

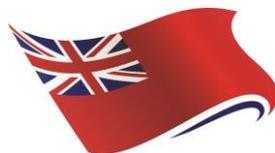


INSTRUCTIONS FOR THE GUIDANCE OF SURVEYORS ON

NAUTICAL EQUIPMENT

MSIS27 CHAPTER 13

Rev 08.22



PREFACE

- 0.1 These Marine Survey Instructions for the Guidance of Surveyors (MSIS) are not legal requirements in themselves. They may refer to statutory requirements elsewhere. They do represent the MCA policy for MCA surveyors to follow.
- 0.2 If for reasons of practicality, for instance, these cannot be followed then the surveyor must seek at least an equivalent arrangement, based on information from the owner/operator. Whenever possible guidance should be sought from either Principal Consultant Surveyors or Survey Operation Branch, in order to maintain consistency between Marine Offices.

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RECENT AMENDMENTS

The amendments made in the most recent publication are shown below, amendments made in previous publications are shown in the document Amendment History.

Version Number	Status / Change	Date	Author Reviewer	Content Approver	Next Review Date/Expiry Date
05.21	<ul style="list-style-type: none"> Amended text and numbering to include reference to regulations; added 'magnetic' to section 13.5.5.1 	23/04/21	I Platts	G Stone	23/04/23
09.21	<ul style="list-style-type: none"> Update references to MSN1871 and include reference to MSN1871 references to Nautical Publications 	30/6/2021	D Fenner	G Stone	06/09/23
08.22	<ul style="list-style-type: none"> Update to text to clarify AIS requirements for under 15m vessels 	09/08/22	I Platts	G Stone	09/08/24

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13.1 GENERAL

13.1.1 The relevant regulations and requirements are set out at the beginning of each section. The guidance should also be applied, as far as practical.

13.2 OBJECT OF INSTRUCTIONS

13.2.1 These instructions are issued by the Maritime and Coastguard Agency (MCA), an executive agency of the Department for Transport for the guidance of Surveyors inspecting navigational equipment installations for the purposes of [The Fishing Vessels \(Codes of Practice\) Regulations 2017](#) referred to as The Regulations. They also indicate to owners, Masters and crews, shipbuilders and installation companies the requirements which certain vessels should meet in order to comply with the Regulations.

13.3 STATUTORY PROVISIONS

13.3.1 The principal statutory provisions covering the navigational equipment requirements for fishing vessels are:-

- [The Merchant Shipping Act 1995](#);
- [The Fishing Vessels \(Codes of Practice\) Regulations 2017](#);
- [MSN 1871 \(F\) - The Fishing Vessels Code of Practice for the Safety of Fishing Vessels of less than 15m Length Overall](#);
- [MSN 1872 \(F\) – The Code of Safe Working Practice for the Construction and Use of 15 Metre \(LOA\) to less than 24m \(L\) Fishing Vessels](#);
- [MSN 1873 \(F\) – The Code of Safe Working Practice for the Construction and Operation of Fishing Vessels of 24m Registered Length and Over](#);
- [The Merchant Shipping \(Vessel Traffic Monitoring and Reporting Requirements\) Regulations 2004](#);
- [MGN 610 \(M+F\) - Navigation: SOLAS Chapter V - Guidance on the Merchant Shipping \(Safety of Navigation\) Regulations 2020](#)

13.4 NOTICES AND CIRCULARS

13.4.1 Notices are issued by the MCA from time to time on the subject of navigation equipment.

13.4.2 Surveyors should bring to the attention of fishing vessel owners, skippers, shipbuilders and others interested any new requirements or recommendations, as opportunity offers, and be prepared to discuss their effect in specific cases.

13.5 COMPASSES- CARRIAGE REQUIREMENTS

13.5.1 Requirements are contained in [Section 9.5.1 of MSN1871](#), [Section 9.5.1 of MSN 1872](#) and [Section 9.5.1 of MSN 1873](#).

13.5.2 VESSELS TO WHICH THE FISHING VESSELS (SAFETY PROVISIONS) RULES 1975 USED TO APPLY

13.5.2.1 In every vessel to which the 1975 Rules applied a voice pipe or other acceptable means of communications shall be provided between the standard compass position and the wheelhouse and the emergency steering position if one is provided.

