

# Compass Test Centre



The Compass Test Centre is located within the Magnetic Assessment Services at MOD Portland Bill, Dorset.

Formerly part of the Admiralty Compass Observatory, relocated from Slough, the facility provides a UK local standard North-seeking compass to calibrate magnetic compasses. It's the only such facility in the UK.

Situated on a magnetically clean site, the facility includes a non-magnetic test area within an isolated building, which accommodates the local standard instrument.

The Compass Calibration and Test Facility at MOD Portland Bill is based around a local, magnetic North-seeking needle housed in a "standards room". This needle is the acknowledged reference for calibrating compasses in the British Isles - and for all compasses fitted to vessels registered under British & European flags. This needle establishes current magnetic north variation figures, which are added to/subtracted from certified true geological locations of various long distant siting targets. This is accurate to 6 seconds of arc, and standard output is constantly monitored.

The compass test centre's floor area has a very low magnetic gradient. Within a background field of 48,000 nT (0.48 Gauss) the earth's field change is no more than 19 nT - which represents a 0.04% shift. In addition, there is only a 2 nT change over the datum stand's 5m radius.

Compasses are tested by mounting onto one of the unique test stands - and to manufacturer specifications - in accordance with ISO 25862.

The stands (pictured above) are used to measure over 20 specifications including direction, friction, period and swirl error. A darkroom tests the compass cards' luminosity. The datum plinth is a non-magnetic concrete column, which tests the most accurate compasses.

All types of magnetic systems' magnetic moments, between 0.01 and 9.844 Am<sup>2</sup> (10 - 9844 cgs units) can be measured using a suspension magnetometer - even when compasses are active and working.

The Compass Test Centre can be used as a testing location, where a magnetically clean environment is required.

## Key Facts

- Magnetic, North-standard reference instrument
- Unique, magnetically clean test area
- Magnetic moment measurement
- Secure, undercover environment



Magnetic compass undergoing test on our unique test stands

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