

## CHAPTER 9

### BUOYAGE SYSTEM

#### 9.1 INTRODUCTION

Since 1980, there is, in principle, one buoyage system in the world namely, the IALA Maritime Buoyage System but, (unfortunately) with two different regions:

1. Region "A" (Red to Port);
2. Region "B" (Red to Starboard).

The IALA Maritime Buoyage System is a combined Lateral and Cardinal System. It applies mainly on the open seas. IALA is the acronym for International Association of Lighthouse Authorities.

For inland waters, the Signalisation des Voies de Navigation Interieure (SIGNI) has been introduced in 1983.

Some countries like the US have their own system for their inland waters.

Other countries though may use the IALA Maritime Buoyage System on their inland waterways

For a historical background, see HISTORICAL SUMMARY at the beginning of this course.

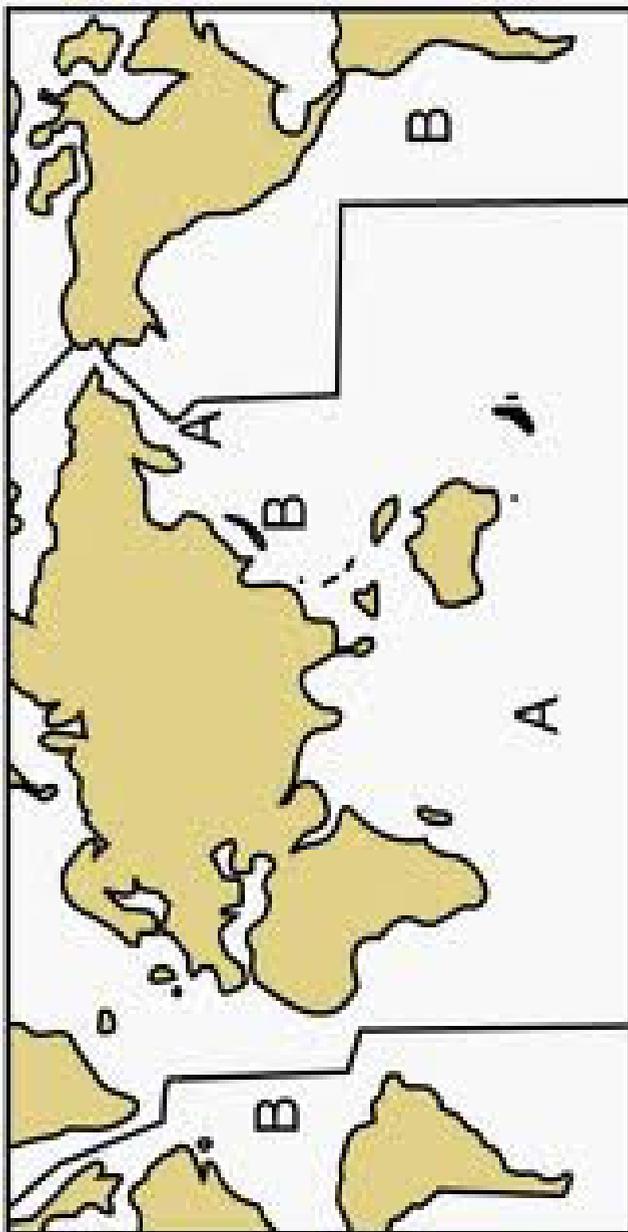
#### 9.2 ONE SYSTEM; TWO REGIONS

An IALA study concluded that to achieve a single world-wide system, two different regions had to be introduced:

1. Region 'A' : Combined Cardinal and Lateral System (Red to Port). This is the buoyage system with red can buoys on the port hand side, used in European, Australian, New Zealand, African, the Gulf and some Asian waters.
2. Region 'B' : Combined Cardinal and Lateral System (Red to Starboard). This is the buoyage system with red conical buoys on the starboard hand side, used in North, Central and South America, Japan, Korea and the Philippines,

Figure 9.1 shows the limits of Region A and Region B.

This duality remains because it has been impossible, in spite of the many discussions, to achieve a universal system that would be accepted by all the authorities concerned. America insisted to keep the red conical buoys to starboard, based on their "Red Right Return".



IALA- Regions A and B  
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## 9.3 GENERAL PRINCIPLE OF THE SYSTEM

### 9.3.1 General

The IALA Buoyage System has 6 types of marks which may be used in combination. Each mark has its own well identifiable characteristics.