13.5.2.2 Vessels should be fitted with a properly adjusted standard magnetic compass, or other means independent of any power supply to determine the vessel’s heading and display (with electric light) the reading at the main steering position. Vessels fitted with a standard magnetic compass should have a valid deviation card. Guidance is contained in MCA Guidance – Safety of Navigation at Annex 13, Operation, Maintenance and testing of Magnetic Compasses.

13.5.2.3 Vessels of 45 metres in length and over to which these Rules apply, operating in latitudes above 65° North or South, shall be provided with a gyro-compass.

13.5.3 VESSELS TO WHICH SECTION 9.5.1 OF MSN 1873 CODE OF PRACTICE FOR THE SAFE CONSTRUCTION AND OPERATION OF FISHING VESSELS OF 24 METRES REGISTERED LENGTH AND OVER APPLY

Table of Requirements for Compass Equipment			
	24m to less than 45m	Less than 75m, but not less than 45m	75m and over
Standard Magnetic Compass,	YES The MCA may exempt vessels and classes of vessels if the nature of the voyage, the vessel’s proximity to land or the type of vessel does not warrant a standard compass provided that a suitable steering compass is in all cases carried.		
Spare Magnetic Compass,	YES Must be interchangeable with standard compass, unless steering or gyro compass is fitted		
Steering Magnetic Compass,	YES Unless heading information provided by the standard compass is made available and is clearly readable by the helmsman at the main steering position.		

13.5.4 VESSELS TO WHICH SECTION 9.5.1 OF MSN 1872 CODE OF SAFE WORKING PRACTICE FOR THE CONSTRUCTION AND USE OF 15 METRE (LOA) TO LESS THAN 24M (L) FISHING VESSELS APPLIES

13.5.4.1 Vessels should be fitted with a properly adjusted standard magnetic compass, or other means independent of any power supply to determine the vessel’s heading and display (with electric light) the reading at the main steering position. Vessels fitted with a standard magnetic compass should have a valid deviation card. Guidance is contained in MCA Guidance – Safety of Navigation at Annex 13, Operation, Maintenance and testing of Magnetic Compasses.

13.5.5 **VESSELS TO WHICH MSN 1871 (F) - THE FISHING VESSELS CODE OF PRACTICE FOR THE SAFETY OF FISHING VESSELS OF LESS THAN 15M LENGTH OVERALL APPLIES**

13.5.5.1 All fishing vessels under 15 overall length require a magnetic compass. The specifications for such compasses are not given.

13.6 **COMPASSES- GENERAL REQUIREMENTS**

13.6.1 Requirements are contained in Section 9.5.1 of MSN1871, Section 9.5.1 of MSN 1872 and Section 9.5.1 of MSN 1873.

13.6.2 Each magnetic compass required to be carried by the Regulations shall be properly adjusted and its table or curve of residual deviations available at all times. Magnetic compasses should be adjusted when:

- they are first installed;
- they become unreliable;
- the vessel undergoes structural repairs or alterations that could affect its permanent and induced magnetism;
- electrical or magnetic equipment close to the compass is added, removed, or altered; or,
- a period of two years has elapsed since the last adjustment and a record of compass deviations has not been maintained, or the recorded deviations are excessive or when the compass shows physical defects.

13.6.3 **EFFECTS OF CHANGES IN MAGNETISM DURING THE LIFE OF A VESSEL**

13.6.3.1 Because the magnetism of a new vessel can be particularly unstable, the performance of magnetic compasses should be monitored carefully during the early life of a vessel, and adjustments made if necessary.

13.6.3.2 Skippers are advised that it is essential to check the performance of magnetic compasses particularly after:

- a casualty in which the vessel has been subject to severe contact or electrical charges; or,
- the vessel has been laid up or has been lying idle - even a short period of idleness can lead to serious deviations, especially for small vessels.

13.6.4 **MONITORING COMPASS PERFORMANCE**

13.6.4.1 Compass performance should be monitored by frequently recording deviations in the vessel's log book. Checking the compass deviation regularly may show the need for repair, testing or adjustment. In addition, compasses should be inspected occasionally by a competent officer or compass adjuster.

