Buoys, marks and beacons

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Traffic lights and signs guide drivers on the roads. Buoys, beacons and navigation lights do the same on the water.

In Queensland, the system of buoys, beacons, marks and lights used is compliant with the International Association of Marine Aids to Navigation and Lighthouse Authorities (IALA) Buoyage System 'A'. Each type of mark has its own colour, shape, top mark and light combination.

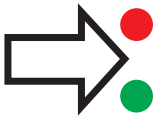
To navigate safely, you need to know each mark and its meaning.

Lateral marks

Lateral marks show the port (left) and starboard (right) sides of navigable waters or channels.

A port mark is red with a can-like shape and displays a red flashing light at night (when lit). A starboard mark is green with a cone-like shape and displays a green flashing light at night (when lit).

When port and starboard lateral marks are opposite each other, travel between them. When there is a single lateral mark, the safe side to pass depends on the direction of travel (or buoyage). This is shown on charts by the symbol:

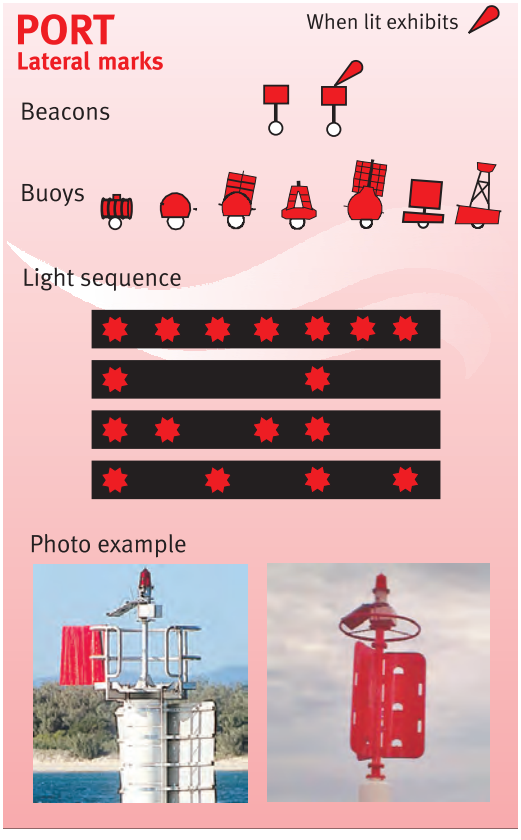


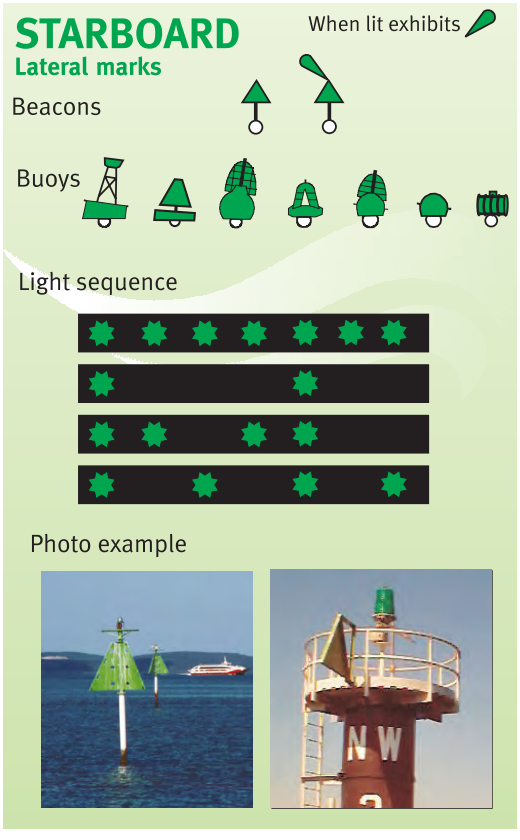
When travelling upstream or away from the sea:

- keep port (red) marks on your port-hand side (left)
- keep starboard (green) marks on your starboard hand side (right).

When travelling downstream or towards the sea:

- keep port (red) marks on your starboard-hand side (right)
- keep starboard (green) marks on your port-hand side (left).





