



Buoyage

Odessa 2009

Buoyage

- How many different systems?
 - Lateral Marks – system A
 - Red to Port
 - Lateral Marks – system B
 - Green to port
 - Cardinal Marks
 - Black and yellow marks defined by location to the danger
 - Special Marks
 - Isolated danger, safe water, special marks

North Cardinal Marks

- North cardinal marks are positioned at the most northerly point of a navigational hazard.
- They are pillar or spar shaped, with the upper part being black and the lower part coloured yellow.
- The black top mark is formed by two cones both pointing upwards as shown.
- Light: White very quick flash, or quick flash.



East Cardinal Marks

- East cardinal marks are positioned at the most easterly point of a navigational hazard.
- They are pillar or spar shaped, black with a wide yellow waist band.
- The black top mark is formed by two cones one pointing up and the other down as shown.
- Light: White very quick flash, 3 every 5 seconds, or quick flash, 3 every 10 seconds.



South Cardinal Marks

- South cardinal marks are positioned at the most southerly point of a navigational hazard.
- They are pillar or spar shaped, with the upper part being coloured yellow and the lower part black.
- The black top mark is formed by two cones pointing down as shown.
- Light: White very quick flash, 6 followed by a long flash every 10 seconds, or quick flash, 6 followed by a long flash every 15 seconds.



West Cardinal Marks

- West cardinal marks are positioned at the most westerly point of a navigational hazard.
- They are pillar or spar shaped, coloured yellow with a wide black waist band.
- The black top mark is formed by two cones one pointing up and the other down as shown.
- Light: White very quick flash, 9 every 10 seconds, or quick flash, 9 every 15 seconds.



Isolated danger mark

- Isolated danger marks are positioned above any isolated navigational hazard, which is surrounded by safe water.
- They may be pillar or spar shaped, black in colour with horizontal red stripes.
- The black top mark is formed by two spheres placed one above the other.
- Light: (if fitted) White flashing in groups of two.



Safe water marks

- Safe water marks indicate safe deep water.
- They may be of different shapes, but always have red and white vertical stripes and a red spherical top mark.
- Light: (if fitted) White isophase occulting, or a long flash every ten seconds.



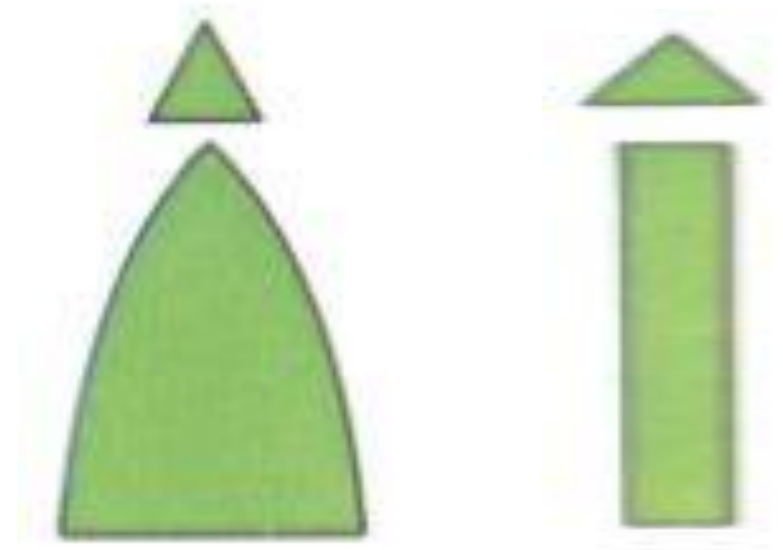
Special marks

- Special marks indicate the position of any special feature.
- They may be of different shapes, but are always yellow with a yellow cross top mark.
- However, a conical shaped buoy would normally be placed in a starboard hand position.



