



Exceptional weather events

Type of event:

Storm

Date:

February 1988

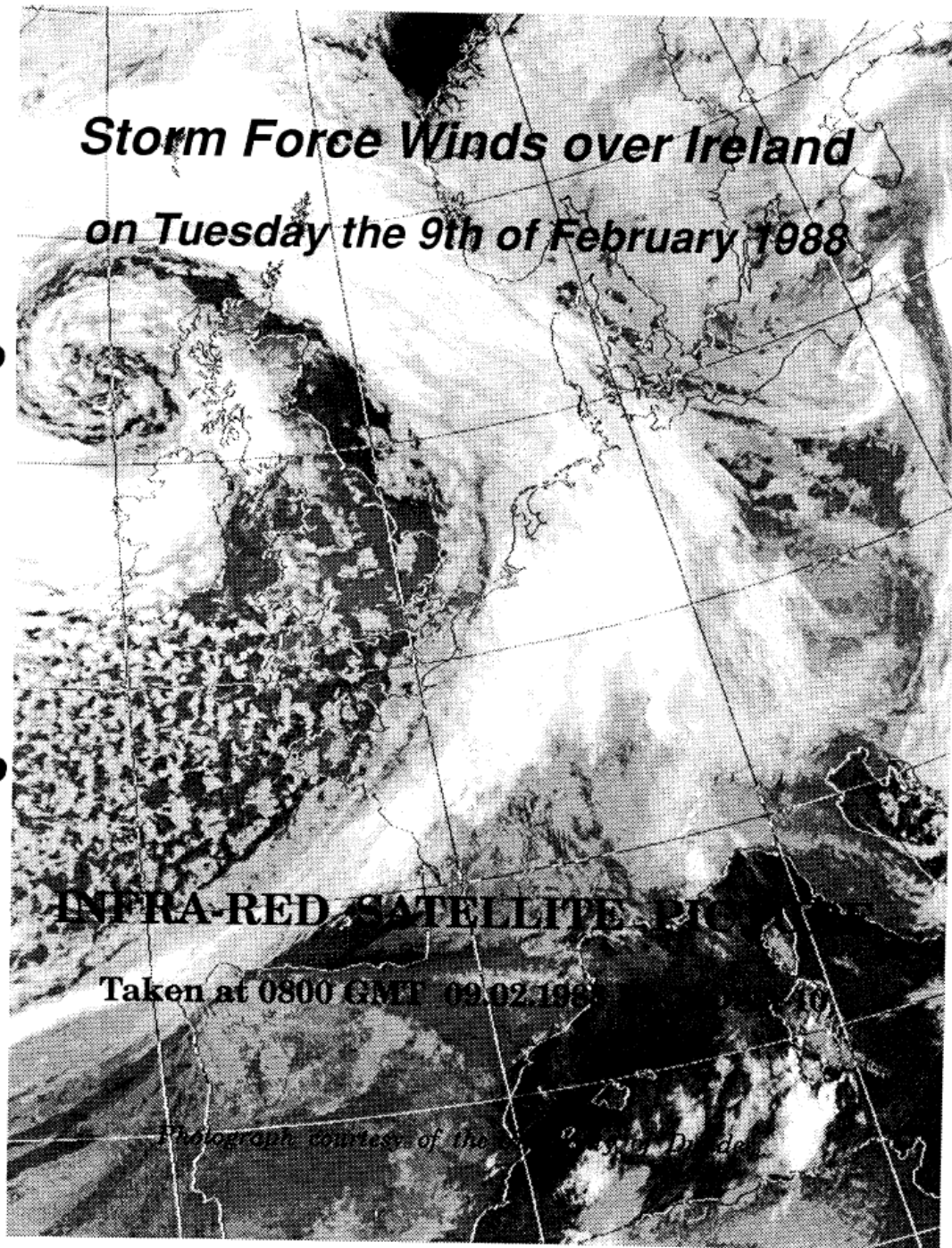
METEOROLOGICAL SERVICE

*Storm Force Winds over Ireland
on Tuesday the 9th of February 1988*

INFRA-RED SATELLITE PHOTOGRAPH

Taken at 0800 GMT 09.02.1988

Photograph courtesy of the Met Office, Dublin



Storm Force Winds over Ireland
on 9th February 1988

The storm which affected Ireland on Tuesday 9th began as a small wave depression to the south of Newfoundland on 7th. During Monday 8th it moved northeastwards across the Atlantic and deepened dramatically.

