



Maritime and Coastguard Agency

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## Wheelhouse visibility onboard Fishing Vessels

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

*This notice should be read in conjunction with MGN 313 Keeping a Safe Navigational Watch on Fishing Vessels, MSN 1781 The Merchant Shipping (Distress Signals and Prevention of Collisions) Regulations 1996 and supersedes MGN188 (F)*

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#### Summary

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

This Note gives guidance on:

- Wheelhouse 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 under 45 metres length;
- Annex I gives requirements for New Vessels constructed on or after 1 July 1998;
- Annex II gives requirements for existing vessels;
- Annex III gives advice on assessing forward visibility.

### 1. Introduction/ Background

1.1 A vessel's safety can depend upon being able to see ahead. All vessels are required to keep a proper look out to avoid collisions and avoid dangerous situations developing.

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 Basic principals of visibility**

2.1 When manoeuvring and to enable watch keepers to see objects in the water at close range, the view forward should be obstructed as little as possible by bow structures. The main position for steering and control of engines is the wheelhouse; therefore visibility is measured from the steering position.

2.2 All New fishing vessels should have a clear view ahead from the steering position. The MCA recommends owners of existing vessels comply as closely as practicable with the visibility standards for “new” vessels as set out in Annex I of this notice.

## **3 Alternative Arrangements for Improving Visibility**

3.1 When assessing minimum standards of visibility, the direct view from the steering position should be used. If visibility is reduced then a risk assessment should be carried out and risk control measures put in place to minimise these.

3.2 The use of a forward lookout, periscopes and other “artificial” projection methods may improve vision around obstructions. However these methods are not accepted as “stand alone” solutions for the reasons given below:

3.3 Use of forward lookout is recommended good practice, to help the watchkeeper, in:

- situations of restricted visibility;
- when entering or leaving harbour; or
- in conditions of heavy vessel traffic.

3.4 The use of periscopes can:

- block the helmsman’s normal view forward and impair the watchkeeper’s view from other wheelhouse windows;
- make identification of navigation lights and other aids to navigation difficult. (Light intensity and colour can be altered when viewed through the equipment.)

## **4. The Effects of Bow Height and Vessel Trim**

The positioning or movement of relatively small weights such as ice and fishing gear can easily reduce visibility standards below the acceptable minimum. Therefore when assessing forward visibility obscured by the bow, the vessels operational trim in normal seagoing conditions should be used. The guidance in Annex III can be used to establish in the view is adequate.

## Further Information

Further information on the contents of this Notice can be obtained from:

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## **1 Visibility standards for new vessels of less than 45 metres in length**

- 1.1 For new vessels including those constructed on or after the 23<sup>rd</sup> November 2002 and covered by the Code of Safe Working Practice for the Construction and Use of 15m LOA to less than 24m Registered Length Fishing Vessels, the view of the sea surface under all conditions of draught, trim and deck cargo should:
- 1.2 be visible no more than 90 metres ahead from the steering position (under the bow) (see diagram A in Annex III) and;
- 1.3 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 Visibility standards for new vessels of 45 metres in length or more:**

- 2.1 This includes those constructed on or after the 1<sup>st</sup> January 1999 and covered by the Fishing Vessels (EC Directive on Harmonised Safety Regime) Regulations 1999 as amended.
- 2.2 The view of the sea surface should not be obscured by any more than two ship lengths, (or 500 metres whichever is less) forward of the bow and to 10° on either side irrespective of the vessels trim.
- 2.3 The horizontal field of vision from the steering 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.
- 2.4 Fishing gear or other obstructions outside the wheelhouse forward of the beam which obstruct the view of the sea surface from the steering position and create blind sectors in the horizontal field of vision should meet the following requirements:
  - no single blind sector should be greater than an arc of 10 degrees;
  - the total arc of blind sectors should not exceed 20 degrees;
  - clear sectors between the blind sectors shall be at least 5 degrees;
  - in the view described in paragraph 1 above, each individual blind sector should not exceed 5 degrees.
- 2.5 Observers on each bridge wing should have a horizontal field of vision which shall extend over an arc of at least 225 degrees. Visibility should therefore be from at least 45 degrees on the opposite bow through to right ahead and then to right astern through 180 degrees on the same side of the vessel.
- 2.6 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.
- 2.7 The vessel's side should be visible from the bridge wing.
- 2.8 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.
- 2.9 Assuming a person with an eye height of 1800mm above the deck at the steering position, and the vessel pitching in heavy sea, the upper edge of the wheelhouse front windows shall allow a forward view of the horizon.

