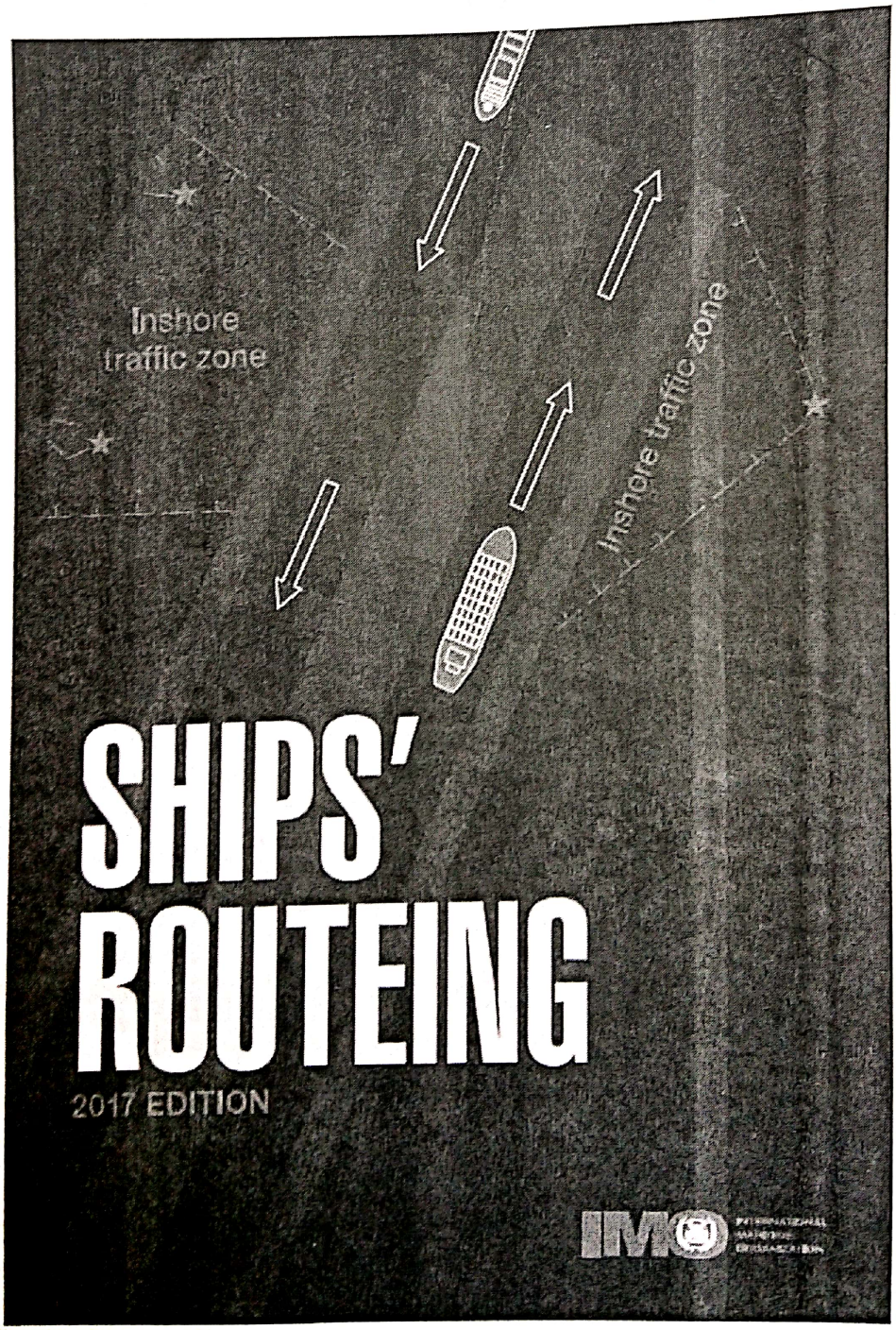
Ship`s routeing

Ships' Routeing is one of IMO publication which establishes an international and mandatory systematic way for ships to follow predetermined routes to avoid hazards to navigation at sea. Navigation hazards include but not limited to risk of collision with traffic in areas of high transit volume, shallow water areas, and areas where certain ships have potential to damage the marine environment and ecology. Ships' Routeing seeks to establish routeing systems that will avoid these navigation hazards.

In accordance with regulation 10.2 of the revised chapter V of the International Convention for the Safety of Life at Sea 1974 (1974 SOLAS Convention), IMO is recognized as the only international body for establishing and adopting measures on an international level concerning routeing and areas to be avoided by ships or certain classes of ships.