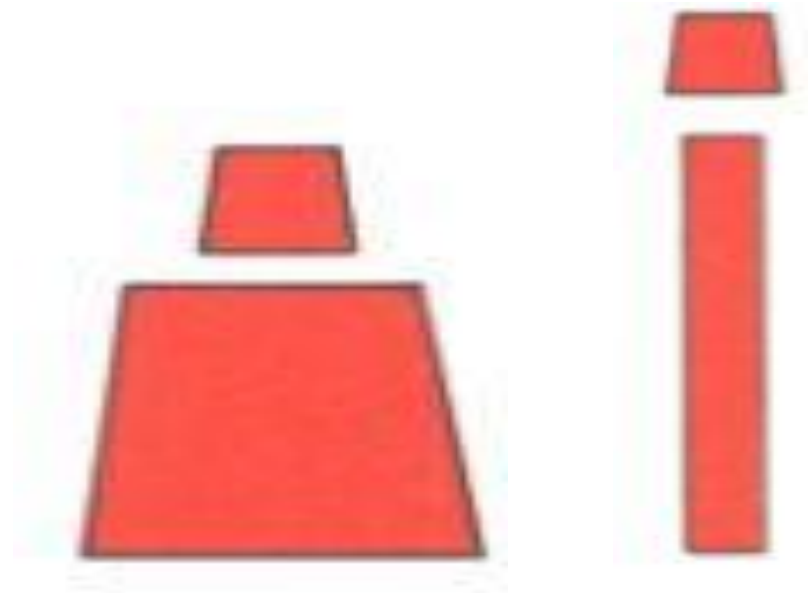
Starboard hand marks – System A

- Starboard hand lateral marks are positioned to mark the starboard hand edge of a navigable channel.
- They may be conical or spar shaped, but are always coloured green.
- The green top mark is also conical.
- Light (if fitted): Green, of any rhythm that does not conflict with other local lights.



Port Hand Marks – System A

- Port hand lateral marks are positioned to mark the port hand edge of a navigable channel.
- They may be either can or spar shaped, but are always coloured red.
- The red top mark is also can shaped.
- Light: (if fitted) Red, of any rhythm that does not conflict with other local lights.

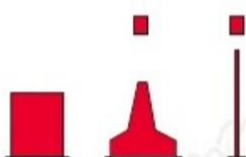


LATERAL MARKS — REGION A

This diagram is schematic and in the case of pillar buoys in particular, their features will vary with the individual design of the buoys in use.

PORT HAND

Colour: Red.
Shape: Can, pillar or spar.
Topmark (when fitted): Single red can.
Retroreflector: Red band or square.



STARBOARD HAND

Colour: Green.
Shape: Conical, pillar or spar.
Topmark (when fitted): Single green cone point upward.
Retroreflector: Green band or triangle.



LIGHTS, when fitted, may have any rhythm other than composite group flashing (2+1) used on modified Lateral marks indicating a preferred channel. Examples are:

Red light		Green light	
Q.R		Q.G	
FLR		FLG	
LFLR		LFLG	
F(2)R		F(2)G	
	Continuous-quick light		
	Single-flashing light		
	Long-flashing light		
	Group-flashing light		

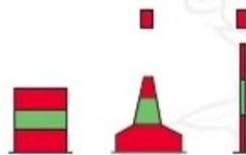
The lateral colours of red or green are frequently used for minor shore lights, such as those marking pier-heads and the extremities of jetties.

PREFERRED CHANNELS

At the point where a channel divides, when proceeding in the conventional direction of buoyage, a preferred channel is indicated by

Preferred channel to starboard

Colour: Red with one broad green band.
Shape: Can, pillar or spar.
Topmark (when fitted): Single red can.
Retroreflector: Red band or square.



Red light

F(2+1)R

Preferred channel to port

Colour: Green with one broad red band.
Shape: Conical, pillar or spar.
Topmark (when fitted): Single green cone point upward.
Retroreflector: Green band or triangle.



