



Maritime and Coastguard Agency

Fishing Vessels: Wheelhouse Visibility

Notice to Owners, Builders, Designers, Skippers and Crews of Fishing Vessels.

This note supersedes Merchant Shipping Notice M1111 and MGN 87 (F). It should be read in conjunction with MGN 84 (F) - Keeping a Safe Navigational Watch on Fishing Vessels.

Summary

This note explains the minimum standards that are acceptable for views from the wheelhouse of fishing vessels.

Key Points

This Note gives guidance on:

- visibility requirements for all fishing vessels;
- a modified assessment of forward visibility obscured by bow structures for use on “new vessels” of less than 45 metres in length;
- the effects on “existing vessels” of between 12 metres and 45 metres length.

1. Introduction

1.1 A vessel's safety can depend upon being able to see where you are going. Rule 5 of the International Regulations for Preventing Collisions at Sea 1972 also requires the keeping of a proper look out.

1.2 A clear view in all directions is preferred, but it is essential to be able to see ahead, and especially directly ahead. Although these are simple principles, they can often be at odds with a vessel's design and layout.

1.3 For the purposes of this note:

Length means the Registered Length;

a *new vessel* is a vessel where the keel was laid or at a similar stage of construction on or after 1st July 1998; and

an *existing vessel* is one that is not a new vessel.

2.0 Basic principals of visibility

2.1 When maneuvering and to be able to see objects in the water at close range, watchkeepers should have their view forward obstructed as little as possible by bow structures.

2.2 The main position for steering and control of engines is the wheelhouse. Therefore, this is where standards of visibility are measured from.

3.0 Effects of the Merchant Shipping (Navigation Bridge Visibility) Regulations 1998 (“The Navigation Bridge Visibility Regulations”)

3.1 Annex I sets out the visibility standards for all new vessels.

3.2 New Vessels over 45 metres

The Navigation Bridge Visibility Regulations came into force on 1 July 1998 and , applying to all new fishing vessels of 45 metres and above.

3.3 New Vessels of less than 45 metres

The standards laid down in the Navigation Bridge Visibility Regulations should also be applied (in a modified form) to all new fishing vessels of less than 45 metres in length.

3.4 Of particular importance, persons at the wheelhouse controls should be able to see at least 90 metres ahead of the bow (see diagram A in Annex III).

3.5 Paragraph 5.4 and Annex III explain how to check and assess forward visibility obscured by the bow.

3.6 Existing Vessels

Existing vessels should have a clear view ahead from the steering position. (as required by Rules 45(4) and 46(4) of the 1975 Fishing Vessel (Safety Provisions) Rules 1975).

3.7 Annex II sets out the standards for existing vessels.

3.8 Note:

Vessels of over 45 metres in length built on or after 1st January 1999 are also required by the Fishing Vessels (EC Directive on Harmonised Safety Regime) Regulations 1999, S.I. 1999/2998, to have similar visibility standards to the Navigation Bridge Visibility Regulations.

4.0 **Alternative Arrangements for Improving Visibility**

4.1 When assessing minimum standards of visibility, the direct view from the steering position should be used.

4.2 The use of a forward lookout, periscopes (provided they do not block in any way the normal view from the wheelhouse) and other "artificial" projection methods may improve vision around obstructions.

4.3 However these methods are not accepted as "stand alone" solutions to problems of inadequate visibility. In particular periscopes can:

.1 block the helmsman's normal view forward and impair the watchkeeper's view from other wheelhouse windows;

.2 make identification of navigation lights and other aids to navigation difficult.

(This is because light intensity and colour can be altered when viewed through the equipment.)

4.4 Although not a stand alone solution, it is good practice to post a forward look-out to help the watchkeeper in:

.1 situations of restricted visibility;

.2 when entering or leaving harbour; or

.3 in conditions of heavy vessel traffic.

5.0 **The Effects of Bow Height and Vessel Trim**

5.1 Substantial differences in visibility close forward can be caused by small changes in the height of the bow.

5.2 It is therefore important to consider the trim of the vessel in the lightship condition.

5.3 The positioning or movement of relatively small weights such as ice and fishing gear when leaving for fishing grounds can easily reduce visibility standards below the acceptable minimum.

