

# WOKINGHAM

# METEOROLOGICAL

# DATA

Wokingham Climatological Station, Emmbrook, Berkshire.

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

## Monthly Means and Totals

## FEBRUARY 2010

Temperature (°C / °F)	Anomaly		Rank in the past 129 years				
Mean maximum	7.0	44.6	-0.9	38 <sup>th</sup> lowest			
Mean minimum	1.2	34.2	-0.1	63 <sup>rd</sup> highest			
Daily mean	4.1	39.4	-0.5	47 <sup>th</sup> lowest			
Highest maximum	11.6	52.9	on 5 <sup>th</sup>	Lowest maximum	2.8	37.0	on 8 <sup>th</sup>
Highest minimum	6.5	43.7	on 25 <sup>th</sup>	Lowest minimum	-3.7	25.3	on 21 <sup>st</sup>
Mean grass minimum	-1.4	29.5	+0.3	Lowest grass minimum	-8.3	17.1	on 20 <sup>th</sup>
Mean earth @30 cm	4.3	39.7	-0.8	Earth @100 cm	6.1	43.0	
Frost duration (hrs)	53.7			Rain duration (hrs)	(78.4)	*	
Rainfall total (mm / in)	70.8	2.79	171 %	23 <sup>rd</sup> highest			
Highest daily fall	11.9	0.47	on 21 <sup>st</sup>				
Number of: Dry days (<0.2mm)	6	Wet days (>0.9mm)	15	days ≥5mm	6		
Sunshine total (hrs) 58.0	Daily mean	2.07	80 %	Sunniest day	7.8	on 17 <sup>th</sup>	
N° days with: Air frost 9	Ground frost	17	Snow falling	12	Snow lying	1	
Thunder 0	Hail ≥5mm	0	Small hail/ice	3	Fog @09	0	Nil sun 9
Air pressure MSL : Mean @09 GMT (mbar/in)	1003.4	-13.3	29.63				
Absolute highest	1025.1	30.24	on 12 <sup>th</sup>				
Absolute lowest	977.3	28.86	on 25 <sup>th</sup>				

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

\* Excludes snowfall/ice on 17<sup>th</sup> and 18<sup>th</sup>.

Notes:

### Wet and Dull with Below Normal Temperature.

**Temperature:** After the very cold January this year, a February mean temperature 0.5° below average comes as something of a relief. The mean temperature is lowest since 2006, and before that 1996, likewise the mean maximum. However the mean min is lowest only since 2008, and there have been 3 Februarys since 1996 with a lower value. The highest max is 1.4° below the median, and is equal lowest with 2006 since 1993. The lowest max is 0.4° above the median. The highest min is 1.5° below the median, while the lowest min is 1.4° above its median. The lowest grass min is equal highest with 2002 since 1997. Earth temperature at 30 cm depth is lowest since 1996, and was also well below normal at 1 m depth. The duration of air frost is 41.7 hours below normal and lowest since 2002. The number of days with air frost and ground frost are both near average. **Rainfall:** This has been a wet February, though there have been three wetter since 2000, the last in 2007. Perhaps the main characteristic was an absence of dry weather, with the number of dry days fewest since before 1976, although the number of days with =>5 mm has been equaled or exceeded 5 times in the same period. Much more rain fell in the second half of the month than the first, the ratio being 33 to 5. Snow fell on 12 days, which is the most since 1987, and is 7 more than average, though on all but one it melted as it fell, and was mostly accompanied by rain. Lying snow was recorded on the 1<sup>st</sup> only, depth 1 cm at 09 GMT. Small hail or ice pellets fell on the 5<sup>th</sup>, 13<sup>th</sup> and 22<sup>nd</sup>. **Sunshine:** This has been a dull February, with fewest sunshine hours since 2005. Two periods were especially dull, the 12<sup>th</sup> to the 16<sup>th</sup> when a total of only 1.1 hours was recorded, and the 21<sup>st</sup> to the 25<sup>th</sup> which had only 2.2 hours. Just 7 days had >50 % of the maximum. Overall there were 18 days with <3 hours and only 2 with =>6 hours. **Wind:** The mean wind speed of 6.9 mph is 1.2 mph below average, yet is highest since 2006. The windiest day was the 26<sup>th</sup>, mean 12.4 mph, and the month's highest gust of 50 mph was also on that day. The 14<sup>th</sup> was the least windy day, mean 3.5 mph, and there were 358 minutes, (5.97 hours) with a mean speed of 0.5 mph or less. Daily mean direction/number of days ; N,7 NE,3 E,1 SE,3 S,7 SW,3 W,3 NW,1. **Humidity:** The overall mean relative humidity was 86.1 %, and the lowest value was 46 % on the 11<sup>th</sup>. The mean water vapour content per kg of air was 4.4 g at both 0900 and 1500 GMT. **Pressure:** The mean air pressure was lowest for February since before 1976, and probably since 1966, as was the month's absolute highest. **Commentary: From the 1<sup>st</sup> to the 6<sup>th</sup> :** Temperatures were generally above normal, with daily anomalies in the range +3.6° for the max on the 5<sup>th</sup> to -2.1° for the min on the 1<sup>st</sup>. The 1<sup>st</sup> and 6<sup>th</sup> were dry days, although there was snow on the 1<sup>st</sup> before 0900 GMT attributed to the 31<sup>st</sup> Jan, otherwise 6.8 mm fell. Sunny at times on the 1<sup>st</sup>, 5<sup>th</sup> and 6<sup>th</sup> otherwise dull. Moderate W'ly winds on the 1<sup>st</sup> backed light S'ly on the 5<sup>th</sup> and became NE'ly on the 6<sup>th</sup>. **From the 7<sup>th</sup> to the 16<sup>th</sup> :** Temperatures generally below normal, with daily anomalies of -5.2° for the max on the 8<sup>th</sup> and -2.3° for the min on the 9<sup>th</sup>. Mostly small amounts of rain, 2.4 mm up to the 14<sup>th</sup>, then 12.4 mm in two days. Mostly dull, except on the 10<sup>th</sup> and 11<sup>th</sup>. Light NE'ly winds on the 7<sup>th</sup> increased fresh on the 8<sup>th</sup>, dropped light by the 12<sup>th</sup> and became S'ly on the 16<sup>th</sup>. **From the 17<sup>th</sup> to the 28<sup>th</sup> :** Temperatures rather variable, with daily anomalies for max between -4.7° on the 22<sup>nd</sup> to +3.0° on the 24<sup>th</sup>, and for min, -4.9° on the 21<sup>st</sup> to +4.7° on the 25<sup>th</sup>. Sunshine was also variable with 8 dull days and 4 fairly sunny. Light SE'ly winds on the 17<sup>th</sup> became moderate W'ly on the 19<sup>th</sup>, backed light S'ly on the 21<sup>st</sup>, increased fresh E'ly on 22<sup>nd</sup>, became mainly moderate and veered NW'ly by the 28<sup>th</sup>, except for a strong W'ly on the 26<sup>th</sup>.

