The modern forecast & finale

Forecasting for a few hours ahead is easy; for a few days requires careful observation and records of past experience, if only in the form of folk sayings; forecasting for 5 days ahead requires a multimillion pound/euro/dollar effort – billions really if you cost satellite observations, an international network of data collection, international communications, megabuck computers, teams of atmospheric physicists, programmers and forecasters, and the dissemination effort. There is an 'up-side' to the random variations in weather: weather changes on a timescale usually measured in days. Bad weather doesn't get locked in for months on end. If it's blowing a gale and driving rain, then you know it's going to stop in days at the longest and not months. If it's searingly hot and dry, then this weather may last several days but not months. Bad weather may come back but there will be a break and on its return it will be a bit different. At least this is true in many parts of the world. Persistent weather is forecastable; it's variable weather that gives forecasters all the problems. To put it the other way around, if forecasters are having problems, the weather will be variable.

To be a forecaster these days you need a good, relevant degree and then a couple of years' training and on-the-spot experience. Many people pay good money for forecasts, among them supermarket buying departments, local councils, transport operators and in this part of the world everyone who is at the sharp end of the offshore oil industry. Even in the UK, which is the home of the once entirely government funded Meteorological Office, private meteorological firms are thriving. The forecasting profession survives on the accuracy of its products. I'm sorry to say that this course won't turn you into a professional forecaster, it was never intended to, but I'll come back to a point I made at the very beginning of the course: everyone is affected by the weather and it's empowering and very useful to have an idea what's going on in the atmosphere that gives us the weather we experience. Now, at the end of the course you know something of the processes that go on – condensation, convection, advection, energy transfer and so on, something of the way air moves and the characteristics of air masses, fronts, cyclones and anticyclones and the weather associated with them.

I'll take this opportunity of advertising the Royal Meteorological Society, now over 150 years old. They promote many aspects of meteorology and have a student community. If you find yourself in a job that requires some meteorological expertise but you are not employed just as a meteorologist then they run the 'Registered Meteorologist' accreditation that will take a pass in our course as evidence of some formal training in the discipline. See the blue-panel piece on the course web page on 'Taking meteorology into your job'.

Final comments

I'll wager that you now know more about meteorology than you give yourself credit for. You should be able to interpret intelligently the real weather signs, satellite pictures, surface charts and more. Chapter 14 in the textbook develops this theme further. Notice the 'instant weather forecast chart' in appendix E that was drawn up for the US but works well here. See also table 14.3 in Ahren's excellent textbook. Our lectures may stop at chapter 13, for the teaching term has come to an end, but the text doesn't stop there.

You also know a good deal about climate and what drives climate changes. The topic of *climate change* is set to run for the whole of our lifetimes. You know more of the technical details involved than most people and should be able to weigh up the issues better than many.

In the future, a few in the class may be able to exert real influence on the way others move on policies that affect climate change.

On a daily basis, I hope you get as much enjoyment over the years of watching the atmosphere as I have had. If you already indulge or take up any sport where the weather is important – sailing, gliding, ballooning, sky-diving, flying, mountaineering, skiing or one of many others, I hope this course has helped a bit.

JSR