Elements used in traffic routeing systems include:

Traffic separation scheme: a routeing measure aimed at the separation of opposing streams of traffic by appropriate means and by the establishment of traffic lanes

Traffic lane: an areas within defined limits in which one-way traffic is established. Natural obstacles, including those forming separation zones, may constitute a boundary

Separation zone or line: a zone or line separating traffic lanes in which ships are proceeding in opposite or nearly opposite directions; or separating a traffic lane from the adjacent sea area; or separating traffic lanes designated for particular classes of ship proceeding in the same direction

Roundabout: a separation point or circular separation zone and a circular traffic lane within defined limits

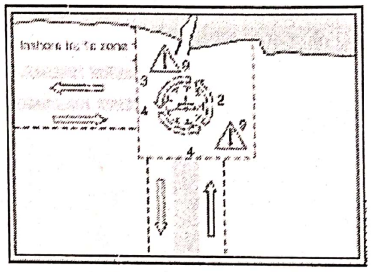
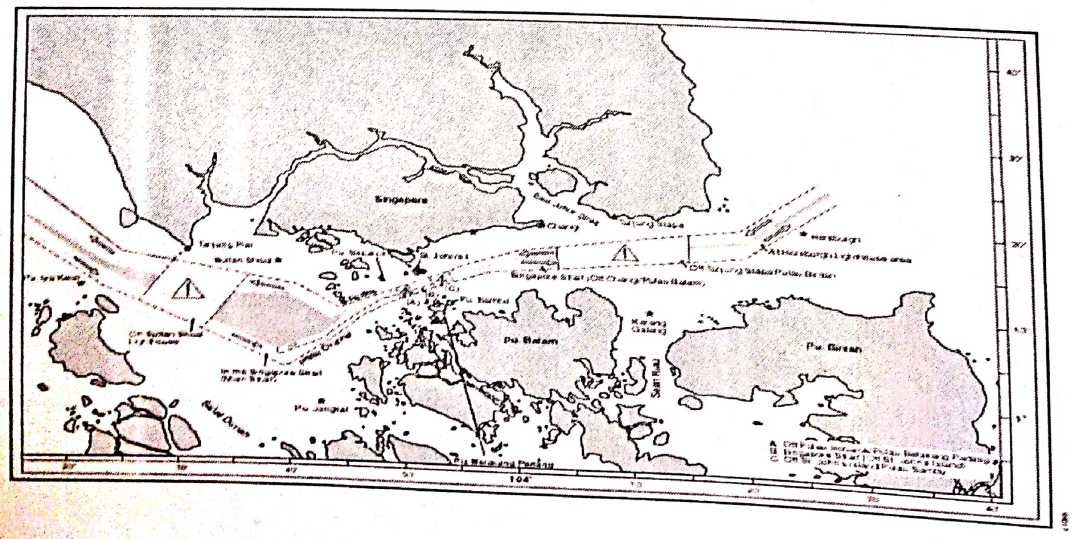


Figure 10.10

Inshore traffic zone: a designated area between the landward boundary of a traffic separation scheme and the adjacent coast

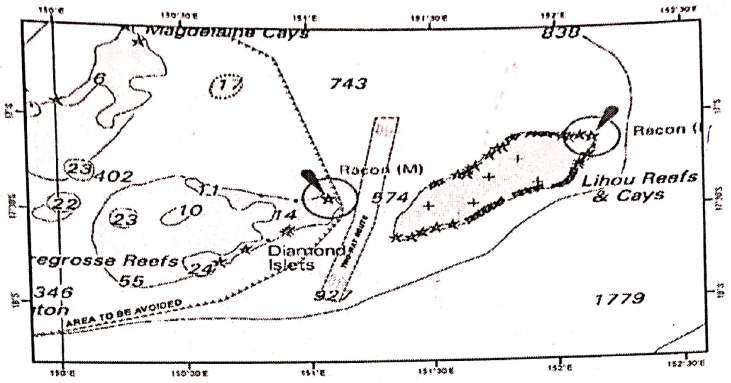
Recommended route: a route of undefined width, for the convenience of ships in transit, which is often marked by centerline buoys



Deep-water route: a route within defined limits which has been accurately surveyed for clearance of sea bottom and submerged articles

Precautionary area: an area within defined limits where ships must navigate with particular caution and within which the direction of flow of traffic may be recommended

Area to be avoided: an area within defined limits in which either navigation is particularly hazardous or it is exceptionally important to avoid casualties and which should be avoided by all ships, or by certain classes of ships.



