

## RESOLUTION A.284(VIII)

*Adopted on 20 November 1973  
Agenda item 10*

### ROUTEING SYSTEMS

THE ASSEMBLY,

NOTING Article 16(i) of the Convention on the Inter-Governmental Maritime Consultative Organization concerning the functions of the Assembly,

RECALLING Regulation 8, Chapter V of the International Convention for the Safety of Life at Sea, 1960, and the amendment thereto adopted by Resolution A.205(VII),

RECALLING FURTHER Resolution A.228(VII) on observance of traffic separation schemes,

NOTING that the International Regulations for Preventing Collisions at Sea, 1972, and, in particular Rules 1(d) and 10 thereof provide for adoption by the Organization of, and the behaviour of vessels in or near, traffic separation schemes,

RECOGNIZING that there is a need to bring the terms, definitions and general principles concerning traffic separation and routeing, as set out in Annex II to Resolution A.161(ES.IV), into harmony with the International Regulations for Preventing Collisions at Sea, 1972,

RECOGNIZING ALSO that the practice of complying with routeing measures adopted by IMCO for international use would contribute considerably to the avoidance of collisions between ships,

RECOGNIZING FURTHER that such practice would consequently reduce the risk of pollution of the marine environment and the risk of damage to marine life resulting from collisions or strandings,

CONFIRMING that IMCO is recognized as the only international body for establishing and adopting routeing measures on an international level,

NOTING that the Ninth International Hydrographic Conference charged the International Hydrographic Bureau to deal with matters relating to presentation on the charts and in sailing directions, details of routeing provisions which have been considered, approved and adopted by IMCO for international use,

HAVING CONSIDERED the Recommendations by the Maritime Safety Committee at its twenty-fifth, twenty-seventh and twenty-eighth sessions,

RESOLVES:

- (a) to adopt the general provisions pertaining to Ships' Routeing approved by the Maritime Safety Committee at its twenty-seventh and twenty-eighth sessions, the text of which appears at Annex I to this Resolution, as a substitute for the terms, definitions and general principles covering traffic separation and routeing set out in Annex II to Resolution A.161(ES.IV);
- (b) to adopt the routeing measures approved by the Maritime Safety Committee at its twenty-fifth, twenty-seventh and twenty-eighth sessions, the text of which appears at Annex II to this Resolution,

REQUESTS the Maritime Safety Committee to revise and update as necessary the publication on "Ships' Routeing" to reflect the decisions taken in the foregoing part of this Resolution and to approve new routeing measures and revisions, cancellations and suspensions of routeing measures previously adopted by the Organization and to submit recommendations thereon to the Assembly for adoption,

INVITES the governments concerned to advise ships under their flag to comply with the adopted routeing measures,

URGES governments, when planning either to introduce new traffic separation schemes similar to those included in the IMCO publication on "Ships' Routeing" or to amend existing schemes in that publication, to consult the Organization in advance whenever practicable,

REQUESTS the Secretary-General to advise the International Hydrographic Bureau on details of the routing provisions to facilitate the hydrographers' work on inclusion of this material in the appropriate nautical charts and related publications for the use of mariners,

REVOKES the following Resolutions by which the Assembly adopted terms, definitions and general principles concerning traffic separation and various traffic separation schemes and areas to be avoided: Resolutions A.90(IV), A.161(ES.IV), A.186(VI), A.226(VII) and A.227(VII).

ANNEX I

**REVISED GENERAL PROVISIONS FOR ADOPTION, TERMINOLOGY,  
SYMBOLS, METHODS AND GENERAL PRINCIPLES OF  
SHIPS' ROUTEING**

**PART I**

**GENERAL PROVISIONS**

## ADOPTION AND RECOMMENDATION

1. IMCO is recognized as the only international body responsible for establishing and recommending measures on an international level concerning ships' routing.
  - (i) the availability of visual aids to navigation, or
  - (ii) the possibility of position-fixing by the use of direction finder or radar.
2. In deciding whether or not to adopt a traffic separation scheme, IMCO will consider:
  - (a) whether the aids to navigation proposed will enable mariners to determine their position with sufficient accuracy to navigate in the scheme in accordance with the principles regarding the use of Routeing Schemes;
  - (b) whether or not the scheme complies with the established Methods of Routeing.
3. Having due regard to paragraph 5, a Government shall when establishing, reviewing or adjusting a routeing system, take due account of:
  - (a) the rights and practices of Governments in respect of the exploitation of living and mineral resources of the high seas and of the sea-bed and subsoil underlying the high seas;
  - (b) the environment, traffic patterns or established routeing systems in the waters under such Government's jurisdiction;
  - (c) the aids to navigation already established in the area, and the effect the routeing system may have upon demands for hydrographic surveys and for improvements or adjustments in the navigation aids provided in the waters concerned.
4. IMCO shall not adopt or amend any scheme that is in the proximity of waters under a Government's jurisdiction without the agreement of that Government, where that scheme may affect:
  - (a) the rights and practices of such Government in respect of the exploitation of living and mineral resources of the high seas and of the sea-bed and subsoil underlying the high seas;
  - (b) the environment, traffic patterns or established routeing systems in the waters under such Government's jurisdiction;
  - (c) demands for improvements or adjustments in the navigation aids provided in the waters concerned.
5.
  - (a) A Government proposing a routeing system, any part of which lies within international waters, should consult with IMCO, so that such system may be adopted by IMCO for international use.
  - (b) A Government may establish or adjust a routeing system lying partly within international waters, before consulting with IMCO, where local conditions require that early action be taken, with a view to later adoption by the Organization.
  - (c) A Government, when proposing or establishing a traffic separation scheme, should be guided by the following criteria, having due regard to the class of vessel for which the scheme is intended:
    - (i) the availability of visual aids to navigation, or
    - (ii) the possibility of position-fixing by the use of direction finder or radar.
6. When establishing areas to be avoided by certain ships, the necessity for creating such areas should be well established and the reasons stated. In general, these areas should be established only in places where inadequate survey or insufficient provision of aids to navigation may lead to danger of stranding, or where local knowledge is considered essential for safe passage or where there is the possibility of unacceptable damage to wildlife, which may result from a casualty. These areas shall not be regarded as prohibited areas unless specifically stated otherwise; the classes of ships which should avoid the areas should be considered in each particular case.
7. Routeing systems should be reviewed, resurveyed and adjusted as necessary, so as to maintain their effectiveness and compatibility with trade patterns, resource exploitation, changes in depth of water, and other developments.
8. Except where local conditions require that early action be taken, a routeing system adopted by IMCO should not come into force before a period of three months has elapsed since the date of adoption by the Assembly.
9. Nothing in the foregoing shall affect the rights, claims or views of any Government in regard to the limits of territorial waters.



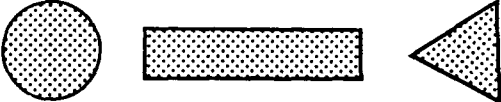

## TERMINOLOGY AND SYMBOLS

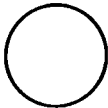
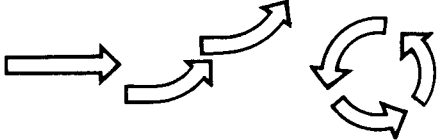
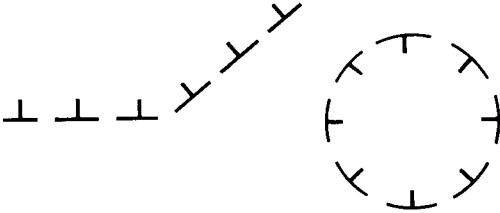

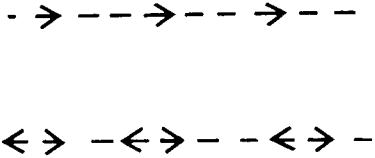

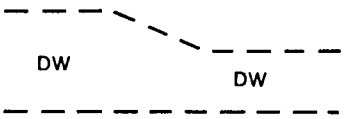
1. The following terms and symbols are used in this booklet in connexion with matters related to ships' routing:

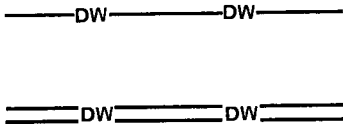
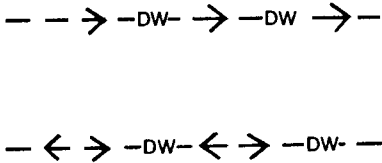
- (a) *Routeing*  
A complex of measures concerning routes aimed at reducing the risk of casualties; it includes traffic separation schemes, two-way routes, tracks, areas to be avoided, inshore traffic zones and deep water routes.
- (b) *Traffic separation scheme*  
A scheme which separates traffic proceeding in opposite or nearly opposite directions by the use of a separation zone or line, traffic lanes or by other means.
- (c) *Separation zone or line*  
A zone or line separating traffic proceeding in one direction from traffic proceeding in another direction. A separation zone may also be used to separate a traffic lane from the adjacent inshore traffic zone.
- (d) *Traffic lane*  
An area within definite limits inside which one-way traffic is established.
- (e) *Roundabout*  
A circular area within definite limits in which traffic moves in a counter-clockwise direction around a specified point or zone.

- (f) *Inshore traffic zone*  
A designated area between the landward boundary of a traffic separation scheme and the adjacent coast intended for coastal traffic.
- (g) *Two-way route*  
A route in an area within definite limits inside which two-way traffic is established.
- (h) *Track*  
The recommended route to be followed when proceeding between pre-determined positions.
- (i) *Deep water route*  
A route in a designated area within definite limits which has been accurately surveyed for clearance of sea bottom and submerged obstacles to a minimum indicated depth of water.

2. The symbols in the following table are those recommended by the International Hydrographic Organization for representation of details of routeing measures on nautical charts. They are included in this publication for readers' information on what may be generally found in charts. Individual countries may, however, use on their charts symbols different from those given below.

Detail	Presentation	Description
1. Outside limit of traffic lanes, two-way routes and inshore traffic zones		Dashed line – the symbol used for maritime limits in general
2. Outside limit of "roundabout"(1)		
3. Separation zone (2) (of any shape)		The zone shall be indicated by means of a tint light enough to reveal any hydrographic details
4. Separation line		A single tinted line

Detail	Presentation	Description
5. Centre of "roundabout" with no separation zone inside		A circle
6. Arrows indicating direction of traffic flow (3)		Open-outlined arrows so situated and shaped as to indicate general directions of traffic flow
7. Boundary of "areas to be avoided by ships of certain classes" (4)		A line composed of a series of T-shaped signs, the cross-bar of the T being long and the down stroke short and pointing towards the area in question, within which a suitable legend may be inscribed
8. Limit of sea exploration and/or exploitation regions which may be dangerous for free navigation		
9. Recommended track when based on a system of fixed marks		A single or double continuous line
10. Recommended track when not based on a system of fixed marks		A single dashed line in which arrowheads are inserted at regular intervals, either singly to indicate a one-way track, or in opposing pairs to indicate a two-way track
11. Outside limit of deep water route, when depicted		A dashed line
12. Deep water route when both outside limits are depicted		Dashed lines and the the letters DW inserted at regular intervals between them. The minimum depth shall be inserted beside the abbreviation when considered critical

Detail	Presentation	Description
13. Deep water route, based on fixed marks		A double or single continuous line with the abbreviation DW inserted at regular intervals. The minimum depth shall be indicated beside the abbreviation when considered critical. When using this symbol, the direction of traffic flow shall be indicated conventionally
14. Deep water route not based on fixed marks, direction of traffic flow		A single dashed line in which arrowheads are inserted at regular intervals, either singly to represent a one-way route, or in opposing pairs, to represent a two-way route. The abbreviation DW shall also be inserted at regular intervals along the symbol, and the minimum depth indicated beside the abbreviation when considered critical

#### Remarks

- (1) The dashed line, representing outside limits of 'roundabout' should be interrupted in places where ships are recommended to enter or to leave the scheme.
- (2) In places where traffic is separated by natural features (islands, marked shoals, etc.) representation of the separation zone may be omitted.
- (3) Dispersion of arrows, instead of placing them in a line, is felt desirable.
- (4) Notes on conditions of avoidance (classes and sizes of ships, nature of cargoes carried, etc.) may be given on charts and shall always be given in Sailing Directions.

#### General Observations

The routeing and traffic separation symbols to be used on charts should be printed in colour, preferably magenta.

Secondary details of routeing and traffic separation, such as figures indicating directions of traffic, schemes and their details, dimensions, distances from coast, etc., should not be shown on charts unless considered critical. These are given in this IMCO publication and may be given in Sailing Directions if so decided by hydrographic offices.

