

WEATHER WISE

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Can you trust a long-range forecast?

Sailors base a lot around long-range forecasts. Chris Tibbs advises what we can do to increase our peace of mind

Sailors naturally place a lot of trust in weather forecasts. Often, we'll base a cruise around a long-term forecast that makes an assessment of conditions in more than a week's time. How accurate are these long-term forecasts? Nobody gets it right 100% of the time and if I had a pound for every time I heard the joke about a weather forecaster being the only

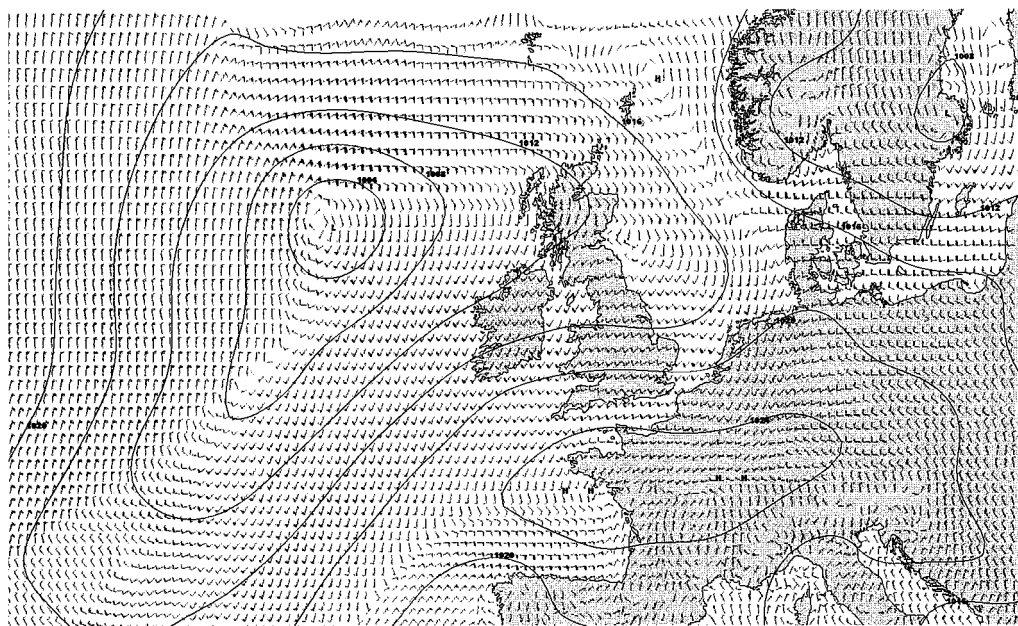
career where you can get it wrong and keep your job, I would be cruising the Pacific in my own yacht! However, it's not really about how accurate a forecast is, but rather understanding how forecasts are made and what we can do to increase our awareness of the overall picture.

Short-term forecasts are for a day, usually with another 24-hour period added on, giving the nitty-gritty of the wind direction and strength, along with visibility and cloud cover or sunshine. This is great for weekend sailing and planning where to anchor overnight.

A medium-range forecast looks at the next two to five days, ideal for short cruises and crossing the Channel. It gives us a pattern and general wind direction, without being too specific. It is critical if picking a weather window, for example, for crossing Biscay, or for any passage where deep-water, all-weather harbours are in short supply.

A long-range forecast is for a period in excess of five days, useful for extended cruises. I use it not only for deciding where to head on the annual cruise, but how we will get back again towards the end of the holiday. On the Internet, it is easy to find a forecast for the next 10 or 15 days. The danger is that you can keep looking until you find one that you like!

Forecasts are made by supercomputers that model the atmosphere around the world, at 70 different levels. A huge number of observations from around the world go into the model. The more accurate the observation,

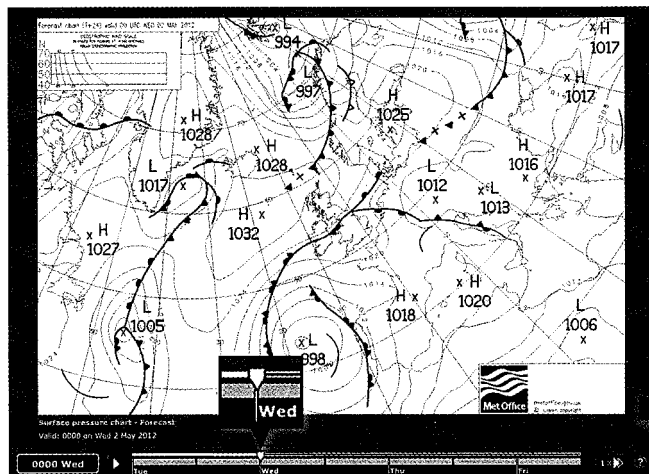
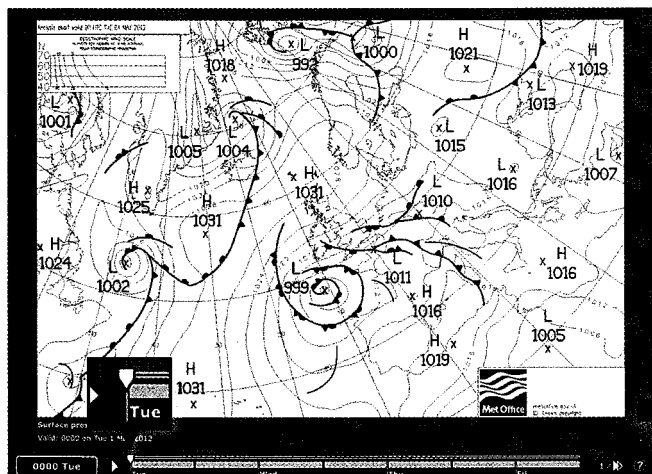


