FEBRUARY STATISTICS RECORDED AT LERWICK OBSERVATORY

	February 2010	Averages 1971-2000
Mean maximum temperature	3.4°C	5.4°C
Mean minimum temperature	-0.4°C	1.4°C
Daily mean temperature	1.5°C	3.1°C
Mean sea-level pressure	1006.3 hPa (mb)	1010.2 hPa (mb)
Total rainfall	143.1 mm	107.8 mm
Wet days => 1 mm	16 days	17.8 days
Sunshine (electronic sensor)	80.3 hours	52.3hours
Air frosts	17 days	7.7 days
Ground frosts	23 days	14.9 days
Snow/sleet	18 days	12.2 days
Days with gale	0 days	6.1 days
Maximum daily mean temp.	4.0°C on 13th	
Minimum daily mean temp.	-3.2°C on 23rd	
Highest maximum	8.2°C on 13th	
Lowest day maximum	0.0°C on 23rd	
Highest night minimum	4.1°C on 7th	
Lowest minimum	-7.4°C on 24th	
Lowest grass minimum	-15.0°C on 24th	
Wettest day	34.4 mm on 25th	
Sunniest day	7.9 hours on 21st	
Highest mean hourly wind	33 knots on 15th	Direction SE'ly
Highest gust	46 knots on 15th	Direction SE'ly

COLD, SNOWY AND SUNNY

Atypically the month was generally cyclonic and unsettled, with a high frequency of winds from between N and E in direction. As a result, it was very cold with some heavy snowfalls. This was the coldest month since February 1979 (1.1°C), with the greatest number of air frosts for any month since February 1986. In Shetland the ground was snow-covered from the 1st – 5th, with a maximum depth of 19cm at the Observatory at 09h on the 3rd. The ground was again snow-covered from the 19th – 28th with 28cm of lying snow at 09h on the 26th. On both occasions blowing snow would have resulted in drifts to a much greater depth.

High pressure during the second week brought some sunny days, lifting daytime temperatures and resulting in a temporary removal of the snow-cover at lower levels. Provisionally, it was the coldest February over the UK since 1991.

Rainfall was below normal in most areas of the UK, so it is interesting to note that at Fair Isle it was slightly above average while Lerwick was decidedly wetter, with almost a third more 'rainfall' than normal. This is likely to be the result of a few short-period heavy falls, such as on the 25th, rather than an overall wet month as - in line with much of the UK - sunshine totals were well above normal. Provisional figures indicate this has been the coldest winter (Dec, Jan, Feb) across the UK as a whole since 1978/79. In Shetland the mean winter temperature for 2009/10 is 2.6° Celsius (average 3.6°Celsius). The winters of 1993/94 and 1985/86 were marginally colder with 2.5° and 2.4° Celsius respectively. The winter of 1978/79 was much colder with a mean of just 1.7° Celsius!

With low pressure over the Norwegian Sea, the 1st was a cloudy day with cool NW'ly winds. Wintry showers merged into a more prolonged period of occasionally heavy snow later in the day. As winds eased, temperatures fell sharply after dark and a widespread frost developed.

As the main low slipped south between Shetland and the Norwegian coast early on the 2nd, winds veered N'ly and increased strong, resulting in heavy drifting of the lying snow. Later in the day a secondary low - slipping south past Shetland - brought further heavy snow showers, with thunder and lightning widely reported. Winds however, fell light.

A weak ridge, crossing the Northern Isles on the 3rd, brought a bright day with a few wintry showers and mostly calm conditions,. During the evening, temperatures fell quickly to below -7° Celsius at Baltasound and -5°

Celsius at Lerwick. However, as an Atlantic frontal wave moved east into northern Scotland overnight, cloud thickened, a SE'ly breeze developed and temperatures rose.

Outbreaks of rain on the 4th cleared - and fresh to strong SE'ly winds veered SW'ly - as the front edged over Shetland. However, more rain followed later as winds again backed fresh SE'ly. By now the rain and milder conditions had removed much of the thinner snow-cover, though many patches lingered, to survive until mid-month and the next snowy spell. The rain across Shetland died out on the 5th and fresh ESE'ly winds brought somewhat brighter conditions, as weakening fronts were pushed south into the Scottish mainland by high pressure ridging east from Iceland.