5.4 Therefore when assessing forward visibility obscured by the bow, the vessels operational trim in normal seagoing conditions should be used. Lightship conditions are not sea-going and should not be used. The formula in diagram A of Annex III can be used to establish in the view is adequate.

6.0 **Vessel of Under 12 metres in length**

6.1 The MCA recommends designers, builders and owners of vessels in this category to comply as closely as practicable with the visibility standards for "new" vessels of less than 45 metres in length as set out in this notice, see paragraph 3.2 to 3.5.

Any enquiries relating to the content of this MGN should be addressed to:

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General enquiries relating to the supply or availability of MSNs, MGNs, MINs or on other subjects should be addressed to the Maritime Information Centre at the above address, or

Tel: 023 8032 9297

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**An executive agency of the Department for
Transport, Local Government and the Regions**

VISIBILITY STANDARDS FOR ALL "NEW VESSELS"

1. For Vessels of less than 45 metres in length, the view of the sea surface should, under all conditions of draught, trim and deck cargo:
 - .1 be visible no more than 90 metres ahead from the conning position (under the bow) (see diagram A in Annex III); and
 - .2 take in an arc from forward of the bow to at least 10 degrees on either side under all draught, trim and deck cargo conditions.
2. Vessels of 45 metres in length or more are required to comply with the Navigation Bridge Visibility Regulations, i.e. the sea surface should not be obscured by any more than two ship lengths, (or 500 metres whichever is less).
3. The horizontal field of vision from the conning position shall extend over an arc of not less than 225 degrees, that is from right ahead to not less than 22.5 degrees behind the beam on either side of the vessel. Paragraph 3 below sets out the requirements for any obstructions to this view.
3. Fishing gear or other obstructions outside the wheelhouse forward of the beam which obstruct the view of the sea surface from the conning position and create blind sectors in the horizontal field of vision should meet the following requirements:
 - .1 no single blind sector should be greater than an arc of 10 degrees;
 - .2 the total arc of blind sectors should not exceed 20 degrees;
 - .3 clear sectors between the blind sectors shall be at least 5 degrees;
 - .4 in the view described in paragraph 1 above, each individual blind sector should not exceed 5 degrees.
4. Observers on each bridge wing the horizontal field of vision shall extend over an arc of at least 225 degrees. Visibility should therefore be:
 - .1 from at least 45 degrees on the opposite bow through to
 - .2 right ahead and then to
 - .3 right astern through 180 degrees on the same side of the vessel.
5. The main steering position should have a horizontal field of vision extending over an arc from right ahead to at least 60 degrees on each side of the vessel.
6. The vessel's side should be visible from the bridge wing.
7. The height between the lower edge of the wheelhouse front windows and the bridge deck shall be kept as low as possible. In no case shall the lower edge present an obstruction to the forward view.
8. Assuming a person with an eye height of 1800mm above the deck at the conning position, and the vessel pitching in heavy sea, the upper edge of the wheelhouse front windows shall allow a forward view of the horizon.

9. Framing between the wheelhouse windows shall be kept to a minimum and not installed immediately in front of any workstation.
10. Forward windows shall be inclined from the vertical, top out, at an angle of not less than 10 degrees and not more than 25 degrees. This helps prevent reflections.
11. Polarised or tinted windows should not be fitted.
12. At all times, regardless of weather conditions, at least two of the forward windows shall provide a clear view, and in addition, depending on the wheelhouse configuration, an additional number of windows shall be able to provide a clear view.

Note that paragraphs 1 and 2 above may be followed:

- (i) where the watch is normally kept from a chair at the steering position, from that position;
- (ii) with a single steering position, up to 1 metre on either side of that position;
- (iii) with two steering positions, in the wheelhouse or bridge wings within those positions; or
- (iv) with wandering lead steering control, within the functional length of the lead.

