

INTERNATIONAL HYDROGRAPHIC  
ORGANIZATION



ORGANISATION HYDROGRAPHIQUE  
INTERNATIONALE

## CHART STANDARDIZATION & PAPER CHART WORKING GROUP (CSPCWG)

[A Working Group of the Committee on Hydrographic Requirements for Information Systems – CHRIS]

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To CSPCWG Members

Date 13 November 2003

Dear Colleagues,

### Subject: Archipelagic Sea Lanes (ASLs)

High on the list of priorities for the new CSPCWG is to develop new symbology for ASLs (Work plan item D.2). IMO discussions on ASLs concluded in 1998 when agreement was reached on both the general provisions for ASLs and the adoption of a partial system of ASLs in Indonesia. However, implementation of the Indonesian ASLs was delayed pending finalization of Indonesian legislation. Symbology was developed, agreed by CSC in 1998, and incorporated in the general provisions in Part H of IMO's publication Ships' Routeing. Copies of the agreed symbology were also provided to the Chairman of C&SMWG at the time. For IHO implementation, it was decided that inclusion of ASLs in M-4 and INT 1 should await the intended rewrite of M-4 sections B-435 and B-436 covering Routeing Measures, or the implementation of the first ASLs, **whichever were the sooner**.

The draft amendments to B-435 and B-436 needed to await the outcome of other CSC discussions before completion, which was delayed by the protracted discussions on ESSAs in general, and coral in particular. (ESSA will be the subject of a further CL). All work stopped with the disestablishment of the CSC. However, the Indonesian ASLs have now been implemented, and various nations have included them on their charts, using the basic symbol proposed by CSC and adopted by IMO, some with variations which some HOs have found advisable when using the symbol in practice.

I have included as annexes a copy of the relevant portion of Ships' Routeing, Part H, showing the CSC agreed symbols and associated text, and a paper prepared by UKHO commenting on their experiences in using the symbology and the reasons for adapting a national version of it. UKHO chart 2056 (Edition 4 published 28 August 2003) is a good example of a chart using UKHO's adaptation of the symbol (a section is attached).

CSPCWG members should state whether:

A. they consider the symbol as agreed in 1998 by CSC (and included in Ships' Routeing) should be adopted at once, or

- B. they consider the symbol to be adopted should be modified, similar to the variation used by UKHO, or
- C. they propose other options. (If so, please give details).

Other CHRIS WG members are welcome to send their comments. CSPCWG Secretary will then prepare a new draft paragraph for section B-435 of M-4.

Please respond by 8 January 2004, preferably using "reply to all" email. This will allow other WG members to read your comments and agree (or perhaps disagree) with them. In the short term, we propose to use this system experimentally, as a simple form of discussion forum. If your email does not have a "reply to all" facility, please copy the address list from the email carrying this letter and enter it as the address list for your outgoing response. (Of course, if you want to make your comments private to the Chairman and Secretary only, you are free to do this).

Finally, I hope you have had opportunity to look at the CSPCWG page on the IHB website, which has now been populated with our basic documents. Circular letters will also be added as they are issued.

Yours sincerely,

Peter G.B. Jones,  
Chairman

Annex A: General Provisions for the Adoption, Designation and Substitution of Archipelagic Sea Lanes

Annex B: Depiction of Archipelagic Sea Lanes in Indonesian Waters on United Kingdom Admiralty Charts

Attachment: Portion of UK chart 2056

## **General provisions for the adoption, designation and substitution of archipelagic sea lanes (from IMO Ships' Routeing, Part H)**

### **INTRODUCTION**

This Part takes into account the unique character of archipelagic sea lanes as a routeing system. The legal regime for archipelagic sea lanes is contained in Part IV of the United Nations Convention on the Law of the Sea (UNCLOS). UNCLOS provides that designation and substitution of an archipelagic sea lane by an archipelagic State automatically includes a corresponding air route above the sea lane. Use of an air route above a designated archipelagic sea lane by civil aircraft engaged in international air navigation shall be in accordance with any relevant requirements of the International Civil Aviation Organization (ICAO). International air traffic services (ATS) routes above the archipelagic waters to be used by civil aircraft engaged in international air navigation are subject to the approval process of ICAO.