Green light

F(2+1)G

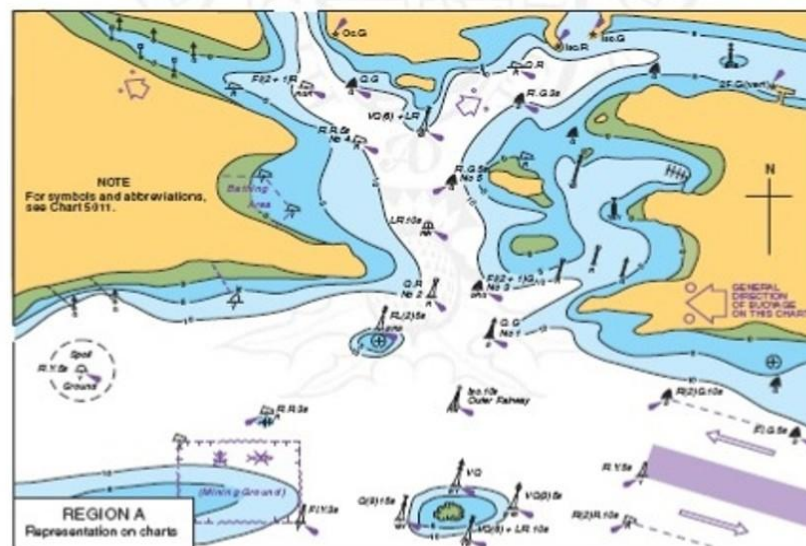
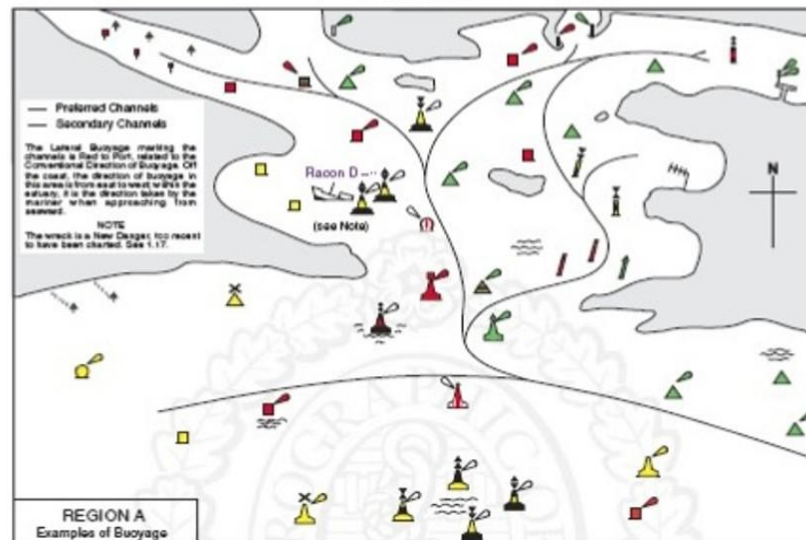
NOTES

Where port or starboard marks do not rely on can or conical buoy shapes for identification, they carry the appropriate topmark where practicable.

If marks at the sides of a channel are numbered (9.16.1)

or lettered, the numbering or lettering follows the conventional direction of buoyage. Special marks, with can and conical shapes but painted yellow, may be used in conjunction with the standard Lateral marks for special types of channel marking.

REGION A

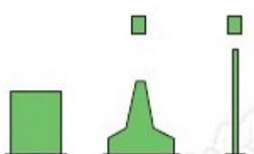


LATERAL MARKS — REGION B

This diagram is schematic and in the case of pillar buoys in particular, their features will vary with the individual design of the buoys in use.

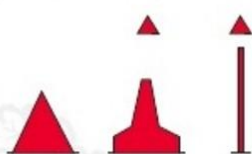
PORT HAND

Colour: Green.
Shape: Can, pillar or spar.
Topmark (when fitted): Single green can.
Retroreflector: Green band or square.



STARBOARD HAND

Colour: Red.
Shape: Conical, pillar or spar.
Topmark (when fitted): Single red cone, point upward.
Retroreflector: Red band or triangle.