The Synoptic situation at 9 GMT 9th is illustrated on Chart 1. The position of the storm centre is marked at 6-hour intervals as it tracked to the North of Ireland, in over Scotland, bringing with it very strong winds and rain. The depression deepened to 944 hectopachals (millibars) and was at its maximum intensity when positioned about 100 miles to the north of Malin Head.

South to Southwest winds began to increase in strength late Monday evening Chart 2 shows the synoptic situation over the country at 7 GMT. At this hour a mean hourly wind speed of 55 knots (storm force 10), a mean 10 minute wind of 60 knots (violent storm force 11) and a gust of 93 knots were reported from Belmullet. Mean hourly wind speeds (Belmullet) of 50 knots or more (stormforce) were recorded between 4 and 9 GMT and 14 and 17 GMT.

Table 1 shows highest gusts, highest 10 minute and highest 60 minute winds recorded at 15 locations together with the highest records at these locations.

Highest gusts recorded at the following locations are noteworthy:

1. Belmullet 93 knots; is the second highest in 32 years of record and is comparable to the highest on record of 94 knots.
2. Casement Aerodrome 78 knots; is the second highest gust recorded in 21 years of record.

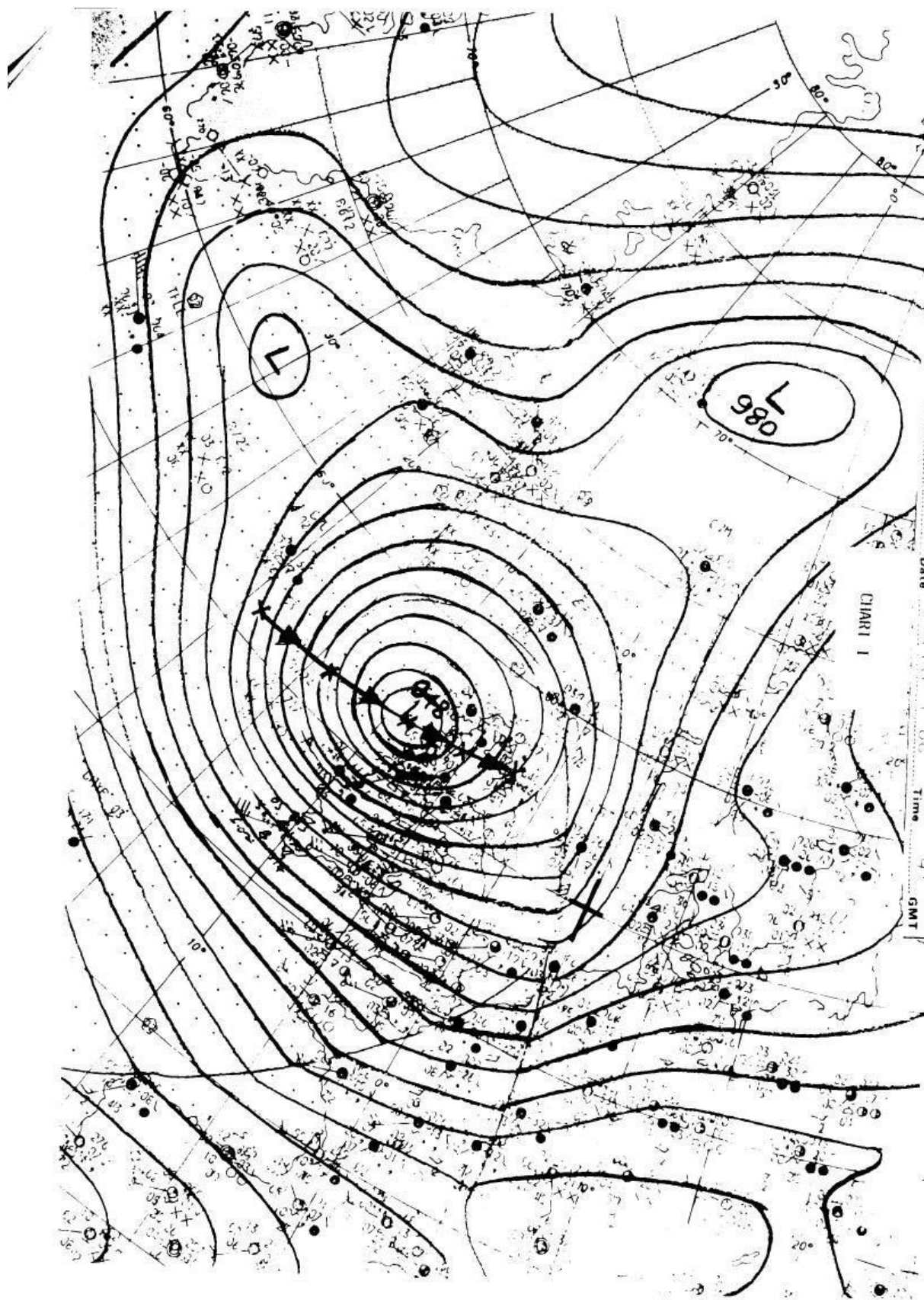
3. Galway 83 knots; is the highest gust since records began there in 1978.