## METHODS OF ROUTEING

1. When establishing routeing systems the following are among the methods which may be used:
  - (a) separation of traffic by separation zones or lines;
  - (b) separation of traffic by natural obstacles and geographically defined objects;
  - (c) separation of traffic by inshore traffic zones intended for keeping coastal traffic away from traffic separation schemes;
  - (d) separation of traffic by sectors at approaches to focal points;
  - (e) separation of traffic by roundabouts intended to facilitate navigation at focal points, where traffic separation schemes meet;
  - (f) routeing of traffic by deep water routes, two-way routes or tracks for ships proceeding in specific directions.
2. A description of methods (a) to (e) with drawings intended only to explain their function is given in the following:
  - (a) *By separation zones or lines (Fig.1)*

In such cases, the separation of traffic is achieved by a separation zone or line between streams of traffic proceeding in opposite or nearly opposite directions. The outside limits in such a scheme are the outer boundaries of lanes intended for one-way traffic. Beyond such limits ships can navigate in any direction. A separation zone may also be used to separate a traffic lane from an inshore traffic zone.

The width and length of separation zones and traffic lanes are determined after careful examination of local conditions, traffic density, prevailing hydrographic and meteorological conditions, space available for manoeuvring, etc., and generally their length is kept to the minimum necessary. In narrow passages and restricted waters a separation line may be adopted instead of a zone, for the separation of traffic, to allow for more navigable space.
  - (b) *By natural obstacles and geographically defined objects (Fig.2)*

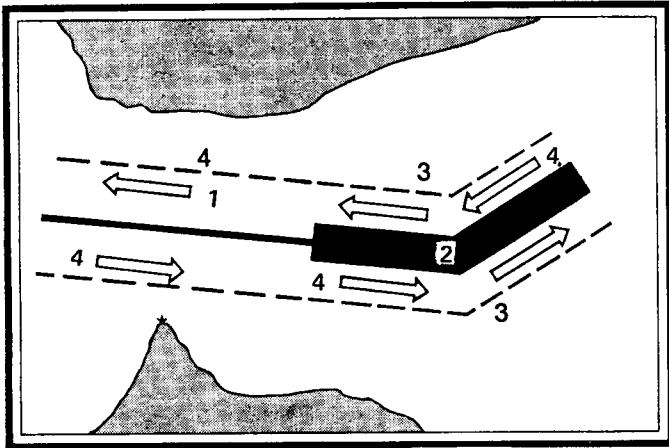
This method is used where there is a defined area with obstacles such as islands, shoals or rocks restricting free movement and providing a natural division for opposing traffic streams.
  - (c) *By inshore traffic zones (Fig.3)*

By using inshore traffic zones coastal shipping can keep clear of through traffic in the adjacent traffic separation scheme. Ships navigating in any direction may be encountered in an inshore traffic zone.
  - (d) *By sectors at approaches to focal points (Fig.4)*

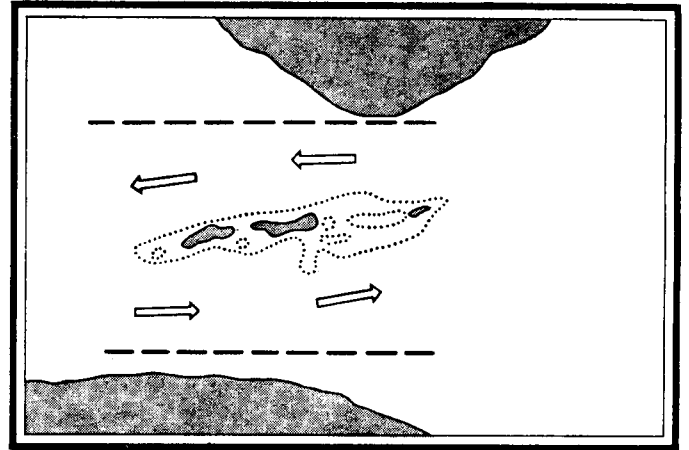
Such a method is used where ships converge at a point or a small area from various directions. Port approaches, sea pilot stations, positions where landfall buoys or light vessels are fixed, entrances to channels, canals, estuaries, etc., may be considered as such focal points. The number of shipping lanes, their dimensions and directions depend mainly on the type of the local traffic.
  - (e) *By roundabouts (Fig.5)*

To facilitate navigation at focal points where several traffic separation schemes meet, ships should move in a counter-clockwise direction around a specified point or zone until they are able to join the appropriate lane.

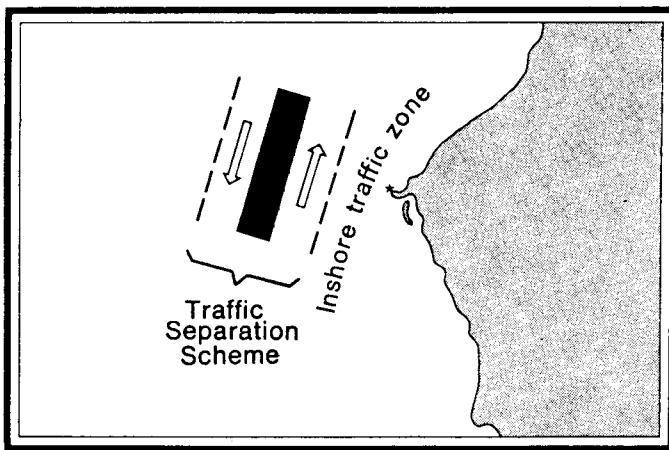




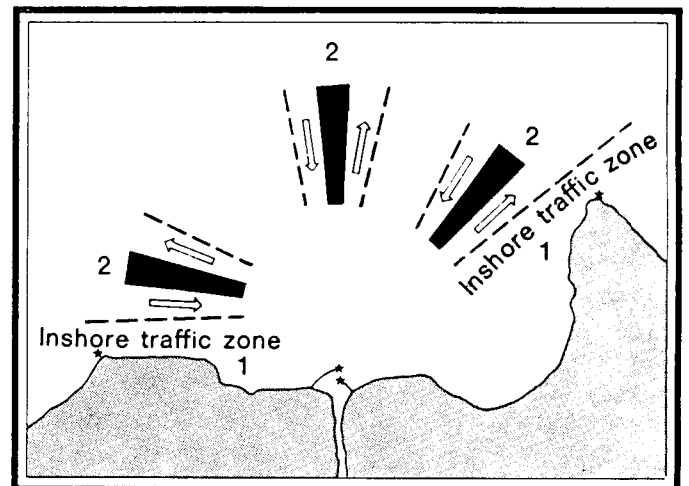
**Figure 1** *Traffic separation by separation line and zone*  
 1 – Separation line  
 2 – Separation zone  
 3 – Outside limits of lanes  
 4 – Arrows indicating main traffic direction



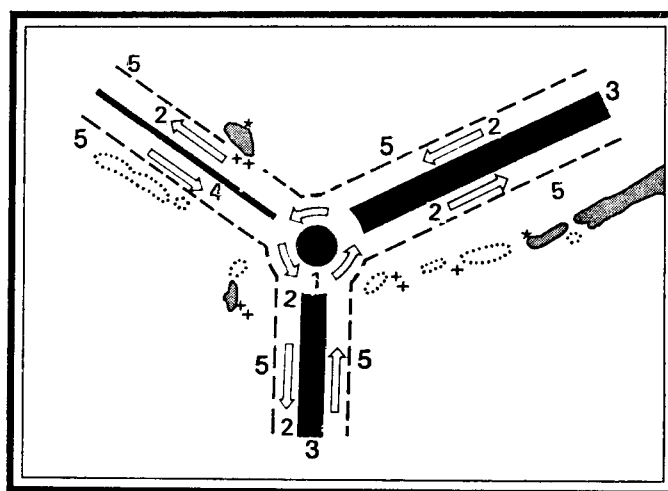
**Figure 2** *Separation of traffic by natural obstacles*



**Figure 3** *Inshore traffic zone for coastal traffic*



**Figure 4** *Sectorial traffic separation scheme at approaches to focal point*  
 1 – Inshore traffic zone  
 2 – Separation schemes for main traffic



**Figure 5** *A roundabout where several traffic separation schemes meet*  
 1 – Circular separation zone  
 2 – Arrows indicating traffic direction  
 3 – Separation zone  
 4 – Separation line  
 5 – Outside limits of lanes

## GENERAL PRINCIPLES OF SHIPS' ROUTEING

### The use of routeing systems

1. The International Regulations for Preventing Collisions at Sea apply to navigation in routeing systems.
2. Routeing systems are intended for use by day and by night in all weathers, in ice-free waters or under light ice conditions where no extraordinary manoeuvres or assistance by icebreaker(s) are required.
3. Routeing systems are recommended for use by all ships unless stated otherwise.
4. A deep water route is primarily intended for use by ships which because of their draught in relation to the available depth of water in the area concerned require the use of such a route. Through traffic to which the above consideration does not apply should, if practicable, avoid following deep water routes. When using a deep water route mariners should be aware of possible changes in the indicated depth of water due to meteorological or other effects.
5. A vessel using a traffic separation scheme shall:
  - (i) proceed in the appropriate traffic lane in the *general direction of traffic flow for that lane*;
  - (ii) so far as practicable keep clear of a traffic separation line or separation zone;
  - (iii) normally join or leave a traffic lane at the termination of the lane, but when joining or leaving from the side shall do so at as small an angle to the general direction of traffic flow as practicable.
6. A vessel shall so far as practicable avoid crossing traffic lanes, but if obliged to do so shall cross as nearly as practicable at right angles to the general direction of traffic flow.
7. Inshore traffic zones shall not normally be used by through traffic which can safely use the appropriate traffic lane within the adjacent traffic separation scheme.
8. A vessel, other than a crossing vessel, shall not normally enter a separation zone or cross a separation line except:
  - (i) in cases of emergency to avoid immediate danger;
  - (ii) to engage in fishing within a separation zone.
9. A vessel navigating in areas near the terminations of traffic separation schemes shall do so with particular caution.
10. A vessel shall so far as practicable avoid anchoring in a traffic separation scheme or in areas near its terminations.
11. A vessel not using a traffic separation scheme shall avoid it by as wide a margin as is practicable.
12. The arrows printed on charts merely indicate the general direction of traffic; ships need not set their courses strictly along the arrows.
13. The signal "YG" meaning "You appear not to be complying with the traffic separation scheme" is provided in the International Code of Signals for appropriate use.

ANNEX II

**PART II**

**TRAFFIC SEPARATION SCHEMES**

## BALTIC SEA

**CAUTION:**

The chartlets are for illustrative purposes only and must not be used for navigation. Mariners should consult the appropriate nautical publications and charts for up-to-date details on aids to navigation and other relevant information.

## BALTIC SEA

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## OFF SOMMERS ISLAND

(Reference chart: British Admiralty 2264)

### Description of the traffic separation scheme

The traffic separation scheme off Sommers Island consists of four parts.

#### Part I:

- (a) A roundabout with a circular traffic separation zone of half a mile in diameter is centred at the following geographical position:
- (1)  $60^{\circ}11'.5$  N.,  $27^{\circ}46'.2$  E.
- (b) A circular traffic lane, one-and-a-quarter miles wide, is established around the circular separation zone.

#### Part II:

- (a) A separation zone, half a mile wide, is centred upon the following geographical positions:
- (2)  $60^{\circ}07'.7$  N.,  $27^{\circ}32'.6$  E.  
(3)  $60^{\circ}10'.4$  N.,  $27^{\circ}42'.2$  E.
- (b) A traffic lane, one mile wide, is established on each side of the traffic separation zone.
- (c) A separation line connects the following geographical positions:
- (4)  $60^{\circ}10'.4$  N.,  $27^{\circ}42'.2$  E.  
(5)  $60^{\circ}10'.6$  N.,  $27^{\circ}43'.5$  E.
- (d) A traffic lane, one-and-a-quarter miles wide, is established on each side of the separation line and the outside limits of the traffic lanes are extended to intersect with the outside limit of the roundabout.  
The main traffic directions are:  
 $060^{\circ} - 240^{\circ}$ .

## OFF HOGLAND (GOGLAND) ISLAND

(Reference chart: British Admiralty 2264)

### Description of the traffic separation scheme

The traffic separation scheme off Hogland Island consists of two parts:

#### Part I:

- (a) A separation zone, half a mile wide, is centred upon the following geographical positions:
- (1)  $59^{\circ}59'.0$  N.,  $26^{\circ}57'.4$  E.  
(2)  $59^{\circ}58'.7$  N.,  $27^{\circ}01'.4$  E.  
(3)  $59^{\circ}59'.7$  N.,  $27^{\circ}04'.8$  E.
- (b) A traffic lane, one mile wide, is established on each side of the separation zone.  
The main traffic directions are:  
 $099^{\circ} - 279^{\circ}$  and  
 $060^{\circ} - 240^{\circ}$ .

