Welcome

Welcome to the SPOT-ON Observers Guide, the Met Office's updated guide to observing practices for the UK land-based observing network.

You may be familiar with the problem of not having all the information you need to make, code and send observations. You may have access to certain reference books, while a nearby observing station has different ones. How do you know where to find the most up-to-date information? How can you be sure that your observations are the best they can be?

This guide is the answer. It is designed to help you make, code and send weather observations — quickly and easily. By ensuring all observers have access to this guide, we hope to reduce the possibility of mistakes. This will enable you to make high-quality observations every time.

You will see the ✓ symbol wherever there is key information to help you make **SPOT-ON** observations.

SPOT-ON means

- ✓ ***S**tandard* — use standard equipment and exposure to ensure accuracy
- ✓ ***P**recise* — keep your instruments in good condition to help ensure high-quality measurements
- ✓ ***O**n **T**ime* — make sure your observations are sent by the time they are needed
- ✓ ***O**rderly* — be methodical in providing an ideally complete set of expected measurements
- ✓ ***N**o errors* — always check your measurements before you send them: your quality control is vital

All your high-quality observations are valuable and may be used in many different ways, for example:

- as input to supercomputer forecasting models, which produce local/global weather forecasts;
- to help with any weather-related issues, e.g. aviation safety;
- for climatological analysis, e.g. frequency of extreme events, such as gales or heavy rain;
- to answer legal enquiries, where data may have to be presented in a law court.

This guide is quite brief — it avoids technical detail — providing enough information to get you started, prompt you or simply to serve as a quick refresher. It is not meant to teach you about meteorology or about the Met Office, and it only covers instruments and methods that are *widely* used.

The notes assume that your station, equipment and computer programs have already been set up correctly, and that you know what observations your station should provide and when. If this is not the case, please use the contact detail on page 4.

Your station has been sent the parts of the guide that relate to the observations you make. If you think your station is missing some part(s), please use the contact detail on page 4.

Universal Time Co-ordinated (UTC) is the international time standard replacing Greenwich Mean Time (GMT). All times quoted in this guide are in UTC unless otherwise stated. UTC is the same as British clock time in winter and is one hour behind British clock time in summer.

The guide is ideal for outdoor use, being resistant to water and usual wear and tear. The loose-leaf format will allow any necessary changes to be made at a later date.

UK land-based observing network

The network consists of synoptic (including auxiliary), climatological (including health resort) and rainfall stations. The classification of each station depends on the observations it makes.

Synoptic observations are the most frequent and most detailed observations. These are coded for sending straight away and are typically done each hour by Met Office observers, but less often at most auxiliary stations.

Climatological observations are normally made once a day at 0900 UTC and make a significant contribution to assessing the long-term climatology of the British Isles. The observation includes maximum and minimum air temperature and total rainfall for the 24 hours to 0900 UTC. However, where there is a Met Office requirement, stations also measure other agreed elements. Most stations send in a month's worth of observations at the start of the following month. This is done on handwritten forms or by entering data on a computer that e-mails the observations to the Met Office.

Health resort stations are climatological stations that make an extra observation at 5 p.m. This is sent to the Met Office via an automated telephone system and collated into a bulletin that is issued to the press.

Climatological stations fall into three broad categories, as explained below.

- **Authorities with a real need for daily observations**

  Sponsors of stations within this group (e.g. agricultural stations and health resorts) have a self-interest in making daily observations.

- **Authorities with an interest but no real need for observations every day**

  The sponsor is usually an organisation. These include schools and public bodies (such as National Trust, Nature Conservancy and Forest Enterprise).

- **Private individuals**

  These observers have a personal interest in the weather but usually have no vested interest in the data.

Rainfall-only observations are made at approximately 4,500 stations throughout the UK. These are vital for water authorities, drainage departments, engineers, public-health departments, agriculturists, farmers and foresters, and many more. It is essential to have rain gauges situated across the whole of the UK to properly study the rainfall distribution. Rainfall amounts should be measured at 0900 UTC.

Automatic stations also make observations. These are often located in difficult terrain and are useful for times when an observer is not available. They may be needed for continuing a valuable climate record when an observer retires from a long-term station. A typical automatic station has a set of weather sensors connected to a central data logger, which provides data, measurement, processing and storage for several weeks worth of data. However, some stations can give hourly or 10-minute information as soon as the data are measured, typically temperature and rainfall.

Changes to stations

Always let us know of any changes or intended changes at your station as soon as possible. This includes changes to exposure of the site; moving, removing, or replacing any instruments; and any changes to the observing programme.

Contact information

For comments or suggestions about this guide, or if you want to request a change, have problems or queries, please e-mail: **SPOT-ON@metoffice.com**

If you have any problems or queries, call the **Customer Centre on 0845 300 0300**. Please give your station name and number, stating that it relates to the 'Spot-On Observers Guide'. The Customer Centre will pass your details onto the Surface Networks Section for a response.

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