13.6.5 ADJUSTMENTS AND REPAIRS

- 13.6.5.1 In the UK, all adjustments should be made by a compass adjuster who holds a **Certificate of Competency as Compass Adjuster** issued by the UK Government.
- 13.6.5.2 If a qualified compass adjuster is unavailable and the Skipper considers it necessary then adjustments may be made by a person holding a Certificate of Competency (Deck Officer) Class 1 (Master Mariner). The compass must be re-adjusted by a qualified compass adjuster at the next available opportunity.
- 13.6.5.3 The date of any adjustment and other details should be noted in the vessel's log book. The position of correctors should be recorded on deviation cards. Because the distances from the coefficients B and C correctors to the standard compass card and to the transmitting element are different, a transmitting magnetic compass will be overcompensated resulting in an error, which can be as much as $2\frac{1}{2}^{\circ}$ and cannot be corrected. Separate deviation cards should be prepared for the standard compass and the transmitting magnetic compass repeater by comparing headings.
- 13.6.5.4 Repairs should only be made by a compass manufacturer or other competent person using the proper test facilities. When the work is finished the repairer should supply the owner or Skipper with a certificate, specifying that the work has been carried out in accordance with the necessary requirements ISO 2269 for Class A Compass and ISO 10316 for Class B Compass which are the International Standards for the Magnetic Compass.
- 13.6.5.5 Outside the UK, and in cases where the compass requires to be adjusted, every effort should be made to ensure that a properly qualified compass adjuster is employed and that a certificate is issued on completion of the compass swing.

13.6.6 PORTABLE EQUIPMENT THAT MAY INTERFERE WITH COMPASSES

- 13.6.6.1 Skippers are advised that portable electrical equipment (e.g. radios and tape recorders) or items made of steel can affect the performance of a compass. Care should be taken to ensure that such items are kept away from the compass position.

13.7 NAUTICAL PUBLICATIONS

- 13.7.1 Requirements are contained in Section 9.7.7 of [MSN1871](#), Section 9.5.3 of [MSN 1872](#) and Section 9.5.2 of [MSN 1873](#).
- 13.7.2 **VESSELS TO WHICH SECTION 9.5.2 OF MSN 1873 CODE OF PRACTICE FOR THE SAFE CONSTRUCTION AND OPERATION OF FISHING VESSELS OF 24 METRES REGISTERED LENGTH AND OVER APPLIES**
- 13.7.2.1 The following must be carried suitable for the intended voyage:
- Set of Admiralty charts to cover all areas of operation, with corrections;

- (ii) International Code of Signals;
- (iii) Merchant Shipping Notices;
- (iv) Mariners Handbook;
- (v) Notices to Mariners;
- (vi) Up to date Nautical Almanac;
- (vii) Navigational tables;
- (viii) Lists of Radio signals;
- (ix) Lists of Land and Earth Stations;
- (x) Lists of Lights;
- (xi) Sailing directions;
- (xii) Tide tables;
- (xiii) Tidal Stream Atlases;
- (xiv) Operating/maintenance instructions for navigational aids carried;
- (xv) Official Log book;
- (xvi) GMDSS radio log; and
- (xvii) The Over 24m FV Code of Practice.

Any of the above items can be accepted if they are contained in a Nautical Almanac carried onboard.

13.7.3 VESSELS TO WHICH SECTION 9.5.3 OF MSN 1872 CODE OF SAFE WORKING PRACTICE FOR THE CONSTRUCTION AND USE OF 15 METRE (LOA) TO LESS THAN 24M (L) FISHING VESSELS APPLIES

13.7.3.1 Charts and publications carried should be appropriate to the intended area of operation of the vessel.

13.7.4 VESSELS TO WHICH SECTION 9.7.7 OF MSN 1871 (F) - THE FISHING VESSELS CODE OF PRACTICE FOR THE SAFETY OF FISHING VESSELS OF LESS THAN 15M LENGTH OVERALL APPLIES

13.7.4.1 Vessels must either carry a set of Admiralty charts to cover all areas of operation, with corrections, or meet:

- [MGN293 \(M+F\) Alternative Arrangements for Meeting Paper Chart Carriage Requirements](#) on MCA Code Vessels under 24 metres in Length and Fishing Vessels under 24 metres in Length.; or

- **MGN319 (M+F)** Acceptance of Electronic Chart Plotting Systems for Fishing Vessels Under 24 metres and Small Vessels in Commercial Use (Code Boats) up to 24 Metres Load Line Length.

