Department of
Transport

International System of Buoys

Marine Safety

IALA Buoyage

An international system of buoys, beacons and lights helps guide vessels clear of dangers and indicates safe water. Navigation marks are recognised by distinctive shapes and colours, and their lights by distinctive colours and rhythms.

All these marks are on the chart – when you have any doubts what you are looking at always refer to the chart.

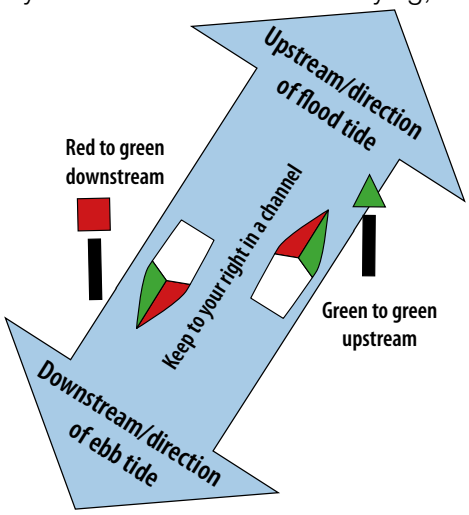
Lateral Marks

The marks indicating the port and starboard sides of channels are called Lateral Marks. Those topped by a red can shape are called Port Marks, and those topped by a green triangle shape are called Starboard Marks.

When entering harbours or travelling upstream in a river, leave port marks on your port side and starboard marks on your starboard side.

When leaving harbours or travelling downstream, leave port marks on your starboard side and starboard marks on your port side.

One way to remember this is the saying, “there’s



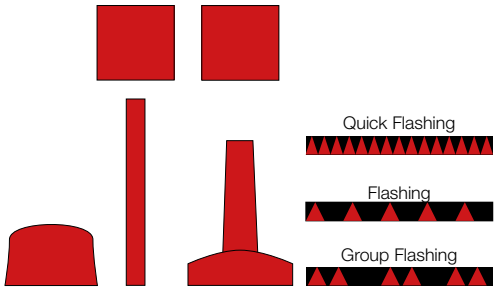
some red, port, left in the bottle” when travelling upstream.

Lateral Marks are not always placed in pairs where you simply have to pass between them. When you see just one, you will need to bear in mind the upstream–downstream principle.

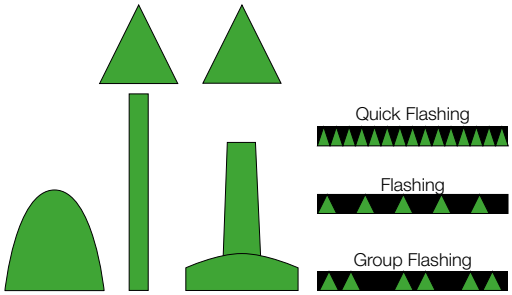
Lights

When lit, Port Marks have red lights, Starboard Marks have green lights. These are the only marks to use these colours. The light can be any rhythm, other than Composite Group Flashing (2+1).

Port Marks



Starboard Marks

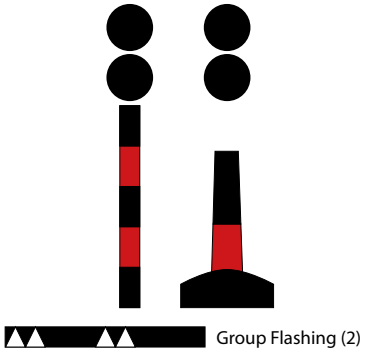


Isolated Danger Marks

As the name suggests, it marks danger with navigable water all around, too small to need marking with a series of marks. In general, pass as well clear of it as you can.

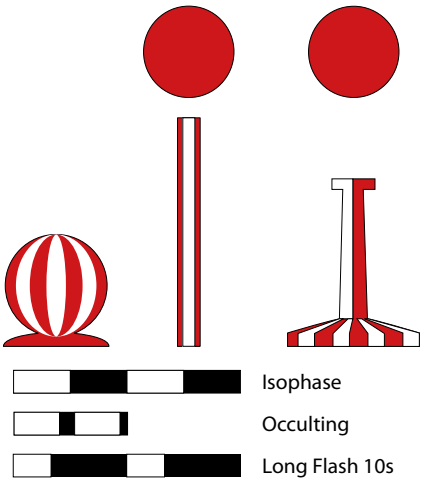
Light

If lit, it will have a white light, flashing in groups of two. The memory jog is two flashes to match the two-sphere topmark.



