Compass Requirements – *Part C Section 7 Subsection 7C*

National Standard for Commercial Vessels requires all vessels in survey to have a magnetic compass.

Table 2 — Scales of navigation equipment for vessels

Equipment Type	Vessel type			
	Operational Area A Vessels <24 metres in length	Operational Area B Vessels <35 metres in length	Operational Area C Vessels <35 metres in length	Operational Areas D & E Vessels <35 metres in length
Magnetic compass	YES	YES	YES	YES

Selecting and Installing the Magnetic Compass

The size of compass required depends on the length of the vessel.

A2.4 Compass card

Magnetic compasses shall be provided with a magnetic compass card of a size according to Table A.2.

Table A.2—Magnetic compass cards

Measured length of vessel metres	Compass card diameter mm
Less than 10	75
10 and over but less than 20	100
20 and over	125

The compass installation is to be practical and away from magnetic disturbances.

A3.1 Location and installation

A magnetic compass in a vessel shall be—

a) located forward of the steering wheel/controls in such a manner that it can be easily read from the normal steering position;

b) located in such a position so as to permit adjustment;

NOTE: Further guidance on the positioning of compasses is contained in ISO 25862:2009.

c) fitted with a means of illumination, together with a device for dimming the illumination; and

d) designed or installed so that the card remains horizontal when the vessel is up to 40° from the horizontal in any direction.

5.3.2 Location of navigation equipment

Electronic navigation equipment shall be installed in such a location and manner that—

a) it is protected against the harmful effects of the marine environment; and

NOTE: Examples of the sources of harmful effects in a marine environment include sunlight, moisture, spray and extremes of temperature.

b) it will not affect any of the vessel's compasses or other navigational equipment in accordance with Clause 5.3.3.

A3.2 Other equipment in the vicinity of compasses

When installing electrical instruments close to a magnetic compass, the following conditions shall be observed:

a) Electrical equipment should not be installed nearer to any magnetic compass than the 'safe distance' as recommended by the manufacturer of such equipment, or which has been determined by test in accordance with ISO 25862:2009.

NOTE: Portable electrical equipment such as hand microphones, mobile telephones and telephone handsets should not be operated in close proximity to a compass.

b) Where the structure of the vessel does not allow magnetic materials to be placed at or outside the required minimum distance in accordance with item a) above, the compass shall be sited in the best possible position compatible with these requirements. The owner or master of the vessel should ensure that a record of satisfactory performance of the compass in service is kept.

ACAA Note –

Your local compass adjuster can give valuable advice on the selection and installation of the magnetic compass suitable for your vessel.

Programmed Inspection and Maintenance of the Magnetic Compass

The National Standard for Commercial Vessels, Part E, requires a system of regular programmed inspection and maintenance of the magnetic compass. Meeting these requirements is outlined in Part C Section 7 Subsection 7C:

A4 ADJUSTMENT OF COMPASSES

A4.1 For the proper adjustment of a magnetic compass on a vessel, the details of any compass deviations observed during the operation of the vessel must be recorded by the master.

NOTE: NSCV Part E requires a system of regular programmed inspection and maintenance for a vessel, its machinery and equipment to be developed and maintained, which includes any compass on board. This requirement ensures compass accuracy is periodically monitored.

A4.2 A magnetic compass on a vessel must be adjusted if:

a) observations show a deviation of the compass on any heading of more than 5°; or

b) the vessel has undergone repairs or alterations which may affect the accuracy of the compass; or

c) the vessel has not previously operated from any port or place in Australia.

NOTE: For circumstances in which it is recommended that a compass be adjusted, see Annex G of ISO 25862:2009 *Ships and marine technology — Marine magnetic compasses, binnacles and azimuth reading devices*.

ACAA Note –

To comply with A4.1, it is recommended that vessels maintain a record of compass deviations. An example of a record book is shown below.

Date	Position		Vessel's Heading			Deviation	Means of determining Vessel's Heading
	Lat.	Long.	True (optn'l)	Magnetic	Compass	(mag-com)	
24/03/2017	Marina Entrance			270°	272°	2°W	Mt Larcom ahead
2/04/2017	Gladstone harbour		113°	103°	100°	3°E	Auckland Channel leads ahead
5/04/2017	23°14'S	151°50'E		218°	221°	3°W	Mt. Stanley ahead (gps point)

Regular entries should be made for headings 0° - 360°.

Alternatively, a qualified compass adjuster can be engaged to adjust the compass and issue a deviation card which satisfies the requirements of A4.1 and A4.2

ISO 25862:2009, Annex G requires that magnetic compasses should be adjusted when:

a) *They are first installed;*
b) *They become unreliable;*
c) *Repairs or structural alterations have been made to the ship that could affect its permanent and/or induced magnetism;*
d) *Electrical or magnetic equipment close to the compass is added, removed or altered;*
e) *The recorded deviations are excessive or when the compass shows physical defects; or*
f) *At any other time deemed necessary by the master for the safety of navigation.*

Summary

A properly functioning magnetic compass provides a resiliant heading reference independent of power supply. In operating a vessel, knowledge of heading is integral to situational awaresss and safe navigation. A properly functioning magnetic compass is also required by the NSCV Code.