mod Gnd frzn
6	60	7	03	05	11	4.5	1.9	83	4.3	1027.1	1	012	05	2	2	7	5	4	/	1	81710	87630					6	2Sc15 /Ci75
7	65	0	04	05	09	-0.2	-4.0	76	2.8	1034.6	2	007	02	0	0	0	0	0	0	0	0						7	Hoar slt Gnd frzn
8	86	1	05	07	14	1.4	-4.3	66	2.7	1031.5	0	002	02	0	0	1	5	7	0	1	81656						8	1Ci80 COTRA Hoar slt Gnd sfc frzn
9	66	7	05	07	14	4.0	1.0	81	4.0	1030.7	2	016	02	2	2	7	5	4	/	/	87612						9	
10	78	8	04	09	16	3.3	-2.1	68	3.2	1030.7	1	007	02	2	2	8	5	5	/	/	88620						10	
11	63	7	03	10	18	4.5	0.4	75	3.9	1026.1	2	003	03	1	1	2	1	4	0	1	82815	86078					11	COTRA Cu hum/fra
12	65	7	27	03	08	5.3	1.1	74	4.1	1021.1	5	002	02	6	2	7	5	5	/	/	82620	87650					12	1Sc35
13	73	5	35	03	08	5.4	1.0	73	4.0	1031.3	2	013	01	2	2	3	8	4	0	1	81818	83628					13	3Ci80 COTRA Cu fra
14	82	2	32	08	18	7.0	2.0	71	4.3	1029.7	2	006	02	1	1	2	8	5	0	0	81820						14	2Sc56 Cu fra
15	72	6	26	05	12	8.1	3.0	70	4.6	1029.2	2	003	03	1	1	0	0	0	0	1	86075						15	COTRA U/a cont
16	78	7	20	03	05	6.0	-0.3	64	3.6	1027.3	2	004	03	1	1	1	5	6	0	1	81635	83072	86080				16	1Sc50 COTRA Parhelion
17	61	8	21	06	11	8.0	2.6	69	4.5	1022.1	2	003	02	2	2	2	0	9	7	7	81366	88270					17	2As68 COTRA Halo 22° part
18	59	7	18	04	10	9.8	4.0	67	5.1	1016.6	8	015	05	2	2	2	0	9	3	1	82366	83075	86080				18	COTRA
19	65	7	21	04	13	9.5	6.8	84	6.1	1013.8	0	004	03	2	2	7	5	4	/	1	87612	87072					19	
20	23	8	20	08	19	12.2	11.2	94	8.3	1003.6	8	008	05	6	5	8	5	3	/	/	87708	88612					20	Radz mod
21	59	7	28	02	06	7.2	4.4	83	5.2	1016.9	2	032	05	1	1	2	5	3	7	1	81708	85359	85078				21	2Sc56 COTRA
22	75	7	20	05	12	9.1	4.9	75	5.4	1018.0	7	007	03	2	2	6	5	6	3	1	86635						22	/Ac65 /Ci75 COTRA
23	57	8	06	03	04	5.7	5.4	98	5.5	1018.6	7	004	10	2	2	3	0	9	3	7	83368	88272					23	COTRA Halo 22° part
24	56	7	19	03	08	10.1	7.8	86	6.6	1005.4	5	003	05	6	2	7	0	9	7	/	81359	85362	87365				24	
25	57	7	18	05	10	10.9	8.9	88	7.1	1000.3	4	000	05	2	2	4	6	4	7	2	83710	83360	87365				25	2Sc25 /Ci70 COTRA
26	68	7	19	08	20	9.4	5.6	77	5.8	1001.2	3	002	02	2	2	7	5	4	/	/	87615						26	
27	62	7	26	05	10	9.3	7.3	87	6.4	1004.1	2	021	03	2	2	7	5	4	/	/	83710	87615					27	/Sc50
28	81	7	24	08	15	8.9	5.7	80	5.7	1009.4	4	000	03	2	2	4	8	4	3	1	81815	83625	87075				28	2Sc56 3Ac63 COTRA Cu hum
29	59	7	20	05	14	9.9	9.0	94	7.1	1001.5	6	010	05	6	5	7	6	3	/	/	87708						29	/Sc56
30	65	8	19	06	14	8.9	7.3	89	6.5	987.1	7	003	02	6	2	4	8	4	7	/	82815	83645	88462				30	2Ac60 Cu med
31	63	8	26	15	27	4.1	2.0	86	4.5	986.3	3	038	61	6	2	6	7	4	2	/	86712	88518					31	

Mean vis = 18.6 km

Mean cloud = 5.9 74%

Mean wind speed = 5.6 kn

Mean gust = 12 kn

Mean TT = 6.3 °C

Mean Td = 3.0 °C

Mean RH = 79.7 %

Mean r = 4.8 g/kg

Mean PPP = 1017.3 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.