### **1 OBJECTIVES**

1.1 The purpose of these provisions is to provide guidance for the preparation, consideration and adoption of proposals for the adoption, designation and substitution of archipelagic sea lanes.

### **2 DEFINITIONS AND CLARIFICATIONS**

2.1 The terms used in connection with matters relating to archipelagic sea lanes have the same meaning as in UNCLOS. These terms include:

- .1 **Archipelagic State**
- .2 **Archipelagic sea lane**
- .3 **Archipelagic sea lanes passage**
- .4 **Innocent passage**

2.2 The following terms are also used in connection with matters relating to archipelagic sea lanes:

#### **.1 All normal passage routes and navigational channels as required by UNCLOS**

All normal passage routes used as routes for international navigation or overflight through or over archipelagic waters and, within such routes, so far as ships are concerned, all normal navigational channels, provided that duplication of routes of similar convenience between the same entry and exit points shall not be necessary.

#### **.2 Partial archipelagic sea lanes proposal**

An archipelagic sea lanes proposal by an archipelagic State which does not meet the requirement to include all normal passage routes and navigational channels as required by UNCLOS.

### **3 PROCEDURES AND RESPONSIBILITIES**

#### **Procedures and functions of IMO**

3.1 IMO is recognized as the competent international organization responsible for adopting archipelagic sea lanes in accordance with the relevant provisions of UNCLOS and these provisions.

3.2 When adopting a proposed archipelagic sea lane, IMO will ensure that the proposed sea lane is in accordance with the relevant provisions of UNCLOS and determine if the proposal is a partial archipelagic sea lanes proposal. IMO may adopt only such archipelagic sea lanes as may

be agreed by the Government of the proposing archipelagic State.

3.3 Upon receipt of a proposal for designating archipelagic sea lanes and before consideration for adoption, the IMO shall ensure that the proposal is disseminated to all Governments and ICAO so as to provide them with sufficient opportunity to comment on the proposal.

3.4 Following a proposal to the IMO by an archipelagic State, other States may request that the archipelagic State propose additional sea lanes to include all other normal passage routes used as routes for international navigation or overflight through or over archipelagic waters as required by UNCLOS.

3.5 In order for IMO to ensure that sea lanes proposed for adoption include all normal passage routes, IMO shall retain continuing jurisdiction (i.e., competence) over the process of adopting archipelagic sea lanes until such time that sea lanes including all normal passage routes have been adopted as required by UNCLOS.

**Responsibilities of Governments and recommended practices**

3.6 The Government of an archipelagic State considering proposing archipelagic sea lanes should consult at an early stage with other user Governments and the IMO.

3.7 Subject to paragraph 3.9, the Government of an archipelagic State which wishes to designate archipelagic sea lanes shall propose to IMO for adoption archipelagic sea lanes including all normal passage routes and navigational channels as required by UNCLOS.

3.8 An archipelagic sea lanes proposal shall provide sea lanes suitable for the continuous and expeditious passage of foreign ships and aircraft in the normal mode through or over the archipelagic waters and the adjacent territorial sea. In proposing archipelagic sea lanes, the Government shall explain in its proposal the suitability of such sea lanes for such continuous and expeditious passage.

3.9 The proposal shall also indicate if it is a partial archipelagic sea lane proposal.

3.10 In proposing archipelagic sea lanes, Governments shall also include the number, edition and, where possible, the geodetic datum of the reference charts used for the proposed sea lanes, together with copies of the reference charts listed in the proposed sea lanes showing the axis of the proposed sea lanes.

3.11 It is recommended that in areas where the 10 per cent rule applies (see paragraph 6.3) the outer limits of the sea lane should, so far as practicable, be clearly indicated on the charts.