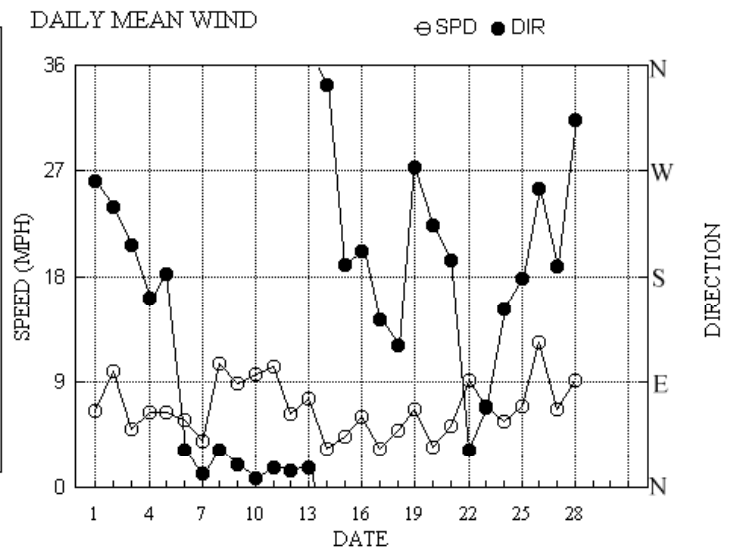
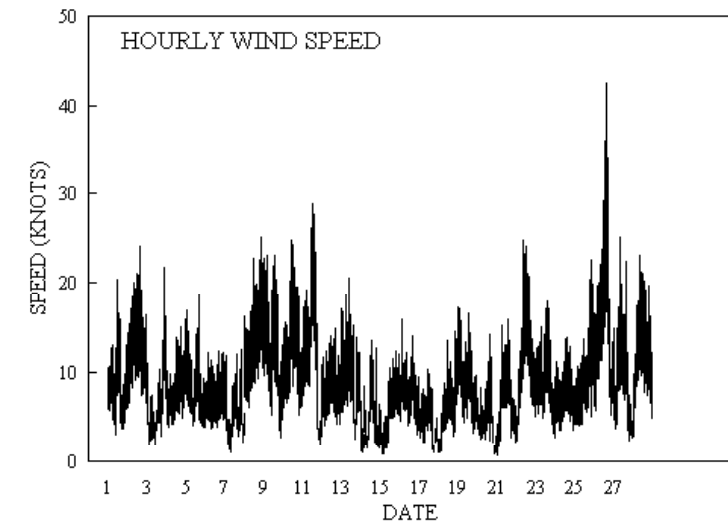
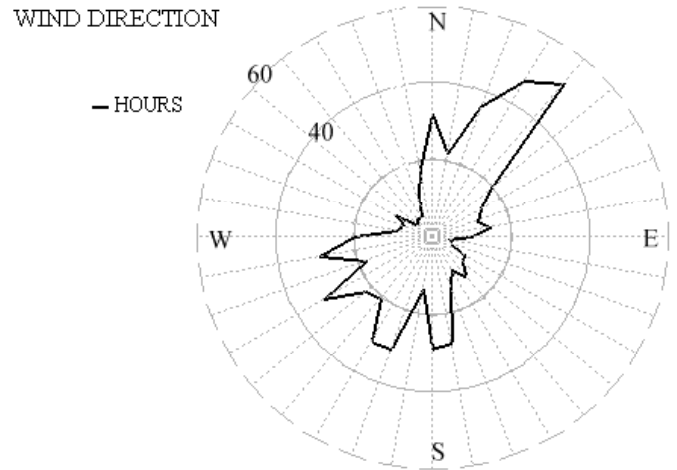
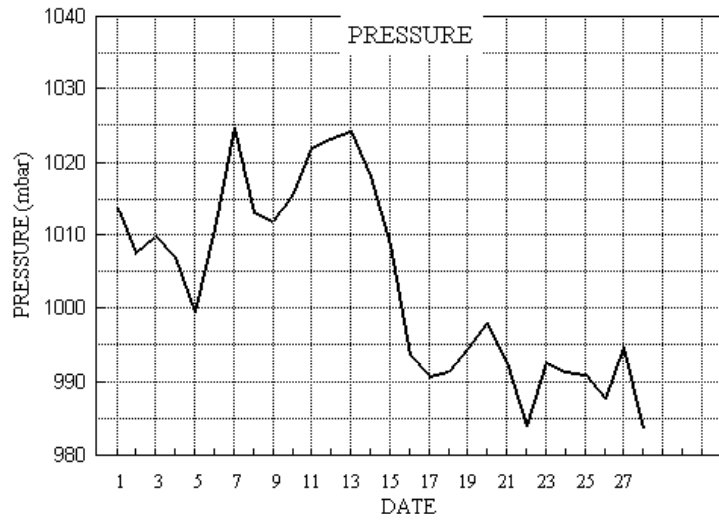
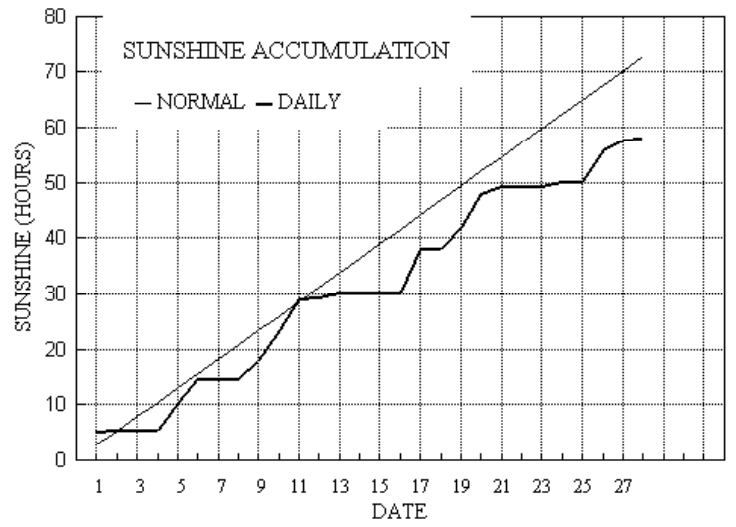