#### Part III:

- (a) A separation line connects the following geographical positions:
- (6)  $60^{\circ}11'.1$  N.,  $27^{\circ}49'.0$  E.  
(7)  $60^{\circ}07'.7$  N.,  $28^{\circ}16'.1$  E.  
(8)  $60^{\circ}01'.9$  N.,  $28^{\circ}29'.0$  E.
- (b) A traffic lane, one mile wide, is established on each side of the separation line and the outside limits of the traffic lanes are extended to intersect with the outside limit of the roundabout.  
The main traffic directions are:  
 $104^{\circ} - 284^{\circ}$  and  
 $132^{\circ} - 312^{\circ}$ .

#### Part IV:

- (a) A separation line connects the following geographical positions:
- (9)  $60^{\circ}12'.8$  N.,  $27^{\circ}47'.8$  E.  
(10)  $60^{\circ}24'.5$  N.,  $28^{\circ}05'.0$  E.
- (b) A traffic lane, half a mile wide, is established on each side of the separation line and the outside limits of the traffic lanes are extended to intersect with the outside limit of the roundabout.  
The main traffic directions are:  
 $036^{\circ} - 216^{\circ}$ .

#### Note:

The roundabout serves the purpose of facilitating manoeuvring in the area where traffic to and from Leningrad, Vyborg and the Western Baltic meet.

### OFF RODSHER ISLAND

(Reference charts: British Admiralty 2248 and 2357)

#### Description of the traffic separation scheme

A separation zone, half a mile wide, is centred upon the following geographical positions:

- (1) 59°59'.9 N., 26°36'.5 E.
- (2) 60°00'.4 N., 26°40'.3 E.
- (3) 60°00'.1 N., 26°44'.3 E.

A traffic lane, one mile wide, is established on each side of the separation zone.

The main traffic directions are:

- 076°—256° and  
099°—279°.

### OFF KALBÅDAGRUND LIGHTHOUSE

(Reference chart: British Admiralty 2248)

#### Description of the traffic separation scheme

A separation zone, one mile wide, is centred upon the following geographical positions:

- (1) 59°52'.2 N., 25°30'.7 E.
- (2) 59°53'.0 N., 25°38'.6 E.
- (3) 59°53'.9 N., 25°46'.5 E.

A traffic lane, one-and-a-half miles wide, is established on each side of the separation zone.

The main traffic directions are:

- 078°—258° and  
076°—256°.

#### Inshore traffic zone

The area between the Kalbådagrund Lighthouse and the landward boundary of the traffic separation scheme is designated as an inshore traffic zone.

### OFF PORKKALA LIGHTHOUSE

(Reference chart: British Admiralty 2248)

#### Description of the traffic separation scheme

A separation zone, one mile wide, is centred upon the following geographical positions:

- (1) 59°44'.1 N., 24°13'.7 E.
- (2) 59°44'.9 N., 24°21'.4 E.
- (3) 59°45'.9 N., 24°29'.1 E.

A traffic lane, one-and-a-half miles wide, for westbound traffic, is established on the northern side of the separation zone.

A traffic lane, two miles wide, for eastbound traffic, is established on the southern side of the separation zone.

The main traffic directions are:

- 078°—258° and  
076°—256°.

#### Inshore traffic zone

The area between Porkkala Lighthouse and the landward boundary of the traffic separation scheme is designated as an inshore traffic zone.

### OFF HANKONIEMI PENINSULA

(Reference chart: British Admiralty 2241)

#### Description of the traffic separation scheme

A separation zone, two miles wide, is centred upon the following geographical positions:

- (1) 59°28'.2 N., 22°33'.3 E.
- (2) 59°31'.9 N., 22°42'.6 E.
- (3) 59°33'.3 N., 22°53'.9 E.

A traffic lane, four miles wide, is established on each side of the separation zone.

The main traffic directions are:

052°—232° and  
076°—256°.

#### Inshore traffic zones

The areas between the outer boundaries of the traffic separation scheme and the adjacent coasts are designated as inshore traffic zones.

### OFF KÖPU PENINSULA (HIUMAA ISLAND)

(Reference chart: British Admiralty 2222)

#### Description of the traffic separation scheme

A separation zone, two miles wide, is centred upon the following geographical positions:

- (1) 59°02'.9 N., 21°35'.8 E.
- (2) 59°07'.7 N., 21°42'.6 E.
- (3) 59°11'.6 N., 21°52'.0 E.

A traffic lane, four miles wide, is established on each side of the separation zone.

The main traffic directions are:

037°—217° and  
052°—232°.

### OFF GOTLAND ISLAND

(Reference chart: British Admiralty 2288)

#### Description of the traffic separation scheme

A separation zone, one mile wide, is centred upon the following geographical positions:

- (1) 56°46'.0 N., 18°19'.0 E.
- (2) 56°49'.5 N., 18°27'.5 E.

A traffic lane, three miles wide, is established on each side of the separation zone.

The main traffic directions are:

053°—233°

#### Inshore traffic zone

The area between Gotland Island and the landward boundary of the traffic separation scheme is designated as an inshore traffic zone.



## OFF ÖLAND ISLAND

(Reference chart: British Admiralty 2251)

### Description of the traffic separation scheme

A separation zone, two miles wide, is centred upon the following geographical positions:

- (1) 56°02'.0 N., 16°35'.0 E.
- (2) Öland Södra Grund Lighthouse
- (3) 56°06'.7 N., 16°46'.9 E.

A traffic lane, three miles wide, is established on each side of the separation zone.

The main traffic directions are:

- 058°—238° and  
053°—233°

### Inshore traffic zone

The area between Öland Island and the landward boundary of the traffic separation scheme is designated as an inshore traffic zone.

## IN THE APPROACHES TO ROSTOCK

(Reference chart: British Admiralty 2365)

IMPORTANT: This traffic separation scheme is under review and not ready for implementation at present.

### Description of the traffic separation scheme

#### Part I:

#### Routing in the NEMEDRI areas

1. In that part of the NEMEDRI "Way 1" which lies between buoys '7c' and '9' the width of the traffic lane situated on the southern side of the axis is expanded to 2 n.m.

2. The approach to Rostock referred to in the NEMEDRI as Warnemünde Approach is abolished.

3. Two new approaches to Rostock, hereafter referred to as western and eastern approaches, are introduced as follows:

#### Western approach

(a) The axis is a line passing through the following points:

- (1) 54°22'.0 N., 11°55'.9 E.
- (2) 54°17'.7 N., 12°00'.0 E.
- (3) 54°15'.2 N., 12°02'.5 E.

(b) A traffic lane, half a mile wide, is established on each side of the traffic separation zones described in 4(a) and 4(b).

(c) Main traffic directions are:

150°.5—330°.5

#### Eastern approach

(d) The axis is a line passing through the following points:

- (4) 54°23'.4 N., 12°06'.5 E.
- (5) 54°20'.5 N., 12°03'.2 E.
- (6) 54°17'.7 N., 12°00'.0 E.

(e) A traffic lane, half a mile wide, is established on each side of the traffic separation zone described in 4(c).

(f) Main traffic directions are:

214°—034°

#### Connexion of the Eastern approach with 'way 1'.

(g) The outside boundary of traffic lanes in the area between buoy '9' and the geographical position referred to in 3(d) (5) is a line connecting the following geographical positions:

- (7) 54°23'.1 N., 12°08'.9 E.
- (8) 54°25'.5 N., 12°10'.9 E.

#### Part II:

#### Separation of traffic in the area

4. The traffic separation zones, one-quarter of a mile wide, established on the axes described in 3(a) and 3(d) are centred upon the following geographical positions:

(a) The northern zone in the western approach to Rostock:

- (9) 54°22'.0 N., 11°55'.9 E.
- (10) 54°18'.5 N., 11°59'.2 E.

(b) The southern zone in the western approach to Rostock:

- (11) 54°17'.0 N., 12°00'.8 E.
- (12) 54°15'.2 N., 12°02'.5 E.

(c) The zone in the eastern approach to Rostock:

- (13) 54°18'.5 N., 12°00'.9 E.
- (14) 54°23'.4 N., 12°06'.9 E.

## IN THE SOUND

(Reference charts: British Admiralty 2115 and 2594)

### Description of the traffic separation scheme

(a) A separation line connects the following geographical positions:

- (1) 56°06'.0 N., 12°34'.1 E.
- (2) 56°04'.6 N., 12°36'.6 E.
- (3) 56°03'.3 N., 12°39'.2 E.
- (4) 56°01'.2 N., 12°40'.2 E.

(b) A traffic lane for northbound traffic is established between the separation line and a line connecting the following geographical positions:

- (5) 56°06'.4 N., 12°34'.9 E.
- (6) 56°03'.4 N., 12°40'.1 E.
- (7) 56°01'.2 N., 12°41'.3 E.

(c) A traffic lane for southbound traffic is established between the separation line and a line connecting the following geographical positions:

- (8) 56°05'.5 N., 12°33'.3 E.
- (9) 56°03'.2 N., 12°38'.3 E.
- (10) 56°01'.2 N., 12°37'.7 E.

### Inshore traffic zones

The areas between the outer boundaries of the traffic separation scheme and the adjacent coasts are designated as inshore traffic zones.

### Note:

Cross channel traffic

All precautions, including if necessary a reduction of speed, should be taken in the area between Hälsingborg and Helsingör which is widely used by local cross channel ferry traffic.

## OFF FALSTERBOREV

(Reference charts: Swedish Administration of Shipping and Navigation 921 and 929)

### Description of the traffic separation scheme

The traffic separation scheme off Falsterborev consists of four parts.

#### Part I:

(a) A roundabout with a circular traffic separation zone of half a mile in diameter is centred at the following geographical position:

- (1) 55°18'.6 N., 12°39'.5 E.

(b) A circular traffic lane, one-and-three-quarter miles wide, modified in its width in the NE quadrant by the exclusion of a segment, is established around the circular separation zone. The segment defined by the following geographical positions is a mine danger area:

- (2) 55°19'.8 N., 12°42'.2 E.
- (3) 55°18'.8 N., 12°41'.8 E.
- (4) 55°18'.6 N., 12°42'.9 E.

#### Part II:

(a) A separation line connects the following geographical positions:

- (5) 55°15'.9 N., 12°51'.8 E.
- (6) 55°17'.5 N., 12°42'.5 E.

(b) A traffic lane, one point one miles wide, is established on each side of the separation line and the outside limits of the traffic lanes are extended to intersect with the outside limit of the roundabout.

The main traffic directions are:

107°—287°.

#### Part III:

(a) A separation line connects the following geographical positions:

- (7) 55°13'.1 N., 12°39'.1 E.
- (8) 55°16'.6 N., 12°38'.9 E.

(b) A traffic lane, one mile wide, is established on each side of the separation line and the outside limits of the traffic lanes are extended to intersect with the outside limit of the roundabout.

The main traffic directions are:

177°—357°.

#### Part IV:

(a) A separation line connects the following geographical positions:

- (9) 55°20'.5 N., 12°39'.4 E.
- (10) 55°25'.0 N., 12°40'.7 E.

(b) A traffic lane, one-and-a-half miles wide, is established on each side of the separation line and the outside limit of the traffic lanes are extended to intersect with the outside limit of the roundabout.

The main traffic directions are:

010°—190°.

### Note:

The roundabout serves the purpose of facilitating manoeuvring in the area where traffic to and from the Baltic Sea, the Kiel Canal and the Sound meet.

## OFF KIEL LIGHTHOUSE

(Reference chart: German Hydrographic Office 32)

### Description of the traffic separation scheme

- (a) A separation zone bounded by a line connecting the following geographical positions:
- (1) 54°29'58" N., 10°18'31" E.
  - (2) 54°29'47" N., 10°18'43" E.
  - (3) 54°29'01" N., 10°16'34" E.
  - (4) 54°29'11" N., 10°16'32" E.
- (b) A traffic lane for north-eastbound traffic is established between the separation zone and a line connecting the following geographical positions:
- (5) 54°28'09" N., 10°17'34" E.
  - (6) 54°29'12" N., 10°19'24" E.
- (c) A traffic lane for south-westbound traffic is established between the separation zone and a line connecting the following geographical positions:
- (7) 54°29'39" N., 10°15'47" E.
  - (8) 54°30'29" N., 10°17'54" E.
- The main traffic directions are:  
059°—239°.

