

Autographic instruments

Autographic instruments use a chart/card that provides a continuous record of the measurement. The charts operate for a specific time period, depending on the mechanism used.

Daily card for sunshine	Change when you do your 0900 UTC observation
Weekly clock-driven chart for pressure	Change at 0900 UTC on Mondays
Monthly electrically operated chart for wind	Change at 0000 UTC on the first day of the month. However, if this is a day when the station is unmanned, change on the first Monday of the month

At synoptic stations, there are still a few autographic instruments in use; however, many of these are likely to be replaced by automated systems in the near future. Those currently in use are the pressure barogram, Campbell–Stokes sunshine recorder and wind anemogram.

Information needed on charts

- ✓ Before putting the new chart on the instrument, write (in ink) the name and details of the station, relevant dates and the serial number of the chart.
- ✓ Always mark the time (to the nearest minute) one or two hours after the chart has been changed.
- ✓ For weekly and monthly charts, make a time mark at about 1200 UTC every day (or 1800 UTC, if more convenient).

- ✓ On daily charts, it is useful to have a second time mark 8–12 hours after the first.
- ✓ Note on the old chart the measured value and the time you took it off, and note on the new chart the measured value and time you put it on. Time marks are essential as a check on the accuracy of the clock. Do not neglect this important task, otherwise the value of the record may be lost.
- ✓ On weekly barogram charts, note the mean sea-level pressure from a precision aneroid or mercury barometer corresponding to the times of the daily time marks.

Regular checks

Check frequently that the instruments are working properly and the records are acceptable. They may be needed as evidence in law courts and are useless if the record is unclear or incomplete.

- ✓ Ensure that your familiarity with the instruments does not lead you to overlook gradual deterioration. Deposits can accumulate on the ink nibs, the clock timing may slow and the instrument calibration may steadily shift. Watch for these and correct them straight away.

- ✓ All autographic records should be examined for trace quality. Charts should always be stored in a dry place, otherwise the trace may spread or smudge.

Analysis of records

- The *barogram* record does not have to be analysed before you send it.
- The *anemogram* record has to be analysed to determine the hourly mean wind speed and direction, highest hourly gust speed and the time (in hours and tenths) of the highest gust speed. A few stations have the responsibility to send wind data on form 6910 — ‘Analysis of anemograms’.
- Analysis of Campbell–Stokes sunshine cards is explained in the ‘Sunshine’ booklet.
- Try to send your completed forms as soon as possible, ideally no later than the third working day of the month after the measurements are made.