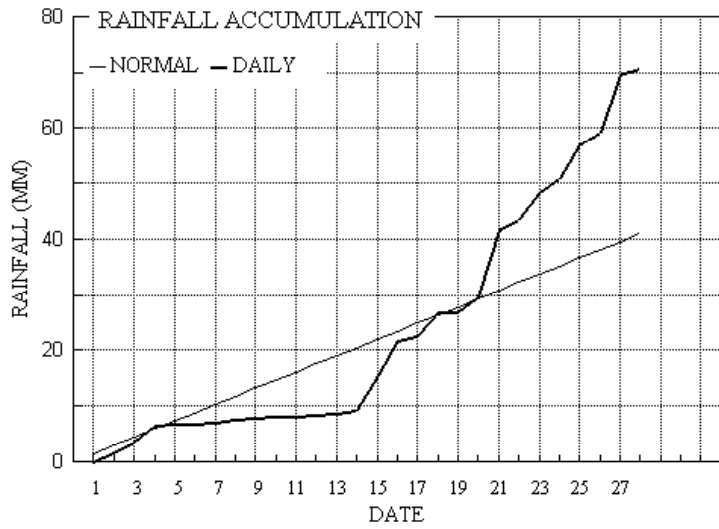
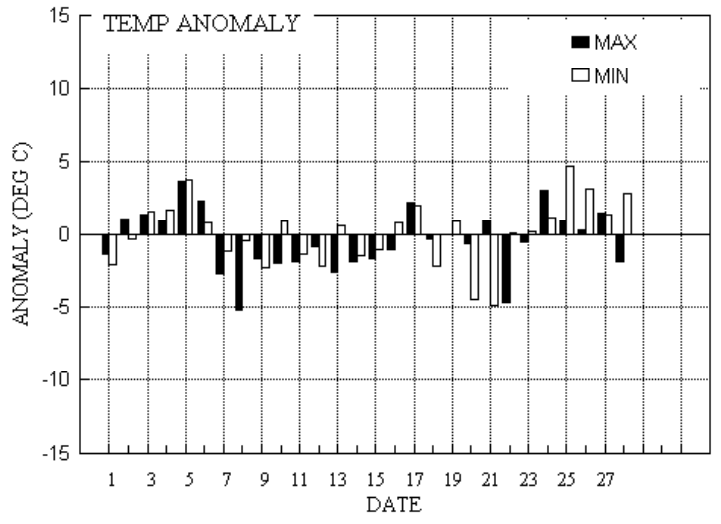
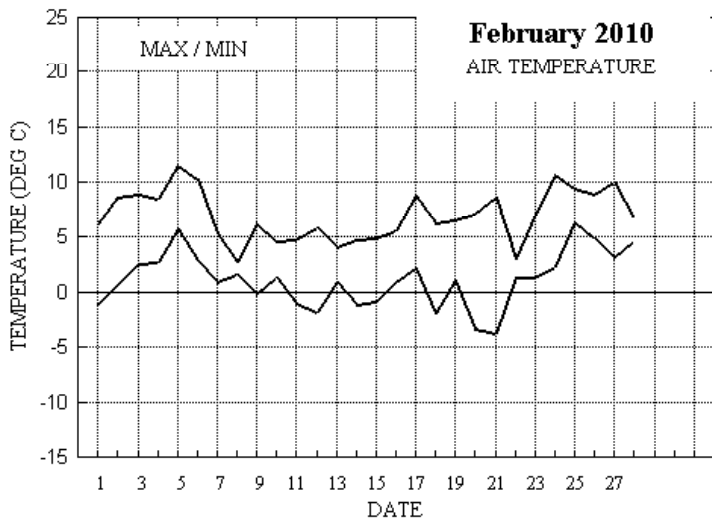
Table 1. Mean anomalies (max, min, rain, sun) for specified periods.

