



Load Line Length - Policy Clarification - Hullform Cut-Outs, Extensions and Steps

Notice to all Owners and builders of Small Commercial Vessels, Shipowners, Designers, Masters, Assigning Authorities and Surveyors

This notice should be read with..

The Merchant Shipping (Load Line) Regulations 1998 - SI 1998 No.2241, as amended

The Safety of Small Commercial Motor Vessels - A Code of Practice (Yellow Code)

The Safety of Small Commercial Sailing Vessels - A Code of Practice (Blue Code)

The Safety of Small Workboats and Pilot Boats - A Code of Practice (Brown Code)

The Code of Practice for the Safety of Small Vessels in Commercial Use for Sport or Pleasure Operating from a Nominated Departure Point (Red Code)

MGN280: Small Vessels in Commercial Use for Sport or Pleasure, Workboats and Pilot Boats - Alternative Construction Standards

Summary

This Note clarifies the UK policy when determining Load Line Length on vessel hullforms featuring cut-outs, removable end sections, or bathing platforms.

1. Foreword

- 1.1 This MGN relates to vessels with under 24m in Load Line Length, where the keel of which was laid on or after the date these regulations were implemented and were measured in accordance with the regulations in force at that time.

2. Introduction

- 2.1 Load Line Length (L) is used as a breakpoint for determining whether a vessel should comply with the requirements for either small vessels or large vessels. Identifying this size breakpoint is particularly important when the determination of the length of the vessel on the 85% waterline or identification of the point of least moulded depth is not straight forward due to particular design arrangements. The objective of this MGN is to explain how the MCA will interpret L in respect of design / measurement practices and the circumstances in which certain measurements will be applied.



- 2.2 The 24m L breakpoint provides a minimum limit to the size of vessel within the scope of the International Convention on Load Lines (Load Lines 66/88), which applies to certain new internationally trading vessels of 24m L and over. An example of how the breakpoint applies in the UK is that the MCA Small Commercial Vessel Codes of Practice apply to seagoing commercial vessels of less than 24m L as an alternative to compliance with the relevant UK Load Line Regulations. This is considered a proportionate approach because the UK Load Line Regulations can be considered overly onerous to apply.
- 2.3 Load Lines 66/88 and the UK Load Line Regulations (SI 1998 No.2241, as amended by S.I. 2000/1335), define L as:

"length" and "(L)" in relation to a ship means the greater of the following distances:-

96% of the total length on a waterline at 85% of the least moulded depth measured from the top of the keel; or

the length from the foreside of the stem to the axis of the rudder stock on that waterline.

In practice, this would mean that where the stem contour is concave above the waterline at 85% of the least moulded depth, both the forward terminal of the total length and the fore-side of the stem respectively shall be taken at the vertical projection to that waterline of the aftermost point of the stem contour (above that waterline) (see Figure 1).

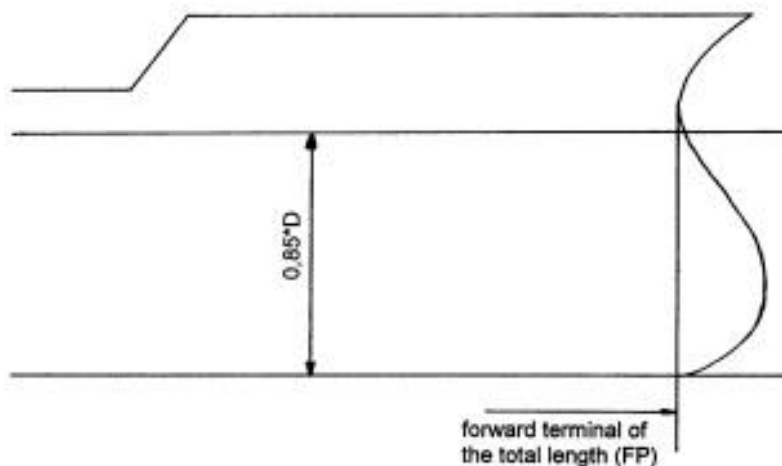


Figure 1: Example of length where the stem contour is concave

In ships designed with a rake of keel the waterline on which this length is measured shall be parallel to the designed waterline at 85% of the least moulded depth (Dmin). This can be found by drawing a line parallel to the keel line of the vessel (including skeg) tangent to the moulded sheer line of the freeboard deck. The least moulded depth is the vertical distance measured from the top of the keel to the top of the freeboard deck beam at side at the point of tangency (see Figure 2).