LIGHTS, when fitted, may have any rhythm other than composite group flashing (2+1) used on modified Lateral marks indicating a preferred channel. Examples are:

Green light		Red light	
Q.G		Q.R	
FL.G		FL.R	
LFL.G		LFL.R	
Fl(2)G		Fl(2)R	
	Continuous-quick light		Continuous-quick light
	Single-flashing light		Single-flashing light
	Long-flashing light		Long-flashing light
	Group-flashing light		Group-flashing light

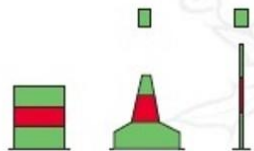
The lateral colours of red or green are frequently used for minor shore lights, such as those marking pier-heads and the extremities of jetties.

PREFERRED CHANNELS

At the point where a channel divides, when proceeding in the conventional direction of buoyage, a preferred channel is indicated by

Preferred channel to starboard

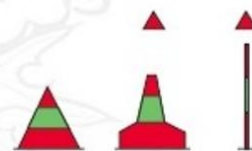
Colour: Green with one broad red band.
Shape: Can, pillar or spar.
Topmark (when fitted): Single green can.
Retroreflector: Green band or square.



Green light
Fl(2+1)G

Preferred channel to port

Colour: Red with one broad green band.
Shape: Conical, pillar or spar.
Topmark (when fitted): Single red cone point upward.
Retroreflector: Red band or triangle.



Red light
Fl(2+1)R

NOTES

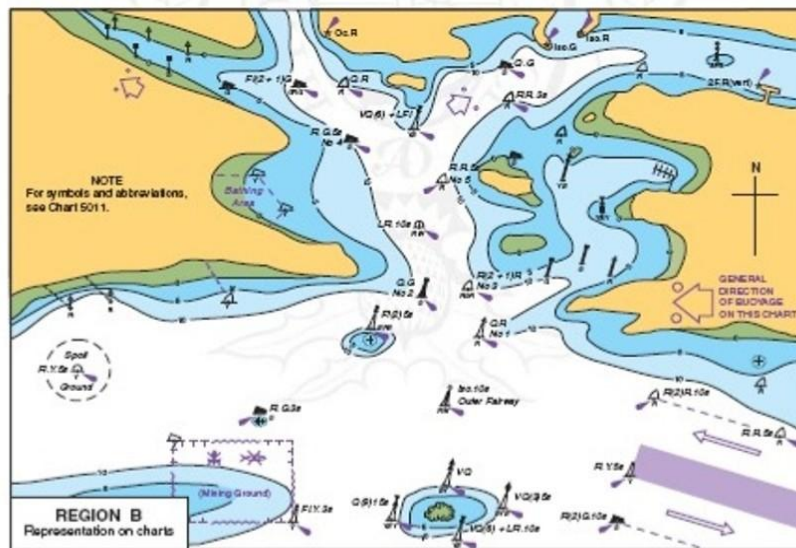
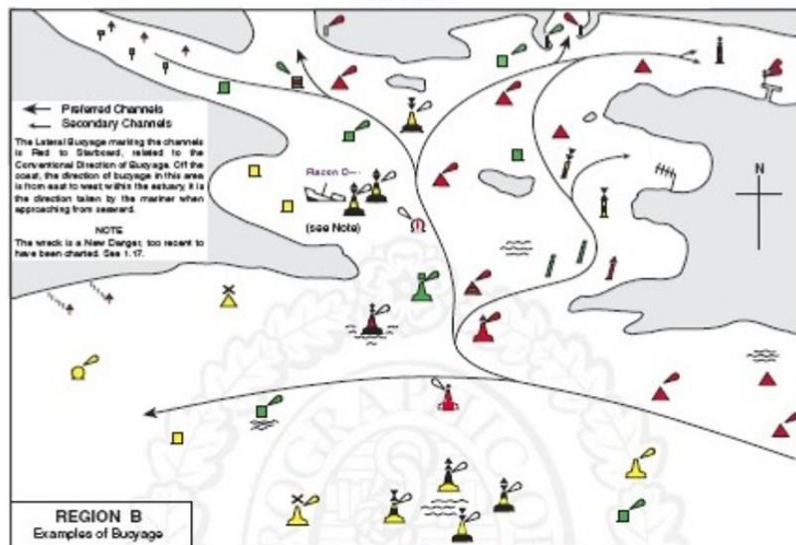
Where port or starboard marks do not rely on can or conical buoy shapes for identification, they carry the appropriate topmark where practicable.