From the 1 <sup>st</sup> to the 9 <sup>th</sup>				From the 10 <sup>th</sup> to the 18 <sup>th</sup>				From the 19 <sup>th</sup> to the 28 <sup>th</sup>			
-0.2°	+0.2°	61 %	77 %	-1.1°	-0.4°	143 %	85 %	-0.1°	+0.5°	299 %	77 %

B J Burton FRMetS

Hon. Met. Officer to Wokingham Town Council.

# Wokingham Climatological Graphs for February 2010



Month: February 2010

Date	Max	Min	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	Sl	Ha	Fg	ddd	ff	sp	ddd	gg	HHhh	ddd	ff	HH	hrs				
1	6.2	-1.1	0.1	-6.5	3.1	6.3	5.3	5.7	1013.7	1	1	1	0	0	0	0	261	5.0	5.7	296	21	1133	301	9	11	0.2	
2	8.6	0.7	1.4	-3.6	2.9	6.2	0.1	0.0	1007.5	0	1	0	0	0	0	0	239	8.5	8.7	244	24	1546	237	11	11	4.7	
3	8.9	2.6	1.9	1.8	3.5	6.0	0.0	0.0	1009.7	0	0	0	0	0	0	0	207	2.8	4.4	237	22	2146	223	9	21	3.8	
4	8.5	2.7	3.0	3.6	4.1	6.0	0.0	0.0	1006.8	0	0	0	0	0	0	0	162	4.8	5.6	157	16	2334	149	8	23	4.2	
5	11.6	5.8	0.5	3.5	4.6	6.0	5.0	0.0	999.4	0	0	0	0	0	1	0	182	3.6	5.6	247	19	1507	137	8	00	0.6	
6	10.3	2.9	tr	-0.7	4.7	6.1	4.3	0.0	1010.8	0	1	0	0	0	0	0	33	4.6	5.0	347	13	1518	355	7	15	0.0	
7	5.3	1.0	0.1	-3.4	4.8	6.2	0.1	0.0	1024.6	0	1	0	0	0	0	0	12	3.2	3.5	21	13	1904	41	6	19	0.2	
8	2.8	1.7	0.7	-0.4	4.8	6.3	0.0	0.0	1013.1	0	1	1	0	0	0	0	32	9.2	9.2	37	25	2008	35	13	20	1.6	
9	6.3	-0.2	0.1	-3.7	4.6	6.4	3.2	0.9	1011.9	1	1	1	0	0	0	0	20	7.4	7.7	24	23	1240	33	11	01	0.1	
10	4.7	1.3	0.3	-3.5	4.3	6.3	5.4	6.0	1015.7	0	1	1	0	0	0	0	8	8.0	8.5	7	25	0914	28	13	11	0.3	
11	4.8	-1.0	tr	-4.5	4.0	6.3	5.8	12.3	1022.0	1	1	1	0	0	0	0	17	8.6	9.0	24	29	1213	32	16	13	0.0	
12	5.9	-1.8	0.3	-6.9	3.7	6.2	0.3	0.0	1023.2	1	1	0	0	0	0	0	14	5.2	5.5	64	15	1512	17	7	14	0.7	
13	4.1	1.0	0.3	-1.1	3.9	6.1	0.8	0.0	1024.3	0	1	1	0	0	0	1	17	6.4	6.6	27	21	0829	26	9	08	0.5	
14	4.8	-1.1	0.6	-5.6	3.9	6.1	0.0	3.2	1018.1	1	1	1	0	0	0	0	343	2.5	3.0	354	14	1343	340	6	13	1.4	
15	4.9	-0.8	6.2	-4.7	4.0	6.1	0.0	2.2	1008.6	1	1	1	0	0	0	0	190	3.2	3.8	191	13	1900	201	7	22	4.8	
16	5.6	1.0	6.2	-0.5	4.1	6.0	0.0	0.0	993.6	0	1	1	0	0	0	0	201	5.1	5.3	215	16	0357	204	7	02	10.1	
17	8.8	2.2	0.9	1.5	4.4	6.0	7.8	2.3	990.8	0	0	0	0	0	0	0	144	2.7	3.0	155	11	1049	119	5	12	xx	
18	6.3	-2.0	4.3	-6.1	4.3	6.1	0.0	3.6	991.3	1	1	1	0	0	0	0	122	1.4	4.2	297	17	2303	289	8	23	xx	
19	6.6	1.1	0.1	1.1	4.3	6.1	3.8	0.3	994.5	0	0	0	0	0	0	0	273	5.5	5.8	304	17	0253	265	9	13	1.0	
20	7.1	-3.3	2.7	-8.3	4.1	6.1	6.1	12.9	997.9	1	1	0	0	0	0	0	223	2.8	3.1	229	14	1423	239	5	14	2.4	
21	8.6	-3.7	11.9	-7.8	3.7	6.1	1.3	4.3	992.6	1	1	1	0	0	0	0	194	3.9	4.6	245	16	1207	161	7	05	9.1	
22	3.0	1.3	1.8	1.1	4.0	6.0	0.0	0.0	983.9	0	0	1	0	0	0	1	33	7.8	8.0	51	25	0837	35	13	11	3.2	
23	7.2	1.4	5.0	1.2	4.1	5.9	0.0	0.0	992.6	0	0	0	0	0	0	0	68	5.6	6.1	76	18	1356	76	8	12	4.5	
24	10.7	2.3	2.5	1.8	4.3	5.9	0.8	0.0	991.3	0	0	0	0	0	0	0	152	2.9	4.9	160	14	1343	160	6	13	2.6	
25	9.5	6.5	6.0	5.9	5.0	5.9	0.1	0.0	990.9	0	0	0	0	0	0	0	178	3.2	6.0	200	23	2048	209	10	22	7.8	
26	8.9	4.9	2.4	4.4	5.5	6.0	5.7	0.0	987.6	0	0	0	0	0	0	0	254	10.6	10.8	257	43	1517	257	18	15	3.5	
27	10.0	3.1	10.4	-1.3	5.4	6.1	2.0	0.0	994.6	0	1	0	0	0	0	0	189	4.8	5.8	205	25	0714	194	10	14	9.2	
28	6.7	4.6	1.1	2.4	5.7	6.2	0.1	0.0	983.5	0	0	0	0	0	0	0	314	5.6	7.9	347	23	0800	342	11	08	1.9	
Total			70.8				58.0	53.7																			78.4
Mean	7.0	1.2		-1.4	4.3	6.1	2.07	1.9	1003.4								338	0.7	6.0								
Anom	-0.9	-0.1	171%		-0.8	-0.7	80%																				
Daily mean	4.1																										
Anom	-0.5																										
Number of days with:																											
Air frost = 9																											
Ground frost = 17																											
Nil sun = 9																											
Snow falling = 12																											
Snow lying = 1																											
Thunder = 0																											
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. 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 February 2010

