

# Fastnet Race 1979: Why was the storm so devastating?

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**When 303 yachts set off on the 1979 Fastnet Race there was no inkling that a storm was imminent. How did it arrive without warning, asks meteorologist Chris Tibbs, and why did it cause such mayhem?**



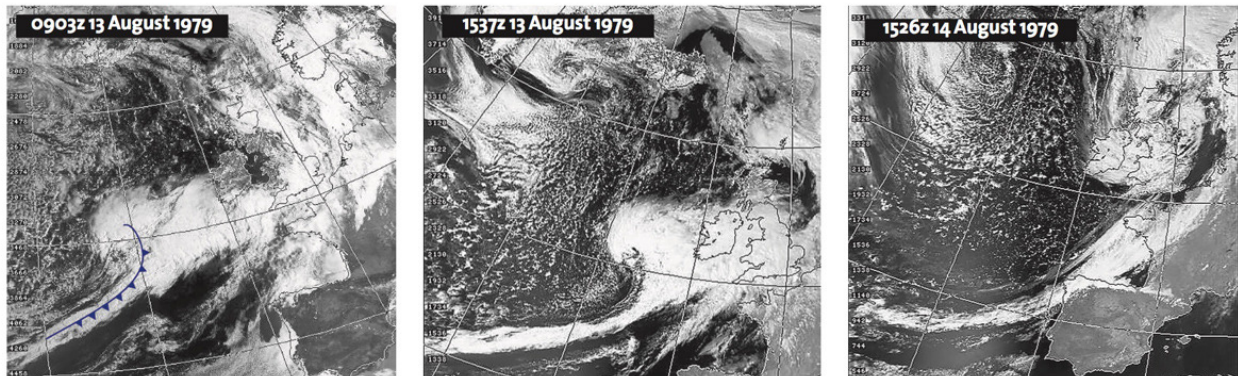
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There was nothing in the forecast at the start of the 1979 Fastnet Race to indicate a storm, but a storm came with devastating effect. How and why did it cause such a catastrophic disaster? Neither the track it followed nor the central pressure of the depression was in itself remarkable. Its speed of close to 45 knots was quick, but not exceptional. It was only when it began to slow down and deepen in the 24 hours between midday Sunday 12 August and Monday 13 that it

appeared to develop storm tendencies, deepening eventually to 978mb, a central pressure that would be considered deep in winter and this was the height of summer.

By mid-afternoon on Monday, satellite pictures showed that the depression was more significant than had been thought and was deepening rapidly to a storm. It has been suggested that it was the afternoon satellite picture that prompted the imminent gale warning that unfortunately was broadcast after the shipping forecast. As the shipping forecast was the primary weather information for most yachts in those days, any warnings outside the scheduled time was unlikely to be heard at sea.

Some synoptic charts at the time indicated a trough following behind the cold front. Whether this was the front or a trough behind it, what is important is that there was a large change in wind direction in the region of 90°. This is a significant feature of the storm, with the strongest wind arriving as the pressure rapidly rose after the trough. Gusts contained within the leading edge of squalls can be half as much again (or more) as the average wind speed, making the reported gusts of 80 knots realistic.



Satellite images of how the Fastnet storm actually developed between 13 and 14 August 1979. The first in the sequence shows the position of the cold front, with its abrupt change in wind direction. By the afternoon of 14 August the storm has passed over and you can see that the vicious cold front has already dissipated. Credit: NEODAAS / University of Dundee

Diagrams of wind fields produced by the Met Office show this 90° change in the wind direction and when we read reports from the boats of the conditions experienced, it is the sea state that is the one overriding factor that generated problems for the boats.

Our understanding of waves is not complete. Records from North Sea rigs show that the existence of very high, or rogue waves is much greater than theory would have us believe. In the Fastnet storm the south-westerly wavetrain would still have been large when the north-westerly waves arrived, creating a very short steep sea and, although the inquiry found that, in theory,

neither the shallow water nor tidal stream had a significant effect, competitors who were asked reported that they thought it had made a difference.

Although estimating wave heights is very difficult from a yacht, claims of 50ft waves are substantiated by the report from a Nimrod pilot on 14 August of wave heights of '50-60ft'. It was the sea state the wind generated that caused the biggest problems, just as it did nearly 20 years later during the 1998 [Sydney-Hobart race](#).



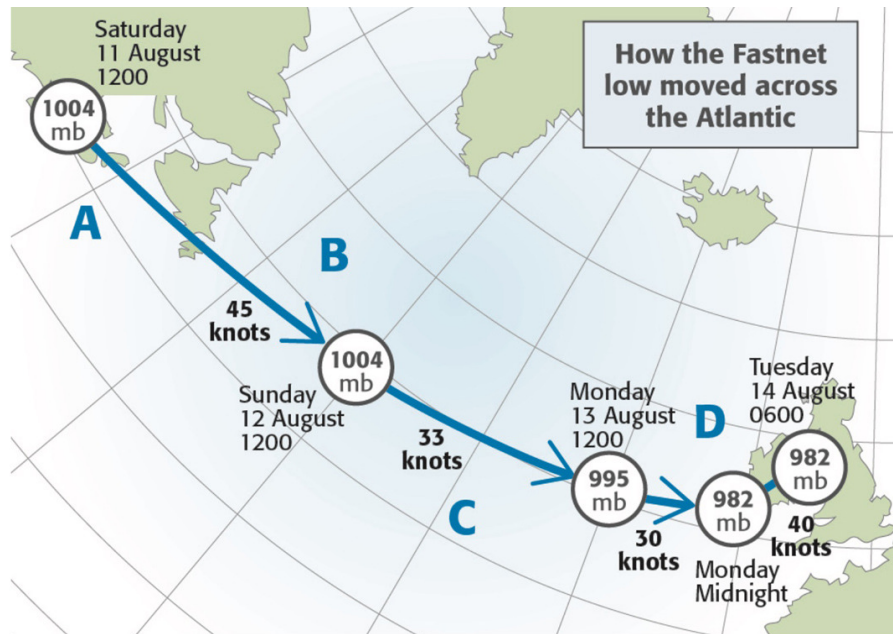


It is so notorious among sailors that you could say the Fastnet Rock is the northern hemisphere's Cape Horn. Legends...

