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Search

[Met Office logo](#)

bullet [Home](#) bullet [Media Centre](#) bullet [Toolkits](#) bullet [150th anniversary](#) bullet [Great weather events: Lowest recorded pressure](#) Space

**[Weather and climate](#) | [Aviation](#) | [Leisure](#) | [Research](#) | [Education](#) | [Product catalogue](#) | [Services for business](#)** Space

Page Top

Spacer

# 150th anniversary

underline

## Great weather events: A record-breaking Atlantic weather system

**On 14/15 December 1986, the explosive deepening of a very active depression between Greenland and Iceland resulted in the central pressure falling below 920 millibars (mb). This is believed to be the lowest pressure recorded in the North Atlantic and, perhaps, the lowest in the world outside tropical storms and possibly the centres of violent tornadoes. The average atmospheric pressure is around 1013 mb, but the central pressure weather systems typically range from 950 to 1040 mb around the UK.**

### Two become one

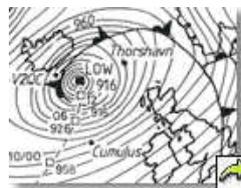
Two active depressions which formed in the general area of Newfoundland followed converging paths and combined to produce the major feature generating the record reading. Before the two circulations were absorbed into each other, their central pressures were 956 mb and 960 mb - both already deep. Afterwards, the single depression deepened explosively and started to move in a north-easterly, then northerly direction, towards south-east Greenland.

A ship at some distance from the centre of the storm recorded a pressure of 938.8 mb. Later, when the storm started to move a little more towards the north-west, another ship reported 926.2 mb. The same ship reported 920.2 mb at midnight on the 15th - it was still at some way from the centre.

### Lowest pressure reached

At this time the Met Office analysis of the North Atlantic indicated that the central pressure was about 916 mb, and other national weather services suggested it could be as low as 912 mb. The centre of this storm did not approach the UK, so it was only ships at sea and automatic buoys that were 'lucky' enough to report winds of between 60 and 75 knots in the circulation around it. Weather fronts associated with the storm crossed the UK during the 15th but the conditions they brought were nothing out of the ordinary for December.

### Lowest pressure equalled



A depression to the west of Ireland passed over one of the Met Office's Ocean Weather Stations on 10 January 1993. The ship recorded a pressure of 939 mb in average wind speeds of 70 knots which produced waves 11 m high. This depression later deepened to equal the record set in 1986.

Record low pressure 10 Jan 1993

### How Met Office numerical model handled the record depression

When compared with actual analyses of the storm, the operational model used by the Met Office in 1986 produced extremely good forecasts. It predicted a surface pressure of 916mb, however the Head of Forecasting Services at the time said that the analysed central pressure may not have been low enough!

#### SOME OTHER LOW PRESSURE READINGS

	Pressure (mb)	Details
<b>1979</b>	870.0	Typhoon 'Tip' (16° 44' N, 137° 46' E). World record
<b>1958</b>	877.0	Typhoon 'Ida' (19° N, 135° E)
<b>1927</b>	886.0	Ship Saperoea (east of Luzon)
<b>1870</b>	921.1	Ship Neier (49° N, 26° W)
<b>1929</b>	925.5	Ship H.M.S Tarifa (51° N, 24° W)
<b>1884</b>	925.6	Ochertyre (lowest pressure on record for the UK)
<b>1886</b>	927.2	Belfast
<b>1962</b>	931.1	Ocean Weather Station 'Lima' (56° N, 19° W)
<b>1983</b>	936.0	South-east Greenland

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