Date	VV	N	dd	ff	gg	TT	TdTd	RH	r	PPP	a	pppww	W1	W2	Nh	Cl	hCr	Cl	Nh	shs	N	shs	N	shs	Date	Remarks
1	84	3	25	04	08	0.7	-1.0	88	3.5	1013.7	2	025	01	1	1	5	6	0	1	81640	83078			1	COTRA Slnly 1cm Gnd frzn	
2	82	8	23	09	20	6.0	4.3	89	5.2	1007.5	6	027	60	6	2	8	5	4	/	/	81712	87615	88630	2		
3	60	8	26	02	05	2.7	1.5	91	4.2	1009.7	2	010	21	6	2	8	5	6	/	/	82640	88650		3		
4	20	8	17	04	09	7.5	7.0	97	6.2	1006.8	6	003	21	6	2	8	7	2	/	/	85703	88705		4		
5	67	7	23	03	07	6.0	5.2	94	5.5	999.4	2	021	01	2	2	1	5	7	1	8	81650	83465	87270	5	COTRA U/a cont	
6	57	6	03	05	08	4.3	3.7	96	5.0	1010.8	2	042	10	2	2	6	5	3	/	1	81St06	83Sc40	85Sc50	6	/Ci75	
7	57	8	03	03	09	3.6	2.9	95	4.6	1024.6	5	001	10	1	1	8	6	3	/	/	88707			7		
8	60	8	03	08	14	2.1	0.3	88	3.9	1013.1	7	014	68	7	6	8	5	4	/	/	81710	87612	88618	8		
9	82	6	03	07	11	1.3	-2.0	79	3.3	1011.9	1	012	02	2	2	6	8	4	/	1	81815	85635		9	2Sc18 /Ci75 Cu hum	
10	81	5	36	10	20	2.0	-2.4	72	3.2	1015.7	2	012	02	2	2	5	8	5	0	0	84820			10	2Sc50 Cu med	
11	82	4	02	08	16	0.7	-4.2	69	2.8	1022.0	3	012	01	1	1	4	8	6	0	0	81830	84650		11	Cu med Gnd frzn Slnly 40% <1cm	
12	59	8	01	06	13	2.9	1.1	88	4.1	1023.2	2	010	60	6	2	8	5	3	/	/	87708	88611		12		
13	67	3	04	10	21	1.7	-3.9	66	2.8	1024.3	3	003	01	1	1	2	8	5	0	1	81825			13	2Sc40 2Ci78 COTRA Cu fra	
14	20	8	29	03	06	1.6	0.8	94	4.0	1018.1	8	002	68	7	6	8	5	3	/	/	87708	88615		14		
15	25	8	13	03	05	1.0	0.7	98	4.0	1008.6	6	008	10	2	2	8	6	2	/	/	82703	87705	88708	15		
16	65	8	21	05	10	3.7	2.9	94	4.7	993.6	6	007	60	6	2	4	5	3	7	/	81708	84640	88458	16	1Sc15 4Ac57	
17	50	3	15	03	07	3.5	1.9	90	4.5	990.8	3	006	05	6	1	1	5	6	3	0	81630	83358		17		
18	20	8	09	04	08	2.2	1.6	96	4.3	991.3	6	001	62	6	2	8	7	2	/	/	86705	88709		18		
19	60	7	28	05	14	2.4	0.0	84	3.9	994.5	2	019	05	5	2	7	5	4	/	/	81715	87620		19		
20	60	1	21	02	05	0.1	-1.0	92	3.6	997.9	2	008	05	0	0	1	5	6	0	0	81640			20	Hoar mod Absent 20&21 vv&cld est	
21	60	8	19	06	12	2.5	1.8	95	4.4	992.6	7	019	62	7	6	8	5	3	/	/	83708	85618	88640	21	Hvy ra 0847-49	
22	50	8	04	10	26	1.4	1.1	98	4.2	983.9	7	012	68	7	6	7	7	2	2	/	83705	87708	88515	22		
23	59	8	06	05	11	2.4	0.9	90	4.1	992.6	0	005	20	5	2	8	5	4	/	/	81710	86712	88625	23		
24	40	8	16	03	10	7.1	6.6	97	6.2	991.3	1	002	58	6	5	8	5	3	/	/	83708	85620	88640	24		
25	57	7	19	04	08	7.5	6.5	93	6.1	990.9	5	001	21	6	2	7	6	3	/	/	83706	87710		25		
26	80	7	26	11	24	5.4	1.0	73	4.2	987.6	2	040	01	2	2	1	8	4	3	8	81818	83270	87075	26	1Sc45 2Ac60 COTRA Halo 22°	
27	80	6	20	08	16	7.7	5.5	86	5.7	994.6	6	002	15	8	1	3	8	4	7	1	81815	84362		27	1Sc25 2Sc40 3As65 /Ci75 jpS vv70k exS	
28	58	8	33	10	21	4.6	3.3	91	5.0	983.5	3	034	63	6	6	7	5	4	2	/	87610	88518		28		

Mean vis = 15.5 km

Mean cloud = 6.6 83%

Mean wind speed = 5.8 kn

Mean gust = 12 kn

Mean TT = 3.4 °C

Mean TdTd = 1.6 °C

Mean RH = 88.7 %

Mean r = 4.4 g/kg

Mean PPP = 1003.4 mbar

See appendix 2 below for full code details

VV = Visibility code (Code FM12-4377)

N = Total cloud amount, oktas

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

ff = 10 minute mean wind speed, knots

gg = Highest gust in past hour, knots

TT = Air temperature at 1.2 m, deg Celsius

TdTd = Dew point temperature at 1.2 m, deg Celsius

RH = Relative humidity at 1.2 m

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

PPP = Air pressure reduced to sea level, mbar

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

ppp = 3 hr pressure tendency, tenths of mbar

ww = Present weather code (Code FM12-4677)

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

covers past 3 hours.

Nh = Amount of low cloud present, oktas

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

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

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

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

8 groups. 8 = indicator for cloud detail

N = Amount of cloud, oktas

C = Type of cloud (FM12-0500)

hshs = Height of cloud (FM12-1677)

Remarks : COTRA = persistent condensation

trails present.

Weather observations. Emmbrook, Wokingham, Berkshire.

