VOYAGE PLANNING & MANAGEMENT

PASSAGE PLANNING

- APPRAISAL
- PLANNING
- EXECUTION
- MONITORING

APPRAISAL

- When you gather as much safety and navigation information to give you a safe voyage.
  - What type of information does this involve?
  - The tides.
  - Tidal streams.
  - Under-keel allowances.
  - Information from pilot books/sailing directions.
  - Chart dangers (rocks, shallow water oil-rigs etc.).
  - Traffic separation schemes.
  - Weather information (shipping forecasts).
  - Possible areas of restricted visibility.
  - Any areas, which would involve an area of high traffic density.

APPRAISAL

- Full coverage of up to date charts with details:
  - Currents – direction & rate of set.
  - Tides – times, heights and direction of rate of set.
  - Draught of ship during various stages.
  - Navigational lights and marks along the way.
  - Navigational warnings.
  - Climate data.
  - Ships maneuvering data.
- Appraisal should indicate areas of danger and delineate areas of safe navigation for the ship.

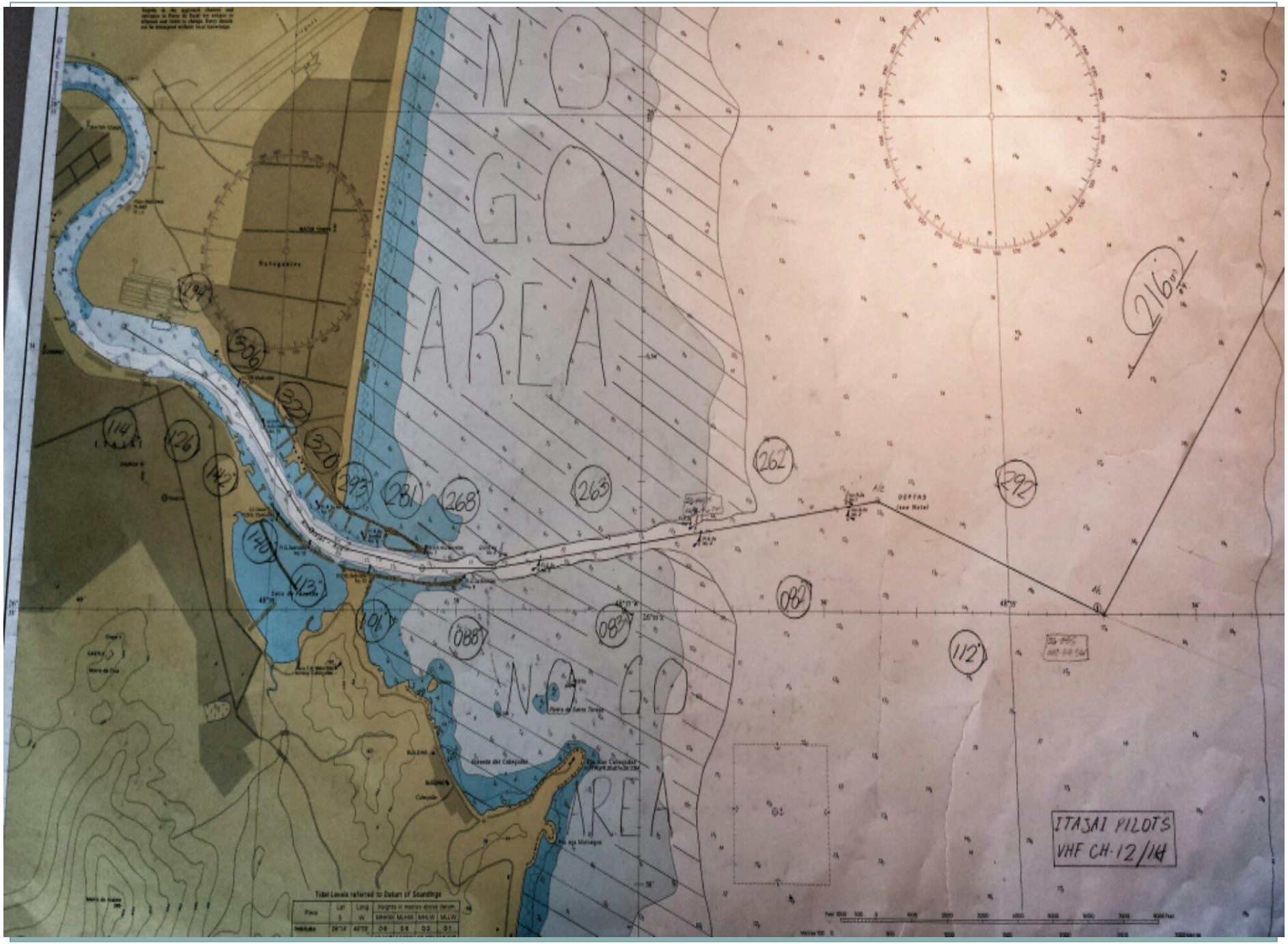

Fl (2) 6s 55ft 12 St M
HORN RACON (—··—)
Colchester
Spoil Ground
Fl R
16 rky
R S
"EM2"
Wreck
Fl R 4s 72ft 6 St M
Pigeon Bay
Temp Dumping Ground
R "2"
Q R
Obstn
Fl G 5s
12 St M "1E"
RACON (—··—)
HORN
275° 26 Miles (Upbound)
095° 27 Miles (Downbound)
260° 13 Miles
272° 22 Miles
Fl G 4s 65ft 6 St M
G "E13"
Fl G 4s
North Harbour I Reef
R "E10"
Fl R 4s
NO-DISCHARGE ZONE
(see note Z)
Fl Y
Y "6"
Fl Y
Y "5"
Fl Y
East Sister I
Hen I Shoal
Fl R 4s 7 St M
ABAND LT HO
Nautical Miles
Petea

PLANNING

- On the basis of the fullest possible appraisal, a detailed voyage plan should be prepared which should cover the entire voyage from **berth to berth** including those areas where the pilot advisory will be used.
- What have you to do to make a plan of your voyage? Plot the intended voyage making sure it is safe, and that the plan has been checked out by the master of the vessel, use way points, parallel indexing , courses, distance on each route, and by using all the information that you Appraised.

HOW ?

- Plot on largest scale chart the intended track;
- Mark all hazards and warnings prior to transfer to next chart.
- Note safe speed and speed alterations that may be required.
- Necessary speed alterations en route.
- Minimum clearance required under the keel in critical areas with restricted water depth.
- Positions where a change in machinery status is required.


NO GO AREA
NO GO AREA
ITAJAI PILOTS
VHF CH-12/14

HOW ?

- Course alteration points, taking into account the vessel's turning circle at the planned speed and any expected effect of tidal streams and currents.
- The method and frequency of position fixing, including primary and secondary options, and the indication of areas where accuracy of position fixing is critical and where maximum reliability must be obtained.
