

Radar factsheet

A **weather radar** measures the location and intensity of **precipitation** - including rain, hail and snow - in real time. The Met Office's network consists of 15 weather radars across the UK, providing information to help monitor and forecast precipitation.

Radar works by sending out electromagnetic pulses from its antenna into the atmosphere. It then measures how long those pulses take to reach a target (e.g. an object like an aircraft or a ship), bounce off that object and return to the radar. It has been known for many years that other objects can also create echoes, e.g. flocks of birds or precipitation.

Between each pulse, a device in the radar called the **receiver** 'listens' for echoes and captures data from them e.g. if the pulses detect precipitation, the data from the receiver can tell us how far away it is, how heavy the precipitation is and even what type of precipitation it is likely to be. Computer technology turns this data into text or visuals that allow meteorologists to see important real-time information about the weather.

A radar is surrounded by a **radome**, a large structure that protects it from damage. Most of the Met Office's radomes are geodesic, meaning they have a rounded, curved surface made

up of lots of flat hexagons. They look like giant golf balls!

Radars are usually maintained by **field service engineers**, who will spend some of their time working at a field service centre, as well as visiting Met Office HQ. Field service centres are workshops where all sorts of weather observing equipment can be built, fixed and maintained. Field service centres are often located near radars so that the engineers can quickly get to the site if something needs to be fixed.

Weather radars are really important. They are the only means available for measuring the location and intensity of precipitation in real time. Data is used directly by **meteorologists**, the people who observe and forecast the weather, and is fed into forecast models, helping keep people safe right across the UK and beyond.