Advances in forecasting go hand in hand with advances in computing power. It seems amazing now that the first live TV forecast was made in the UK in 1954 and ten years later the first operational cloud pictures from satellites became available. What we can call modern numerical modelling techniques started in the early 1960s in the UK as the Met Office took delivery of its first electronic computer. The new technology enabled observations to be used not only to draw up weather chart 3, but by going back to first principles, mathematical modelling of the atmosphere could be made at a number of different heights.

Nowadays, as we sit on a modern race boat we can have near broadband speed internet connections, download satellite pictures and compare a number of computer models in the middle of an ocean. It is all a long way away from 30 years ago when the principal weather information was the Shipping Forecast on Radio 4.

At the UK Met Office the main model is run with an approximate 40km resolution and 50 levels through the atmosphere, forecasting ahead for six days. In 1979 the area covered, resolution and levels were all significantly less; in the region of 300km resolution with 10 levels. Like a digital picture, the higher the resolution, the greater the detail and the greater the accuracy. As weather is three-dimensional, the increase in levels taken into account increases accuracy.

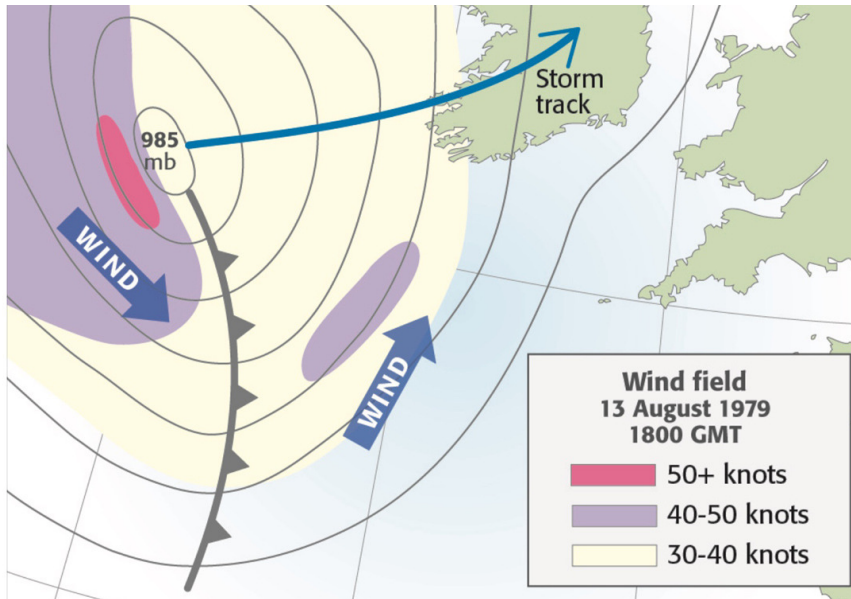


The passage of the low pressure across the Atlantic and how it intensified. Credit: Ambrose Greenway

The complexity of the models and the forecasts they give has increased immensely and, while there is always the possibility of another Fastnet storm, the forecasting should offer a much longer warning.

Contemporary reports and [the 1979 Fastnet Race inquiry](#) made much of the accuracy of the Shipping Forecasts broadcast by the BBC. What has not changed is that the forecasts then and now are still for only 24 hours – 24 hours from the time of issue, which is not necessarily the time of receipt. However accurate the forecast, a yacht can travel only a limited distance to get to shelter. So knowing what the weather will be doing in 48 or 72 hours is important for trying to avoid incoming bad weather.

As a group, sailors will often say that the forecast of bad weather occurs more frequently than bad weather itself. This is not necessarily true, but forecasters do look at the worst that is likely to happen rather than the best. So even if a forecast were completely accurate, would sailors take as much notice of it as they should?



This wind diagram shows the wind change. North-westerly waves would have arrived before the windshift, creating a confused sea. Credit: Ambrose Greenway

The forecast for the 2007 Fastnet Race showed a depression of similar central pressure (978mb) as the 1979 Fastnet storm tracking through the Irish Sea at a time when the majority of the fleet would be there. These were coincidences too close for comfort and the start was delayed by 24 hours. In reality, the storm did not generate the wind speeds that it might have done, nor was there the 90° veer in the same place.

Even so, there were a lot of retirements, yachts heading direct to Plymouth with a considerable amount of damage in only moderate conditions. There is no doubt that weather forecasting has become much more accurate over the past 40 years and it is unusual for forecast 3, even at three days, to be wrong. This has, however, increased our expectations. Today, sailors are demanding an accuracy of just a few knots and a precise wind direction.



### About the author

Chris Tibbs is a meteorologist and sailor. After three round the world races and 250,000 miles of sailing, he went back to university and gained a Masters degree in meteorology. He works as a forecaster and weather router and has competed in many classic ocean races, including twice in the Fastnet.

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