Safe Water Marks

There is safe water all around this mark. Most commonly, it used to mark the seaward end of channels into ports. They are sometimes used to mark the centre of a channel; occasionally they are used in a series down the middle of a channel instead of Lateral Marks on the edges of the channel.



Light

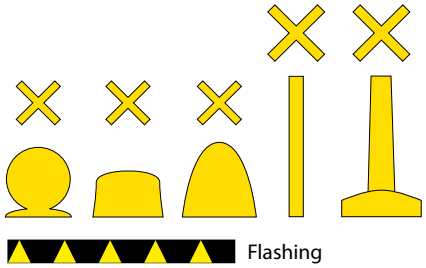
If lit, it will have a white light whose rhythms are listed above. It may also use the Morse “A” rhythm.

Special Marks

Marks used to indicate a special area or feature whose nature may be apparent from reference to a chart or other nautical publication. They are not generally intended to mark channels or obstructions where other marks are more suitable.

Some examples of uses of Special Marks:

- Traffic separation marks;
- Spoil Ground marks; and
- Aquaculture.



Light

If lit, a Special Mark will have a yellow light and may have any rhythm other than those used for white lights on Cardinal, Isolated Danger or Safe Water marks.

Navigation aid light characteristics

Type of light	Characteristic	Abbr.	Description
Fixed		F	A light showing continuously and steadily.
Flashing		Fl	A light in which the total duration of light in a period is shorter than the total duration of darkness and the appearances of light (flashes) are usually of equal duration.
Long flashing		LFl	A flashing light in which an appearance of light, of not less than 2 seconds duration, is regularly repeated.
Group flashing		Fl(3)	A flashing light in which a group of flashes, specified in number, is regularly repeated.
Composite group flashing		Fl(2+1)	A light similar to a group-flashing light except that successive groups in a period have different numbers of flashes.
Quick flashing		Q	A continuous flashing light with a rate of 50 or 60 per minute.
Very quick flashing		VQ	A continuous flashing light with a rate of 100 or 120 per minute.
Occulting		Oc	A light in which the total duration of light in a period is longer than the total duration of darkness and the intervals of darkness (eclipses) are usually of equal duration.
Isophase		Iso	A light in which all the durations of light and darkness are clearly equal.
Morse		Mo(A)	A light in which appearances of light of two clearly different durations are grouped to represent a character or characters in the Morse Code.

Period shown

Cardinal Marks

These are used where Lateral Marks would be inappropriate or confusing. They indicate the compass direction of the safest water, so having a compass on board is very useful.

You should pass to the east of an East Cardinal Mark, to the south of a South Cardinal, to the west of a West Cardinal Mark and to the north of a North Cardinal Mark.

The lights, topmarks and colour schemes have a logic to help you memorise them.

The cones on the top point in the direction of the black segment of the pillar:

North	both cones top point up, black at the top of the pillar.
East	the cones point up and down, black at top and bottom.
South	both cones point down, black at the bottom.
West	the cones point inwards, black in the middle.

Lights (white)

The lights patterns almost follow the clock face:

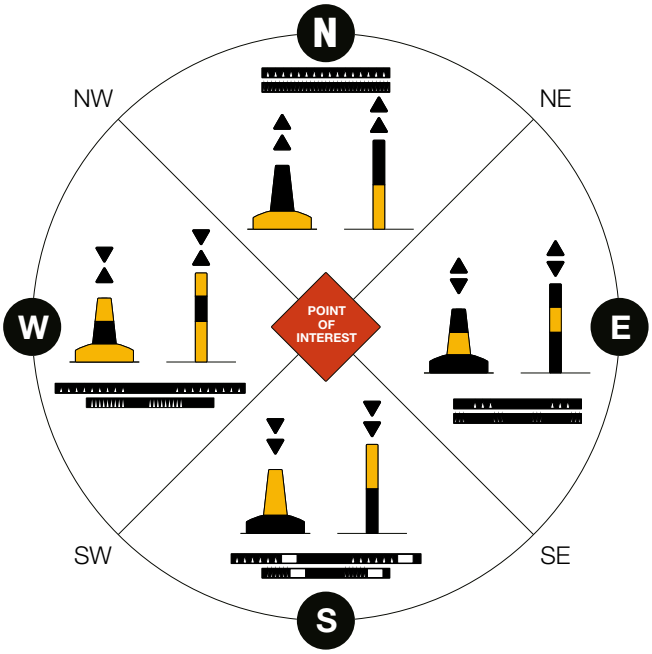
3 o'clock = East Cardinal = 3 flashes

6 o'clock = South Cardinal = 6 flashes + 1 long flash

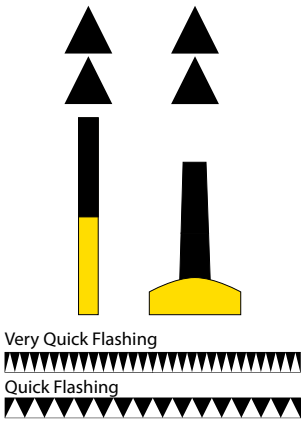
9 o'clock = West Cardinal = 9 flashes

12 o'clock = North Cardinal = continuous flashing.

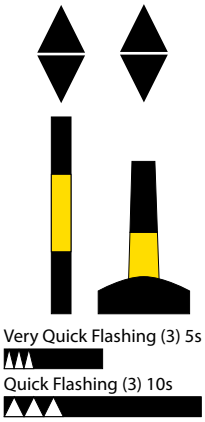
The long extra flash for south, and the continuous flash for north are to avoid confusion if you lose track with your counting.



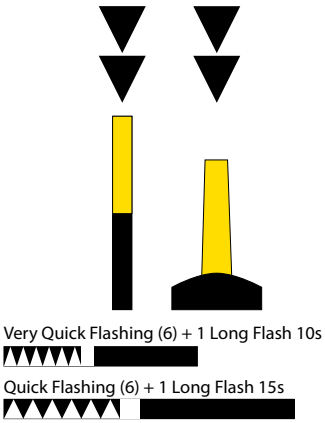
North Cardinal



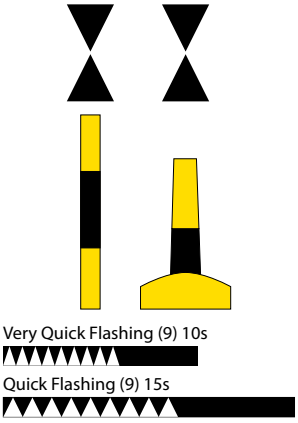
East Cardinal



South Cardinal

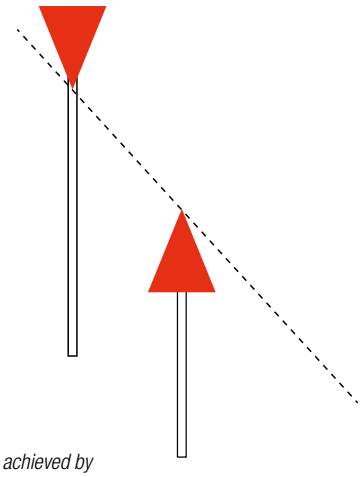


West Cardinal



Leads

Leads are a pair of marks that when aligned form a transit along the safe channel through shallow or dangerous waters. They are often used for the approaches to anchorages (there are many at Rottnest). You steer to keep the rear lead directly above the front lead.



The course is achieved by keeping the rear lead directly above the front lead

Lights

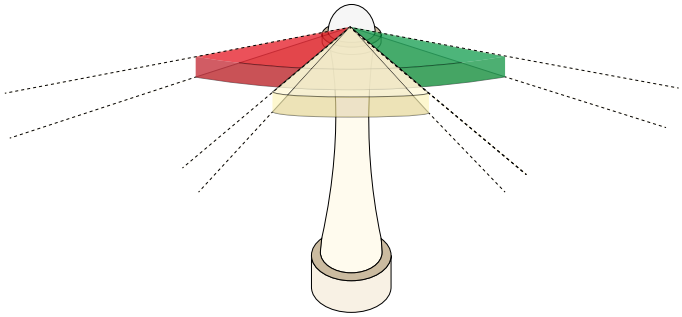
If lit, they may use any colour. The chart will have the details.

Sectored lights

Sectored lights are navigation aids that indicate a safe channel through shallow or dangerous waters.

Generally there are three lights of different colours each identifying a sector of an arc. The white sector will generally be the safe water and the red or green sectors areas to avoid. It is particularly important to check the chart for the light's meaning, purpose and to determine the extent of the safe passage.

The recommended course is achieved by keeping within the white sector of the light. If the light colour shifts to red or green an adjustment of course is required to bring it back into the white and back on track.



The course is achieved by keeping within the white sector

Contact

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