During the next week an anticyclone - developing north of Iceland - migrated slowly south past Scotland. A ridge, extending southeast from Iceland on the 7th, gave a dry, bright day with sunny spells and a moderate E to ENE'ly wind. The 8th was a cloudy, cool day, with a few wintry showers developing, as a weak front approached Shetland from the east. Further fronts - brushing south past Shetland on the 9th and 10th - brought a mixture of occasionally wintry showers or patchy rain or sleet, accompanied by mainly moderate N'ly winds. The 11th was rather cloudy, with the occasional light shower falling as sleet or snow over the hills. As light N'ly winds backed NW'ly, the 12th and 13th were brighter and mainly dry with sunny periods bringing quite mild daytime temperatures, though clear spells did bring cool nights with a widespread frost.

As high pressure over the Northern Isles declined, SE'ly winds increased and temperatures rose as a front - associated with low pressure near Faeroe - moved in off the Atlantic. As this continued east, outbreaks of occasionally moderate rain or drizzle - accompanied by fresh to strong S to SE'ly winds - affected Shetland on the 14th and 15th.

Between the 16th and 18th, a shallow area of low pressure over the UK resulted in a strong cold E'ly wind and mostly cloudy conditions, with wintry showers or longer periods of sleet or wet snow. A trough developed over the Northern Isles on the 19th as the low moved out over the North Sea. Winds eased light SE to E'ly, and a frost was widespread early and late. While most had a dry day, some saw a wintry shower. Early in the afternoon a waterspout was observed south of Fair Isle. Light winds continued through the 20th. Many places started the day clear and frosty with a thin snow-cover. In most places this quickly melted in the pleasant warmth of a bright, sunny day. Fair Isle, with 7.6 hours, was the sunniest place in the UK.

Low pressure over the North Sea transferred into southern Scandinavia and light E'ly winds backed N'ly, bringing a fine, cool winter's day on the 21st. Out of direct sunlight, the partially snow-covered ground remained frozen all day. Showery troughs affected Shetland during the 22nd. It was bright across the South Mainland and Fair Isle with a few - locally heavy - wintry showers. However, across the west, central and northern parts these were heavy and prolonged, leading to significant accumulations of lying snow. As temperatures remained below freezing in many places, NNE'ly winds – freshening for a while – caused the lying snow to drift. Winds did fall light later and – while this did reduce the drifting – it meant the showers were rather more prolonged.

After another very cold night, the 23rd was a bright day with light NW to N'ly winds bringing further occasionally heavy snow showers to Shetland. A weak ridge gave a mostly dry night with clear skies and light winds, resulting in a locally severe frost, with the air temperature falling to -9° Celsius at Baltasound and -7.4° Celsius at Lerwick Observatory, with -15.0°Celsius just above the snow surface. At Sandwick another weather diarist reported a minimum of -10° Celsius. Early on the 24th there were reports of 'Diamond Dust' – tiny crystals of ice formed as moisture in the air freezes in the intense cold - glinting in the sun, as it slowly fell to the ground. Frequent in Polar regions, this beautiful phenomenon is not often seen in Shetland. There were also reports of the sea freezing in some of the more-sheltered voes.

High cirrostratus cloud – the precursor of a front pushed north over Scotland by a depression over southern England - produced a strong 22° halo as it moved north across Fair Isle during the morning of the 25th. Spreading on over the remainder of Shetland during the evening, the attention of many observers was drawn to an excellent display of a strong 'white' lunar halo – some describing it as the brightest and 'largest' they had witnessed. It is likely that what they observed was the rarer - even more so, as it was complete - 46° halo.

The front brought a cloudy day on the 25th, with prolonged and at times very heavy periods of snow, accompanied by strong to near-gale NE'ly winds. Close to the coasts the snow was rather wet and 'sticky', but it only required a small gain in height for the snow to be dry enough to drift in the strong winds. 'Blizzard-like' conditions brought near-zero visibility at times, leading to hazardous driving situations. Drier, clearer conditions edged down from the north later in the day. As the depression moved out over the North Sea, colder, clearer and drier NE'ly winds followed for the 26th and 27th.

On the 28th, while southern England and the near-Continent were battered by a deep depression moving east across northern France, the Northern Isles - under the influence of high pressure - fared much better. It was for the most part bright and sunny, though the afternoon clouded over as some wintry showers spread south on a cold fresh N'ly breeze. Fair Isle, with 7.1 hours was again the sunniest place in the UK.

Dave Wheeler

Initial Statistical details for Scotland as a whole (1961-1990 average) for February:
Mean Temperature: 0.3°C (-2.2°C below average).
Rainfall – 82.2 mm (66% of average).
Sunshine – 67.9 hours (112% of average.

Data from the UK Met Office