- Considerations relating to the protection of the marine environment.

HOW ?

- Use of ships' routeing and reporting systems and vessel traffic services.
- Contingency plans for alternative action to place the vessel in deep water or proceed to a port of refuge or safe anchorage in the event of any emergence necessitating abandonment of the plan, taking into account existing shore-based emergency response arrangements and equipment and the nature of the cargo and of the emergency itself.

EXECUTION

- The master should find out how long his intended voyage should take, making sure he has enough water and fuel for the voyage.
- Estimated times of arrival at critical points for tide heights and flow
- Any areas of high traffic density that would make him deviate from his course (he should if possible make a plan to keep well clear of these areas).

CONSIDERATION

- Reliability and condition of ships equipment.
- ETA at critical points – course alterations, tide heights, pilot boarding etc..
- He should take into account any weather conditions– visibility expected on the voyage.
- Day or night passage – accuracy of fix and threat of piracy.
- Expected traffic conditions.

MONITORING

- This is the act of checking your position often on a chart and that you remain in a safe distance from any danger areas (land).
- Parallel Indexing should be used when you are alongside any hazards to maintain a safe distance.
- Use all available means to ascertain the position and progress of the ship and that it is safe.

Note

- Human failure is a major cause of accident.
- Passage planning cannot prevent this but may reduce its likelihood.
- Choice of route lies between the shortest, quickest or simplest way.
- Berth to berth coverage must be properly planned.
- No go areas – draft & UKC, danger areas.
- Refer to publications on board.

IALA MARITIME BUOYAGE SYSTEM NAVIGATION AIDS

THE IALA SYSTEM

- IALA = International Association of Lighthouse Authorities is a non-profit organization founded in 1957 to collect and provide nautical expertise and advice.

Function of Buoyage system (1976)

- To harmonize aids to navigation worldwide
- To ensure the movement of the vessels are safe
- Expeditious and cost effectively
- Protecting the environment

TYPE OF MARKS

- The different types of marks used in the pilotage of vessels at sea are easily distinguished by their shape, colour, topmark by day and the colour and rhythm of the light by night. The five types of marks are:

- **Lateral Marks:** indicate the edge of a channel
- **Cardinal Marks:** indicate the position of a hazard and the direction of safe water
- **Isolated Danger Marks:** indicate a hazard to shipping
- **Safe Water Marks:** indicates the end of a channel and deep, safe water is ahead
- **Special Marks:** indicate an area or feature such as speed restrictions or mooring area