Only the Lateral marks differ between Region A and Region B as described below; the other 5 types of mark are common to both regions.

### 9.3.2 Lateral Marks

In Region A, Lateral marks utilize red can buoys and lights to denote the port side of a channel and green conical buoys and lights to denote the starboard side of a channel.

In Region B, Lateral marks utilize red conical buoys and lights to denote the starboard side of a channel and green can buoys and lights to denote the port side of a channel.

Please take note that the shapes of buoys in Region A are different to those encountered in Region B. (For details see Chapters 8 and 10.)

A modified Lateral marks may be used at a point to indicate that a channel will be divided into a main (or preferred or primary) channel and a secondary channel, as designated by the Authority.

For the identification and use of Lateral marks, see Chapter 10.

Please note that modified Lateral marks are mainly used in Region B and seldom in Region A. With the introduction of the IALA Maritime Buoyage System in Region A, IALA decided to indicate a preferred channel by Cardinal marks. Although this is still the case, modified Lateral marks may also be encountered in Region A.

On the other hand, a preferred channel in Region B will seldom or never be indicated by Cardinal marks.

The introduction of Cardinal marks in Region B was a concession made by America to arrive to a single maritime buoyage system in the world but they admitted to seldom (not to say never) use them.

### 9.3.3 Cardinal Marks

Cardinal marks indicate that the deepest water in the area lies to the named side of the mark. This convention is necessary even though for example, a North

mark may have navigable water not only to the North but also East and West of it. The mariner will know he is safe in the North, but **MUST** consult his chart for further guidance.

Cardinal marks do not have a distinctive shape but are normally pillar or spar. They are always painted in yellow and black horizontal bands and their distinctive double cone topmarks are always black.

Cardinal marks also have a special system of quick (Q) or very quick (VQ) flashing white lights.

**As mentioned before, Cardinal marks are permitted in Region B but they are seldom used.**

For details on the identification and use of Cardinal marks, see Chapter 10.

#### **9.3.4 Isolated Danger Mark**

The Isolated Danger mark is placed on a danger of small area which has navigable water all around it. Distinctive double black spherical topmarks and Group flashing (2) white lights, serve to associate Isolate Danger marks with Cardinal marks.

For details on the identification and use of Isolated Danger marks, see Chapter 10.

#### **9.3.5. Safe Water Marks**

The Safe Water mark has navigable water all around it and does not mark a danger. They can be used, for example, as mid-channel or landfall marks.

Safe Water marks have an appearance quite different from danger marking buoys. They are spherical, or alternatively pillar or spar with a single spherical topmark. Beside the New Danger mark; they are the only type of mark to have vertical stripes (red and white). Their lights, if any, are white using isophase, occulting, one long flash or Morse "A" rhythms.

For details on the identification and use of Safe Water marks, see Chapter 10.

#### **9.3.6 Special Marks**

Special marks are not primarily intended to assist navigation but are used to indicate a special area or feature whose nature may be apparent from reference to chart or other nautical document.

Special marks are yellow. They may carry a yellow X topmark, and any light

used is also yellow. To avoid the possibility of confusion between yellow and white in poor visibility, the yellow lights of Special marks do not have any of the rhythms used for white lights.

The shape will not conflict with that of navigational marks, this means, for example, that a special buoy on the port hand side of a channel may be cylindrical but will not be conical. Special marks may also be lettered or numbered to indicate their purpose.

For details on the identification and use of Special marks, see Chapter 10.

### 9.3.7. New Dangers

A new danger is a danger not yet shown in nautical documents and particularly on charts.

After the sinking of the “Tricolor” in the Pas de Calais (Dover Straits) in 2002, and that several ships hit the wreck, IALA introduced a New Danger mark.

New Danger marks do not have a distinctive shape but are normally pillar or spar, depending on location. It is coloured in equal number and dimensions of blue and yellow vertical stripes. At night, it shows an alternating blue and yellow flashing light with a nominal range of 4 nautical miles.

If multiple buoys are deployed then the lights will be synchronized.

A racon Morse Code “D” and/or AIS transponder can be used.

The top mark, if fitted, is a standing/upright yellow cross.

**It is important to realize - especially for the colour-blind - that this new buoy breaches the useful and crucial convention: vertical stripes equal safety, horizontal stripes equal danger.**

For details on the identification and use of New Danger marks, see Chapter 10.

#### NOTE

The majority of the text in this chapter 9, is based on IALA’s publication “*Maritime Buoyage System*”.