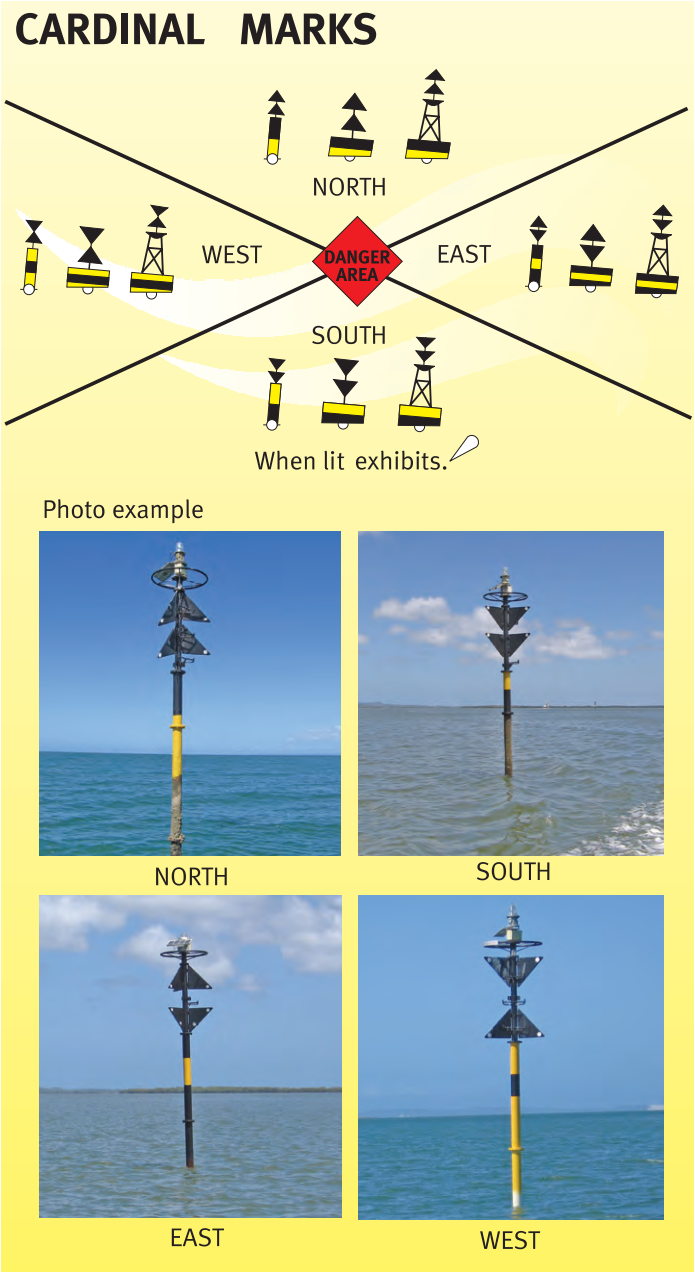
Queensland Government

Cardinal marks

Cardinal marks show where the deepest and safest water is by using a compass. They can mark:

- where to find the deepest water in an area
- the safest side to pass a danger
- a feature in a channel (for example, a bend, junction or the end of a shoal).

Cardinal marks have black and yellow bands with black double cones on top showing the different compass directions that identifies the safest and deepest water.



North cardinal mark

The top cones point up or North, showing there is safe water to the North of the mark.

East cardinal mark

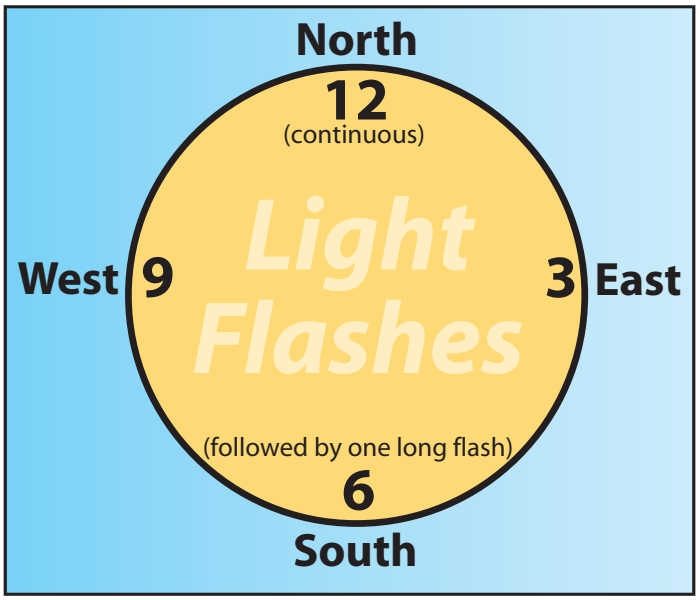
The top cones are in the shape of an egg, showing there is safe water to the East of the mark. To remember this, think of 'e' for egg and for East.