## WESTERN EUROPEAN WATERS

**CAUTION:**

The chartlets are for illustrative purposes only and must not be used for navigation. Mariners should consult the appropriate nautical publications and charts for up-to-date details on aids to navigation and other relevant information.

## WESTERN EUROPEAN WATERS

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### OFF THE OSLO FJORD

(Reference chart: British Admiralty 3708)

#### Description of the traffic separation scheme

A separation zone, two miles wide, is centred upon the following geographical positions:

- (1) 58°43'.0 N., 10°08'.0 E.
- (2) 58°51'.0 N., 10°27'.0 E.

A traffic lane, three miles wide, is established on each side of the separation zone.

The main traffic directions are:

051°—231°.

#### Note:

This scheme is only intended for ships approaching the Oslo Fjord from the south-west or proceeding in the opposite direction. It is not intended for ships navigating in other directions.

### OFF OKSÖY

(Reference chart: British Admiralty 2289)

#### Description of the traffic separation scheme

A separation zone, two miles wide, is centred upon the following geographical positions:

- (1) 57°50'.0 N., 8°03'.0 E.
- (2) 57°58'.0 N., 8°22'.0 E.

A traffic lane, three miles wide, is established on each side of the separation zone.

The main traffic directions are:

051°—231°.

### OFF LINDESNES

(Reference chart: British Admiralty 2327)

#### Description of the traffic separation scheme

A separation zone, two miles wide, is centred upon the following geographical positions:

- (1) 57°50'.0 N., 7°22'.0 E.
- (2) 57°50'.0 N., 7°00'.0 E.

A traffic lane, three miles wide, is established on each side of the separation zone.

The main traffic directions are:

090°—270°.

## OFF LISTA

(Reference chart: British Admiralty 2281)

### Description of the traffic separation scheme

A separation zone, two miles wide, is centred upon the following geographical positions:

- (1) 57°55'.0 N., 6°37'.0 E.
- (2) 58°00'.0 N., 6°17'.0 E.

A traffic lane, three miles wide, is established on each side of the separation zone.

The main traffic directions are:

115°—295°.

## OFF FEISTEIN

(Reference chart: British Admiralty 2281)

### Description of the traffic separation scheme

The traffic separation scheme off Feistein consists of two parts.

#### *Part I:*

(a) A separation zone, two miles wide, is centred upon the following geographical positions:

- (1) 58°43'.0 N., 5°11'.0 E.
- (2) 58°32'.0 N., 5°05'.0 E.

(b) A traffic lane, three miles wide, is established on each side of the separation zone.

The main traffic directions are:

015°—195°.

#### *Part II:*

(a) A separation zone, two miles wide, is centred upon the following geographical positions:

- (3) 58°48'.0 N., 5°06'.0 E.
- (4) 58°50'.0 N., 4°43'.0 E.

(b) A traffic lane, three miles wide, is established on each side of the separation zone.

The main traffic directions are:

100°—280°.

#### **Note:**

Part I of the scheme is intended for ships using the Strait of Dover and Part II for ships using the Fair Isle Passage.

## IN THE APPROACHES TO RIVER ELBE

(Reference charts: German Hydrographic Office 44 and 49)

### Description of the traffic separation scheme

(a) A separation zone, half a mile wide, is centred upon the following geographical positions:

- (1) 54°00'00" N., 8°05'28" E.
- (2) 54°00'00" N., 8°07'09" E.

(b) A separation line connects the following geographical positions:

- (3) 54°00'00" N., 8°07'09" E.
- (4) 53°59'57" N., 8°13'22" E.

(c) A traffic lane for eastbound traffic is established between the separation zone/line and a line connecting the following geographical positions:

- (5) 53°58'00" N., 8°05'28" E.
- (6) 53°59'23" N., 8°13'17" E.

(d) A traffic lane for westbound traffic is established between the separation zone/line and a line connecting the following geographical positions:

- (7) 54°01'51" N., 8°05'28" E.
- (8) 54°01'38" N., 8°13'34" E.

The main traffic directions are:  
091°—271°.

## OFF TERSCHELLING AND IN THE GERMAN BIGHT

(Reference charts: British Admiralty 1405, 1875, 2593 and 3761; German Hydrographic Office 50 and 53; Netherlands Hydrographic Office 1352 and 1353)

### Description of the traffic separation scheme

(a) A separation zone bounded by a line connecting the following geographical positions:

- (1) 53°48'.7 N., 6°23'.7 E.
- (2) 53°56'.6 N., 7°39'.7 E.
- (3) 53°54'.8 N., 7°42'.1 E.
- (4) 53°46'.7 N., 6°23'.8 E.

(b) A separation line connects the following geographical positions:

- (5) 53°47'.7 N., 6°23'.8 E.
- (6) 53°47'.5 N., 6°22'.1 E.
- (7) 53°47'.2 N., 6°20'.4 E.

(c) A separation zone bounded by a line connecting the following geographical positions:

- (8) 53°29'.7 N., 4°44'.9 E.
- (9) 53°48'.2 N., 6°20'.4 E.
- (10) 53°46'.1 N., 6°20'.5 E.
- (11) 53°27'.8 N., 4°46'.2 E.

(d) A traffic lane for westbound traffic is established between the separation zones/line and a line connecting the following geographical positions:

- (12) 53°59'.2 N., 7°36'.2 E.
- (13) 53°51'.4 N., 6°20'.5 E.
- (14) 53°32'.4 N., 4°42'.8 E.

(e) A traffic lane for eastbound traffic is established between the separation zones/line and a line connecting the following geographical positions:

- (15) 53°25'.1 N., 4°48'.2 E.
- (16) 53°43'.6 N., 6°23'.7 E.
- (17) 53°52'.1 N., 7°45'.6 E.

The main traffic directions are:  
072°—252° and  
080°—260°.

### Inshore traffic zone

The area between the coast and the landward boundary of the traffic separation scheme is designated as an inshore traffic zone.

### Note:

The separation zones of this scheme are connected by a separation line to indicate the area where a concentration of crossing traffic is likely to be met.



**DEUTSCHE BUCHT LIGHTVESSEL  
WESTERN APPROACH**

(Reference charts: British Admiralty 1405 and German Hydrographic Office 50, 53 and 87)

**Description of the traffic separation scheme**

(a) A separation zone bounded by a line connecting the following geographical positions:

- (1) 54°10'31" N., 6°22'30" E.
- (2) 54°11'07" N., 7°20'42" E.
- (3) 54°10'09" N., 7°21'58" E.
- (4) 54°09'31" N., 6°22'30" E.

(b) A separation line connects the following geographical positions:

- (5) 54°10'01" N., 6°22'30" E.
- (6) 54°10'00" N., 6°20'48" E.
- (7) 54°09'53" N., 6°19'06" E.

(c) A separation zone bounded by a line connecting the following geographical positions:

- (8) 54°08'58" N., 6°01'20" E.
- (9) 54°10'23" N., 6°19'05" E.
- (10) 54°09'22" N., 6°19'05" E.
- (11) 54°08'00" N., 6°01'54" E.

(d) A traffic lane for westbound traffic is established between the separation zones/line and a line connecting the following geographical positions:

- (12) 54°13'06" N., 7°18'06" E.
- (13) 54°12'30" N., 6°20'36" E.
- (14) 54°10'54" N., 6°00'12" E.

(e) A traffic lane for eastbound traffic is established between the separation zones/line and a line connecting the following geographical positions:

- (15) 54°06'06" N., 6°03'00" E.
- (16) 54°07'30" N., 6°20'54" E.
- (17) 54°08'11" N., 7°24'36" E.

The main traffic directions are:

082°—262° and  
089°—269°.

**Notes:**

The separation zones of this scheme are connected by a separation line to indicate the area where a concentration of crossing traffic is likely to be met.

**Least waterdepth**

The area bounded by a line connecting the geographical positions given in paragraphs (d) and (e) above was closely surveyed to a least waterdepth of 30 metres at LWS in 1972. See also note pertaining to the "Deep water route from lightbuoys TW/1 and TW/A to North Hinder" (Page 61).

**OFF TEXEL**

(Reference charts: British Admiralty 191, 1405, 2322 and 2593; Netherlands Hydrographic Office 1037, 1350, 1352 and 1452)

**Description of the traffic separation scheme**

A separation zone, two miles wide, is centred upon the following geographical positions:

- (1) 53°02'.2 N., 4°18'.3 E.
- (2) 53°06'.4 N., 4°22'.7 E.

A traffic lane, three miles wide, is established on each side of the separation zone.

The main traffic directions are:

032°—212°.

**Inshore traffic zone**

The area between the coast and the landward boundary of the traffic separation scheme is designated as an inshore traffic zone.

## IN THE APPROACHES TO HOOK OF HOLLAND

(Reference charts: British Admiralty 1406 and 122; Netherlands Hydrographic Office 1449, 1349 and 1350)

### Description of the traffic separation scheme

The traffic separation scheme in the approaches to Hook of Holland consists of two parts.

#### Part I—At the Goeree

(a) A separation zone bounded by a line connecting the following geographical positions:

- (1) 51°59'.3 N., 3°46'.7 E.
- (2) 51°58'.8 N., 3°46'.9 E.
- (3) 51°57'.3 N., 3°39'.1 E.
- (4) 51°56'.5 N., 3°34'.5 E.
- (5) 51°57'.5 N., 3°34'.0 E.
- (6) 51°58'.3 N., 3°38'.7 E.

(b) A traffic lane for westbound traffic is established between the separation zone and a line connecting the following geographical positions:

- (7) 52°00'.7 N., 3°46'.0 E.
- (8) 51°59'.2 N., 3°33'.3 E.

(c) A traffic lane for eastbound traffic is established between the separation zone and a line connecting the following geographical positions:

- (9) 51°54'.6 N., 3°35'.4 E.
- (10) 51°55'.8 N., 3°39'.8 E.
- (11) 51°57'.3 N., 3°47'.6 E.

#### Part II—North of the entrance to the New Waterway

(a) A separation zone, two miles wide, is centred upon the following geographical positions:

- (12) 52°06'.3 N., 3°58'.3 E.
- (13) 52°03'.4 N., 3°57'.2 E.

(b) A traffic lane, two miles wide, is established on each side of the separation zone.

#### Note:

A circular separation zone, half a mile in diameter, is centred at the following geographical position:

- (14) 52°01'.2 N., 3°53'.6 E.

This position coincides with the present position of 'Maas-Center'. All incoming and outgoing traffic, except the incoming deep-draught vessels which have to make use of the deep water route, should keep the separation zone on their port side.

## AT NORTH HINDER

(Reference charts: British Admiralty 1406 and Netherlands Hydrographic Office 1349)

### Description of the traffic separation scheme

- (a) A separation zone, one mile wide, is centred upon the following geographical positions:
- (1) 51°49'.1 N., 2°45'.8 E.
  - (2) 51°48'.0 N., 2°39'.4 E.
- (b) A separation line connects the following geographical positions:
- (3) 51°48'.0 N., 2°39'.4 E.
  - (4) 51°47'.2 N., 2°34'.5 E.
- (c) A separation zone, one mile wide, is centred upon the following geographical positions:
- (5) 51°47'.2 N., 2°34'.5 E.
  - (6) 51°47'.0 N., 2°33'.0 E.
  - (7) 51°28'.0 N., 2°07'.1 E.
- (d) A traffic lane for south-westbound traffic is established between the separation zones/line and a line connecting the following geographical positions:
- (8) 51°53'.6 N., 2°43'.8 E.
  - (9) 51°51'.2 N., 2°28'.5 E.
  - (10) 51°30'.4 N., 2°00'.0 E.
- (e) A traffic lane for north-eastbound traffic is established between the separation zones/line and a line connecting the following geographical positions:
- (11) 51°44'.5 N., 2°47'.5 E.
  - (12) 51°42'.3 N., 2°36'.2 E.
  - (13) 51°39'.7 N., 2°31'.2 E.
  - (14) 51°23'.7 N., 2°13'.4 E.

### Note:

The separation zones of this scheme are connected by a separation line to indicate the area where a concentration of crossing traffic is likely to be met.