If marks at the sides of a channel are numbered (9.16.2)

or lettered, the numbering or lettering follows the conventional direction of buoyage.

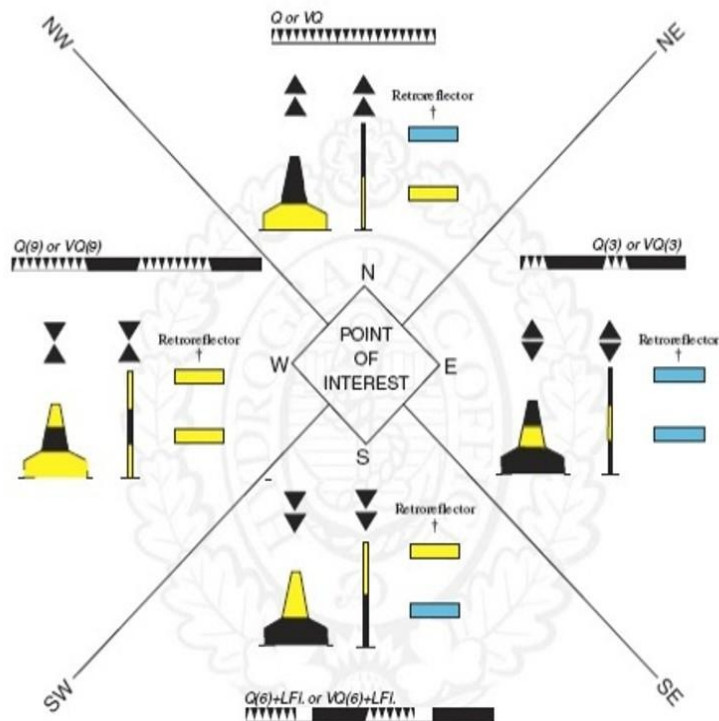
Special marks, with can and conical shapes but painted yellow, may be used in conjunction with the standard Lateral marks for special types of channel marking.

REGION B



CARDINAL MARKS

Topmarks are always fitted (when practicable)
Buoy shapes are pillar or spar



NOTES

†Retroreflectors illustrated are those of the Comprehensive Code. In the Standard Code these marks are distinguished by one or more white bands, letters, numerals or symbols.

This diagram is schematic and in the case of pillar buoys in particular, their features will vary with the individual design of the buoys in use.

LIGHTS, when fitted, are white Very Quick Lights or Quick Lights; a South mark also has a Long Flash immediately following the quick flashes.

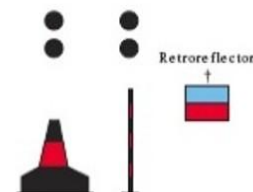
(9.25)

200

ISOLATED DANGER MARKS

Topmark
(This is a very important feature by day and is fitted whenever practicable)

Shape: pillar or spar



Light (when fitted): White, Group-flashing (2).

$F(2)$

SAFE WATER MARKS

Topmark
(If the buoy is not spherical, this is a very important feature by day and is fitted wherever practicable)

Shape: spherical, pillar or spar



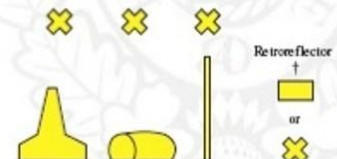
Light (when fitted): White, Isophase, or Occulting, or Long-Flashing every 10 seconds, or Morse Code (A)

Iso
 Oc
 $LFI, 10s$
 $Mo(A)$

SPECIAL MARKS

Topmark
(if fitted)

Shape: optional



Light (when fitted): Yellow, and may have any rhythm not used for white lights

Examples

FLY
 $F(4)Y$

If these shapes are used they will indicate the side on which the buoys should be passed



NOTES

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This diagram is schematic and in the case of pillar buoys in particular, their features will vary with the individual design of the buoys in use.

(9.32)

202