Summary

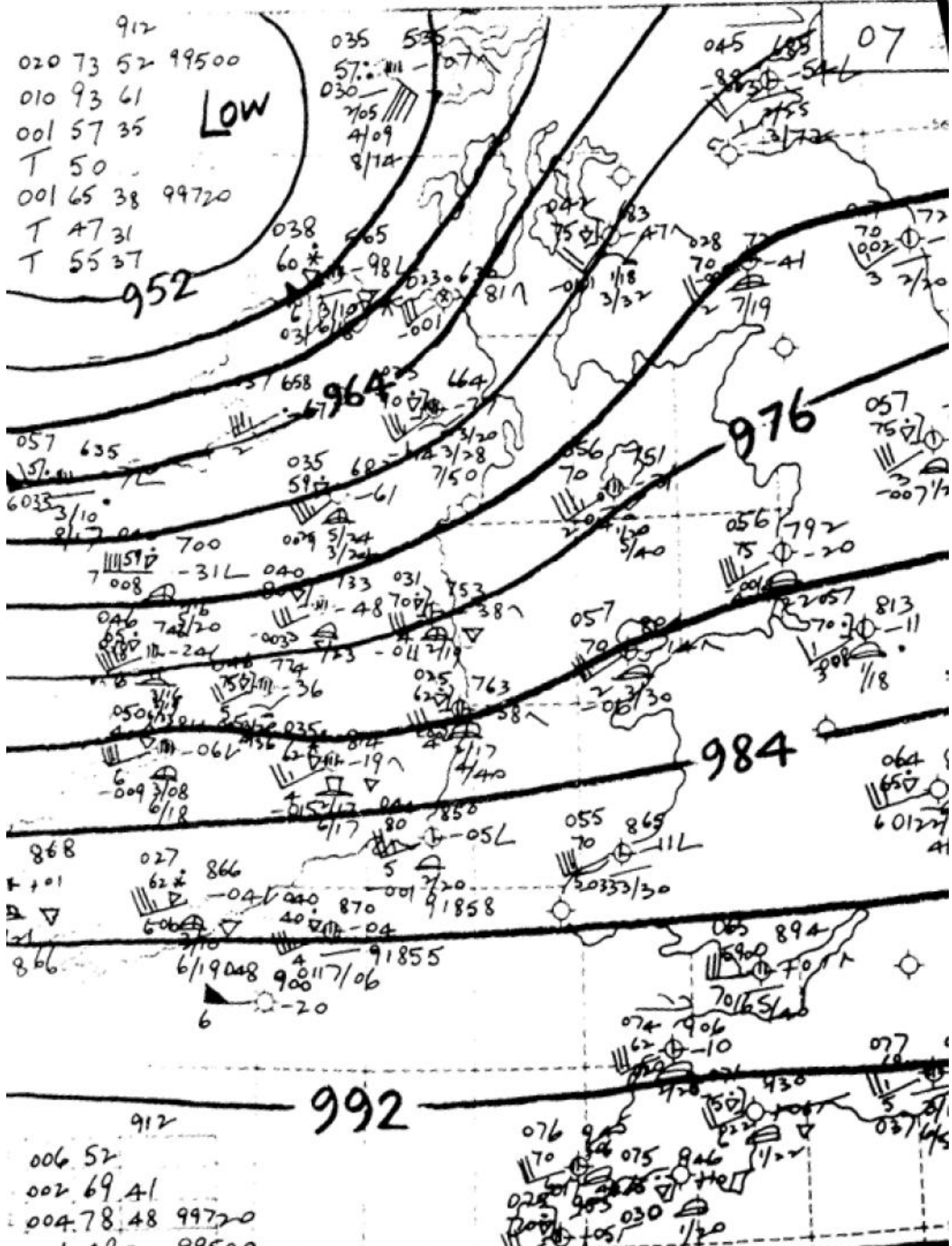
The storm was unusual but not unique. Winds were comparable to the highest recorded at some locations. The south and southeast were least affected. A storm on the first of the month gave stronger winds at Cork Airport and at Roches Point with gusts of 83 and 82 knots respectively. The most severe storm in living memory occurred on 16th September 1961. At Malin Head, "Hurricane Debbie" as it was known gave mean hourly wind speeds in excess of 60 knots and a gust of 98 knots.