Weather observations. Emmbrook, Wokingham, Berkshire.

Observations at 1500 GMT for March 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	NChshs	Date	Remarks
1	84	4	26	01	11	9.5	-0.9	48	3.5	1012.3	3	001	02	0	0	2	1	6	0	1	82840	83075			1	COTRA Cu hum
2	86	6	06	03	12	9.9	-4.4	36	2.7	1024.0	8	001	02	2	2	1	1	7	0	8	81850	86078			2	1Cs72 COTRA Cu hum
3	78	7	06	09	18	6.2	-1.4	59	3.5	1019.0	7	020	02	2	2	5	0	9	1	8	85463	87270			3	COTRA Halo 22° part
4	84	4	02	10	17	6.6	-1.7	55	3.0	1026.0	1	007	02	1	1	2	4	6	0	1	81840	83075			4	2Sc45 COTRA Cu hum
5	70	7	29	07	14	8.6	-0.9	51	3.5	1028.6	8	022	03	1	1	1	1	6	4	5	81838	86080			5	2Ac64 2Cs75 COTRA Cu hum
6	78	3	06	07	16	6.9	-3.4	48	2.9	1027.8	3	002	02	1	1	3	4	6	0	1	81840	83645			6	1Ci75 COTRA Cu hum
7	81	1	06	07	18	5.6	-6.5	41	2.2	1032.3	7	016	02	0	0	1	1	6	0	1	81845				7	1Ci75
8	84	5	05	09	17	8.1	-2.8	46	3.0	1028.4	7	023	03	1	1	1	8	6	3	0	81840	85357			8	1Sc56 Cu hum Ac str vir
9	75	7	03	10	20	8.1	0.3	58	3.8	1029.6	7	004	02	2	2	7	8	6	/	/	81832	87650			9	2Sc40 Cu med
10	80	7	04	11	22	5.6	-0.9	63	3.5	1028.0	6	017	02	2	2	7	5	5	/	/	87625				10	
11	63	7	01	05	15	6.1	-3.1	52	3.0	1023.5	7	017	02	2	2	7	5	6	/	/	87635				11	
12	68	7	34	05	08	7.1	4.2	82	5.1	1021.6	1	006	80	8	2	7	8	4	/	1	81715	83820	87650		12	1Sc30 /Ci75 Cu med
13	75	7	32	08	13	8.8	1.3	59	4.1	1030.3	7	009	02	2	2	7	5	6	/	/	87632				13	
14	84	7	32	09	19	11.8	0.0	44	3.7	1028.0	6	009	03	1	1	7	8	6	/	/	84845	85656			14	Cu hum Absent vv&cld est
15	84	6	27	10	24	12.6	-0.2	41	3.7	1026.2	7	021	02	2	2	3	4	7	0	1	81850	83656	85075		15	COTRA Cu hum
16	75	6	21	06	15	11.9	-0.9	41	3.6	1025.1	7	015	02	2	2	0	0	9	0	1	83072	85078			16	COTRA Cz arc Halo 22° part Paranthelion
17	63	8	23	07	14	13.7	5.5	58	5.5	1021.5	6	007	02	2	2	1	8	6	3	7	81845	88270			17	1Sc50 1Ac58 COTRA Halo 22° part Parhelia
18	62	8	18	09	16	15.7	1.7	39	4.3	1011.8	7	026	03	2	2	7	0	9	7	7	85361	86463	88268		18	COTRA Halo 22° part
19	40	8	18	05	11	11.4	10.7	95	8.0	1010.9	8	021	50	5	2	8	7	2	/	/	86704	88708			19	
20	62	8	21	10	21	11.9	10.7	92	8.1	1002.4	7	007	51	6	5	8	5	3	/	/	86708	88618			20	
21	82	7	24	03	11	11.8	4.0	59	5.0	1019.0	1	002	02	2	2	6	8	6	0	1	82835	85645	87075		21	COTRA Cu hum
22	70	8	21	13	25	10.6	4.2	64	5.2	1016.1	6	008	60	6	2	7	5	6	2	/	87630	88550			22	
23	60	8	16	07	15	10.2	8.6	90	7.0	1013.9	7	028	50	6	5	8	5	3	/	/	86707	88612			23	
24	82	7	17	07	12	16.8	7.1	53	6.3	1002.9	7	016	03	1	1	1	1	6	7	1	81835	83361	86365		24	1Ac59 /Ci75 Cu hum COTRA
25	61	8	15	08	16	11.7	10.5	92	8.0	996.7	7	022	60	6	2	8	5	3	/	/	82708	87612	88620		25	
26	80	6	20	10	26	11.8	5.3	64	5.6	1000.3	6	005	15	8	2	4	8	5	0	1	83828	83075			26	2Sc50 COTRA Cu con jpW
27	82	7	26	08	14	12.9	4.3	56	5.1	1005.9	2	005	15	8	2	7	8	6	/	/	82835	83645	86656		27	Cu con jpW&NW
28	86	7	26	06	18	12.7	3.5	54	5.0	1006.7	7	015	03	2	2	6	8	6	3	1	82838	85650	85075		28	3Ac60 COTRA Absent vv&cld est
29	62	8	16	07	16	11.0	8.5	84	7.0	996.5	8	032	62	6	2	2	8	4	2	/	81812	88550			29	2Sc25 Cu hum
30	65	8	23	13	28	6.1	3.3	82	4.9	985.9	3	015	60	8	6	6	5	4	2	/	82715	85620	88530		30	
31	58	8	28	11	23	5.3	1.1	75	4.2	994.4	2	033	80	8	6	8	8	4	/	/	81715	85830	88650		31	2Sc40 Cu med vv40k ex N