Vessel Traffic Services (VTS)

A vessel traffic service (VTS) is a marine traffic monitoring system established by harbour or port authorities, similar to air traffic control for aircraft. Typical VTS systems use radar, closed-circuit television (CCTV), VHF radiotelephony and automatic identification system to keep track of vessel movements and provide navigational safety in a limited geographical area. IALA Recommendation V-103 is the Recommendation on Standards for Training and Certification of VTS Personnel.

Importance of Vessel Traffic services can be better understood from the functions it plays in managing ship traffic. The key importance of VTS is for managing vessel traffic. This further helps ensuring safety of ships, along with helping attain maximum traffic flow from any given route. Maximum economic returns possible from a marine route can be realized only with help of these traffic services that keep important marine information available for all mariners at all times.

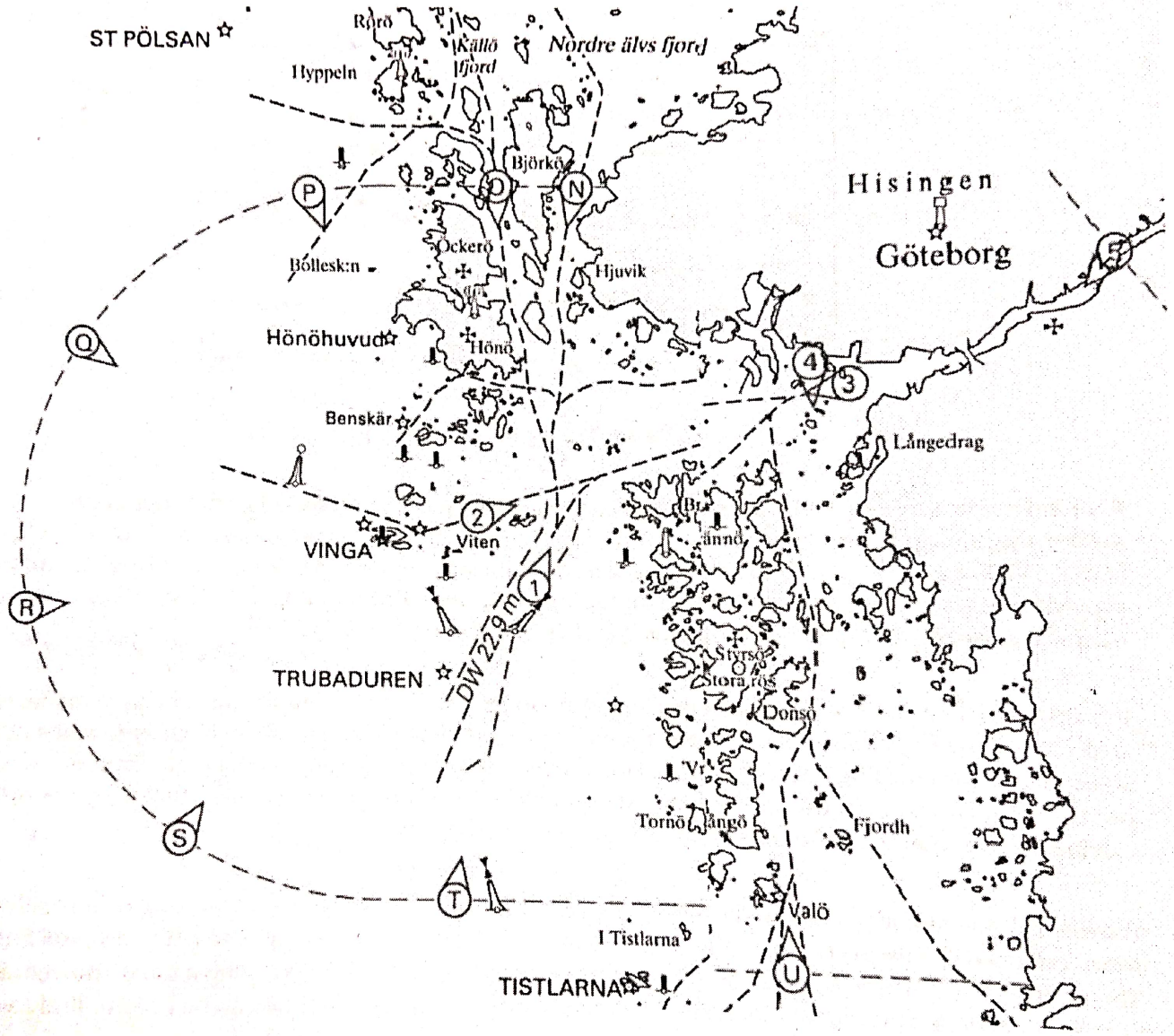
It even helps in keeping a tab on movement of unauthorized cargo movements, making waters safer and more controlled. However, one of the most important roles of these services is to act as a vessel finder. The information gathered, stored and replayed by various sensors help in keeping a tab on movements of vessels at all time. This crucial marine information is available at all times and can be used to find a vessel if it goes missing.