3.12 If IMO adopts a partial archipelagic sea lane proposal as a partial system of archipelagic sea lanes, the archipelagic State shall periodically inform IMO on its plans for conducting further surveys and studies that will result in the submission to IMO of proposals for adoption of all normal passage routes and navigational channels as required by UNCLOS, along with the general location of these lanes and time frame for this effort. In such a case, the archipelagic State is ultimately required to propose for adoption archipelagic sea lanes including all normal passage routes and navigational channels as required by UNCLOS.

3.13 Archipelagic sea lanes adopted by IMO shall come into effect on a date promulgated by the

Government of the archipelagic State that proposed the sea lanes, which shall be communicated to IMO by that Government. That date shall not be earlier than six months after the date of designation of the sea lanes by that Government. Either Notices to amend charts, or revised charts to depict the sea lanes, shall be made available at least six months before the sea lanes come into effect.

#### **4 CRITERIA FOR CONSIDERATION AND ADOPTION OF PROPOSALS**

4.1 Archipelagic sea lane proposals shall conform with the relevant provisions of UNCLOS, including Article 53, and the requirements of this Part.

4.2 The adequacy of aids to navigation, hydrographic surveys and nautical charts of the area, as well as the configuration of the archipelagic state, shall be considered.

4.3 Routeing measures in the vicinity shall also be considered.

#### **5 SUBSTITUTION OF ARCHIPELAGIC SEA LANES AND TRAFFIC SEPARATION SCHEMES**

5.1 An archipelagic State may, when circumstances require, after giving due publicity thereto, substitute other sea lanes or traffic separation schemes for any sea lanes or traffic separation schemes previously designated or prescribed by it.

5.2 The provisions of this Part concerning the designation of archipelagic sea lanes apply equally to the substitution of archipelagic sea lanes.

5.3 The provisions of this Part and Part A of the IMO publication on Ships' Routeing concerning the prescription of traffic separation schemes apply equally to the substitution of traffic separation schemes.

#### **6 USE OF ARCHIPELAGIC SEA LANES AND NORMAL PASSAGE ROUTES**

6.1 Ships and aircraft shall exercise in accordance with UNCLOS their right of archipelagic sea lanes passage in the normal mode solely for the purpose of continuous, expeditious and unobstructed transit between one part of the high seas or an exclusive economic zone and another part of the high seas or an exclusive economic zone.

6.2 Ships and aircraft in archipelagic sea lanes passage shall respect applicable sea lanes and the relevant provisions of UNCLOS, including Article 39. Ships shall also respect any traffic separation schemes in archipelagic sea lanes established in accordance with Part A of the IMO publication on Ships' Routeing.

6.3 Ships and aircraft in archipelagic sea lanes passage shall not deviate more than 25 nautical miles to either side of the axis lines defining archipelagic sea lanes, provided that such ships and aircraft shall not navigate closer to the coasts than 10 per cent of the distance between the nearest points on islands bordering the sea lane.

6.4 Within archipelagic sea lanes, traffic is not separated, except in traffic separation schemes.

6.5 Except for internal waters within archipelagic waters, ships of all States enjoy the right of innocent passage through archipelagic waters and the territorial sea.

6.6 If an archipelagic State does not designate sea lanes and air routes thereabove, the right of archipelagic sea lanes passage may be exercised through the routes normally used for international navigation.

6.7 Where a partial archipelagic sea lanes proposal has come into effect, the right of archipelagic sea lanes passage may continue to be exercised through all normal passage routes used as routes for international navigation or overflight in other parts of archipelagic waters in accordance with UNCLOS.

6.8 The right of archipelagic sea lanes passage shall not be suspended, hampered or obstructed.

6.9 The archipelagic State shall give appropriate publicity to any danger to navigation within archipelagic sea lanes of which it has knowledge.

## 7 REPRESENTATION ON CHARTS

7.1 Axis lines of archipelagic sea lanes are shown on charts for the purpose of defining the sea lanes. Axis lines do not indicate any routes or recommended tracks as defined in Part A of the IMO Publication on Ships' Routeing.