Mean vis = 28.5 km

Mean cloud = 6.6 83%

Mean wind speed = 7.8 kn

Mean gust = 17 kn

Mean TT = 9.9 °C

Mean TdTd = 2.2 °C

Mean RH = 60.7 %

Mean r = 4.6 g/kg

Mean PPP = 1016.0 mbar

See appendix 2 below for full code details

VV = Visibility code (Code FM12-4377)

N = Total cloud amount, oktas

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

ff = 10 minute mean wind speed, knots

gg = Highest gust in past hour, knots

TT = Air temperature at 1.2 m, deg Celsius

TdTd = Dew point temperature at 1.2 m, deg Celsius

RH = Relative humidity at 1.2 m

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

PPP = Air pressure reduced to sea level, mbar

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

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.



March 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	3.52	10.2	1518	-2.1	629	77.8	97.9	745	44.3	1520	-0.41	3.69	4.8	1017	3.2	628	1011.33	1017.3	2359	1004.4	0	0.1
2	3.08	10.5	1526	-3.1	640	73.8	98.0	404	32.3	1534	-1.93	3.27	4.2	941	2.4	1534	1022.72	1025.8	2102	1017.2	2	0.1
3	3.25	7.4	1323	0.2	17	75.5	93.4	419	53.2	1325	-0.89	3.53	3.9	318	2.9	1740	1020.75	1025.3	1	1017.7	2006	0.1
4	3.07	8.9	1318	-3.1	2356	72.5	92.2	644	44.0	1559	-1.80	3.31	4.1	1012	2.6	2353	1024.89	1031.2	2358	1019.2	25	0.0
5	2.23	9.0	1510	-5.4	638	73.6	95.7	649	47.3	1553	-2.45	3.15	4.0	2317	2.3	634	1029.87	1032.0	753	1026.7	2356	0.0
6	3.49	8.7	1258	-2.1	2334	71.9	92.0	548	43.4	1320	-1.40	3.44	4.5	824	2.4	2205	1028.08	1032.6	2357	1025.6	419	0.0
7	-0.13	6.2	1402	-5.8	637	65.9	93.5	648	36.6	1426	-6.26	2.34	2.9	1011	1.7	1810	1033.06	1034.8	834	1031.5	1711	0.0
8	1.93	8.5	1502	-5.2	559	67.6	90.2	601	33.8	1147	-3.89	2.84	4.0	2350	1.9	1147	1029.89	1032.5	5	1027.6	2042	0.0
9	5.04	9.0	1311	1.9	700	72.9	86.2	46	51.1	1159	0.42	3.85	4.4	1008	3.4	1159	1029.74	1031.0	2113	1028.3	12	0.0
10	3.89	8.1	1233	1.2	323	68.9	78.3	255	54.0	1233	-1.36	3.38	4.0	1231	3.1	930	1029.04	1031.0	904	1026.9	2352	0.0
11	3.60	8.2	1108	-1.4	2220	67.5	90.6	721	47.1	1312	-2.10	3.22	4.0	901	2.8	2152	1024.89	1027.2	17	1023.2	1634	0.0
12	5.14	9.1	1206	1.1	19	76.6	89.9	1313	62.8	1206	1.35	4.19	5.6	1321	3.1	125	1022.74	1027.8	2358	1020.7	1234	1.8
13	6.13	9.4	1524	2.5	2011	72.3	88.5	420	55.3	1422	1.35	4.11	4.6	115	3.6	952	1030.21	1031.6	949	1027.6	0	0.0
14	8.02	12.6	1434	4.4	2352	60.3	77.9	2354	40.1	1134	0.50	3.87	4.6	1031	3.3	1134	1029.02	1030.0	118	1027.7	1546	0.0