South cardinal mark

The top cones point down or South, showing there is safe water to the South of the mark.

West cardinal mark

The top cones make the shape of a wine glass, showing there is safe water to the West of the mark. To remember this, think of 'w' for wine glass and for West.



At night, each type of cardinal mark has a flashing white light with different groupings of flashes (continuous, or groups of 3, 6 or 9). To remember each type, think of a compass face with the numbers of a clock marked on it beside each direction:

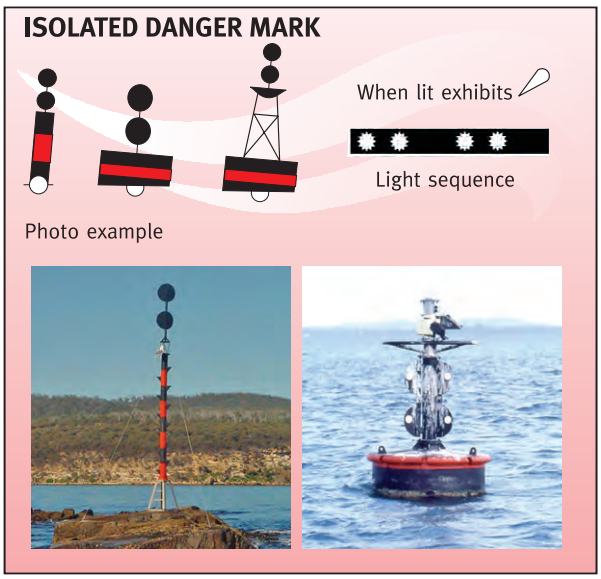
- 3 (quick or very quick) flashes for East
- 6 (quick or very quick) flashes followed by a long flash for South
- 9 (quick or very quick) flashes for West
- continual (quick or very quick) flashes for North.

Isolated danger marks

Isolated danger marks show where there is an isolated danger that has navigable water all round it – but don't pass too close.

Isolated danger marks are black with 1 or more red horizontal bands and 2 spheres as the top mark.

At night, the white light flashes in groups of 2. To remember isolated danger marks, think of 2 flashes of light with 2 spheres as the top marks.

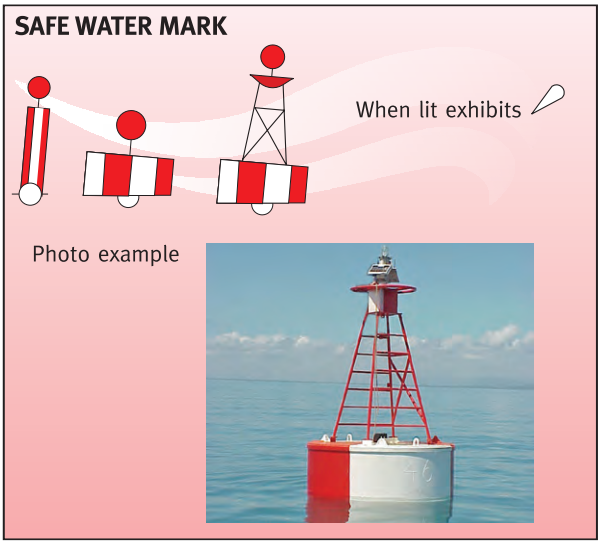


Safe water marks

Safe water marks show that there is navigable water all around the mark. For example, fairway, mid-channel or landfall marks.

Safe water marks have red and white vertical stripes with a single red sphere as the top mark.

At night, a single white light shows 1 long flash every 10 seconds. To remember safe water marks, think of 1 light with 1 long flash and 1 sphere for the top mark.