13.7.4.2 Where Admiralty charts are carried, the charts to be carried shall be those:

- a. that are of such a scale and which contain sufficient detail as clearly to show:
 - i) all navigation marks that may be used by a Vessel when navigating the waters that are comprised in the chart;
 - ii) all known hazards affecting those waters; and
 - iii) any information concerning traffic separation schemes, two-way routes, recommended tracks, inshore traffic zones and deep water routes applicable to those waters, as well as areas that are to be avoided;
- b. that are either published by the Hydrographer of the Navy or any authority in any country other than the United Kingdom duly exercising functions similar to those of the Hydrographer of the Navy, and are of a similar scale and contain equivalent detail; and
- c. which, in all cases, are of the latest available edition and have been adequately corrected.

13.7.5 CHART CARRIAGE REQUIREMENTS

13.7.5.1 For vessels detailed in sections **13.6.1 and 13.6.2** above, navigational chart carriage requirements are as follows:-

13.7.5.2 The charts to be carried should be those:

- that are of such a scale and which contain sufficient detail as clearly to show:
 - all navigation marks that may be used by a vessel when navigating;
 - the waters that are comprised in the chart;
 - all known hazards affecting those waters; and
 - any information concerning traffic separation schemes, two-way routes, recommended tracks, inshore traffic zones and deep-water routes applicable to those waters, as well as areas that are to be avoided;
- that are either published by the Hydrographer of the Navy or any authority in any country other than the United Kingdom duly exercising functions similar to those of the Hydrographer, and are of a similar scale and contain equivalent detail; and
- which, in all cases, are of the latest available edition and have been adequately corrected.

13.7.5.3 An equivalent electronic chart display and information system (ECDIS) may be accepted as meeting the paper chart obligations above.

- 13.7.5.4 Reference should be made to: The Merchant Shipping (Safety of Navigation) Regulations, 2002.
- 13.7.6 ELECTRONIC CHART PLOTTING SYSTEMS (REFER PRESENTLY IN [MGN 319 M+F](#))**
- 13.7.6.1 For fishing vessels of under 24metres, certain Electronic Chart Plotting Systems are acceptable.
- 13.7.6.2 The MCA will accept electronic chart plotting systems complying with the specifications developed by the Sea Fish Industry Authority (SFIA).
- 13.7.6.3 Manufacturers, or their agents, will be required to provide a signed statement, a certified copy of which must be kept on board the vessel.
- 13.7.6.4 To satisfy the statutory requirements vessels must comply with these standards, including the provision of suitable back up arrangements which are provided in outline.
- 13.7.6.5 Electronic chart plotting systems conforming to the SFIA specifications are not a substitute for approved Electronic Chart Display and Information Systems (ECDIS) and they are not accepted for use other than prescribed in this notice.

13.8 AIS (AUTOMATIC IDENTIFICATION SYSTEMS)

13.8.1 Requirements are contained in Section 9.6.4 of [MSN 1872](#) and Section 9.6.5 of [MSN 1873](#).

13.8.2 INSTALLATION OF AUTOMATIC IDENTIFICATION SYSTEMS ON FISHING VESSELS

- 13.8.2.1 Reg 8A of [The Merchant Shipping \(Vessel Traffic Monitoring and Reporting Requirements\) Regulations 2004](#) states:
- (1) This regulation applies to a fishing vessel having an overall length of more than 15 metres which—
 - (a) is operating in United Kingdom waters;
 - (b) is landing its catch at a port situated in the United Kingdom; or
 - (c) is registered in the United Kingdom.
 - (2) A fishing vessel referred to in paragraph (1) shall be fitted with an automatic identification system which complies with the relevant requirements in accordance with the timetable contained in Part I of Annex II to the Directive.

13.8.2.2 All vessels of 15 Length Overall shall have AIS fitted. Skippers and Owners should be reminded that AIS should always be turned on. If vessels of less than 15m Length Overall have AIS fitted, it is not a requirement that AIS should always be turned on, but it is recommended that it is kept on. In such cases, AIS must be maintained to the same condition as statutory equipment. It must be safe, suitable

for its intended purpose and maintained in good working condition, including those vessels under 15m who have voluntarily installed the equipment.