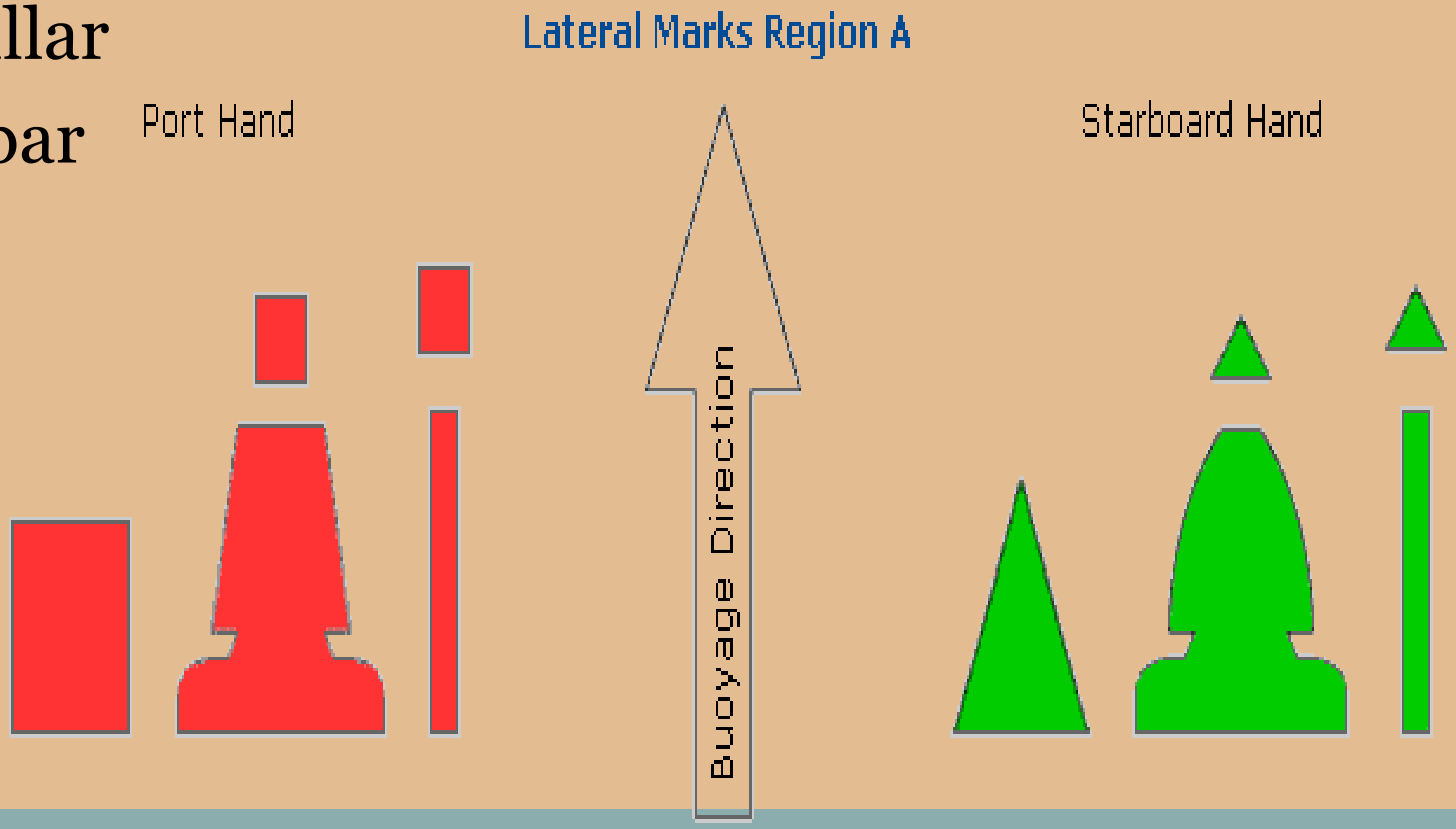
LATERAL MARKS

- Lateral marks define a channel and indicate the port and starboard sides of the navigation route to be followed into a waterway such as a harbour, river or estuary from seaward. The vessel should keep port marks to its left and keep starboard marks to its right.