Observations at 1500 GMT for February 2010

Date	VV	N	dd	ff	gg	TT	TdTd	RH	r	PPP	a	ppp	ww	W1	W2	Nh	Cl	h	Cr	Ch	shs	NChs	hshs	NChs	Date	Remarks
1	84	8	29	05	16	4.8	-1.3	65	3.4	1015.9	2	008	03	2	2	2	8	6	1	7	82830	85462	88270	1	1Sc50 Cu hum	
2	58	8	24	11	22	7.8	6.2	89	6.0	1002.9	6	024	58	6	5	8	5	3	/	/	82708	86612	88620	2		
3	30	8	16	06	11	3.9	2.8	93	4.7	1009.2	8	006	51	5	2	8	5	2	/	/	83705	87707	88615	3		
4	61	8	17	06	12	7.9	6.1	88	5.9	1004.1	8	021	01	6	5	1	5	4	7	/	81710	87357		4	1Sc50 /As68	
5	62	5	20	07	12	9.8	4.0	67	5.1	1001.9	3	009	87	8	1	5	9	5	0	0	82925	83828		5	1Sc45 vv50k ex p	
6	59	1	01	05	11	7.6	4.3	79	5.1	1017.4	2	026	05	0	0	1	6	4	0	0	81712			6	1Sc40	
7	63	7	01	05	10	4.8	2.0	82	4.3	1022.0	7	023	02	2	2	7	8	4	/	/	82812	86815	85625	7	Cu fra/hum	
8	58	8	03	12	19	1.7	-0.1	88	3.8	1010.7	7	016	68	7	6	7	5	4	2	/	81710	87612	88515	8	pptn v slit	
9	75	6	02	09	19	4.3	-0.2	73	3.8	1011.9	5	002	15	8	1	6	8	5	0	0	82825	85656		9	1Sc45 Cu med jpSE	
10	82	3	03	12	22	2.9	-6.2	51	2.3	1017.8	3	002	01	8	1	3	2	6	6	0	83838			10	1Ac57 Cu med Slnly tr in shade	
11	84	3	03	13	27	3.4	-5.6	51	2.5	1022.1	7	004	02	0	0	3	1	6	0	1	83838			11	1Ci80 COTRA Cu hum	
12	60	7	05	07	14	4.7	1.6	80	4.3	1023.1	5	002	80	8	6	7	8	4	/	/	81712	83815	87650	12	Cu med vv30k ex E to S	
13	81	8	36	06	15	3.1	-1.9	70	3.3	1021.7	6	021	15	2	2	8	8	5	/	/	82820	84630	88640	13	Cu med jpW&NE	
14	65	8	36	04	11	4.0	1.9	86	4.3	1015.6	7	015	02	6	2	8	8	4	/	/	81815	86618	88625	14	Cu hum	
15	40	8	19	05	09	3.9	1.8	87	4.4	1004.0	7	030	62	6	2	6	7	3	2	/	83708	88515		15		
16	82	8	20	07	12	4.9	3.0	87	4.8	991.9	6	010	60	6	2	1	8	4	2	/	81815	86540	88460	16	1Sc25 Cu med	
17	61	2	17	05	08	7.9	-1.4	52	3.5	989.8	6	010	02	0	0	1	1	6	3	0	81830			17	1Ac62 Cu hum	
18	59	8	15	05	10	6.0	5.1	94	5.6	987.8	7	023	21	6	2	8	5	3	/	/	82708	85712	87620	18	8Sc30	
19	82	4	27	06	15	4.8	-2.3	60	3.2	995.1	6	002	03	1	1	4	8	6	3	0	82830	83650		19	1Ac57 Absent 19 to 21 vv&cld est	
20	82	6	25	04	14	5.5	-2.3	57	3.2	997.3	7	006	15	1	1	5	8	6	0	1	82830	84650		20	1Ci75	
21	84	6	24	06	14	7.5	1.3	65	4.2	991.0	7	008	02	2	2	5	8	5	3	/	83825	83656		21	4Ac49	
22	50	8	02	10	21	2.3	1.3	93	4.3	985.1	3	015	68	7	6	7	7	4	2	/	87710	88515		22	rain+snow+ice pellets(b)	
23	57	8	07	07	18	2.6	1.6	93	4.3	992.5	7	002	58	6	5	7	7	3	2	/	87708	88515		23		
24	62	7	16	07	14	9.8	7.9	87	6.7	989.0	7	022	80	8	2	4	8	4	7	/	82815	83650	85460	24	2Ac58 Cu con Rainbow	
25	58	8	10	05	12	8.1	6.3	88	6.1	985.1	7	038	61	6	2	2	8	4	2	/	81815	88535		25	2Sc30 Cu med	
26	82	2	26	16	37	7.9	-0.7	54	3.7	993.8	2	028	01	1	1	2	1	6	0	2	82835			26	1Ci75 Cu hum	
27	80	6	20	07	23	9.8	6.4	79	6.1	991.2	6	028	15	8	2	5	8	4	0	4	81815	85820		27	1Sc40 3Ci80 COTRA Cu med jpN	
28	82	8	29	09	20	6.2	2.5	77	4.6	994.0	2	044	01	6	2	3	8	4	0	7	83818	88268		28	1Sc30 Cu med Halo 22° part	

Mean vis = 22.3 km

Mean cloud = 6.3 79%

Mean wind speed = 7.4 kn

Mean gust = 16 kn

Mean TT = 5.6 °C

Mean TdTd = 1.6 °C

Mean RH = 76.3 %

Mean r = 4.4 g/kg

Mean PPP = 1003.0 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.