## AT WEST HINDER

(Reference charts: British Admiralty 1406, 1895 and Belgian Hydrographic Office "Vlaamse Banken")

### Description of the traffic separation scheme

- (a) A separation line connects the following geographical positions:
- (1) 51°22'.0 N., 2°42'.7 E.
  - (2) 51°22'.0 N., 2°37'.0 E.
  - (3) 51°22'.5 N., 2°30'.0 E.
  - (4) 51°20'.0 N., 2°20'.0 E.
  - (5) 51°20'.0 N., 2°10'.6 E.
- (b) A traffic lane for westbound traffic is established between the separation line and a line connecting the following geographical positions:
- (6) 51°23'.0 N., 2°42'.7 E.
  - (7) 51°23'.0 N., 2°37'.0 E.
  - (8) 51°23'.5 N., 2°30'.0 E.
  - (9) 51°22'.8 N., 2°26'.5 E.
  - (10) 51°21'.3 N., 2°17'.7 E.
  - (11) 51°23'.7 N., 2°13'.4 E.
- (c) A traffic lane for eastbound traffic is established between the separation line and a line connecting the following geographical positions:
- (12) 51°21'.2 N., 2°42'.7 E.
  - (13) 51°21'.2 N., 2°37'.0 E.
  - (14) 51°21'.5 N., 2°31'.2 E.
  - (15) 51°20'.0 N., 2°24'.6 E.

### Inshore traffic zone

The area between the Continental coast and the southern boundary of the traffic separation scheme is designated as an inshore traffic zone.

### Note:

CAUTION: Northbound traffic should be aware of the possibility of encountering westbound ferries coming across the banks from the inshore traffic zone in the vicinity of Bergues Bank light and whistle buoy and crossing the northbound and West Hinder routes in a general direction towards the lightbuoy position 51°15'.3 N., 2°03'.6 E.

**IN THE STRAIT OF DOVER AND  
ADJACENT WATERS**

(Reference charts: British Admiralty 1406, 1598, 1895  
and 2451)

**Description of the traffic separation scheme**

(a) A separation zone, one mile wide, is centred upon the following geographical positions:

- (1) 51°28'.0 N., 2°07'.1 E.
- (2) 51°16'.5 N., 1°52'.4 E.

(b) A separation line connects the following geographical positions:

- (3) 51°16'.5 N., 1°52'.4 E.
- (4) 51°06'.1 N., 1°38'.2 E.

(c) A separation zone, one mile wide, is centred upon the following geographical positions:

- (5) 51°06'.1 N., 1°38'.2 E.
- (6) 50°57'.2 N., 1°23'.6 E.

(d) A natural separation zone is formed by The Ridge or Le Colbart.

(e) A separation zone, two miles wide, is centred upon the following geographical positions:

- (7) 50°48'.9 N., 1°16'.2 E.
- (8) 50°37'.9 N., 1°04'.4 E.
- (9) 50°33'.7 N., 0°57'.8 E.

(f) A separation zone bounded by a line connecting the following geographical positions:

- (10) 50°33'.0 N., 0°59'.0 E.
- (11) 50°34'.4 N., 0°56'.7 E.
- (12) 50°28'.8 N., 0°00'.0
- (13) 50°25'.0 N., 0°00'.0

(g) A traffic lane for south-westbound traffic is established between the separation zones/line described in paragraphs (a), (b), (c) and (d) above and a line connecting the following geographical positions:

- (14) 51°30'.4 N., 2°00'.0 E.
- (15) 51°23'.0 N., 1°50'.0 E.
- (16) 51°14'.1 N., 1°44'.1 E.
- (17) 51°06'.9 N., 1°31'.0 E.
- (18) 50°57'.3 N., 1°12'.2 E.

(h) The traffic lane for south-westbound traffic described in paragraph (g) above is continued between the separation zones described in paragraphs (d), (e) and (f) above and a separation zone, half a mile wide, centred upon the following geographical positions:

- (19) 50°57'.3 N., 1°12'.2 E.
- (20) 50°52'.0 N., 1°02'.2 E.
- (21) 50°36'.8 N., 0°27'.4 E.
- (22) 50°34'.7 N., 0°00'.0

(i) A traffic lane for north-eastbound traffic is established between the separation zones described in paragraphs (e) and (f) above and a separation zone, half a mile wide, centred upon the following geographical positions:

- (23) 50°37'.7 N., 1°21'.0 E.
- (24) 50°26'.6 N., 0°58'.8 E.
- (25) 50°12'.0 N., 0°00'.0

(j) The traffic lane for north-eastbound traffic described in paragraph (i) above is continued between the separation zones/line described in paragraphs (a), (b), (c), (d) and (e) above and a line connecting the following geographical positions:

- (26) 51°20'.0 N., 2°24'.6 E.
- (27) 51°06'.4 N., 1°49'.0 E.
- (28) 50°53'.6 N., 1°30'.8 E.
- (29) 50°44'.5 N., 1°27'.0 E.
- (30) 50°37'.7 N., 1°21'.0 E.

(k) A deep-water route forming part of the north-eastbound traffic lane between the north-western edge of the Sandettie Bank and the separation line/zone described in paragraphs (a) and (b) above has been established between the following latitudes:

- (i) 51°10'.3 N.
- (ii) 51°22'.0 N.

The general direction of the route is 046°.

**Inshore traffic zones**

The areas between the outer boundaries of the traffic separation scheme and the adjacent coasts are designated as inshore traffic zones.

**Notes:**

**WARNING**

I. A deep-water route forming part of the north-eastbound traffic lane is established to the northwest of the Sandettie Bank and masters considering the use of this route should take into account the proximity of traffic using the south-westbound lane.

The main traffic lane for north-eastbound traffic lies to the south-east of the Sandettie Bank and shall be followed by all such vessels as can safely navigate therein having regard to their draught.

II. In the area of the deep-water route east of the separation line vessels are recommended to avoid overtaking.

III. Attention is also drawn to the note pertaining to the "At West Hinder" traffic separation scheme (Page 27).

### NEWARP/CROSS SAND

(Reference chart: British Admiralty 1543)

#### Description of the traffic separation scheme

A separation zone, half a mile wide, is centred upon the following geographical positions:

- (1) 52°39'.0 N., 1°59'.2 E.
- (2) 52°43'.9 N., 1°59'.2 E.
- (3) 52°46'.7 N., 1°52'.5 E.

A traffic lane, one-and-a-half miles wide, is established on each side of the separation zone.

The main traffic directions are:

- 000°—180° and  
305°—125°.

### OFF THE LIZARD

(Reference chart: British Admiralty 2565)

#### Description of the traffic separation scheme

A separation zone, two miles wide, is centred upon the following geographical positions:

- (1) 49°50'.7 N., 5°00'.7 W.
- (2) 49°48'.6 N., 5°19'.1 W.

A traffic lane, three miles wide, is established on each side of the separation zone.

The main traffic directions are:

- 080°—260°.

### OFF LAND'S END, BETWEEN SEVEN STONES AND LONGSHIPS

(Reference chart: British Admiralty 2565)

#### Description of the traffic separation scheme

A separation zone, two miles wide, is centred upon the following geographical positions:

- (1) 49°54'.0 N., 5°57'.3 W.
- (2) 50°08'.0 N., 5°57'.3 W.

A traffic lane, three miles wide, is established on each side of the separation zone.

The main traffic directions are:

- 000°—180°.

### **SOUTH OF THE SCILLY ISLES**

(Reference charts: British Admiralty 1123 and 2649)

#### **Description of the traffic separation scheme**

A separation zone, two miles wide, is centred upon the following geographical positions:

- (1) 49°43'.4 N., 6°15'.8 W.
- (2) 49°43'.4 N., 6°34'.4 W.

A traffic lane, three miles wide, is established on each side of the separation zone.

The main traffic directions are:  
090°—270°.

### **WEST OF THE SCILLY ISLES**

(Reference charts: British Admiralty 1123 and 2649)

#### **Description of the traffic separation scheme**

A separation zone, two miles wide, is centred upon the following geographical positions:

- (1) 49°51'.9 N., 6°41'.4 W.
- (2) 50°01'.6 N., 6°37'.0 W.

A traffic lane, three miles wide, is established on each side of the separation zone.

The main traffic directions are:  
016°—196°.

### **OFF SMALLS**

(Reference chart: British Admiralty 1478)

#### **Description of the traffic separation scheme**

A separation zone, two miles wide, is centred upon the following geographical positions:

- (1) 51°39'.1 N., 5°52'.1 W.
- (2) 51°50'.7 N., 5°46'.8 W.

A traffic lane, three miles wide, is established on each side of the separation zone.

The main traffic directions are:  
016°—196°.

### OFF CHICKEN ROCK, CALF OF MAN

(Reference chart: British Admiralty 45)

#### Description of the traffic separation scheme

A separation zone, two miles wide, is centred upon the following geographical positions:

- (1) 53°55'.5 N., 4°52'.9 W.
- (2) 53°57'.9 N., 5°00'.3 W.
- (3) 54°02'.8 N., 5°02'.0 W.

A traffic lane, three miles wide, is established on each side of the separation zone.

The main traffic directions are:

- 298°—118° and  
349°—169°.

### OFF SKERRIES

(Reference chart: British Admiralty 1977)

#### Description of the traffic separation scheme

A separation zone, two miles wide, is centred upon the following geographical positions:

- (1) 53°22'.8 N., 4°52'.0 W.
- (2) 53°31'.3 N., 4°41'.7 W.
- (3) 53°32'.1 N., 4°31'.6 W.

A traffic lane, two miles wide, is established on each side of the separation zone.

The main traffic directions are:

- 036°—216° and  
083°—263°.

### IN THE NORTH CHANNEL

(Reference chart: British Admiralty 2724)

#### Description of the traffic separation scheme

A separation zone, two miles wide, is centred upon the following geographical positions:

- (1) 55°15'.3 N., 5°55'.4 W.
- (2) 55°22'.8 N., 6°04'.6 W.
- (3) 55°24'.0 N., 6°15'.0 W.

A traffic lane, two miles wide, is established on each side of the separation zone.

The main traffic directions are:

- 326°—146° and  
282°—102°.

### OFF TUSKAR ROCK

(Reference chart: British Admiralty 1410)

#### Description of the traffic separation scheme

A separation zone, two miles wide, is centred upon the following geographical positions:

- (1) 52°14'.0 N., 6°00'.8 W.
- (2) 52°08'.5 N., 6°03'.8 W.
- (3) 52°04'.7 N., 6°11'.5 W.

A traffic lane, three miles wide, is established on each side of the separation zone.

The main traffic directions are:

051°—231° and  
018°—198°.

#### Inshore traffic zone

The area between Tuskar Rock and the landward boundary of the traffic separation scheme is designated as an inshore traffic zone.

### OFF FASTNET ROCK

(Reference chart: British Admiralty 2424)

#### Description of the traffic separation scheme

A separation zone, two miles wide, is centred upon the following geographical positions:

- (1) 51°20'.0 N., 9°25'.8 W.
- (2) 51°18'.2 N., 9°35'.2 W.

A traffic lane, two miles wide, is established on each side of the separation zone.

The main traffic directions are:

073°—253°.

#### Inshore traffic zone

The area between Fastnet Rock and the landward boundary of the traffic separation scheme is designated as an inshore traffic zone.

### OFF CASQUETS

(Reference chart: British Admiralty 2669)

#### Description of the traffic separation scheme

A separation zone, two miles wide, is centred upon the following geographical positions:

- (1) 49°46'.1 N., 2°35'.1 W.
- (2) 49°49'.4 N., 2°27'.2 W.
- (3) 49°51'.5 N., 2°18'.3 W.

A traffic lane, three miles wide, is established on each side of the separation zone.

The main traffic directions are:

057°—237° and  
070°—250°.



## OFF USHANT

(Reference chart: British Admiralty 2643)

### Description of the traffic separation scheme

A separation zone, two miles wide, is centred upon the following geographical positions:

- (1) 48°28'.6 N., 5°23'.6 W.
- (2) 48°34'.0 N., 5°19'.4 W.
- (3) 48°37'.4 N., 5°11'.9 W.

A traffic lane, four miles wide, is established on each side of the separation zone.

The main traffic directions are:

- 028°—208° and  
055°—235°.

### Inshore traffic zone

The area between Ushant Island and the landward boundary of the traffic separation scheme is designated as an inshore traffic zone.

## OFF CAPE FINISTERRE

(Reference charts: British Admiralty 1752 and Spanish Hydrographic Office 124)

### Description of the traffic separation scheme

A separation zone, two miles wide, is centred upon the following geographical positions:

- (1) 42°59'.5 N., 9°31'.0 W.
- (2) 43°05'.5 N., 9°31'.0 W.
- (3) 43°10'.9 N., 9°27'.2 W.

A traffic lane, four miles wide, is established on each side of the separation zone.

The main traffic directions are:

- 000°—180° and  
028°—208°.

### Inshore traffic zone

The area between the coast and the landward boundary of the traffic separation scheme is designated as an inshore traffic zone.

## OFF CAPE ROCA

(Reference charts: British Admiralty 1515 and Spanish Hydrographic Office 101)

### Description of the traffic separation scheme

A separation zone, two miles wide, is centred upon the following geographical positions:

- (1) 38°39'.8 N., 9°40'.9 W.
- (2) 38°45'.7 N., 9°42'.5 W.
- (3) 38°51'.7 N., 9°42'.5 W.