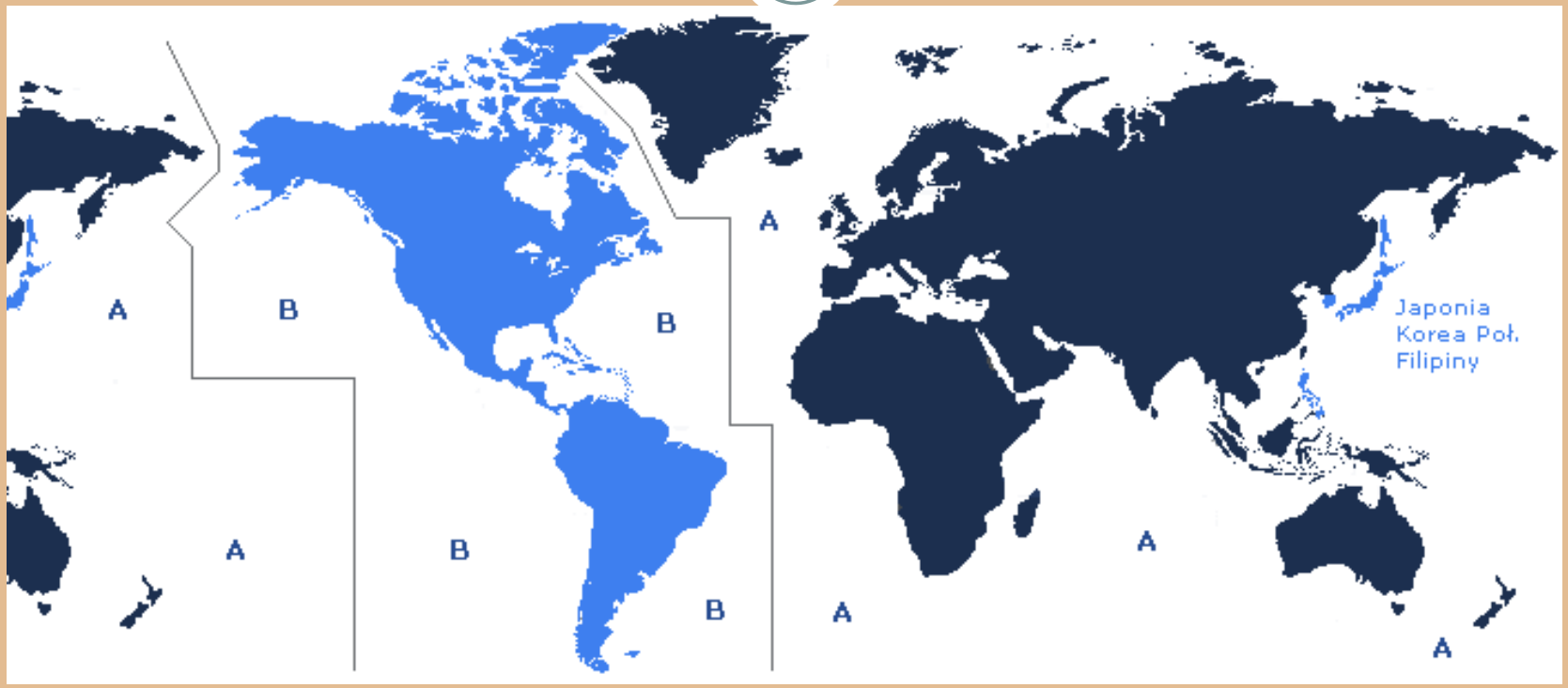
- The red colour for the left hand lateral signs were included in the region A.
- the green colour for the left hand lateral signs were included in the region B.
- the fairway direction is the one leading from the sea

SHAPE OF BUOYS

- Can
- Cone
- Pillar
- Spar



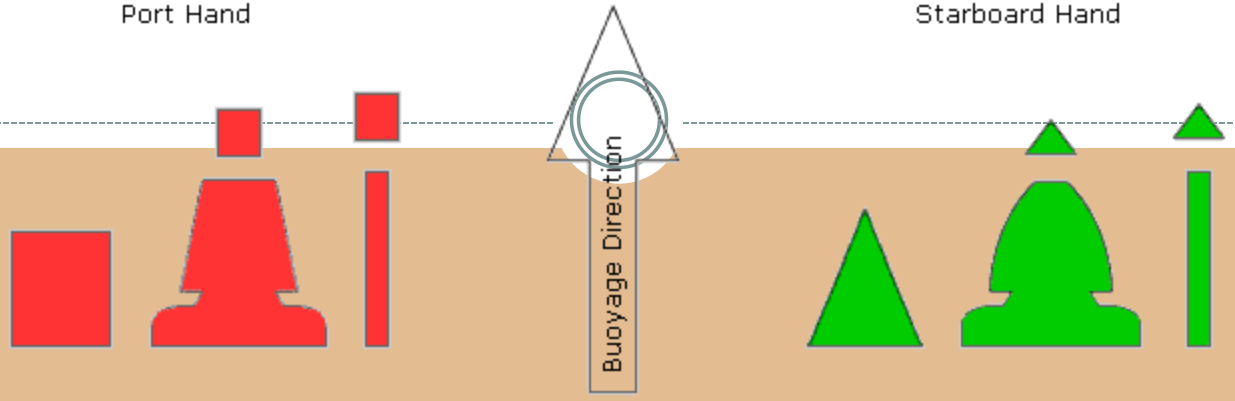
REGION A AND REGION B



- System “A” all over the world, except “B”