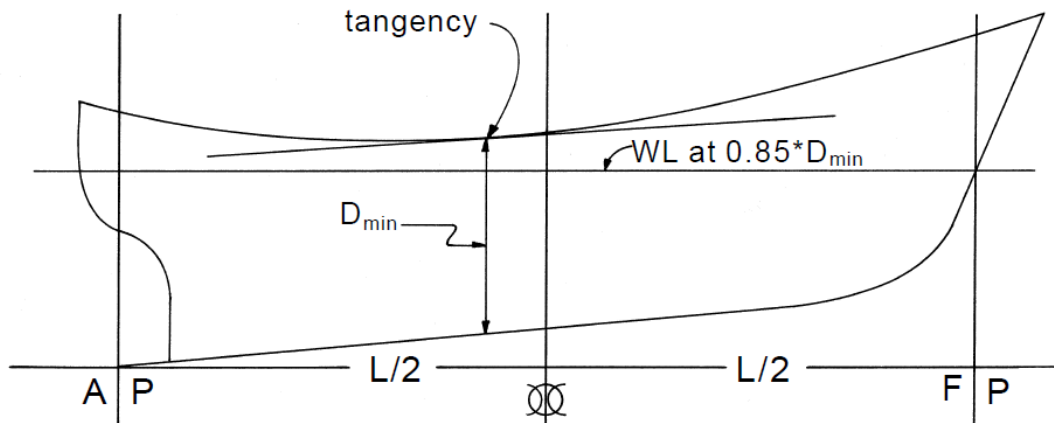


Figure 2: Waterline at 85% of the least moulded depth

2.4 The MCA has become aware of vessels with cut-outs in way of the 85% waterline such that 96% of the length on that waterline is less than 24m. The cut-out arrangement can lead to undesirable hydrodynamic characteristics or aesthetic considerations so the cut-out is typically covered with a fairing piece which follows the more usual contours of a stem or stern. This fairing piece is generally bolted or otherwise fixed in place for the duration of the vessel's life and, with the fairing piece in place and included in L calculations, the L of the vessel would be 24m or above. This is illustrated in *Figures 3 and 4* below.