Many storms are short lived with the strong winds concentrated over a few hours. A feature of this storm is the duration of the strong winds - see anemograph for Belmullet. At many locations gale force winds continued for a period of 24 hours.

G.O.'Reilly



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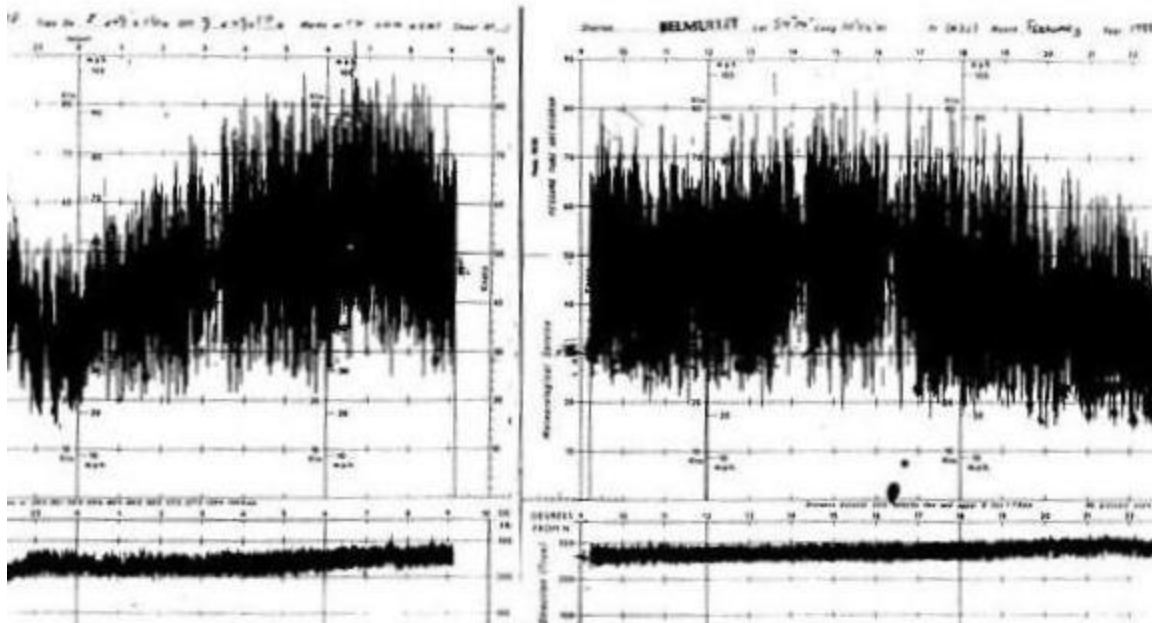