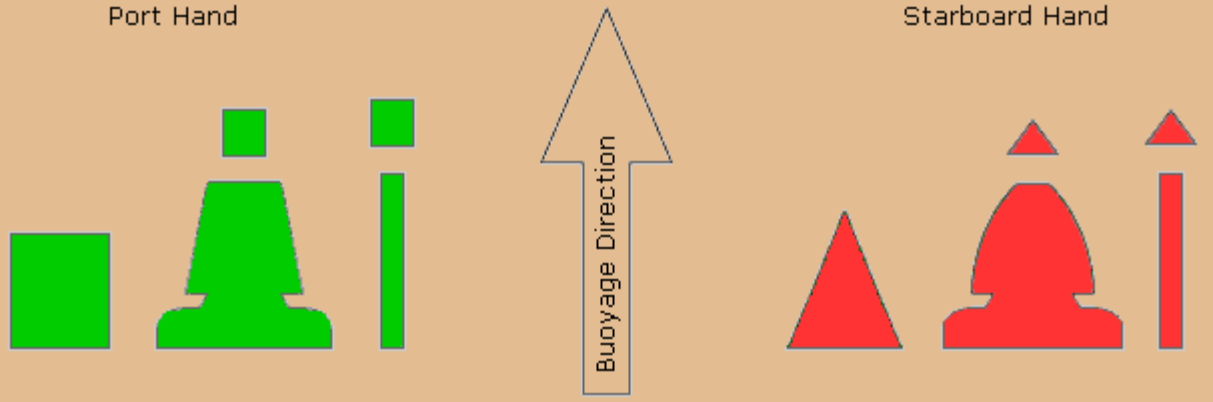
- System “B”= USA, Canada, Mexico, West Indies, Costa Rica, Panama, Guatemala, Surinam, Colombia, Venezuela, Peru, Brazil, Argentina, Paraguay, Chile, Japan, South Korea,Philippines.

Lateral Marks Region A



In the Region A, during the day and night, the green colour is used to mark the right side of the fairway, and the red colour - to mark the left side (2+1 Flashing lights) : red and green

Lateral Marks Region B



In the Region B the colours are reversed, ie the red colour is used for the right side, and the green colour - for the left side (2+1 Flashing lights) :red and green