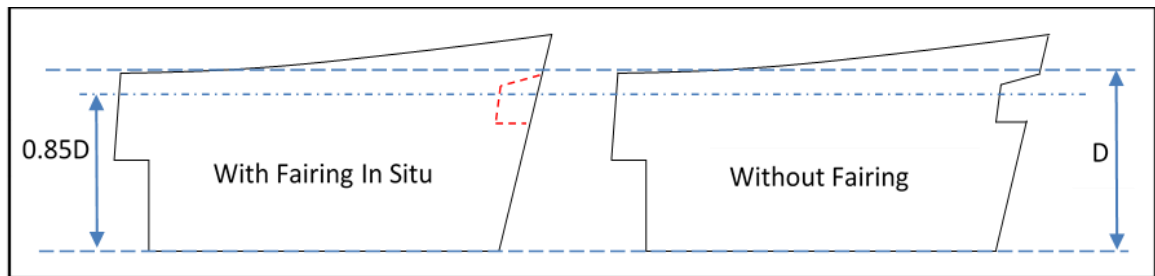


Figure 3: Vessel Bow cut-out on the 85% Waterline

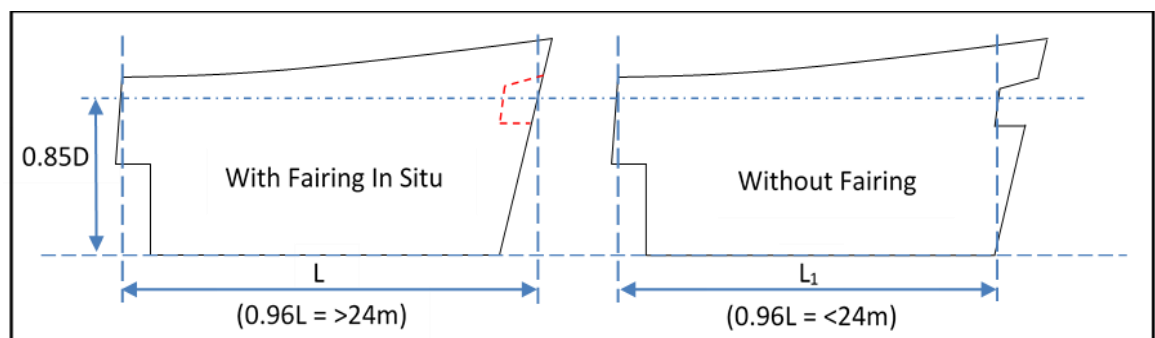


Figure 4: Waterline Length in Relation to Bow Cut-out

2.5 Other examples have been seen where one or both end sections of a vessel are bolted-on (or otherwise fixed) at a vertical flat-plane bulkhead to artificially increase the length of a vessel with an allegedly "removable" portion of hull which has been discounted from L calculations. This is similar to the example at 1.4 above but without the cut-out, and for similar reasons as described above for a fairing, the "removable" stem or stern portion(s)

will clearly be in place during the normal operation of the vessel and may well be fixed in place for the duration of the vessel's life.

- 2.6 As can be seen by the definition at 1.3 above, determination of L requires the least moulded depth to be ascertained. If the least moulded depth, and hence the 85% waterline, falls on an extended low deck such as a bathing platform then the vessel will be considerably longer than if the bathing platform were excluded from the length determination. Section 4 of this MGN clarifies the circumstances under which low deck extensions such as bathing platforms should be taken into account when determining L. *Figure 5* demonstrates how the length of the vessel can be altered by the inclusion or omission of the bathing platforms.

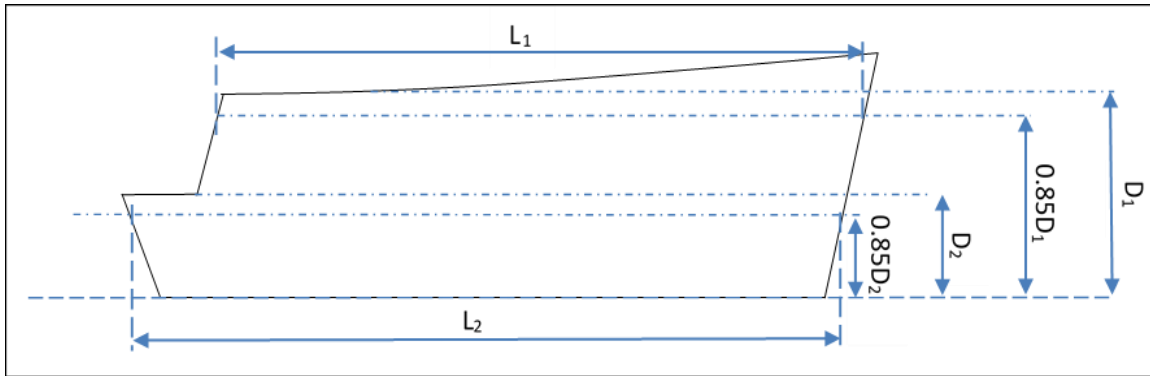


Figure 5: Influence of "bathing platform" on Load Line Length

2. UK Policy on Reduction of Length Through Cut-Outs

- 2.1 The part-definition of 'fixed permanent structure' as given in the Merchant Shipping (Tonnage) Regulations, Statutory Instrument 1997 No. 1510 (as amended) which is associated with the measurement of Load Line Length, explains that a "fixed permanent structure" includes any portion of the hull which is capable of being detached, but which is fixed in place during the normal operation of the vessel. Any addition or arrangement on the bow or stern of the vessel, the effect of which is to change the calculation of the Load Line Length of the vessel and is normally in position when the vessel is navigating, will be taken into account in the calculation of length whilst in its operating position.
- 2.2 With the above regulations and policy in mind, cut-outs in the stem or stern, as described in para 1.4 of this MGN, which serve no functional purpose for the design of the vessel, and exist solely to circumvent the requirement for vessels of 24m and over to comply with Load Lines 66/88, will be treated as if they do not exist for the purpose of measuring Length. As a result, for vessels where the cut-out portion on the 85% waterline has been covered with a fairing piece, the MCA and organisations authorised by the MCA will consider the L of a vessel to be the length with the fairing piece in place. Cut-outs will only be considered as a genuine reduction in L if they serve a purpose; for example an anchor housing. All UK authorised assigning authorities are encouraged to apply this policy.