They operate 24 hours a day and use shore-based systems to:

- help identify and monitor vessels
- strategically plan vessel movements
- give navigational information and advice.

برای مناطق وسیع استفاده می شود.

There are two main types of VTS, surveilled and non-surveilled. Surveilled systems consist of one or more land-based sensors (i.e. radar, AIS and closed circuit television sites), which output their signals to a central location where operators monitor and manage vessel traffic movement. Non-surveilled systems consist of one or more reporting points at which ships are required to report their identity, course, speed, and other data to the monitoring authority. VHF-FM communications network forms the basis of most major services.



The coverage area, reporting points, information to be report and operating VHF channel of each VTS can be found in the appropriate admiralty List of radio signal. The locations reporting points are shown on the relevant Admiralty Charts.

Reporting points/ lines are established within a VTS coverage are where all ships have to report when passing through .

Ship Reporting Systems

As per SOLAS regulation chapter V ,Ship reporting systems contribute to safety of life at sea, safety and efficiency of navigation and/or protection of the marine environment. A ship reporting system, when adopted and implemented by the IMO shall be used by all ships, or certain categories of ships or ships carrying certain cargoes in accordance with the provisions of each system. The master of a ship shall comply with the requirements of adopted ship reporting systems and report to the appropriate authority all information required in accordance with the provisions of each such system.

Details of mandatory ship reporting schemes are promulgated through the Admiralty List of Radio Signals. The locations of ship reporting systems are shown on the relevant Admiralty Charts. Ships to which a mandatory ship reporting system applies should report to the shore-based authority without delay when entering and, if necessary, when leaving the area covered by the system. A ship may be required to provide additional reports or information to update or modify an earlier report.

AMVER Ship Reporting System

AMVER, or Automated Mutual-Assistance Vessel Rescue System is a worldwide voluntary reporting system sponsored by the United States Coast Guard. It is a computer-based global ship reporting system used worldwide by search and rescue authorities to arrange for assistance to persons in distress at sea. With AMVER, rescue coordinators can identify participating ships in the area of distress. **Amver's** mission is to quickly provide search and rescue (SAR) authorities, on demand, accurate information on the position and characteristics of vessels near a reported distress.

coverage of the system was at first restricted to the North Atlantic waters, all ships registered with an American port of registry and even for foreign-registered ships with voyage of more than a day had to register them on the AMVER system. After 1980 the International Maritime Organisation also brought into force, compulsory requirement for vessels to incorporate AMVER worldwide. Ships under the AMVER protocol need to provide information about their position upon their departure and arrival from a particular port. The ships also need to provide information, in case the ship has to digress from its original route. All the information that is fed helps in keeping track of vessels across the world and thereby helps dispatch the best possible resources to a vessel in distress in a designated area.

AMVER Reporting

Sailing Plan (SP): To be sent within a few hours before or upon or within a few hours of departure.

Position Report (PR): This should be sent within 24 hours of departing port and at least once every 48 hours thereafter.

Deviation Report (DR): This report should be sent as soon as any voyage information changes.

Final Arrival Report (FR): This should be sent upon arrival at the port of destination.

IMO Standards for AMVER Report

AMVER/DR//

A/Vessel Name/International Radio Call Sign//

B/Time (as of position in C or G)//

C/Latitude/Longitude (as of time in B)//

E/Current Course (as of time in B)//

F/Estimated Average Speed (for remainder of voyage)//

G/Port of Departure/Latitude/Longitude//

I/Destination/Latitude/Longitude/Estimated Time of Arrival//

K/Port of Arrival/Latitude/Longitude/Time of Arrival//

L/Navigation Method/Leg Speed/Latitude/Longitude/Port/ETA/ETD//

M/Coastal Radio Station or Satellite Number/Next Radio Station//

V/Medical Personnel//

X/Remarks//

Y/Relay Instructions//

Z/End of Report (EOR)//

AUSREP: The Australian Ship Reporting System

The Australian Ship Reporting System (AUSREP) is compulsory for Australian-registered commercial vessels and for foreign vessels on voyages between Australian ports. All other vessels are encouraged to participate when within the AUSREP area.

The objective of the AUSREP system is to contribute to the safety of life at sea by:

1. Limiting the time between the loss of a vessel and the initiation of SAR action, in cases where no distress signal is sent out.