February 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	1.80	5.0	1522	-0.7	50	80.5	92.7	531	61.2	1114	-1.33	3.44	3.9	2251	3.0	1118	1014.05	1017.2	1915	1009.0	8	0.5
2	5.83	8.6	1531	1.4	21	86.6	91.1	757	79.5	1153	3.76	5.02	6.0	1526	3.7	21	1007.11	1015.6	0	1002.4	1601	0.6
3	4.79	8.8	2221	2.4	819	91.0	97.1	1903	75.5	1200	3.43	4.93	6.6	2130	3.9	1125	1008.39	1010.1	955	1006.3	0	1.5
4	7.39	8.4	2	5.6	1909	90.1	96.7	848	76.7	2336	5.85	5.81	6.5	1041	4.8	2334	1004.66	1008.1	19	997.7	2358	0.9
5	6.76	11.2	1414	2.6	2259	86.5	96.8	2345	58.7	1416	4.56	5.33	6.5	1126	4.4	2259	1000.23	1003.2	2357	996.0	356	2.8
6	4.83	9.7	1357	2.8	749	91.9	97.0	20	72.9	1433	3.58	4.90	5.8	1357	4.5	749	1014.02	1024.8	2345	1003.0	6	0.2
7	3.72	5.2	1423	0.7	730	89.8	98.1	758	78.3	1548	2.18	4.40	4.8	151	3.8	730	1022.78	1024.9	527	1018.3	2359	0.1
8	1.70	2.9	0	0.3	2019	86.3	94.2	1249	75.6	2357	-0.34	3.71	4.2	23	3.0	2357	1012.85	1018.3	0	1010.5	1525	0.6
9	2.06	6.1	1310	-0.6	723	76.3	87.2	1343	60.6	1648	-1.71	3.36	4.3	1359	2.9	532	1012.38	1015.2	2046	1010.0	447	0.1
10	1.34	4.7	1131	-1.4	2201	74.3	89.2	1240	46.5	1518	-2.89	3.08	3.8	34	2.2	1613	1017.30	1020.8	2142	1014.2	319	0.2
11	0.69	4.6	1353	-2.0	2134	69.1	88.3	2243	45.7	1250	-4.53	2.70	3.3	2256	2.1	1250	1022.00	1023.5	2131	1020.1	215	0.0
12	2.76	5.8	1433	0.5	55	83.8	92.5	1622	71.1	2136	0.28	3.84	4.7	1320	3.2	3	1023.41	1025.1	2030	1021.9	411	0.3
13	2.26	4.0	1405	-0.1	2356	74.7	88.3	2358	57.8	956	-1.82	3.30	3.9	2025	2.5	956	1022.66	1024.8	110	1020.3	1939	0.0
14	2.16	4.8	1251	-1.3	104	91.5	96.8	706	83.5	1253	0.91	4.05	4.6	1248	3.1	53	1016.71	1020.6	14	1012.9	2353	0.8
15	2.22	4.3	1432	-1.2	327	93.3	98.6	534	83.1	1437	1.24	4.19	4.9	2322	3.4	327	1005.87	1012.9	2	998.1	2357	1.4
16	3.76	5.6	1407	1.9	2050	93.0	96.7	114	85.5	1502	2.72	4.70	5.2	1149	4.2	1938	993.32	998.1	0	991.2	1659	7.9
17	3.45	8.3	1429	-1.2	2352	84.8	97.6	633	49.7	1527	0.88	4.15	5.0	1153	3.3	1600	990.82	992.3	2354	989.7	1543	0.6
18	2.58	6.2	1541	-1.7	59	95.8	98.0	117	92.8	1711	1.97	4.52	5.7	1542	3.3	59	989.68	992.3	12	986.8	1657	3.9
19	2.53	6.6	1318	-0.2	2353	79.3	93.7	0	49.6	1427	-0.92	3.62	4.1	719	2.8	1414	994.40	997.3	2359	989.6	0	0.1
20	0.90	7.1	1417	-3.3	547	83.8	97.7	555	53.0	1324	-1.79	3.38	4.2	1135	2.9	547	997.71	998.9	2211	996.8	408	0.0
21	3.21	8.3	1420	-3.7	148	89.1	98.3	405	63.8	1501	1.47	4.36	5.6	1212	2.8	148	992.80	998.6	2	989.6	2359	3.5
22	2.71	4.4	4	1.3	917	93.9	98.2	938	85.2	1943	1.81	4.45	5.2	354	3.9	2139	986.64	991.4	2353	983.1	1245	7.1
23	2.71	4.8	2355	1.3	721	91.4	97.9	2350	78.7	1144	1.43	4.30	5.3	2359	3.8	643	992.13	993.0	1043	991.3	0	2.9
24	7.34	10.6	1401	4.7	0	94.2	97.9	9	80.4	1403	6.45	6.13	7.1	1302	5.3	304	989.73	991.7	26	986.3	1925	3.1
25	7.46	9.3	1218	6.2	1752	91.5	97.2	1959	74.3	1246	6.12	6.01	6.7	2032	5.5	1252	986.10	991.2	423	977.3	2109	4.7
26	5.92	8.9	1316	3.7	2045	74.7	96.3	3	49.3	1538	1.51	4.38	5.9	5	3.2	1641	990.30	999.2	2356	978.9	1	0.6
27	7.01	10.0	1453	3.1	53	88.0	96.6	2250	71.9	1555	5.12	5.58	6.6	1328	4.2	51	992.49	999.2	1	984.8	2356	2.5
28	5.19	6.7	1533	2.5	2350	84.6	97.5	317	61.1	1933	2.69	4.76	5.9	104	3.4	2109	990.51	1004.5	2359	979.9	545	8.3

Total																						55.2
Mean	3.75	6.82		0.84		86.1	95.29		68.64		1.52	4.37	5.23		3.54		1003.25	1007.60		998.78		
Max	7.46	11.21		6.20		95.8	98.60		92.80		6.45	6.13	7.07		5.45		1023.41	1025.06		1021.93		
Min	0.69	2.93		-3.72		69.1	87.20		45.68		-4.53	2.70	3.33		2.14		986.10	991.23		977.34		

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

# WOKINGHAM METEOROLOGICAL DATA

Wokingham Climatological Station, Emmbrook, Berkshire.

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

## Seasonal Means and Totals

## WINTER 2009/2010

Temperature (°C)				Rank in the past <b>128</b> years					
Mean maximum	6.0	(-1.8)		12 <sup>th</sup> lowest					
Mean minimum	0.1	(-1.6)		18 <sup>th</sup> lowest					
Daily mean	3.0	(-1.8)		16 <sup>th</sup> lowest					
Rainfall total (mm)	249.4	(151 %)		8 <sup>th</sup> highest					
Sunshine total (hours)	203.9	(99 %)							
N° of:	Dry days	33 (-12)	Wet days	43 (+12)					
Days with:	Air frost	43 (+14)	Ground frost	60 (+7)	Snow falling	32 (+22)	Snow lying	20 (+15)	
Thunder	1 (0)	Hail ≥5mm	0	Small hail/ice	5	Fog @09 GMT	5 (-2)	Nil sun	28
Air pressure MSL : Mean @09 GMT (mbar)	1008.8				(-7.3)				

Departure from 1971 to 2000 average shown in brackets.