13.8.2.3 AIS fitted shall meet IMO performance standards (Class A). AIS shall be maintained operational at all times. IMO Resolution A.917(22) "Guidelines for the onboard use of AIS" contains further information on the use of AIS.

13.9 VOYAGE DATA RECORDERS (VDR)

13.9.1 Requirements are contained in Section 9.6.5 of [MSN 1873](#); and in [MGN 610 \(M+F\)](#).

13.9.2 The voyage data recorder (marine "black box") records key navigational information, which can then be used to build up an accurate picture of events preceding an accident and enable investigators to establish the causes.

13.9.3 Fishing vessels, of 3000 Gross Tonnes and over constructed on or after 31st July 2002 are required to carry a VDR.

13.9.4 The voyage data recorder and Navigational equipment fitted on new ships and replacement equipment on existing ships is required to be Type Approved and meet IMO performance standards.

13.9.5 Voyage data recorders shall be subjected to an annual performance test and a certificate issued.

13.10 OTHER NAVIGATIONAL EQUIPMENT

13.10.1 Requirements are contained in Section 9.5.2 of [MSN 1872](#) and Section 9.5.1 of [MSN 1873](#).

13.10.2 VESSELS TO WHICH SECTION 9.5.1 OF [MSN 1873](#) CODE OF PRACTICE FOR THE SAFE CONSTRUCTION AND OPERATION OF FISHING VESSELS OF 24 METRES REGISTERED LENGTH AND OVER APPLIES

Table of Requirements for Navigational Equipment			
	24m to less than 45m	Less than 75m, but not less than 45m	75m and over
Adequate means of communication between Standard Compass position and navigation control position	YES to the satisfaction of the MCA		
Means of taking bearings over an arc of the horizon of 360 degrees	YES As far as practicable		

Radar Installation capable of operating in the 9GHz band, to the satisfaction of the MCA	YES		
Facilities for plotting radar readings on the navigating bridge	YES		YES
Gyro Compass³, of which the master or a gyro-repeater should be clearly readable by the helmsman at the main steering position	N/A	YES	YES A Gyro-repeater or Gyro-repeaters shall be provided and placed for taking bearings as nearly as practicable over an arc of 360°
Vessels with emergency steering positions to be provided with telephones or other means of communication for relaying heading information to such positions.	YES	YES Vessels built after 1 February 1992 to be provided with arrangements for supplying visual compass readings to the emergency steering position	
Echo Sounding Device,	Suitable means to determine depth of water	YES, for vessels constructed on or after 25 May 1990	YES, for vessels constructed on or after 25 May 1980
Device to indicate Speed and Distance,	N/A	YES, for vessels constructed on or after 1 September 1984	
Indicators showing Rudder angle, rate of revolution of each propeller and if fitted with variable pitch propellers or lateral thrust propellers, the pitch and operational mode of such propellers.	N/A	YES, for vessels constructed on or after 1 September 1984 All indicators to be readable from the conning position	YES, for all vessels All indicators to be readable from the conning position
Nautical Publications	YES	YES	YES

13.10.3 VESSELS TO WHICH SECTION 9.5.2 OF MSN 1872 CODE OF SAFE WORKING PRACTICE FOR THE CONSTRUCTION AND USE OF 15 METRE (LOA) TO LESS THAN 24M (L) FISHING VESSELS APPLIES

13.10.3.1 Vessels should be provided with efficient means acceptable to the Certifying Authority for:

- locating position;
- measuring speed and distance; and

- measuring the depth of water.

13.10.3.2 Electronic aids to navigation should be tested frequently and well maintained.

13.10.4 MSN 1871 (F) - THE FISHING VESSELS CODE OF PRACTICE FOR THE SAFETY OF FISHING VESSELS OF LESS THAN 15M LENGTH OVERALL

13.10.4.1 Electronic aids to navigation should be tested frequently and well maintained

DOCUMENT AMENDMENT HISTORY

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05.21	<ul style="list-style-type: none"> Amended text and numbering to include reference to regulations; added 'magnetic' to section 13.5.5.1 	23/04/21	I Platts	G Stone	24/04/23
09.21	<ul style="list-style-type: none"> Update references to MSN1871 and include reference to MSN1871 references to Nautical Publications 	30/06/21	D Fenner	G Stone	06/09/23
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