2. Limiting the search area for a SAR action.

3. Providing up-to-date information on all shipping resources available in the area, in the event of SAR action.

On departure from an Australian port or on entering the AUSREP area, the following procedures are applicable:

1. Masters are to send a Sailing Plan (SP) to RCC Australia.

2. A computerized plot is maintained of the vessel's estimated position.

3. Position updates can be done by either of the following methods:

a. Position Reports (PR) are sent to RCC Australia each day between 2200 UTC and 0800 UTC at the time that has been nominated by the vessel's master so that a report is received at least every 24 hours. Dates and times shall be in Coordinated Universal Time (UTC).

b. Masters may agree to their vessels being queried via INMARSAT-C which, when requested, will automatically send a PR.

4. On arrival at the destination or on final departure from the AUSREP area, a Final Report (FR) should be sent to RCC Australia.

5. Should a vessel at any time be in a position more than 2 hours steaming from the position that would be predicted from the last SP or PR, a Deviation Report (DR) should be sent to the MRCC.

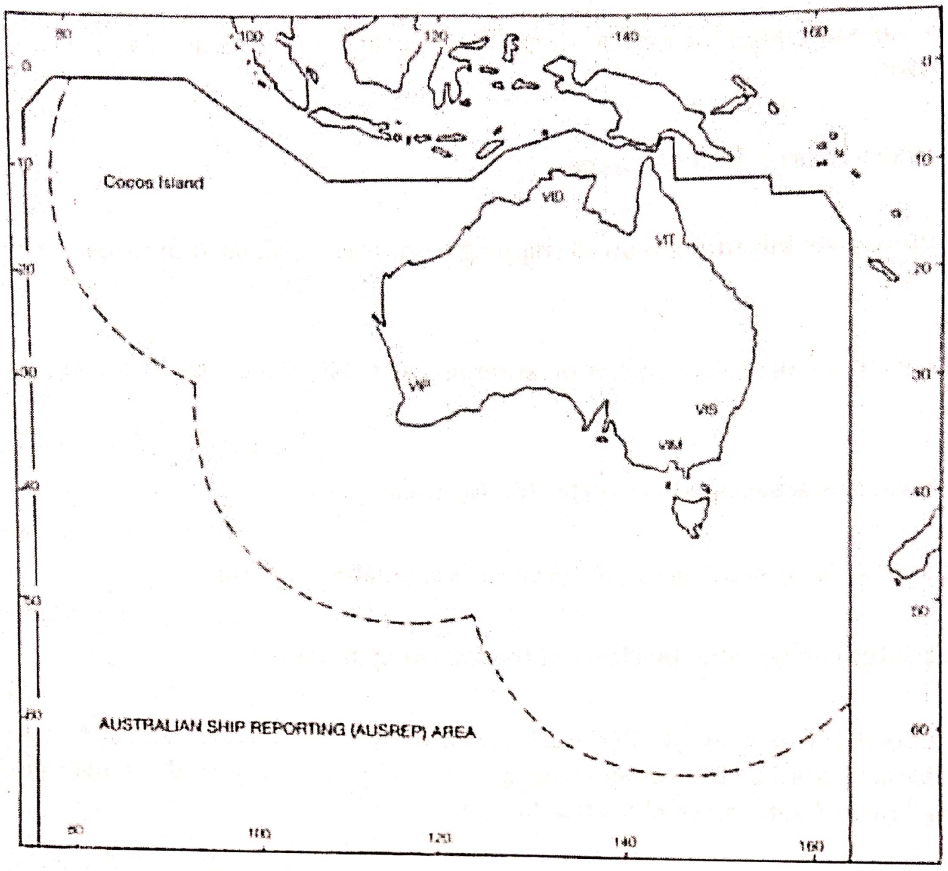
6. All dates and times used in AUSREP reports are to be in Coordinated Universal Time (UTC).

Sailing Plan (SP): The SP is sent up to 24 hours prior to joining the AUSREP system or prior to departure.

Position Report (PR): These reports must be sent between 2200 UTC and 0800 UTC at the nominated daily reporting time until and including the day of arrival in, or departure from, the AUSREP area. The interval between PRs should not exceed 24 hours.

Deviation Report (DR): A DR must be sent to RCC Australia if a vessel, at any time, is in a position more than 2 hours steaming from that which would be predicted from the last SP or PR.

Final Report (FR): An FR is sent when Vessels enroute overseas and departing the AUSREP area or vessels ending a voyage at an Australian port.


Cocos Island
VID
VIT
VIP
VIS
VIM
AUSTRALIAN SHIP REPORTING (AUSREP) AREA