2.10 Framing between the wheelhouse windows shall be kept to a minimum and not installed immediately in front of any workstation.

2.11 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.

2.12 Polarised or tinted windows should not be fitted.

2.13 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.

2.14 Note that paragraphs 1 and 2 above may be followed:

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

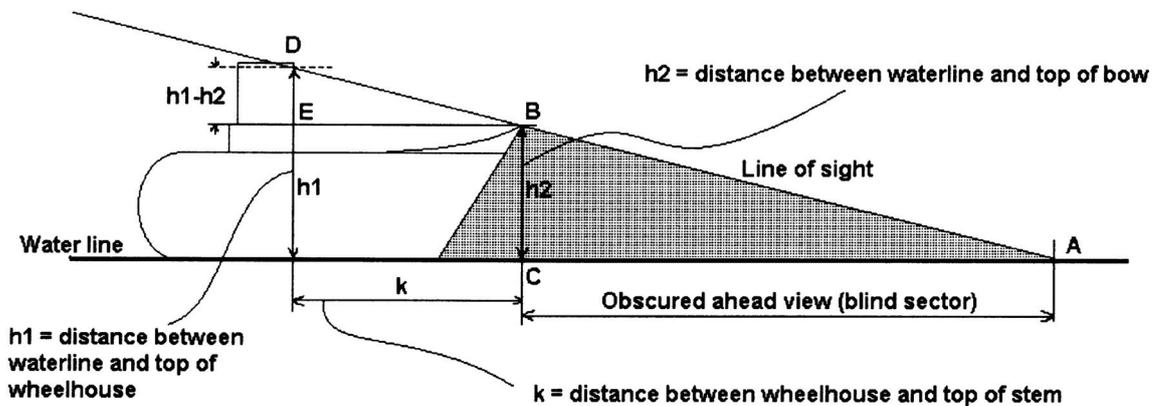
## 1 Visibility Standards for existing vessels

- 1.1 Existing vessels of 45 metres or more in length shall, where practicable, comply with 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.
- 1.2 Existing vessels of less than 45 metres or more in length shall be so constructed that the person steering from the main wheelhouse control position has a clear view ahead and if fitted with power operated steering has a clear view ahead from the principal steering station.
- 1.3 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.
- 1.4 It is the owner's and skipper's responsibility to ensure that the vessel is fit to proceed to sea in compliance with paragraph 1.2; 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.
- 1.5 Where compliance with paragraph 1.2 cannot be achieved, there are a number of acceptable options that either alone or in combination, will help achieve an acceptable standard of visibility:
- Lowering of the whaleback or forward shelter. (Should be practical and should not compromise safety or the protection of the crew.)
  - Fitting permanent ballast to trim the head. (In some cases only a small added-weight is required to get the bow down.)
  - Raising the wheelhouse. (There are already successful examples of this type of modification.)
  - Raising the steering position by incorporating an all-round, transparent dome in the wheelhouse deckhead. (A cost effective method most useful when manoeuvring in the close confines of a harbour. The dome should be able to maintain a clear forward-facing view regardless of the weather conditions.)
  - Alternatively, vessels will be considered satisfactory through achieving full compliance with the standards for new vessels (see Annex I).

Where options concerning structural changes are contemplated the overall effect on the vessels stability should be considered.

## THE ASSESSMENT OF FORWARD VISIBILITY OBSCURED BY THE BOW

Diagram A



TRIANGLES ABC & BDE ARE SIMILAR

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

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  $5^\circ$  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)

$$AC = \frac{4.8 \times 10}{(5.0 - 4.8)} = \frac{48}{0.2} = 240 \text{ metres}$$

Greater than 90m and therefore unacceptable.

Sample 2)

$$AC = \frac{4.5 \times 5}{(5.0 - 4.5)} = \frac{22.5}{0.5} = 45 \text{ metres}$$

Less than 90m and therefore acceptable.