Special marks

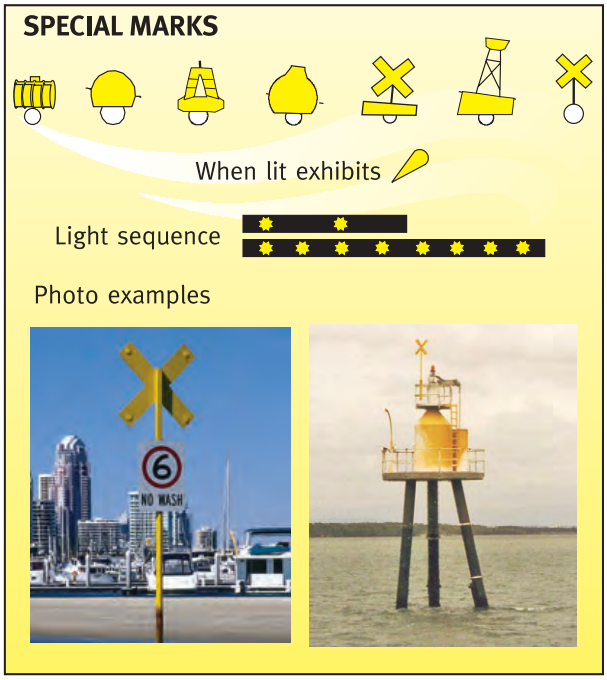
Special marks show a special area or feature. For example, to show that a channel divides or to mark cables or pipelines.

They can also mark a channel within a channel. For example, a channel for deep draught ships in a wide river or bay where the limits of the channel for normal navigation are marked by red and green lateral buoys or beacons.

The direction to travel around a special mark is usually referred to or shown on charts.

Special marks are yellow and sometimes have a yellow X as the top mark.

At night, the flashing light is yellow.

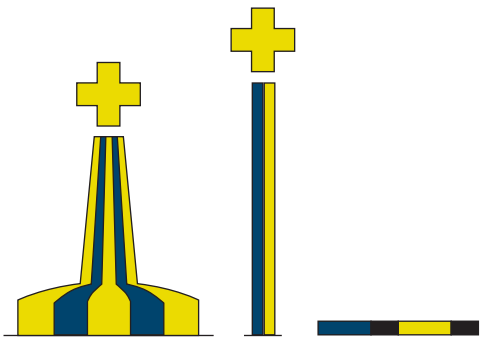


Emergency wreck marking buoy

Emergency wreck marking buoys are used to identify new dangers or wrecks.

They have blue and yellow vertical stripes and are a pillar or spar shape with a yellow cross as the top mark.

At night, the flashing light alternates between 1 second of blue light and 1 second of yellow light, with 0.5 seconds of darkness in between.



Other navigational aids

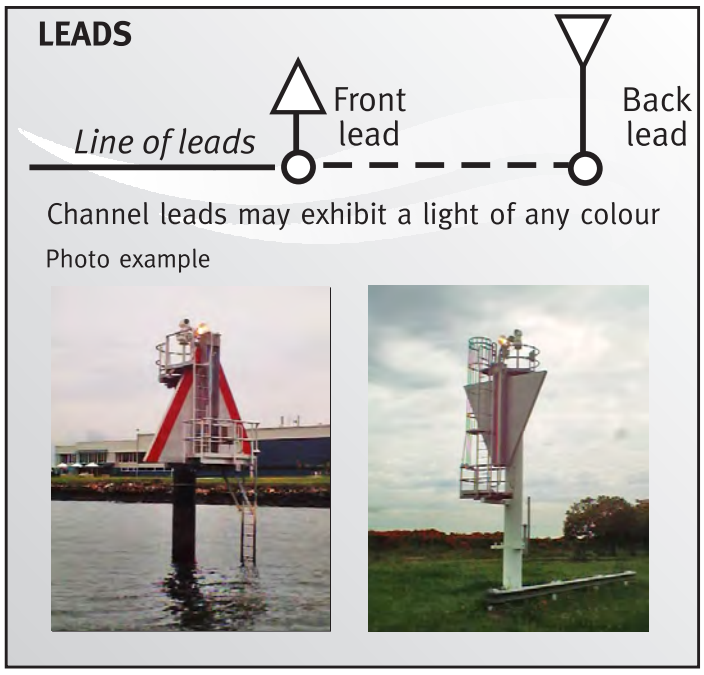
There are some other aids to navigation that you need to be aware of.

Leads

Leading lights/beacons usually display a triangular shape. The front lead has its apex pointing up and the rear or back lead has its apex pointing down.

When the leads are in line, you are travelling in the middle of the channel. Where leads are used to mark the middle of larger shipping channels, small vessels should travel on the starboard-side of the channel to keep clear of large ships – especially at night.