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Many chartplotters can display weather forecasts. This one, by Raymarine, has useful wind arrows

MET OFFICE PRESSURE CHARTS

A five-day forecast in 12-hour intervals, giving you a good idea of the general picture



It's not possible to know exactly what the weather will be in the future.

or in other words the more accurate the representation of the initial conditions, the better the model will perform and the more accurate forecasts will be. The longer the time elapsed since the initial analysis, the less accurate the forecast will be. Whether or not the weather is settled also makes a huge difference to accuracy. If, for example, there is a family of depressions passing over the UK, it will be more tricky predicting the exact conditions several days hence.

The Met Office uses this global model and also has smaller area models 'nested' within it. Nested models have varying degrees of scale, or resolution, typically 12km, but the latest ones are down to 4km and there is likely to be a 1.5km model in regular use soon. The advantage of these high-resolution models for sailors is that they can model the wind over coastal waters more accurately, taking into account the variation between the land and water temperature and the effect this has on the wind.

Once these models are produced, meteorologists interpret their output and will then produce a forecast, be it for the *Shipping Forecast* or the nightly news. They rely on the high-resolution models, or what are called meso-scale models, for the short-term forecast, then the global models for the longer-term forecasts.

Professional meteorologists also use ensemble forecasts. These involve changing, or 'perturbing', the initial conditions and some aspects of the modelling. By running the model a number of times, often 24, with different initial conditions, it is possible to view a spread of outcomes, giving a good indication of the uncertainty within the forecast.

All this describes how a forecast is made, but it does not actually help in deciding if it will be accurate.

A few years ago, before setting out to cross the Bay of Biscay in November (not a good time to do so), I compared four different models. All four were very similar in pattern, which gave me the confidence to leave from Cowes on the Isle of Wight and make my first stop north-west Spain. If the models had been different, my confidence in the forecast would have been