Storm 9th February 1988 - (WIND SPEED IN KNOTS)

Station		MAX GUST	HIGHEST ON RECORD	MAX 10 MIN	HIGHEST on RECORD	MAX 60 MIN	HIGHEST on RECORD **	MEAN 00-24	PERIOD	
Belmullet	*	93	(94)	60	(66)	55	(55)	44.7	1956	- 1987
Birr		74	(85)	38	(51)	32	(40)	25.8	1954	- 1987
Casement Aerodrome	*	78	(81)	53	(57)	50	(49)	38.5	1967	- 1987
Claremorris		85	(96)	48	(60)	45	(55)	37.8	1943	- 1987
Clones		71	(87)	44	(54)	41	(47)	31.3	1950	- 1987
Cork Airport		72	(94)	42	(58)	34	(56)	30.2	1961	- 1987
Dublin Airport	*	73	(75)	49	(49)	44	(45)	35.5	1944	- 1987
Galway	*	83	(73)	46	(42)	42	(38)	33.9	1978	- 1987
Kilkenny		72	(77)	39	(45)	33	(41)	27.6	1957	- 1987
Malin Head		81	(98)	57	(67)	53	(60)	42.1	1955	- 1987
Mullingar		71	(79)	36	(45)	33	(41)	27.9	1944	- 1987
Roches Point		74	(91)	49	(62)	38	(59)	33.5	1955	- 1987
Rosslare		61	(87)	35	(52)	30	(48)	24.8	1956	- 1987
Shannon Airport		80	(93)	46	(60)	41	(53)	33.5	1940	- 1987
Valentia		79	(88)	42	(58)	39	(49)	32.6	1940	- 1987

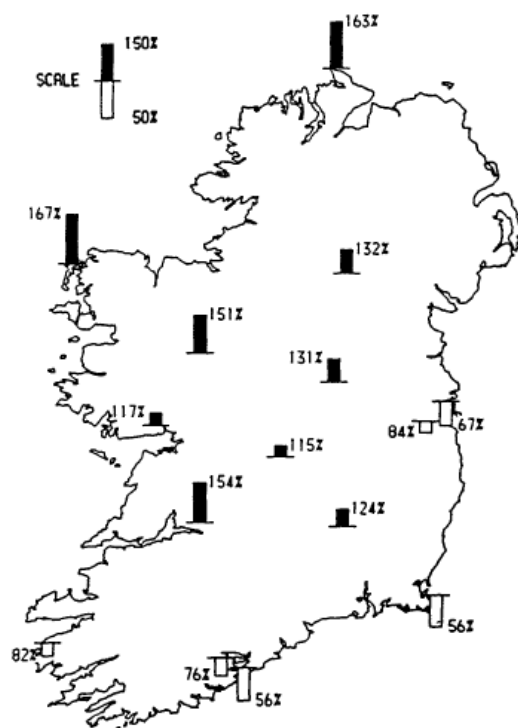
** Period of record for highest 60 minute wind (1962 - 1987) /Galway 1978 - 1987

* Stations at which previous records were equalled or exceeded.



Major Storms on 1st and 9th Cause Considerable Damage

The first half of the month was wet and windy. Westerly winds were dominant and on 1st and 9th major storms passed close by the northwest of the country, causing record low pressures. Both storms wreaked havoc over the country, bringing down telephone and power lines and causing widespread disruption of road, rail, air and sea transport. During the second half of the month high pressure dominated to weather charts in the region of Ireland. The centre of the anti-cyclone was mostly out to the west in the Atlantic but between 19th and 21st the centre was quite close to the country. As winds were mostly from the northwest or north and amounts of precipitation were small we got improved drying which was much needed after the wet January.



