

## **Weather extremes 2005**

### **January 7th-8th Severe storm development**

**by Dave Jameson**

A very mild and moist SW'ly airflow engulfed the UK during the latter part of the first week of 2005. Low pressure systems steered fronts erratically NE bringing spells of heavy rainfall and gusty winds, though to the south it remained mostly dry bright and very mild with temperatures well above average, even touching 15C (59F) at Coningsby in Lincolnshire on the 7th.

A warm front had passed through on the 6th, however a wave formed on the cold front situated at the time over N Scotland which prevented it from moving south. As a result of this trailing cold front, rain fell over the NW for 2 days until early on Saturday morning – parts of NW Scotland and N Wales received well over 100mm during the 72 hour period to 06Z on the 8th, with Capel Curig (nr Snowdonia) reporting 225mm (9 inches) of rain ( See table 1, below). Over 100 flood warnings were issued by the Environment Agency as the relentless rain brought widespread flooding to these areas with Carlisle in Cumbria particularly badly affected. Carlisle was cut off and 'awash' for some time on the 8th with flood waters nearing the second floors of a few houses, leaving residents stranded and having to be airlifted off of farmhouses. Keswick was hit badly by flooding too with residents having to be evacuated by mountain rescue teams and inflatable boats. Many other areas saw similar flooding.

<b>Station</b>	<b>Total Rainfall (mm)</b>
Capel Curig, Nth Wales	225.4
Loch Glascarnoch, NW Scotland	129.0
Eskdalemuir, SW Scotland	122.6
Keswick, Lake District	120.0
Tulloch Bridge, Scotland	98.0

Table 1: 72hr selected rainfall totals to 06Z on the 8th Jan

The pressure gradient tightened as the storm centre moved closer to a strong high over central Europe, a new wave was forming on the front during the 7th with forecasts tracking a new strongly developed low across N Ireland and later Scotland with a very tight pressure gradient on its southern flank. Predicted to bring gusts of winds to 70 mph widely across all parts of the UK later on the 7th and early on the 8th, though perhaps more worryingly a slight potential of severe storm force winds with gusts to 90 mph across S Scotland and Cumbria – this prompted the UK Met Office to issue an 'emergency severe weather warning' ~ the first released for some time.

By midnight the low was just off W Ireland with a central pressure of 980mbars and with mean wind speeds already approaching 40 mph and gusting widely in excess of 60 mph across much of England and Wales.

As the low continued to track ENE'wards across the Irish Sea an into Scotland the winds increased further in strength gusting over 80 mph and battering the country further with a small area of exceptionally strong winds on the back-edge of the back-bent occlusion moving through the border region bringing a top gust of 104 mph to St. Bees Head on the West coast of Cumbria and a phenomenal gust to 130 mph at Great Dun Fell (which is a high level station above 2500ft and the reason behind such a extremely high gust) and it also brought a swathe of damaging gusty winds across N England (See table 2 below).

Station	Wind Gust (mph)
Great Dun Fell, Cumbria (above 2500ft)	130
St. Bees Head, Cumbria	104
Loftus (Cleveland)	89
Warcop, Cumbria	89
Leeming	87
Albermarle	86
Dishforth	84
Crosby	82

**Table 2:** Highest UK gusts on the 8th Jan

If the torrential rain and severe storm force winds weren't enough to contend with, cold air digging in behind the low across Scotland brought a further hazard turning the rain to a mix of sleet and snow – giving a few centimetres covering on the higher routes and making for blizzard conditions at times in these areas. The storm caused considerable damage across much of the UK with numerable reports of fallen trees and overturned vehicles on major routes causing some disruption. Some were without power during the early part of the morning with 40,000 without in the badly flooded Carlisle and a further 60,000 without in Dublin, Ireland. In Scotland P&O's European Highland ran aground on shingle in Cairnryan, Dumfries and Galloway though all 100 passengers were safe. No fatalities were reported from the storm which may perhaps be credited jointly to the UK Met Offices advance warning system and the emergency service teams quick response across the countries affected.

By 12Z the depression had moved out into the North Sea and still deepening was approaching Norway, Denmark and Sweden bringing further heavy rain and severe gales here. An oil rig in the N Sea -Ekofisk- reported a gust of 107mph and in Denmark during the afternoon a low level gust of 103mph was reported at Roesnaes, and at 16Z one of 104mph at Hantholm, with widespread reports of gusts near 90mph in the N Denmark and Baltic coastal areas of Germany with associated damage and sadly, reported fatalities.