VISIBILITY STANDARDS FOR “EXISTING VESSELS”

1. Existing vessels of 45 metres or more in length shall, where practicable, comply with the Navigation Bridge Visibility Regulations, as summarised in Annex I of this guidance. However, owners will not be required to make structural alterations or to supply equipment that would be necessary in order to satisfy those standards.
2. Existing vessels of less than 45 metres or more in length shall comply with rules 45(4) and 46(4) of the Safety Provisions Rules, namely:

“45(4) Every such vessel shall be so constructed that the person steering from the main wheelhouse control position has a clear view ahead.”;

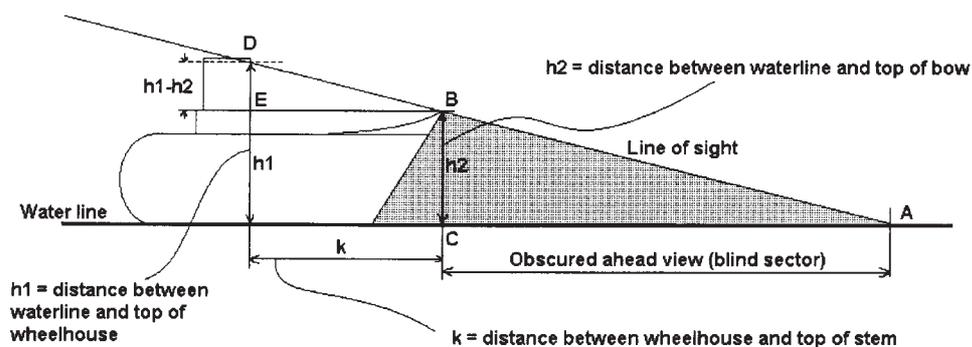
and

“46(4) Every such vessel which is fitted with power operated steering has a clear view ahead when at the principal steering station.”

3. Vessels should be designed and constructed to provide the person in control of navigating the vessel with good all-round visibility. The view, especially ahead, should be obstructed as little as possible. This applies to every foreseeable operating condition for which the vessel is designed, having particular regard to trim.
4. It is the owner’s and skipper’s responsibility to ensure that the vessel is fit to proceed to sea in compliance with rules 45(4) and 46(4). However, provided there are no new modifications that impair visibility from the wheelhouse, owners will not be required to make structural alterations or to supply equipment that would be necessary in order to satisfy those standards.
5. Where compliance with rules 45(4) and 46(4) of the Safety Provisions Rules cannot be achieved, there are a number of acceptable options that either alone or in combination, will help achieve an acceptable standard of visibility:
 - .1 Lowering of the whaleback or forward shelter.
Should be practical and should not compromise safety or the protection of the crew.
 - .2 Fitting permanent ballast to trim the head.
In some cases only a small added-weight is required to get the bow down.
 - .3 Raising the wheelhouse.
There are already successful examples of this type of modification.
 - .4 Raising the steering position by incorporating an all-round, transparent dome in the wheelhouse deckhead.
A cost effective method most useful when maneuvering in the close confines of a harbour. The dome should be able to maintain a clear forward-facing view regardless of the weather conditions.
6. Alternatively, vessels will be considered satisfactory through achieving full compliance with the standards for new vessels (see Annex I).

THE ASSESSMENT OF FORWARD VISIBILITY OBSCURED BY THE BOW

Diagram A



TRIANGLES ABC & BDE ARE SIMILAR

$$\frac{h_2}{AC} = \frac{(h_1 - h_2)}{k} \quad \text{therefore} \quad AC = \frac{h_2 \times k}{(h_1 - h_2)} = \text{obscured ahead view}$$

Note: On wooden vessels the stem post blind sector can be ignored and the bow height (h_2) taken as the edge of the whaleback at no more than 5° from the centreline.

Examples for a Registered length of 24 metres

AC = obscured ahead view which must be less than 90 metres
(or for vessels of 45 metres or more in length two ships lengths, or 500 metres whichever is the lesser).

Sample 1)

$$AC = \frac{4.8 \times 10}{(5.0 - 4.8)} = \frac{48}{0.2} = 240 \text{ metres} - \text{which is greater than 90 metres}$$

and is unacceptable **X**

Sample 2)

$$AC = \frac{4.5 \times 5}{(5.0 - 4.5)} = \frac{22.5}{0.5} = 45 \text{ metres} - \text{which is less than 90 metres}$$

and is acceptable **✓**