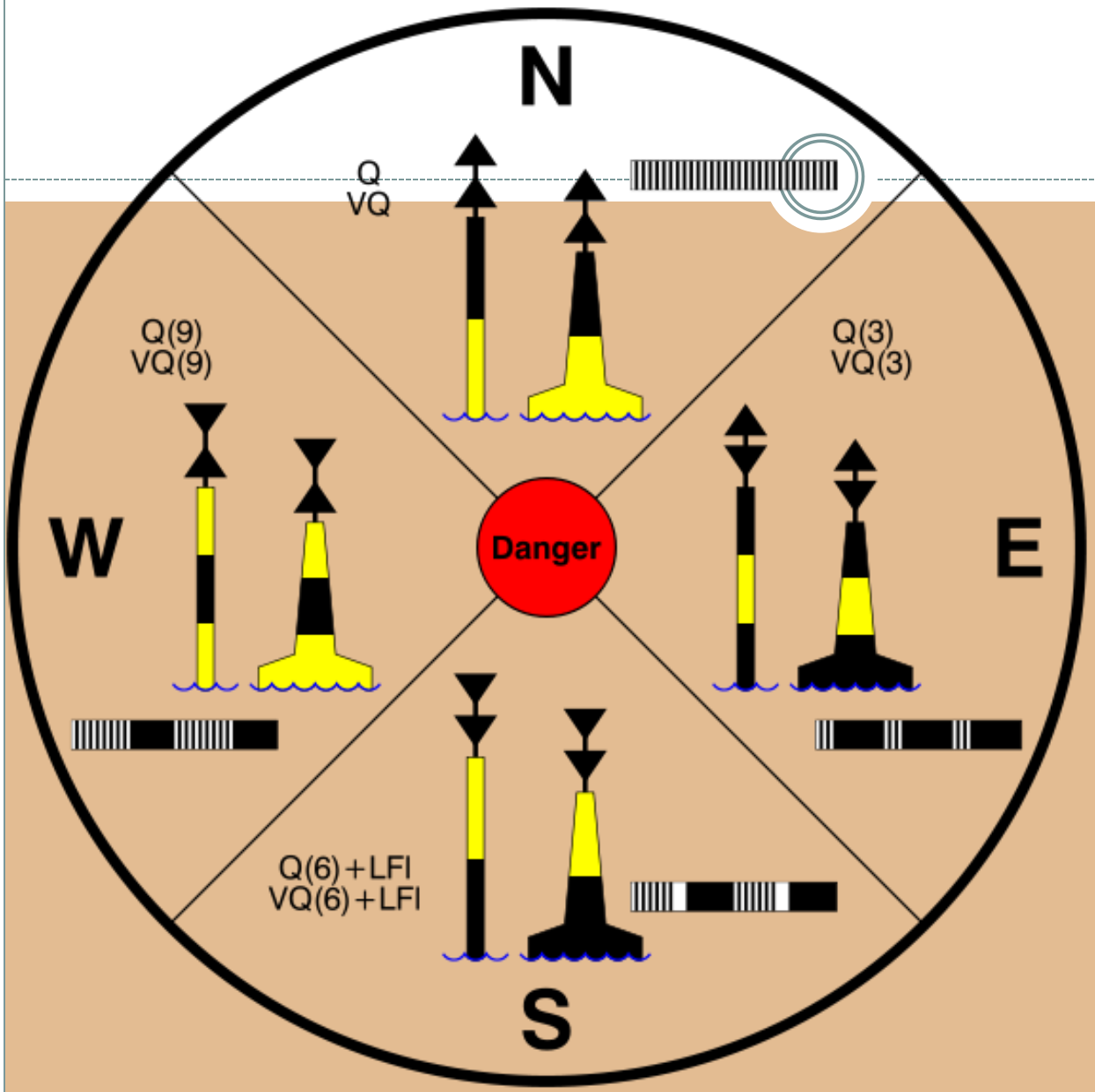
CARDINAL BUOYS

- They are placed to the North, South, East or West from the hazard.
- The cardinal buoys have mainly the shape of columns or poles. They are painted in horizontal, yellow and black stripes, and their topmarks (two cones) are painted black.

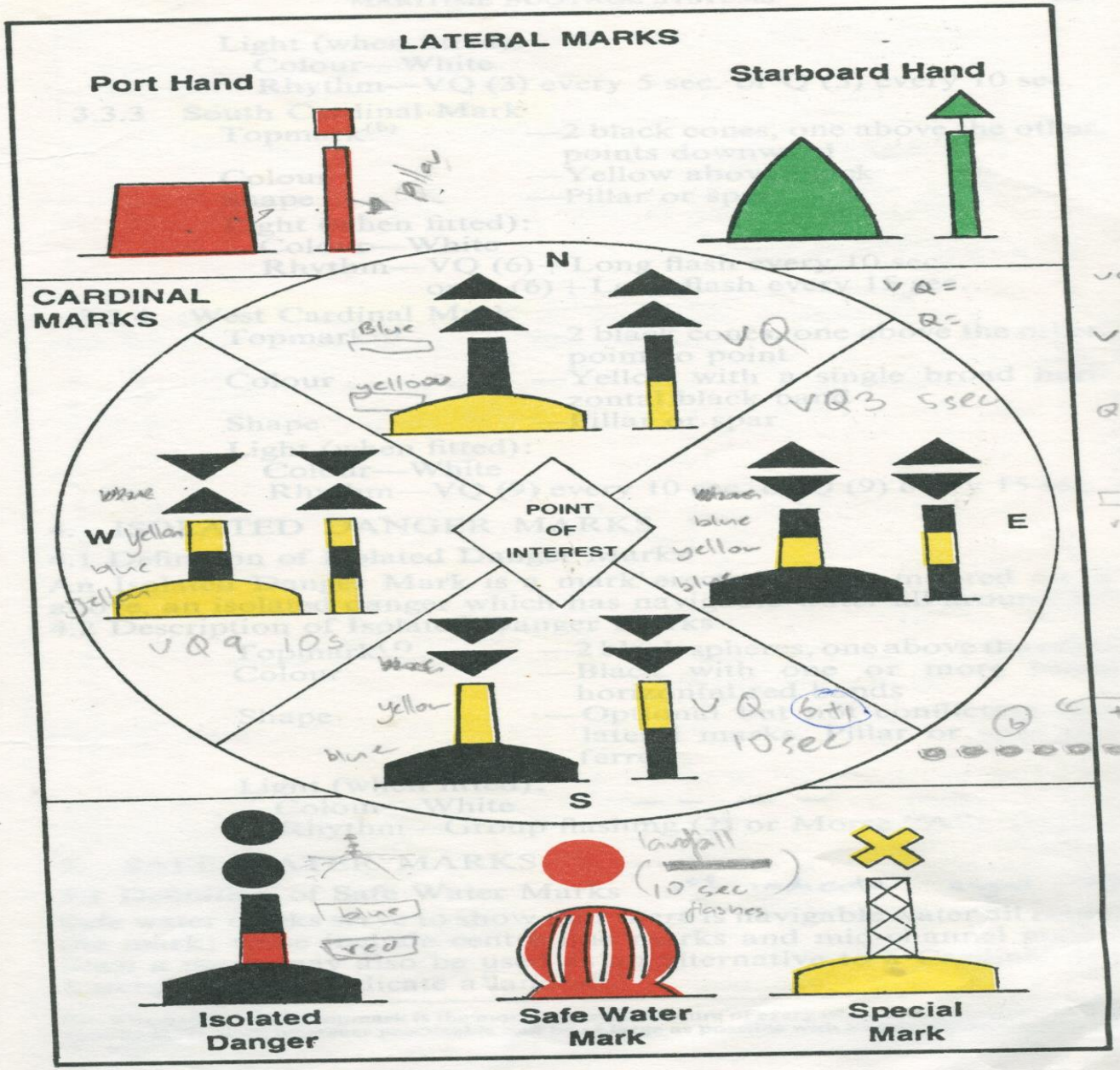
Function of Cardinal Buoys:

