

# **IALA Recommendation O-113**

**On**

## **The Marking of Fixed Bridges over Navigable Waters**

**Edition 1**

**May 1998**



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## Document Revisions

Revisions to the IALA Document are to be noted in the table prior to the issue of a revised document.

<b>Date</b>	<b>Page / Section Revised</b>	<b>Requirement for Revision</b>
July 2005	Entire doc reformatted	Reformatting to meet IALA documentation standards

# **IALA Recommendation O-113 on the Marking of Fixed Bridges over Navigable Waters**

(IALA Recommendation O-113, May, 1998)

## **THE COUNCIL:**

**RECOGNISING** the need to provide guidance on the marking of fixed bridges over navigable waters which is compatible with the IALA Maritime Buoyage System;

**RECOGNISING ALSO** that such guidance should enable a common approach to be made world-wide, thus greatly assisting mariners, who, while navigating in waters of different authorities, should not be confused by different marking systems being used on fixed bridges;

**CONSIDERING** the proposals of the IALA Operational Committee;

**REVOKES IALA** Recommendation for the marking of fixed bridges over navigable waters, dater 14<sup>th</sup> May, 1987; and,

**RECOMMENDS** that:

### **1 GENERAL**

The following recommendations should be read in conjunction with the IALA Maritime Buoyage System. They are intended to supplement the rules of the system where bridges need special marking to ensure their safety and that of vessels navigating beneath them, for example by reason of limited headroom, water depth or the possibility of collision with the bridge piers.

Where sea and inland navigation meet, authorities should ensure that the marking of bridges does not conflict with the signs and signals of inland waterways systems.

### **2 BEST POINT OF PASSAGE**

In some cases, it may be necessary or desirable to indicate to vessels the most appropriate point to pass under a bridge. This is referred to in this Recommendation as “best point of passage”.

These recommendations provide suitable day and night signals for this purpose.

The “best point of passage” will be determined by the competent Authority taking into account all relevant factors, such as:

- maximum available headroom
- water depth under the bridge, particularly where it is not uniform
- protection of the bridge piers and other obstructions
- the need to have one way or two way traffic.

### **3 VISUAL MARKS**

The following system is recommended when proceeding in the “Conventional Direction of Buoyage”.

#### **3.1 Colours (for daymarks and lights)**

##### 3.1.1 In countries in Buoyage Region A

- Green to starboard
- Red to Port.

##### 3.1.2 In countries in Buoyage Region B

- Red to starboard
- Green to Port.

#### **3.2 Marking by day (if considered necessary)**

3.2.1 If navigation is possible in the full passage span. the marks should be located on the bridge piers. If navigation is possible only in part of the span, the marks should be located on or under the span, indicating the limits of the navigable channel.

- In countries in Buoyage Region A
  - to starboard: a panel showing a solid green equilateral triangle point upwards.
  - to port: a panel showing a solid red square.
- In countries in Buoyage Region B
  - to starboard: a panel showing a solid red equilateral triangle point upwards.
  - to port: a panel showing a solid green square.

3.2.2 The “best point of passage” may be indicated by a circular panel with red and white vertical stripes.

3.2.3 To ensure positive recognition, the Competent. Authority should be satisfied that there is a good contrast between the coloured panels and the colour of the bridge structure. Such a contrast may be achieved by mounting the panels against a white background.

3.2.4 If there is more than one navigable channel under the bridge, the same system should be used for each channel.

3.2.5 Bridge spans other than those marked by red and green lateral marks, e.g. spans to be used by very small craft, may be indicated by special yellow marks as prescribed in the IALA Maritime Buoyage System.

### **3.3 Marking by night**

3.3.1 Red or green rhythmic aid to navigation lights may be used to mark the navigable limits of the channel in accordance with the IALA Maritime Buoyage System.

If navigation is possible in the full passage span, the lights should be located on the bridge piers. If navigation is possible only in a part of the span, the lights should be located under the span, or on buoy and beacons in the water so placed as to indicate the limits of the navigable channel.

3.3.2 The “best point of passage” may be indicated by a white light or lights located under the span and exhibiting a safe water mark character.

3.3.3 If there is more than one navigable channel under the bridge, the same system should be used for each channel.

3.3.4 Care should be taken to ensure that all red and green aid to navigation lights have adequate ranges having regard to the circumstances, especially where background lighting makes identification difficult. The lights must be so mounted as to be visible over all relevant areas of the horizon, and not obstructed by parts of the bridge structure.

3.3.5 Bridge spans other than those marked by red and green lateral, e.g. spans to be used by very small craft, may be indicated by special yellow lights as prescribed in the IALA Maritime Buoyage System.

3.3.6 As an alternative to aid to navigation lights, the daymarks prescribed in paragraphs 3.2.1. and 3.2.2. may be floodlit.

3.3.7 Floodlighting of bridge piers may in some cases give a satisfactory indication of the navigable area and may be considered.

3.3.8 Retroreflecting material of appropriate colour may be used to enhance night time recognition of daymark panels.

## **4 SOUND SIGNALS**

One or more sound fog signals may be used to warn the navigator of the presence of a bridge.

Any type of sound fog signal may be used for this purpose.

If a number of sound fog signals are placed at different points on a bridge or its supports, their characters should be different from each other.

## **5 RADAR MARKING**

### **5.1 Radar reflectors**

Bridges crossing navigable water are usually clearly recognizable on a radar display. However channel boundaries or bridge piers are seldom clearly distinguishable.

Radar recognition of the bridge piers or channel boundaries may be made possible by radar reflectors located either on dolphins, on buoys or on poles fixed to the

bridge structure. Radars on sea going vessels are usually such that the distance between the bridge and the reflectors should be 20 metres or more. To ensure that the reflectors can be clearly distinguished from the bridge structure, practical trials should be carried out.

## **5.2 Racons**

A short range racon may be used to mark the “best point of passage” under a bridge. Administrations contemplating the use of more than one racon to mark one or more spans must take into account the technical limitations that may exist. Where two racons are used to mark a bridge span the preferred codes should be:

- Starboard: Morse code T(-)
- Port : Morse code B(-···)

Care should be taken to ensure that the racon trace does not unnecessarily obscure echoes from other targets.