Rainfall percentage of (1951-1980) normals

WINDSTORMS

In both cases a major Atlantic depression passed close by the northwest of the country. On 1st the centre of low pressure passed very near Belmullet and pressure there fell to 949.1 hectopascals (millibars). All but some southern areas could be said to have escaped lightly with maximum gusts of between 40 and 60 knots. However, along the whole south coast gusts of between 75 and 83 knots were recorded and Cork Airport had twelve successive hours with mean windspeed of at least gale force (34 to 40 knots) and two hours with storm force winds (48 to 55 knots). This resulted in over 40,000 homes in southern counties being without electricity as falling trees brought down power lines.

On 9th (see front page on which the storm centre is to the north of Ireland) the central pressure of the storm was lower than on 1st but the centre did not pass quite so close to any of our stations and the lowest pressure recorded was 953.5 hectopascals at Malin Head, the lowest February pressure there in over thirty years of record. Destructive winds affected the whole country. The west and northwest were worst affected but near southern coasts the storm of 1st was the more severe. Many areas had 20 to 24 hours with mean winds of at least gale force and Belmullet had eight hours with storm force winds. Maximum gusts ranged from 69 to 85 knots generally; Rosslare registered only 61 knots but Belmullet recorded 93 knots (107 mph), its highest gust since January 1957.

The windstorm of 9th bears comparison with the

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the storms of February 1957, January 1974 and even 'Hurricane Debbie' of September 1961. Four people were killed and over a dozen injured as the storm swept over the country. Trees were down everywhere, roofs blown off and over 80,000 homes were without power during the day.

Records for February were broken at quite a number, but not all our stations. The only full-period record broken was at Galway where the 83-knot gust was the highest since the station opened in 1978. The lengthy duration of gale force winds was the most singular feature of this storm. On 28th and 29th in a fresh northerly airflow winds gusted from 35 to 50 knots over the country with gusts of up to 62 knots at Malin Head.

PRECIPITATION

In south Munster and east Leinster rainfall was below normal but elsewhere it was above normal. Amounts ranged from 127mm at Belmullet (167% of normal) to 39mm at Rosslare (56% of normal). The bulk of the rain fell in the first two weeks, when wettest spells were 1st to 3rd, 7th to 10th and 13th to 15th and showers of hail, sleet and snow were widely reported.

During the second half of the month drying conditions improved considerably as amounts of rain were small especially between 16th and 24th. With the centre of high pressure retreating slowly westwards troughs occasionally came down from the north between 25th and 29th but amounts of precipitation remained small. Showers of hail and sleet were reported especially in the north and west. Malin Head and Shannon Airport had their highest February totals for 11 years but Belmullet had its wettest February for 18 years.

AIR TEMPERATURE

Mean maximum air temperatures ranged from 0.1°C to 0.6°C above normal. Mean minimum air temperatures were below normal in south Munster and south Leinster but were above normal elsewhere. Air frost was recorded on 3rd between 5th and 8th, 10th and 12th and from 14th, 16th and 25th.

SUNSHINE

Totals ranged from 104 hours at Rosslare (131% of normal) to 48 hours (73% of normal) at Malin Head. Near the south and east coasts it was the sunniest February for 13 to 18 years.

WINTER OF 1987/88

December : Cold Start Becoming Mild

January : Wet and Mild

February : Wet and Stormy at First

In all but parts of the east rainfall was above normal. In the west it was the wettest winter for 14 years while near the south coast it was the wettest for 6 to 9 years and at some stations over 130% of normal rainfall was recorded. In parts of the east rainfall was below normal with Casement Aerodrome having only 91% of its normal total.

Mean maximum air temperatures were between 0.4°C and 0.9°C above normal in most areas while mean minimum air temperatures ranged from 0.5°C to 0.9°C above normal. In the east and parts of the southeast it was the mildest winter since 1975/76. However, at Belmullet mean air temperatures were just above normal.

Sunshine totals ranged from 214 hours at Rosslare to 123 hours at Claremorris representing percentages of normal varying from less than 80% at Birr and Claremorris to over 108% at Rosslare which had its sunniest winter for 18 years. Near the south and east coasts the highest winter sunshine totals for 6 to 9 years were recorded.

There was a notable windstorm on February 9th but there were no major snowfalls during the winter. Lowest temperatures were recorded during the cold spell of early December when -7.1°C was recorded at Clones.