

# Weather plays its part in shaping future MOD plans

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**If you thought wet bank holidays were bad, prepare yourself for something much worse. Report by Roy Bacon.**



Destructive power: But tornadoes are not the only weather phenomenon that can cause terrible damage  
[Picture: MOD]

In the basement of the Met Office's Exeter headquarters is a dust-free room containing what looks like a vast array of high-tech coffee vending machines. These metal boxes contain the Met Office's NEC SX-8 supercomputer – and the world's weather.

The computer uses information from ground stations, satellites, weather balloons, ships and aircraft to produce forecasts for TV and radio, and customers such as airlines and the Forces. Robert Napier, chairman of the board of the Met Office said:

"It's a seven-day-a-week, 24-hour-a-day operation, and we're rather good at it."

The SX-8's massive computing power (it carries out fifty million million calculations in order to produce one 24-hour forecast) is the key to the Met Office's increasing accuracy:

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Derrick Ryall, head of the Defence Climate Research Programme

"Today's three-day forecast is as reliable as the one-day forecast was 20 years ago," said Robert.

And forecasts are becoming more localised:

"We can now go down to detail of four kilometres, and we're testing down to one-and-a-half."

The Met Office is an MOD agency, and the connection goes back to the days of the service's founder, naval captain Robert Fitzroy, who developed the origins of modern forecasting.

In addition to providing trained weathermen and women for the military (mobile forecasters provide on-the-spot advice to commanders on operations) the longer-term implications of climate change are beginning to figure in the calculations of military planners:

"There could well be water wars as rivers dry up," said Robert. "Combine that with the likelihood of population movements, and dramatic changes in the developing world's ability to grow crops because of the shortage of water, and there will be huge flows of refugees. That could be very destabilising."

In addition, he said, there is now a greater expectation that UK Armed Forces will respond to humanitarian disasters around the world:



Robert Napier: World faces disasters and conflict [Picture: MOD]

Under a changing climate we are likely to see more of those. Everywhere in the world is going to see a change in climate; but quite often it's less developed countries, that are least able to adapt, that are being hit."

Derrick Ryall, head of the Defence Climate Research Programme funded by MOD and the Department for the Environment, Food and Rural Affairs, said there has been a change in attitude at MOD over the last 18 months:

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Robert Napier, chairman of the board of the Met Office

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That means looking at every aspect of defence, from operations to procurement, Mr Ryall added:

"You need to design it for the environment in which you're going to operate. For example, at the moment we know that helicopters have difficulty operating

in hot regions of the world. It's much cheaper to design something with a specification to encompass future environment, than redesign it in mid-life."

Recent events, including the devastation wrought by Hurricane Katrina in 2005, and the thousands of heat-related deaths across Europe in 2003, mean that even the most sceptical have joined the scientific consensus on climate change. Robert Napier said that taking one bad storm, or one bad year, in isolation is not proof that climate change is happening:

"But what you can do is look at all the trends. So many of the hottest years on record have been in recent years, for example. The clock is ticking – and it's ticking closer to midnight."