Notes: **Cold. Very Wet. Sunshine Near Normal. Two Significant Snow Episodes.**

**Temperature :** This has been the coldest winter since 1985, and the mean temperature is only 0.2° outside the very cold category. In fact, the mean maximum is just inside the coldest 10 % of ranked values, offset by a mean min which is 0.7° above the coldest 10 %. In terms of the mean max it is equal coldest with 1986 and 1985 since 1979, but the mean min is 0.3° above the 1985 value. It is worthy of note that one of the two warmest winters on record was only 3 years ago, the other being 1990, with a mean temperature 1.0° above this winter's mean max. The highest max this season was 13.2° on the 5<sup>th</sup> Dec, 0.7° below the median . The lowest max was -0.4° on the 7<sup>th</sup> Jan, 0.1° below the median. The highest min was 8.3° on the 6<sup>th</sup> Dec, 1.6° below the median and 10<sup>th</sup> lowest in 97 years. The lowest min was -8.7° on the 7<sup>th</sup> Jan, 1.2° below the median and lowest since 1997. The mean grass min was -2.3° and is lowest since 1991, as is the lowest grass min of -16.0° on the 7<sup>th</sup> Jan. The mean earth temp. at 30 cm depth was 4.8°, lowest since 1997, and at 1 m depth 7.4°, slightly higher than last winter's value. Air frost duration was 408.0 hours, 126.5 hours above average and most since 1996. All months were below average, with Jan both coldest and with the greatest anomaly, -2.8°, with Feb least cold, anomaly -0.5°. **Rainfall :** (Includes melted snow). This has been a very wet winter season, wettest since 2001, and ranking 8<sup>th</sup> wettest in 128 years. In recent years both 1990 and 1995 were also wetter. All months had a surplus of rain, ranging from 171 % in Feb to 118 % in Jan. Dec had the highest total, 106.5 mm, and Feb the lowest, 70.8 mm. The wettest day was the 5<sup>th</sup> Jan with 20.5 mm. Despite 23 days when the duration of rain could not be measured due to snow or ice, the total for the remaining days of 181.7 hours is still 21.3 hours above average and most since 2003. There were no dry spells this season, and the number of dry days is 12 fewer than average. The number of days with =>10 mm is equal highest with 2003 since 1990. Snow fell on 8 days in Dec, 12 in Jan and 12 in Feb. Lying snow was recorded each day from the 18<sup>th</sup> to the 26<sup>th</sup> Dec, the 6<sup>th</sup> to the 15<sup>th</sup> Jan and on the 1<sup>st</sup> Feb. In Dec it reached a max depth of 11 cm on the 22<sup>nd</sup>, but in Jan it was 19 cm on the 7<sup>th</sup>. This is a new snow depth record for this station (since 1976). The Eden Winter Snow Index stands at 208 at the end of Feb, exceeding the previous highest in the past 34 years of 181 in 1981/82. Thunder occurred on the 23<sup>rd</sup> Dec, and there were falls of small hail or ice pellets on 16<sup>th</sup> Dec, 29<sup>th</sup> Jan and the 5<sup>th</sup>, 13<sup>th</sup> and 22<sup>nd</sup> Feb. The highest recorded rainfall rate was 70 mm/hr on the 6<sup>th</sup> Dec. **Sunshine :** Over the season as a whole, sunshine was about average, but on a monthly basis Dec had 21 % more, and Feb 20 % less, than average, with Jan near average. The sunniest period occurred at the start of Jan, with 27.3 hours in the first 4 days. But Jan also saw the duller period, with no sunshine from the 10<sup>th</sup> to the 16<sup>th</sup>. The season's highest daily total was 7.8 hours on the 17<sup>th</sup> Feb. The number of days with nil sun is about average. Overall there were 56 days with <3 hours and 11 with =>6 hours. **Wind :** The overall mean speed of 6.2 mph this winter is 1.6 mph below average. The windiest month was Feb, 6.9 mph, and the least windy Jan, 5.6 mph. The windiest day was the 26<sup>th</sup> Feb, mean 12.4 mph, and the season's highest gust of 50 mph was also on that day. The least windy day was the 14<sup>th</sup> Dec, mean 2.3 mph, and there were 1666 min (27.8 hours) with a mean speed of 0.5 mph or less. Daily mean direction/number of days: N,16 NE,13 E,6 SE,8 S,13 SW,21 W,8 NW,5. Winds from N were 9.8 % more frequent, and from SW 10.3 % less so. SE winds were 4.8 % up, and S were 2.4 % down, all other directions were within 2 % of average. **Humidity :** The overall mean relative humidity was 88.1 %, and the lowest value this winter was 46 % on the 11<sup>th</sup> Feb. The mean water vapour content per kg of air was 4.2 g at 0900 and 4.3 g at 1500 GMT. **Pressure :** The mean air pressure at 09 GMT is lowest since 1979.

**December:** Cold and very wet with significant snow and above normal sunshine. Mean max lowest since 1996. Lowest min lowest since 1991. Lowest grass min lowest since 1995. Wettest since 2002, number of days with =>10 mm most since 1989. Snow lying from 18<sup>th</sup> to 26<sup>th</sup>, max depth 11 cm, deepest since 1986, and most days since 1981.

**January:** Cold with above normal rainfall and sunshine and significant snow. Coldest since 1987. Highest max lowest since 1979 and 5<sup>th</sup> lowest in 107 years. Lowest max, lowest min and mean grass min all lowest since 1997. Highest min lowest since 1985. Deep snowfall from 6<sup>th</sup> to 15<sup>th</sup> with max depth 19 cm, deepest for any month since before 1976. Most days with snow lying since 1987. Mean wind speed lowest since 1997. Highest gust lowest since before 1988.

**February:** Wet and dull with below normal temperature. Earth temp. lowest since 1996. Number of dry days fewest since before 1976. Although snow fell on 12 days, the most since 1987, there was only 1 day with snow lying. Mean pressure lowest since before 1976.

Month	Mean	Anom	Mean	Anom	Rain	Anom	Sun	Anom	Wind	Max	Mean	Anom
	Max		Min		mm		hrs		Mn mph	gust	pressure	
December	6.7°	-1.6°	0.2°	-2.3°	106.5	165 %	75.3	121 %	6.3	41	1006.8	-8.3
January	4.4°	-3.1°	-1.0°	-2.5°	72.1	118 %	70.6	104 %	5.6	30	1015.6	-0.4
February	7.0°	-0.9°	1.2	-0.1°	70.8	171 %	58.0	80 %	6.9	50	1003.4	-13.3

B J Burton FRMetS.

Hon. Met. Officer to Wokingham Town Council.



## 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/wwwp1.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 of 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.