- Indicate that the deepest water is an area on the named side of the mark.
- Indicate the safe side on which to pass a danger.
- Draw attention to a feature in a channel, such as a bend, junction, branch, or end of a shoal.
- Draw attention to a new danger such as a grounded ship. In such cases two equal marks are often placed together to indicate that it's a newly marked danger and is not yet printed in official charts.

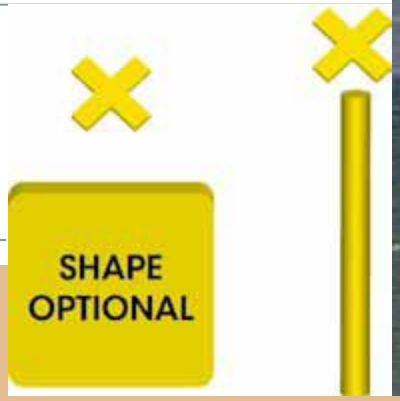
Cardinal Buoys



- white flashing light : quick (Q) or very quick (VQ)
- 10 second for sequence flashing (very quick)
- 15 second for sequence flashing (quick)

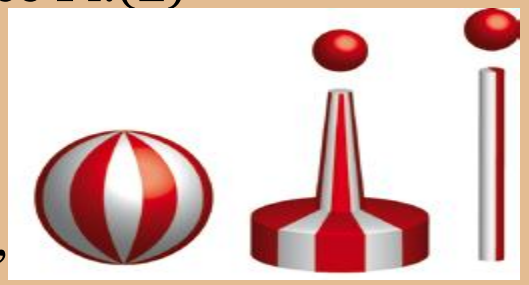


System A Buoys.



Special Marks

- Special marks do not usually assist navigation but are used to indicate a feature such as recreation zones,
- speed limits, mooring areas or cable and pipe lines including outfall sewerage pipes. Yellow flashing sequence Fl.(2)

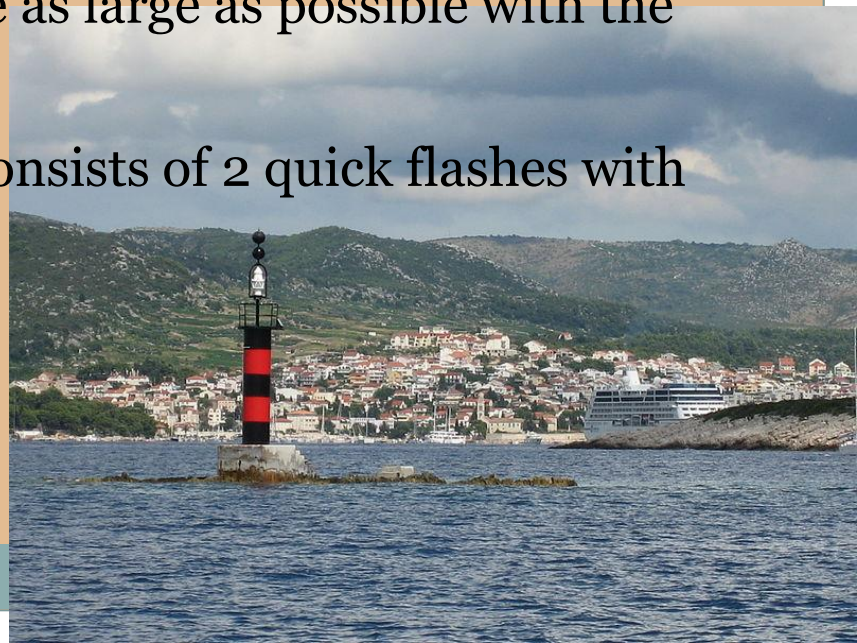


Safe Water Marks " Fairway Buoy"