A traffic lane, four miles wide, is established on each side of the separation zone.

The main traffic directions are:

- 348°—168° and  
000°—180°.

### Inshore traffic zone

The area between the coast and the landward boundary of the traffic separation scheme is designated as an inshore traffic zone.

## OFF CAPE ST. VINCENT

(Reference charts: British Admiralty 92 and Spanish Hydrographic Office 115)

### Description of the traffic separation scheme

A separation zone, two miles wide, is centred upon the following geographical positions:

- (1) 36°53'.1 N., 8°55'.5 W.
- (2) 36°54'.6 N., 9°00'.7 W.
- (3) 36°56'.5 N., 9°03'.6 W.
- (4) 37°00'.5 N., 9°06'.6 W.

A traffic lane, three miles wide, is established on each side of the separation zone.

The main traffic directions are:

- 290°—110°  
308°—128° and  
330°—150°.

## AT BANCO DEL HOYO

(Reference charts: British Admiralty 142 and Spanish Hydrographic Office 105)

### Description of the traffic separation scheme

(a) A separation zone, two miles wide, is centred upon the following geographical positions:

- (1) 35°55'.5 N., 6°06'.0 W.
- (2) 35°55'.5 N., 6°12'.0 W.

(b) A traffic lane for westbound traffic is established between the separation zone and a line connecting the following geographical positions:

- (3) 35°58'.2 N., 6°06'.0 W.
- (4) 35°58'.2 N., 6°12'.0 W.

### Inshore traffic zone

The area between the coast and the landward boundary of the traffic separation scheme is designated as an inshore traffic zone.

### Note:

Attention is drawn to the existence of the traffic separation scheme at Banco del Hoyo; ships navigating from St. Vincent to the Mediterranean are advised to make use of it.

(c) A traffic lane for eastbound traffic is established between the separation zone and a line connecting the following geographical positions:

- (5) 35°52'.3 N., 6°06'.0 W.
- (6) 35°52'.3 N., 6°12'.0 W.

The main traffic directions are:  
090°—270°.

## MEDITERRANEAN AREA

**CAUTION:**

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## IN THE STRAIT OF GIBRALTAR

(Reference charts: British Admiralty 142 and Spanish Hydrographic Office 105)

### Description of the traffic separation scheme

- (a) A separation zone, half a mile wide, is centred upon the following geographical positions:
- (1) 35°58'.8 N., 5°25'.7 W.
  - (2) 35°56'.0 N., 5°36'.5 W.
  - (3) 35°56'.0 N., 5°45'.0 W.
- (b) A traffic lane for westbound traffic is established between the separation zone and a line connecting the following geographical positions:
- (4) 36°01'.0 N., 5°25'.7 W.
  - (5) 35°58'.2 N., 5°36'.5 W.
  - (6) 35°58'.2 N., 5°45'.0 W.

- (c) A traffic lane for eastbound traffic is established between the separation zone and a line connecting the following geographical positions:

- (7) 35°52'.3 N., 5°45'.0 W.
- (8) 35°53'.6 N., 5°36'.5 W.
- (9) 35°56'.6 N., 5°25'.7 W.

The main traffic directions are:

090°—270° and  
072°—252°.

### Inshore traffic zones

The areas between the outer boundaries of the traffic separation scheme and the adjacent coasts are designated as inshore traffic zones.

## OFF CANI ISLAND

(Reference chart: British Admiralty 2122)

### Description of the traffic separation scheme

A separation zone, two miles wide, is centred upon the following geographical positions:

- (1) 37°31'.8 N., 10°02'.0 E.
- (2) 37°31'.8 N., 10°12'.8 E.

A traffic lane, three miles wide, is established on each side of the separation zone.

The main traffic directions are:

090°—270°.

## OFF CAPE BON

(Reference chart: British Admiralty 2122)

### Description of the traffic separation scheme

A separation zone, two miles wide, is centred upon the following geographical positions:

- (1) 37°13'.2 N., 11°01'.3 E.
- (2) 37°10'.2 N., 11°11'.5 E.

A traffic lane, three miles wide, is established on each side of the separation zone.

The main traffic directions are:

290°—110°.

**SARONICOS GULF (in the approaches to Piraeus Harbour)**  
(Reference charts: British Admiralty 1657 and Greek Hydrographic Office 140)

**NOTES:**

Since the adoption of this scheme official notification has been received from the Greek Administration to the effect that the scheme is under revision and will not be implemented in its present form.

**Description of the traffic separation scheme**

A separation zone, one-and-a-half miles wide, is centred upon the following geographical positions:

- (1) 37°37'.5 N., 23°45'.0 E.
- (2) 37°50'.0 N., 23°38'.0 E.

A traffic lane, one mile wide, is established on each side of the separation zone.

The main traffic directions are:

335°—155°.

**Inshore traffic zone**

The area between the coast and the eastern boundary of the traffic separation scheme is designated as an inshore traffic zone.

**Notes:**

Ships in the area between the northern boundaries of the scheme and the adjacent coast of the mainland and Salamis Island should proceed with caution, as heavy traffic of especially small ships, fishing boats and pleasure craft from all directions may be encountered.

Large ships bound to Piraeus and Salamis Strait should reduce speed to bare steerage way before entering the appropriate lane of the scheme.

## INDIAN OCEAN AND ADJACENT WATERS

**CAUTION:**

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## INDIAN OCEAN AND ADJACENT WATERS

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**IN THE STRAIT OF BAB EL MANDEB**  
(Reference chart: British Admiralty 1925)

**Description of the traffic separation scheme**

- (a) A separation zone, one mile wide, bounded by a line connecting the following geographical positions:
- (1) 12°55'.6 N., 43°12'.4 E.
  - (2) 12°36'.9 N., 43°20'.2 E.
  - (3) 12°32'.6 N., 43°27'.6 E.
  - (4) 12°33'.5 N., 43°28'.2 E.
  - (5) 12°37'.5 N., 43°21'.0 E.
  - (6) 12°55'.9 N., 43°13'.7 E.
- (b) A traffic lane for southbound traffic is established between the separation zone and a line connecting the following geographical positions:
- (7) 12°55'.1 N., 43°11'.2 E.
  - (8) 12°35'.9 N., 43°19'.0 E.
  - (9) 12°31'.3 N., 43°26'.9 E.

- (c) A traffic lane for northbound traffic is established between the separation zone and a line connecting the following geographical positions:
- (10) 12°56'.5 N., 43°15'.0 E.
  - (11) 12°38'.8 N., 43°21'.9 E.
  - (12) 12°34'.8 N., 43°28'.8 E.

The main traffic directions are:  
159°—339° and  
120°—300°.

**Note:**

In the passage between Perim Island and the mainland coastal traffic may be proceeding in both directions.

**IN THE STRAIT OF HORMUZ**  
(Reference chart: British Admiralty 3956)

**Description of the traffic separation scheme**

- (a) A separation zone, one mile wide, is centred upon the following geographical positions:
- (1) 26°27'.2 N., 56°22'.8 E.
  - (2) 26°27'.2 N., 56°30'.3 E.
  - (3) 26°26'.2 N., 56°33'.9 E.
  - (4) 26°21'.4 N., 56°37'.9 E.
- (b) A traffic lane for eastbound traffic is established between the separation zone and a line connecting the following geographical positions:
- (5) 26°25'.2 N., 56°22'.8 E.
  - (6) 26°25'.2 N., 56°30'.0 E.
  - (7) 26°24'.5 N., 56°32'.6 E.
  - (8) 26°20'.2 N., 56°36'.1 E.

- (c) A traffic lane for westbound traffic is established between the separation zone and a line connecting the following geographical positions:
- (9) 26°22'.6 N., 56°39'.7 E.
  - (10) 26°31'.9 N., 56°32'.0 E.
  - (11) 26°31'.9 N., 56°30'.6 E.
  - (12) 26°29'.2 N., 56°22'.8 E.

The main traffic directions are:  
090°—270°  
108°—288° (Passage south of Little Quoin Island. See Note.)  
143°—323°.

**Note:**

Westbound traffic may navigate either south of Little Quoin Island or north of Great Quoin Island.

## TUNB-FARUR

(Reference chart: British Admiralty 2837)

### Description of the traffic separation scheme

Separation of traffic in this area is achieved by establishing separate traffic lanes.

(a) A traffic lane for westbound traffic is established between a line connecting the following geographical positions:

- (1) 26°22'.7 N., 55°30'.0 E.
- (2) 26°18'.7 N., 55°07'.7 E.
- (3) 26°23'.0 N., 54°30'.0 E.

and a line connecting the following geographical positions:

- (4) 26°20'.6 N., 55°30'.0 E.
- (5) 26°16'.6 N., 55°08'.0 E.
- (6) 26°21'.0 N., 54°30'.0 E.

The main traffic directions are:

258° and 278°.

(b) A traffic lane for eastbound traffic is established between a line connecting the following geographical positions:

- (7) 26°13'.0 N., 54°30'.0 E.
- (8) 26°08'.0 N., 55°17'.5 E.
- (9) 26°11'.8 N., 55°30'.0 E.

and a line connecting the following geographical positions:

- (10) 26°10'.0 N., 54°30'.0 E.
- (11) 26°05'.0 N., 55°17'.5 E.
- (12) 26°08'.8 N., 55°30'.0 E.

The main traffic directions are:

098° and 078°.

### Note:

Westbound traffic which has passed Quoin Islands should proceed so as to keep Jaz-Tunb and Jaz-Farur on the port side.

Eastbound traffic should proceed so as to keep Jaz-Farur and Jaz-Tunb on the port side in order to get into the appropriate traffic lane in the Strait of Hormuz traffic separation scheme.

## IN THE APPROACH TO RAS TANURA

(Reference charts: British Admiralty 3788 and United States Naval Oceanographic Office 62415)

### Description of the traffic separation scheme

- (a) A separation zone bounded by a line connecting the following geographical positions:
- |     |               |              |
|-----|---------------|--------------|
| (1) | 27°06'50" N., | 50°42'00" E. |
| (2) | 27°06'06" N., | 50°23'18" E. |
| (3) | 26°56'09" N., | 50°11'55" E. |
| (4) | 26°49'18" N., | 50°10'26" E. |
| (5) | 26°51'09" N., | 50°11'17" E. |
| (6) | 26°55'33" N., | 50°12'23" E. |
| (7) | 27°05'16" N., | 50°23'30" E. |
| (8) | 27°06'08" N., | 50°42'05" E. |
- (b) A separation line connects the following geographical positions:
- |      |               |              |
|------|---------------|--------------|
| (9)  | 26°49'18" N., | 50°10'26" E. |
| (10) | 26°48'19" N., | 50°10'15" E. |
| (11) | 26°45'12" N., | 50°11'09" E. |
| (12) | 26°44'26" N., | 50°11'28" E. |
| (13) | 26°43'00" N., | 50°11'53" E. |
| (14) | 26°41'56" N., | 50°12'14" E. |
| (15) | 26°41'01" N., | 50°12'08" E. |
| (16) | 26°40'52" N., | 50°12'06" E. |
- (c) A traffic lane for inward bound traffic is established between the separation zone/line and a line connecting the following geographical positions:
- |      |               |              |
|------|---------------|--------------|
| (17) | 27°07'16" N., | 50°42'00" E. |
| (18) | 27°06'28" N., | 50°23'00" E. |
| (19) | 26°56'21" N., | 50°11'29" E. |
| (20) | 26°49'32" N., | 50°09'50" E. |
| (21) | 26°48'02" N., | 50°09'52" E. |
| (22) | 26°42'02" N., | 50°11'42" E. |
| (23) | 26°40'52" N., | 50°11'44" E. |
- (d) A traffic lane for outward bound traffic is established between the separation zone/line and a line connecting the following geographical positions:
- |      |               |              |
|------|---------------|--------------|
| (24) | 26°40'52" N., | 50°12'16" E. |
| (25) | 26°41'00" N., | 50°12'18" E. |
| (26) | 26°41'57" N., | 50°12'24" E. |
| (27) | 26°42'25" N., | 50°12'22" E. |
| (28) | 26°43'07" N., | 50°12'07" E. |
| (29) | 26°44'17" N., | 50°11'42" E. |
| (30) | 26°47'23" N., | 50°10'57" E. |
| (31) | 26°49'16" N., | 50°10'42" E. |
| (32) | 26°50'54" N., | 50°11'36" E. |
| (33) | 26°55'07" N., | 50°13'02" E. |
| (34) | 26°55'32" N., | 50°13'08" E. |
| (35) | 27°04'51" N., | 50°23'52" E. |
| (36) | 27°05'34" N., | 50°42'06" E. |

**NORTH AMERICA,  
ATLANTIC COAST**

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## NORTH AMERICA, ATLANTIC COAST

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## **WARNING**

### **Navigation in the vicinity of the Grand Banks of Newfoundland**

Attention is drawn to Regulation 8 of Chapter V of the Convention for the Safety of Life at Sea, 1960. It directs that all ships proceeding on voyages in the vicinity of the Grand Banks of Newfoundland avoid as far as practicable the fishing banks of Newfoundland north of latitude 43° N. The reasons for avoiding the area are:

- (a) high concentration of fishing vessels;
- (b) prevailing adverse weather conditions;
- (c) seasonal existence of icebergs.