15	7.21	13.4	1352	-0.5	349	65.2	95.9	358	37.6	1420	0.52	3.89	4.9	955	3.3	2329	1027.79	1029.8	130	1025.5	1622	0.1
16	6.07	12.6	1511	-0.7	442	63.7	90.6	446	36.0	1423	-0.88	3.52	4.1	955	3.0	1358	1025.96	1027.5	901	1023.8	2359	0.0
17	8.32	14.3	1421	2.7	524	75.8	95.3	2359	55.5	1424	4.13	5.11	6.2	1230	3.8	31	1022.04	1023.9	0	1021.0	1632	0.1
18	10.71	17.0	1316	4.9	359	73.7	97.6	411	32.3	1319	5.39	5.64	7.8	2104	3.7	1322	1014.91	1021.5	17	1011.0	2056	0.9
19	10.25	11.8	1826	7.5	633	92.6	96.2	1356	80.4	912	9.10	7.21	8.2	1818	5.9	831	1010.80	1014.0	816	1005.5	2151	3.3
20	11.27	12.9	1307	8.0	2353	93.8	96.6	208	88.6	1704	10.31	7.86	8.6	957	6.1	2358	1003.95	1007.3	2359	1001.8	1612	2.1
21	8.58	13.0	1537	5.7	659	77.4	95.0	231	48.2	1629	4.58	5.25	6.2	2	4.2	1646	1016.74	1020.9	2039	1007.3	1	0.5
22	8.12	12.3	1233	2.3	2359	82.4	96.6	2354	53.6	1233	5.08	5.44	6.4	1849	4.3	2359	1017.88	1020.3	24	1015.6	1713	0.9
23	6.41	11.3	1214	-0.9	517	93.2	99.4	649	66.0	1048	5.32	5.68	7.2	1750	3.5	445	1015.76	1019.6	203	1010.1	2350	1.3
24	11.54	17.7	1435	7.1	534	79.8	98.1	457	44.1	1442	7.79	6.62	7.9	2359	5.3	1442	1004.67	1010.2	12	1001.3	2354	2.7
25	10.88	14.1	1223	8.2	2109	87.9	96.8	2	73.6	1232	8.92	7.22	8.4	1411	5.5	2359	998.72	1001.5	0	994.8	1655	7.0
26	9.39	12.5	1418	7.0	2358	77.2	91.2	2359	59.6	1617	5.51	5.67	6.3	1338	5.2	1617	1000.58	1001.5	632	999.1	10	1.2
27	9.32	13.7	1341	5.5	2340	78.5	93.9	455	55.0	1459	5.58	5.69	6.9	932	4.7	1914	1005.19	1010.5	2358	1000.3	204	0.1
28	8.64	13.0	1437	4.6	317	79.5	96.8	2352	50.7	1425	5.03	5.47	6.5	2333	4.6	1413	1007.64	1010.5	104	1004.2	2355	3.1
29	9.69	11.9	1141	7.2	404	92.4	97.8	616	79.1	1156	8.50	6.99	7.7	1844	6.1	404	998.39	1004.4	100	990.8	2351	6.0
30	7.79	12.1	1122	5.1	2208	84.7	95.3	134	64.3	1119	5.32	5.76	7.4	48	4.3	2325	986.92	990.9	0	983.5	1237	2.2
31	4.46	6.8	1218	1.9	2247	77.2	90.9	728	59.6	1234	0.74	4.10	4.8	759	3.3	2105	991.31	1002.7	2357	981.6	354	2.9
Total																						36.5
Mean	6.48	11.16		1.89		76.5	93.17		52.57		2.32	4.69	5.65		3.72		1016.63	1020.22		1012.95		
Max	11.54	17.69		8.16		93.8	99.40		88.60		10.31	7.86	8.63		6.13		1033.06	1034.79		1031.50		
Min	-0.13	6.25		-5.82		60.3	77.90		32.26		-6.26	2.34	2.93		1.74		986.92	990.90		981.65		

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

## **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 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.