3 UK Policy on Extension of Length Through Removable End Sections

- 3.1 Any portion of the hull which is capable of being detached, but which is fixed in place during the normal operation of the vessel, is included in the definition of 'fixed permanent structure'. Fixed permanent structures which are in way of a waterline at 85% of the least

moulded depth measured from the top of the keel, should be included in the calculation of L. All UK authorised assigning authorities are encouraged to apply this policy.

- 3.2 The policy above is not intended to apply to functional arrangements such as Trim Tabs but it is expected to be applied to all fixed permanent structure from the date of this MGN.

4 UK Policy on Extension of Length Through Bathing Platforms and Low Decks

- 4.1 Bathing platforms have in the past been excluded from the Load Line Length. This has tended to encourage disproportionately long lengths whilst allowing the craft to nominally remain below the 24 metres breakpoint referred to in paragraph 1.2 above.
- 4.2 Where a platform is clearly an appendage that does not contribute towards the buoyancy of a vessel, then it should not be considered as part of the Load Line Length. Where the platform cuts the waterline and therefore contributes towards buoyancy, it should be considered as being part of the Load Line Length, regardless of whether it is full width or whether it is bolted on.

5 Length Measurement – RCD and Load Line

- 5.1 Hull Length. L_H defined for the Recreational Craft Directive in ISO Standard 8666:2018 is as follows:
- a. Measured parallel to waterline.
 - b. This length includes all structural and integral parts of the craft, such as stems or sterns, bulwarks, and hull/deck joints.
 - c. This length excludes removable parts that can be detached in a non-destructive manner and without affecting the structural integrity of the craft, e.g. spars, bowsprits, pulpits at either end of the craft, stem-head fittings, rudders, outdrives, outboard motors and their mounting brackets and plates, diving platforms, boarding platforms, rubbing strakes, and fenders if they do not act as hydrostatic support when the watercraft is at rest or underway.
- 5.2 This definition may allow for a detachable stern section provided this section is open to sea and provides no hydrostatic buoyancy.

Q1: if the removable part has functional components (e.g. bow roller, mooring/towing points) can it be excluded from hull length?

A1: Yes. Even if some functional fittings (such as cleats, windlass, fairlead ...) are fixed to a removable part, it remains a "removable part".

Note: the definition in ISO 8666 refers to excluded examples of functional fittings such as rudders.

Q2: If a component has hydrodynamic performance but offers no hydrostatic support, can it be excluded from the hull length?

A2(i): Components that have no internal volume (e.g. a trim tab) give no hydrostatic support and are excluded from hull length.

A2(ii): Detachable components that have an internal volume will move the centre of buoyancy of the craft. If the detachable component can affect the centre of buoyancy of



the craft, it is considered to be providing hydrostatic support and thus must be included in hull length.

A2(iii): If, however, the detachable component is open to the sea, there is no internal volume providing buoyancy and thus there is no hydrostatic support, so the component may be excluded from hull length. Note: internal volume means a space of air or other low-density material.

- 5.3 RCD Hull Length is defined differently to Load Line Length. There is no allowance in the Load Line Convention for detachable hull sections to be excluded. If the detachable hull section increases the total length at the waterline as determined in accordance with Load Line then it will be included in Load Line Length.
- 5.4 It is acknowledged that this may result in yachts that can be considered for RCD compliance that are over 24m Load Line Length. If such a vessel intends to operate commercially at any stage in its lifetime then it would be considered over 24m for Load Line and so the Large Yacht Code/UK Load Line Regulations would apply.
- 5.5 If the detachable section of hull meets the RCD definition to allow exclusion from Hull Length then it is easily detachable and does not contribute to the buoyancy of the vessel and so can be removed when the vessel is to be considered for commercial operation.



More Information

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