## IN THE APPROACHES TO CHEDABUCTO BAY

(Reference charts: Canadian Hydrographic Service 4013 and 4335)

### Description of the traffic separation scheme

The traffic separation scheme for Chedabucto Bay consists of three parts.

#### Part I:

(a) A separation zone bounded by a line connecting the following geographical positions:

- (1) 45°24'00" N., 60°36'42" W.
- (2) 45°24'12" N., 60°27'10" W.
- (3) 45°23'42" N., 60°28'12" W.
- (4) 45°23'49" N., 60°36'29" W.

(b) A traffic lane for westbound traffic is established between the separation zone and a line connecting the following geographical positions:

- (5) 45°26'00" N., 60°23'12" W.
- (6) 45°25'26" N., 60°41'42" W.

(c) A traffic lane for eastbound traffic is established between the separation zone and a line connecting the following geographical positions:

- (7) 45°22'18" N., 60°34'30" W.
- (8) 45°22'09" N., 60°31'36" W.

The main traffic directions are:  
092°—267°.

#### Part II:

(a) A separation zone bounded by a line connecting the following geographical positions:

- (9) 45°22'34" N., 60°40'00" W.
- (10) 45°19'53" N., 60°36'30" W.
- (11) 45°19'18" N., 60°37'48" W.
- (12) 45°22'41" N., 60°42'10" W.

(b) A traffic lane for north-westbound traffic is established between the separation zone and a line connecting the following geographical positions:

- (13) 45°21'21" N., 60°33'18" W.
- (14) 45°22'18" N., 60°34'30" W.

The main traffic direction is 318°.

(c) A traffic lane for southbound traffic is established between the separation zone and a line connecting the following geographical positions:

- (15) 45°22'54" N., 60°46'30" W.
- (16) 45°21'17" N., 60°44'24" W.
- (17) 45°14'28" N., 60°48'23" W.

The main traffic directions are:  
138° and 202°.

#### Part III:

(a) A separation line connects the following geographical positions:

- (18) 45°23'54" N., 60°41'42" W.
- (19) 45°23'54" N., 60°58'48" W.

(b) A traffic lane for westbound traffic is established between the separation line and a line connecting the following geographical positions:

- (20) 45°25'26" N., 60°41'42" W.
- (21) 45°24'54" N., 60°58'48" W.

(c) A traffic lane for eastbound traffic is established between the separation line and a line connecting the following geographical positions:

- (22) 45°22'54" N., 60°46'30" W.
- (23) 45°22'54" N., 60°58'48" W.

The main traffic directions are:  
090°—270°.

## IN THE APPROACHES TO PORTLAND, MAINE

(Reference chart: United States National Ocean Survey  
C & GS 1106)

### Description of the traffic separation scheme

The traffic separation scheme in the approaches to Portland, Maine, consists of two parts:

#### *Part I* – Eastern approach

A separation zone, one mile wide, is centred upon the following geographical positions:

- (1) 43°30'.2 N., 69°59'.4 W.
- (2) 43°24'.75 N., 69°33'.0 W.

A traffic lane, two miles wide, is established on each side of the separation zone.

The main traffic directions are:

107° and 287°.

#### *Part II* – Southern approach

A separation zone, one mile wide, is centred upon the following geographical positions:

- (3) 43°26'.8 N., 70°03'.5 W.
- (4) 43°07'.8 N., 69°55'.3 W.

A traffic lane, two miles wide, is established on each side of the separation zone.

The main traffic directions are:

162° and 342°.

#### Note:

Precautionary area

A precautionary area of radius five miles is centred upon geographical position 43°31'.5 N., 70°06'.0 W.

## IN THE APPROACH TO BOSTON, MASSACHUSETTS

(Reference chart: United States National Ocean Survey  
C & GS 1107)

### Description of the traffic separation scheme

A separation zone, one mile wide, is centred upon the following geographical positions:

- (1) 42°21'.0 N., 70°40'.7 W.
- (2) 42°08'.5 N., 69°53'.6 W.
- (3) 40°49'.5 N., 69°00'.0 W.

A traffic lane, two miles wide, is established on each side of the separation zone.

The main traffic directions are:

110°—290° and  
153°—333°.

#### Note:

Precautionary area

A precautionary area of radius five miles is centred upon geographical position 42°22'.7 N., 70°48'.0 W.



**IN THE APPROACHES TO NARRAGANSETT BAY,  
RHODE ISLAND AND BUZZARDS BAY,  
MASSACHUSETTS**

(Reference charts: United States National Ocean Survey  
C & GS 1107, 1108 and 1210)

**Description of the traffic separation scheme**

The traffic separation scheme in the approaches to Narragansett Bay, Rhode Island and Buzzards Bay, Massachusetts, consists of two parts:

*Part I*—Narragansett Bay approach

A separation zone, two miles wide, is centred upon the following geographical positions:

- (1) 41°22'.7 N., 71°23'.4 W.
- (2) 41°11'.1 N., 71°23'.4 W.

A traffic lane, one mile wide, is established on each side of the separation zone.

The main traffic directions are:

000° and 180°.

*Part II*—Buzzards Bay approach

A separation zone, one mile wide, is centred upon the following geographical positions:

- (3) 41°10'.15 N., 71°19'.15 W.
- (4) 41°24'.9 N., 71°03'.9 W.

A traffic lane, one mile wide, is established on each side of the separation zone.

The main traffic directions are:

038° and 218°.

**Note:**

**Precautionary areas**

A precautionary area of radius 5.4 miles is centred upon geographical position 41°06'.0 N., 71°23'.4 W.

A precautionary area of radius 3.55 miles is centred upon geographical position 41°25'.6 N., 71°23'.4 W.

**Restricted area**

A restricted area, two miles wide, extending from the northern limit of the Narragansett Bay approach traffic separation zone to latitude 41°24'.7 N. has been established.

The restricted area within the precautionary area will only be closed to vessel traffic by the Naval Underwater System Center during periods of daylight and optimum weather conditions for torpedo range usage. The closing of the restricted area will be indicated by the activation of a white strobe light mounted on Brenton Reef Light and controlled by a Naval vessel supporting the torpedo range activities. There would be no vessel restrictions expected during inclement weather or when the torpedo range is not in use.

## OFF NEW YORK

(Reference charts: British Admiralty 2755 and United States National Ocean Survey C & GS 1108)

NOTE: Under review—possible insufficient navigational marking in the eastern and south-eastern approaches.

### Description of the traffic separation scheme

The traffic separation scheme off New York consists of three parts.

#### Part I—Eastern approach

(a) A separation zone bounded by a line connecting the following geographical positions:

- (1) 40°28'.5 N., 69°27'.9 W.
- (2) 40°24'.2 N., 73°11'.5 W.
- (3) 40°26'.0 N., 73°40'.8 W.
- (4) 40°27'.0 N., 73°40'.7 W.
- (5) 40°27'.2 N., 73°11'.5 W.
- (6) 40°31'.5 N., 69°28'.1 W.

(b) A traffic lane for westbound traffic is established between the separation zone and a line connecting the following geographical positions:

- (7) 40°36'.5 N., 69°28'.2 W.
- (8) 40°32'.2 N., 73°11'.5 W.
- (9) 40°27'.9 N., 73°40'.6 W.

(c) A traffic lane for eastbound traffic is established between the separation zone and a line connecting the following geographical positions:

- (10) 40°25'.0 N., 73°41'.2 W.
- (11) 40°19'.2 N., 73°11'.5 W.
- (12) 40°23'.5 N., 69°27'.8 W.

#### Part II—South-eastern approach

(a) A separation zone bounded by a line connecting the following geographical positions:

- (13) 39°20'.7 N., 72°18'.0 W.
- (14) 40°06'.3 N., 73°22'.7 W.
- (15) 40°22'.4 N., 73°43'.5 W.
- (16) 40°23'.0 N., 73°42'.7 W.
- (17) 40°08'.6 N., 73°20'.1 W.
- (18) 39°23'.0 N., 72°15'.2 W.

(b) A traffic lane for north-westbound traffic is established between the separation zone and a line connecting the following geographical positions:

- (19) 39°26'.7 N., 72°10'.8 W.
- (20) 40°12'.2 N., 73°15'.7 W.
- (21) 40°24'.0 N., 73°41'.9 W.

(c) A traffic lane for south-eastbound traffic is established between the separation zone and a line connecting the following geographical positions:

- (22) 40°21'.7 N., 73°44'.5 W.
- (23) 40°02'.7 N., 73°27'.2 W.
- (24) 39°17'.0 N., 72°22'.4 W.

#### Part III—Southern approach

(a) A separation zone bounded by a line connecting the following geographical positions:

- (25) 39°45'.7 N., 73°48'.0 W.
- (26) 40°20'.5 N., 73°48'.3 W.
- (27) 40°20'.7 N., 73°47'.0 W.
- (28) 39°45'.7 N., 73°44'.0 W.

(b) A traffic lane for northbound traffic is established between the separation zone and a line connecting the following geographical positions:

- (29) 39°45'.7 N., 73°37'.7 W.
- (30) 40°21'.2 N., 73°45'.8 W.

(c) A traffic lane for southbound traffic is established between the separation zone and a line connecting the following geographical positions:

- (31) 40°20'.4 N., 73°49'.6 W.
- (32) 39°45'.7 N., 73°54'.4 W.

#### Note:

##### Precautionary area

A precautionary area of radius seven miles is centred upon the Ambrose Light in geographical position 40°27'.5 N., 73°49'.9 W.

## OFF DELAWARE BAY

(Reference charts: British Admiralty 2563 and United States Ocean Survey C & GS 1219)

### Description of the traffic separation scheme

The traffic separation scheme of Delaware Bay consists of two parts.

#### Part I—Eastern approach

(a) A separation zone bounded by a line connecting the following geographical positions:

- (1) 38°46'.8 N., 74°34'.6 W.
- (2) 38°46'.8 N., 74°55'.7 W.
- (3) 38°47'.8 N., 74°55'.4 W.
- (4) 38°47'.8 N., 74°34'.6 W.

(b) A traffic lane for westbound traffic is established between the separation zone and a line connecting the following geographical positions:

- (5) 38°49'.8 N., 74°34'.6 W.
- (6) 38°48'.8 N., 74°55'.3 W.

(c) A traffic lane for eastbound traffic is established between the separation zone and a line connecting the following geographical positions:

- (7) 38°45'.8 N., 74°56'.1 W.
- (8) 38°44'.8 N., 74°34'.6 W.

#### Part II—South-eastern approach

(a) A separation zone bounded by a line connecting the following geographical positions:

- (9) 38°27'.0 N., 74°35'.6 W.
- (10) 38°43'.4 N., 74°58'.0 W.
- (11) 38°44'.2 N., 74°57'.2 W.
- (12) 38°27'.6 N., 74°34'.6 W.

(b) A traffic lane for north-westbound traffic is established between the separation zone and a line connecting the following geographical positions:

- (13) 38°29'.1 N., 74°32'.9 W.
- (14) 38°45'.1 N., 74°56'.6 W.

(c) A traffic lane for south-eastbound traffic is established between the separation zone and a line connecting the following geographical positions:

- (15) 38°42'.8 N., 74°58'.9 W.
- (16) 38°27'.0 N., 74°39'.2 W.

#### Note:

##### Precautionary area

A precautionary area of radius eight miles is centred upon Harbour of Refuge Light in geographical position 38°48'.9 N., 75°05'.6 W.

## IN THE APPROACHES TO CHESAPEAKE BAY

(Reference charts: British Admiralty 2843 and United States National Ocean Survey C & GS 1222)

### Description of the traffic separation scheme

The traffic separation scheme in the approaches to Chesapeake Bay consists of two parts.

#### Part I—Eastern approach

A separation line connects the following geographical positions:

- (1) 36°58'.7 N., 75°48'.7 W.
- (2) 36°56'.5 N., 75°56'.3 W.