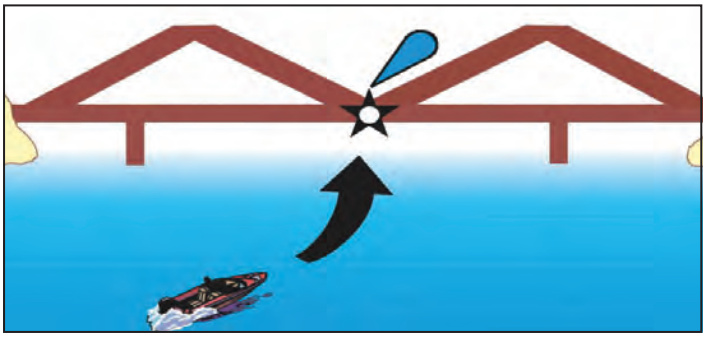
Fixed white day lights are sometimes used to mark the leads. At night, major leads are usually lit with blue lights.



Blue middle channel mark

Blue middle channel marks are fixed blue lights that show the middle of the channel for vessels passing under a bridge.

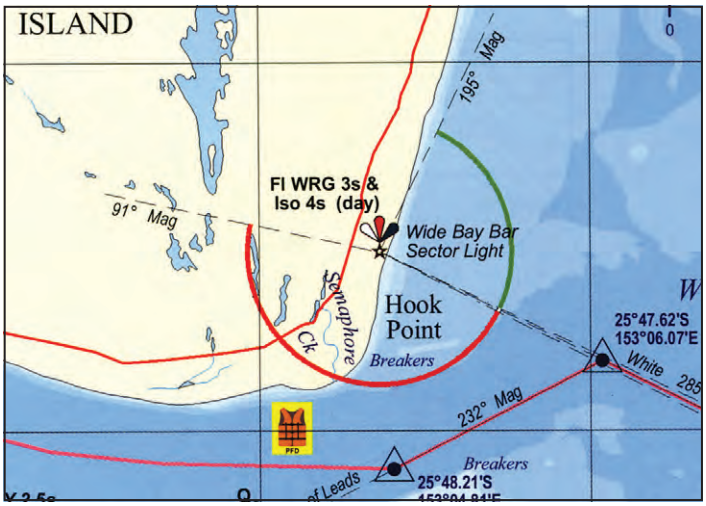
On a chart, they are normally shown as a star with a flash symbol.



Directional or sector lights

Directional lights and sector lights have a similar purpose to leading lights at channel entrances and inshore waters.

Directional lights can be used as steering marks and sector lights display a light of different colours (usually green, white and red).



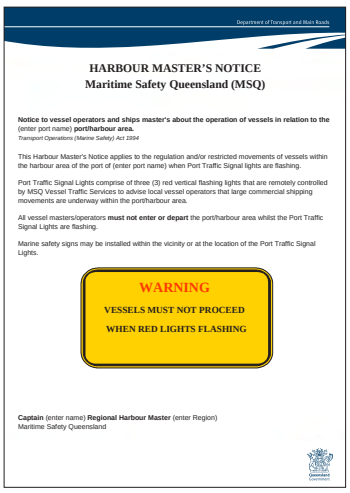
Port traffic signal lights

Maritime Safety Queensland's port traffic signal lights have 3 red vertical flashing lights that are remotely controlled by vessel traffic services to tell others in the area that large commercial ships are moving in the port, harbour, marina or other confined waterway.

Vessels must not enter or depart the port or harbour area when the port traffic signal lights are flashing. Marine warning signs will be installed beside or close to the port traffic signals to increase awareness and advise vessels.

The flashing red lights can also be used to advise of a serious emergency or to divert small ships according to instructions.

A Harbour Master's Notice with a Notice to Mariners will be issued for areas where the port traffic signal areas are used.



HARBOUR MASTER'S NOTICE
Maritime Safety Queensland (MSQ)

Notice to vessel operators and ships master's about the operation of vessels in relation to the (enter port name) **port/harbour area.**
Transport Operations (Marine Safety) Act 1994

This Harbour Master's Notice applies to the regulation and/or restricted movements of vessels within the harbour area of the port of (enter port name) when Port Traffic Signal lights are flashing.

Port Traffic Signal Lights comprise of three (3) red vertical flashing lights that are remotely controlled by MSQ Vessel Traffic Services to advise local vessel operators that large commercial shipping movements are underway within the port/harbour area.

All vessel masters/operators **must not enter or depart** the port/harbour area whilst the Port Traffic Signal Lights are flashing.

Marine safety signs may be installed within the vicinity or at the location of the Port Traffic Signal Lights.

WARNING
VESSELS MUST NOT PROCEED
WHEN RED LIGHTS FLASHING

Captain (enter name) **Regional Harbour Master** (enter Region)
Maritime Safety Queensland