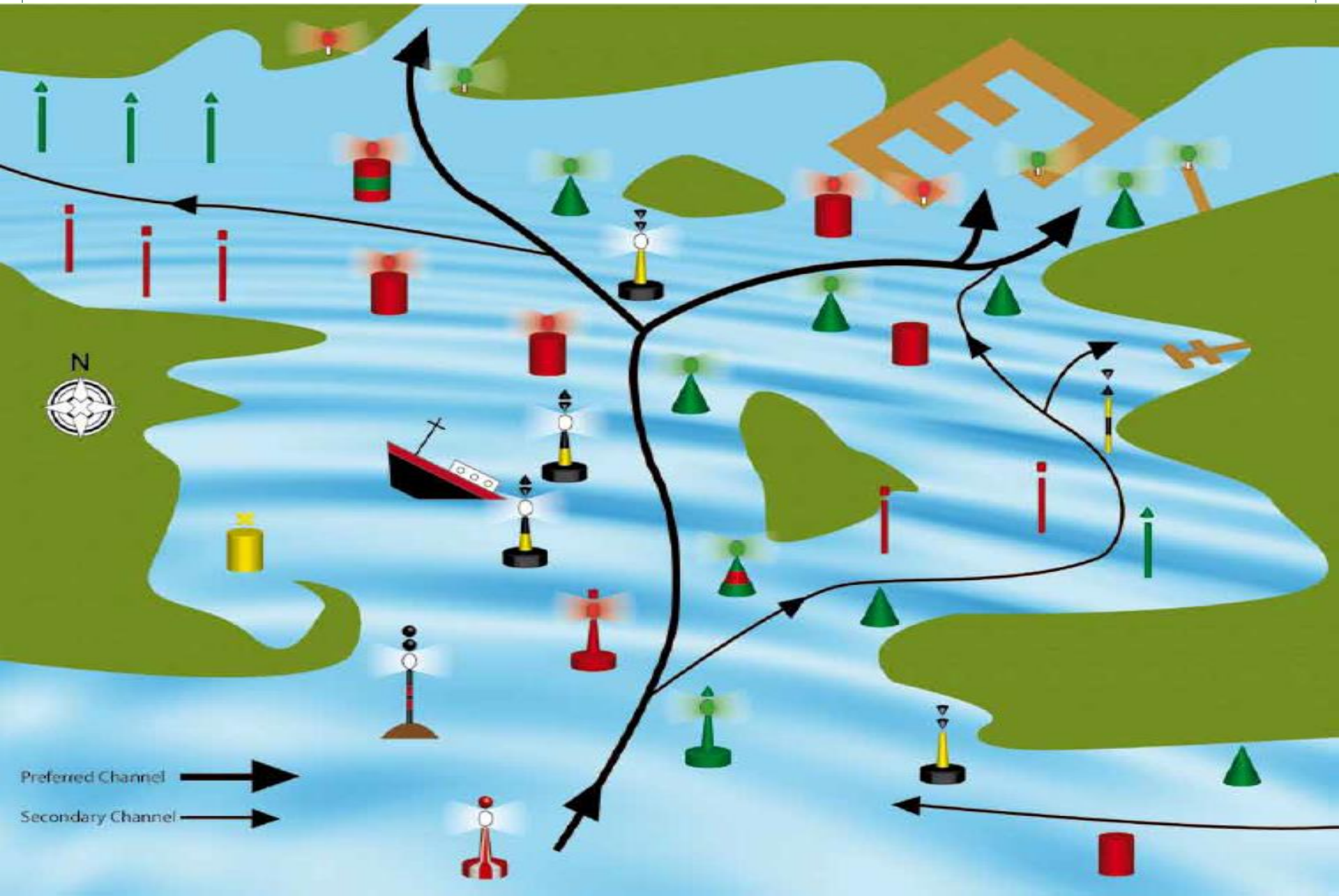
- indicate there is navigable water all around the mark including the end of a channel or mid
- channel, however, this mark does not mark a danger. They are the only mark to have vertical stripes.
- (L Fl 10s)

Isolated Danger Mark

- to indicate a hazard to shipping such as a submerged rock or wreck which
- has navigable water all around it. It is erected or moored above the hazard.
- The double sphere topmark is an important feature and needs to be visible by day. The topmarks should be as large as possible with the spheres clearly separated.
- distinctive sequence of flashing light consists of 2 quick flashes with intervals of 5 seconds



IALA Buoyage System Example, REGION A



IALA Buoyage System Example, REGION B