A traffic lane, half a mile wide, is established on each side of the separation line.

The main traffic directions are:

- 070° and
- 250°.

#### Part II—Southern approach

A separation line connects the following geographical positions:

- (3) 36°51'.3 N., 75°50'.9 W.
- (4) 36°55'.5 N., 75°56'.6 W.

A traffic lane, half a mile wide, is established on each side of the separation line.

The main traffic directions are:

- 132° and
- 312°.

**NORTH AMERICA,  
PACIFIC COAST**

**CAUTION:**

The chartlets are for illustrative purposes only and must not be used for navigation. Mariners should consult the appropriate nautical publications and charts for up-to-date details on aids to navigation and other relevant information.

**NORTH AMERICA, PACIFIC COAST**

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## OFF SAN FRANCISCO

(Reference chart: British Admiralty 229)

### Description of the traffic separation scheme

The traffic separation scheme off San Francisco consists of three parts.

#### Part I—Northern approach

- (a) A separation zone bounded by a line connecting the following geographical positions:
- (1) 37°48'.6 N., 122°47'.5 W.
  - (2) 37°57'.1 N., 123°03'.5 W.
  - (3) 37°55'.7 N., 123°04'.6 W.
  - (4) 37°47'.8 N., 122°48'.2 W.
- (b) A traffic lane for north-westbound traffic is established between the separation zone and a line connecting the following geographical positions:
- (5) 37°49'.4 N., 122°46'.6 W.
  - (6) 37°58'.5 N., 123°02'.3 W.
- (c) A traffic lane for south-eastbound traffic is established between the separation zone and a line connecting the following geographical positions:
- (7) 37°54'.3 N., 123°05'.7 W.
  - (8) 37°46'.8 N., 122°48'.7 W.

#### Part II—Southern approach

- (a) A separation zone bounded by a line connecting the following geographical positions:
- (9) 37°39'.1 N., 122°40'.3 W.
  - (10) 37°27'.0 N., 122°36'.9 W.
  - (11) 37°27'.0 N., 122°34'.8 W.
  - (12) 37°39'.3 N., 122°39'.1 W.
- (b) A traffic lane for northbound traffic is established between the separation zone and a line connecting the following geographical positions:
- (13) 37°27'.0 N., 122°32'.6 W.
  - (14) 37°39'.7 N., 122°37'.9 W.
- (c) A traffic lane for southbound traffic is established between the separation zone and a line connecting the following geographical positions:
- (15) 37°39'.0 N., 122°41'.6 W.
  - (16) 37°27'.0 N., 122°39'.0 W.

#### Part III—Main approach

- (a) A separation zone bounded by a line connecting the following geographical positions:
- (17) 37°41'.9 N., 122°48'.0 W.
  - (18) 37°38'.1 N., 122°58'.1 W.
  - (19) 37°36'.5 N., 122°57'.3 W.
  - (20) 37°41'.1 N., 122°47'.2 W.
- (b) A traffic lane for south-westbound traffic is established between the separation zone and a line connecting the following geographical positions:
- (21) 37°42'.8 N., 122°48'.5 W.
  - (22) 37°39'.6 N., 122°58'.8 W.
- (c) A traffic lane for north-eastbound traffic is established between the separation zone and a line connecting the following geographical positions:
- (23) 37°35'.0 N., 122°56'.5 W.
  - (24) 37°40'.4 N., 122°46'.3 W.

#### Note:

##### Circular traffic separation zone

A circular traffic separation zone of radius half a mile is centred upon geographical position 37°45'.0 N., 122°41'.5 W.

##### Precautionary area

A precautionary area of radius six miles is centred upon geographical position 37°45'.0 N., 122°41'.5 W.

**IN THE SANTA BARBARA CHANNEL**

(Reference charts: British Admiralty 899 and United States National Ocean Survey C & GS 5101 and 5202)

**Description of the traffic separation scheme**

A separation zone, two miles wide, is centred upon the following geographical positions:

- (1) 34°20'.1 N., 120°30'.4 W.
- (2) 34°04'.6 N., 119°19'.6 W.
- (3) 33°44'.1 N., 118°36'.3 W.

A traffic lane, one mile wide, is established on each side of the separation zone.

The main traffic directions are:

- 105°—285° and
- 120°—300°.

**Note:**

Port Hueneme Fairway

The fairway at Port Hueneme is extended to meet the eastern edge of the northbound lane.

**IN THE APPROACHES TO LOS ANGELES –  
LONG BEACH**

(A continuation of the Santa Barbara Channel scheme)

(Reference chart: United States National Ocean Survey C & GS 5101)

**Description of the traffic separation scheme**

A separation zone, two miles wide, is centred upon the following geographical positions:

- (1) 33°39'.7 N., 118°17'.6 W.
- (2) 33°39'.7 N., 118°27'.3 W.
- (3) 33°44'.1 N., 118°36'.3 W.

A traffic lane, one mile wide, is established on each side of the separation zone.

The main traffic directions are:

- 090°—270° and
- 120°—300°.

## AUSTRALASIA

**CAUTION:**

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**SOUTH OF WILSON PROMONTORY IN THE  
BASS STRAIT**

(Reference charts: British Admiralty 1695A and Australian  
AUS 801)

**Description of the traffic separation scheme**

(a) A separation zone bounded by a line connecting the following geographical positions:

- (1) 39°11'.0 S., 146°45'.0 E.
- (2) 39°15'.0 S., 146°33'.0 E.
- (3) 39°15'.0 S., 146°15'.0 E.
- (4) 39°12'.0 S., 146°25'.0 E.

(b) A traffic lane for westbound traffic is established between the separation zone and a line connecting the following geographical positions:

- (5) 39°02'.0 S., 146°45'.0 E.
- (6) 39°09'.0 S., 146°26'.0 E.
- (7) 39°10'.8 S., 146°19'.2 E.
- (8) 39°10'.8 S., 146°15'.0 E.

(c) A traffic lane for eastbound traffic is established between the separation zone and a line connecting the following geographical positions:

- (9) 39°19'.0 S., 146°15'.0 E.
- (10) 39°19'.0 S., 146°45'.0 E.

The main traffic directions are:

- 090°—270° and
- 067°—250°.

**Inshore traffic zone**

The area between Wilson Promontory and the landward boundary of the traffic separation scheme is designated as an inshore traffic zone.

**PART III**

**OTHER ROUTEING SYSTEMS**

## DEEP WATER ROUTES

**CAUTION:**

The chartlets are for illustrative purposes only and must not be used for navigation. Mariners should consult the appropriate nautical publications and charts for up-to-date details on aids to navigation and other relevant information.

## CHARTLET OF DEEP WATER ROUTES

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## DEEP WATER ROUTE FROM LIGHTBUOYS TW/1 AND TW/A TO NORTH HINDER

(Reference charts: German Hydrographic Office 50 and 53 and Netherlands Hydrographic Office 1035)

### Description of the deep water route

The deep water route is bounded by a line connecting the following geographical positions:

- |      |               |             |
|------|---------------|-------------|
| (1)  | 54°10'54" N., | 6°00'12" E. |
| (2)  | 54°04'47" N., | 4°42'40" E. |
| (3)  | 53°35'31" N., | 3°36'30" E. |
| (4)  | 52°55'45" N., | 3°14'15" E. |
| (5)  | 52°09'55" N., | 2°35'00" E. |
| (6)  | 51°51'56" N., | 2°33'20" E. |
| (7)  | 51°53'16" N., | 2°41'38" E. |
| (8)  | 52°09'35" N., | 2°43'20" E. |
| (9)  | 52°54'10" N., | 3°22'00" E. |
| (10) | 53°32'24" N., | 3°43'29" E. |
| (11) | 54°00'00" N., | 4°46'00" E. |
| (12) | 54°06'06" N., | 6°03'00" E. |

### Note:

#### Least Waterdepths

The area bounded by a line connecting the geographical positions (1), (2), (3), (10), (11) and (12) above, was closely surveyed in 1972. The least waterdepth found in this area was more than 25 metres at LWS.

The area bounded by a line connecting the geographical positions (3), (4), (5), (6), (7), (8), (9) and (10) above, was closely surveyed in 1972. The least waterdepth found in this area was 23 metres at LWS.

See also note pertaining to the traffic separation scheme "Deutsche Bucht Light vessel Western Approach" (Page 25).

## DEEP WATER ROUTE LEADING TO EUROPOORT

(Reference charts: British Admiralty 1406 and 122 and Netherlands Hydrographic Office 1449, 1349, 1350 and 1540)

### Description of the deep water route

The deep water route is bounded by a line connecting the following geographical positions:

- |     |              |            |
|-----|--------------|------------|
| (1) | 52°00'.0 N., | 3°27'.9 E. |
| (2) | 52°02'.1 N., | 3°53'.6 E. |
| (3) | 52°01'.3 N., | 3°56'.4 E. |
| (4) | 52°01'.1 N., | 3°55'.3 E. |
| (5) | 52°01'.3 N., | 3°51'.8 E. |
| (6) | 51°59'.4 N., | 3°28'.0 E. |

The directions of the route are:

- 082°.5—262°.5 and  
112° —292°.

### Note:

#### Least waterdepth

West of the line through positions (3) and (4) above the least waterdepth is 22.5 metres at mean LLWS and east of this line 22 metres at mean LLWS. The depths are checked and maintained by frequent surveys and dredging.

#### Electronic navigational aids

The Decca Navigator Chain (Holland Chain) enables masters of deep-draught vessels equipped with a Decca receiver to be informed continuously and highly accurately about the ships' deviation from, and progress along, the axes of the route.

For optimum use of this aid in the eastern part of the deep water route a special indicator is brought on board by the pilot.

**DEEP WATER ROUTE FORMING PART OF THE  
NORTH-EASTBOUND TRAFFIC LANE OF THE  
STRAIT OF DOVER AND ADJACENT WATERS  
TRAFFIC SEPARATION SCHEME**

(Reference charts: British Admiralty 1406 and 1895)

**Description of the deep water route**

A deep water route forming part of the north-eastbound traffic lane between the north-western edge of the Sandettie Bank and the separation line/zone described in paragraphs (a) and (b) of the traffic separation scheme in the Strait of Dover has been established between the following latitudes:

- (i) 51°10'.3 N.
- (ii) 51°22'.0 N.

The main direction of the route is 046°.

**Note:**

See note pertaining to the traffic separation scheme "In the Strait of Dover and Adjacent Waters" (Page 28).

**PART IV**

**AREAS TO BE AVOIDED**

### **AREAS TO BE AVOIDED**

1. In the region of the Rochebonne shelf
2. At Alphard Banks
3. In the region of Cape Terpeniya (Sakhalin)

**CAUTION:**

The chartlets are for illustrative purposes only and must not be used for navigation. Mariners should consult the appropriate nautical publications and charts for up-to-date details on aids to navigation and other relevant information.



## AREAS TO BE AVOIDED

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## IN THE REGION OF THE ROCHEBONNE SHELF

(Reference chart: British Admiralty 2648)

### Description of the area to be avoided

In order to avoid the risk of pollution due to an accident in the area, all tankers carrying oil should avoid the area contained within a circle of radius seven miles, centred at geographical position  $46^{\circ}10'.0$  N.,  $2^{\circ}26'.0$  W. Local knowledge is essential for safe passage because of navigational hazards in the area.

## AT ALPHARD BANKS

(Reference chart: British Admiralty 2083)

### Description of the area to be avoided

All vessels should avoid the area contained within a circle of radius six miles, centred at geographical position  $35^{\circ}01'.7$  S.,  $20^{\circ}51'.2$  E.

This area is established because of insufficient aids to navigation and the proximity of the Alphard Banks to traffic routes.

## IN THE REGION OF CAPE TERPENIYA (SAKHALIN)

(Reference chart: British Admiralty 2405)

### Description of the area to be avoided

The area described below should be avoided by ships of more than 1000 tons gross tonnage carrying oil or hazardous cargoes, for reasons of conservation of unique wildlife in the area, and of inadequate survey.

The area is bounded by a line passing through Cape Davydov and the points defined as follows:

- (1) 21.8 miles at  $100^{\circ}$  from Terpeniya Lighthouse (L.H.)
- (2) 40.5 miles at  $126^{\circ}$  from Terpeniya L.H.
- (3) 41.6 miles at  $146^{\circ}.7$  from Terpeniya L.H.
- (4) 20.2 miles at  $208^{\circ}.5$  from Terpeniya L.H.
- (5) 12.0 miles at  $307^{\circ}.5$  from Terpeniya L.H. and thence eastward to the coast.