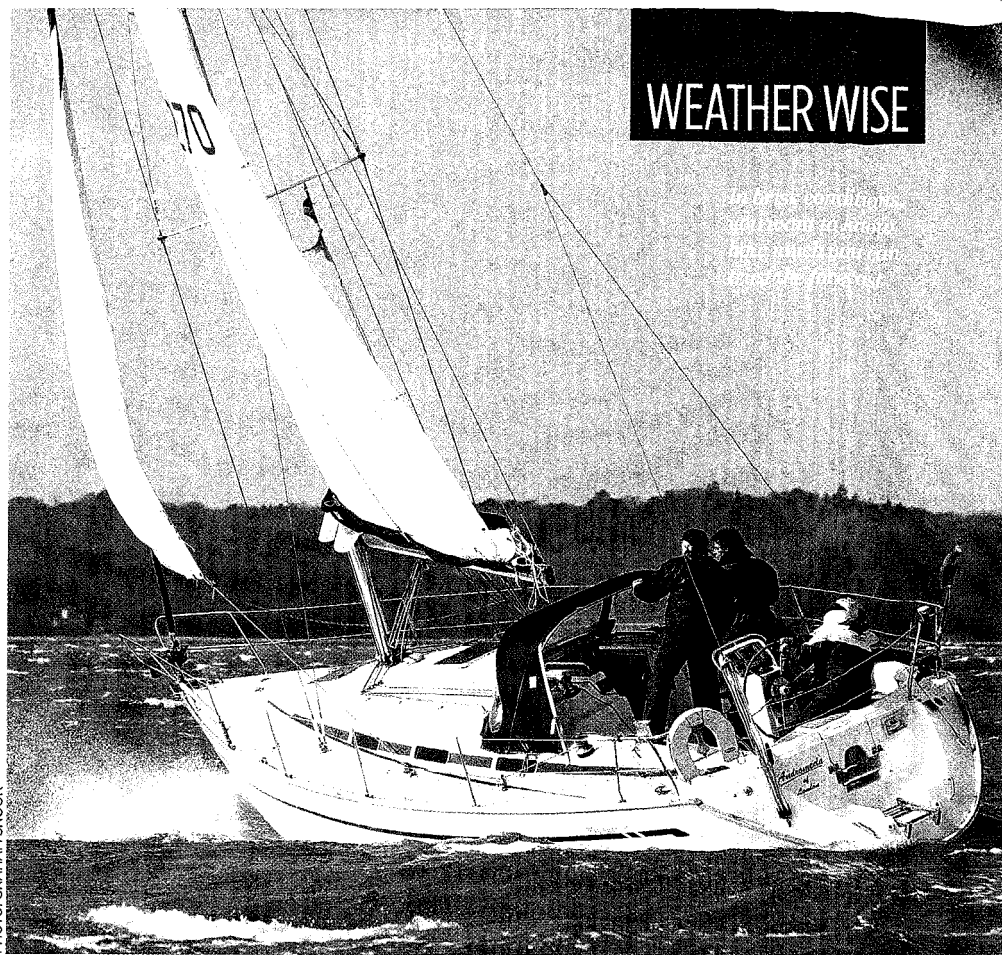


PHOTO: GRAHAM SNOOK

low, and we would have waited.

Different models handle the forecast in slightly different ways. Even the analysis can be different, as although a huge number of observations go into it, there are still large gaps in coverage around the world.

Comparing the Met Office charts with, say, American charts, or with GRIB files, will compare different models. By looking online, there are a number of additional models to compare. On sites like www.metbrief.com, you will find a huge amount of information including links to

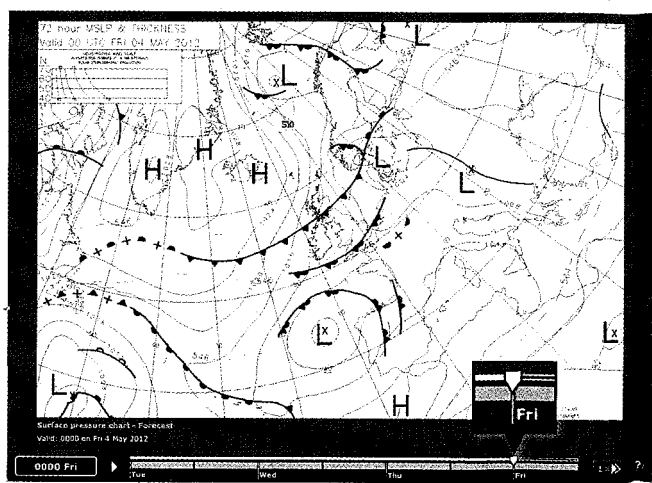
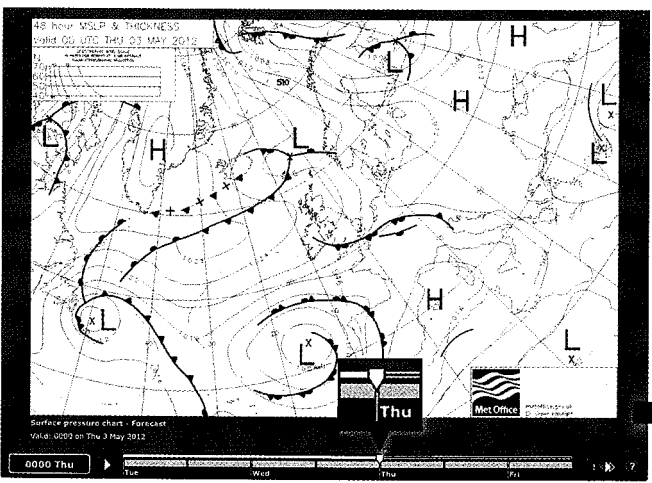
different models. Sometimes the models will diverge and show quite different forecasts. When this is the case, there is likely to be a great deal of uncertainty within the forecast and it is prudent to keep as up to date as possible with

the latest information. This often happens when we get a run of depressions crossing the Atlantic. The tracks of these depressions are difficult to predict, so a medium- to long-range forecast is likely to change.

It is also worth taking note of just what a forecast says. Broadcast times are short and the number of words limited. To help convey as much information as possible, words have specific meanings which convey additional information. Whether rain is described as 'intermittent' or 'showers' will indicate where within a depression you are. Whether the wind is 'backing' or 'veering' will help determine what would be a safe or exposed anchorage.

So how much can we trust the forecast? The longer-range the forecast, the greater room for error. If conditions are volatile then the error is likely to be larger. However, as we've seen, by comparing different models, we can gauge the level of uncertainty in the forecast and plan our passages accordingly. ▲

'Words used in forecasts have specific meanings which convey additional information'



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