7.2 The axis of designated archipelagic sea lanes, including a listing of geographical co-ordinates with geodetic datum that define axis turning points, so far as practicable the outer limits of the sea lanes where the 10 per cent rule applies (see paragraphs 3.11 and 6.3), and any prescribed traffic separation schemes shall be clearly shown on all appropriate scale charts, to which due publicity shall be given, and referred to in complementary hydrographic publications.

7.3 The legends, symbols and notes appearing in paragraphs 7.4, 7.5, 7.6 and 7.7 are recommended by the International Hydrographic Organization as guidance for the representation of details of archipelagic sea lanes and associated measures on nautical charts. They are included to illustrate the information likely to be found on charts and as an aid to those designing archipelagic sea lanes proposed for adoption by IMO.

### 7.4 Use of legends on charts and in notes

<b>Legend</b>	<b>Use of legend</b>
<b>Archipelagic Sea Lane</b>	Not usually shown on charts but referred to in notes
<b>ASL</b>	Shown on charts in conjunction with symbol for axis line (paragraph 7.5)

### 7.5 Symbol for axis line of archipelagic sea lanes

Unless otherwise specified, symbols are printed on charts in colour, usually magenta.

<b>Description</b>	<b>Symbol</b>	<b>Note</b>
1 Axis line of archipelagic sea lane		1
2 Legend ASL (see Note)		2
3 Turning point of axis line of archipelagic sea lane		3

#### Notes:

1 The axis line will be shown through other routeing measures without interruption, since it may not necessarily form the centre line of a routeing measure established in Archipelagic Sea Lanes, in accordance with Part A of the IMO Publication on Ships' Routeing.

2 The legend **ASL (see Note)** should normally be used. The full legend **Archipelagic Sea Lane**

(see Note) may, however, be used in cases where it is considered appropriate.

3 Turning points are indicated by joined pecked lines.

### 7.6 Symbol for outer limits of archipelagic sea lanes

Unless otherwise specified, symbols are printed on charts in colour, usually magenta.

Description	Symbol	Note
1 Limit of area in which 10% rule applies		1
2 Outer limit		Not usually shown on charts but referred to in notes

#### Note:

1 The solid half-circle indicator is on the side of the limit of the area which lies within 10% of the distance between the nearest points on islands bordering the sea lane.

### 7.7 Cautionary and explanatory notes on charts

The following note provides an example of the type of information which should be included in the note:

#### ASL ± ARCHIPELAGIC SEA LANES

**Archipelagic Sea Lanes as defined in UNCLOS have been designated in the area of this chart. Vessels exercising archipelagic sea lanes passage shall not deviate more than 25 miles from the charted axis line and shall not navigate, while in archipelagic sea lanes passage, within the areas indicated thus:  .**

**Where a traffic separation scheme exists in a narrow channel in such a sea lane, rules for the use of traffic separation schemes apply. It should be noted that the axis line of the ASL does not indicate the deepest water, any route or recommended track.**



## DEPICTION OF ARCHIPELAGIC SEA LANES IN INDONESIAN WATERS ON UNITED KINGDOM ADMIRALTY CHARTS – UKHO EXPERIENCE

### A. Background

1. IMO discussed and adopted the principles of Archipelagic Sea Lanes (ASL) at the 69<sup>th</sup> Session of MSC (11 to 20 May 1998). SN/Circ.199 explained the purpose of ASLs, how they would work, their representation on charts and associated cautionary notes. ASL affect shipping, both surface and subsurface, and aircraft operations. Subsequently, a partial ASL system came into effect in Indonesian waters on 28 December 2002.

### B. Depiction on Admiralty charts (all symbols, legends and notes in magenta)

1. The full extent of the changes needed careful consideration and plots were obtained on a chart covering the whole of the area. These plots showed the axis lines, and boundaries drawn 25 miles and 27.8 miles either side of the ASL axis. The latter distance is important as any island, or part of an island, that fall within 27.8 miles affects the 10% Rule, see Diagram 1 below and section C .

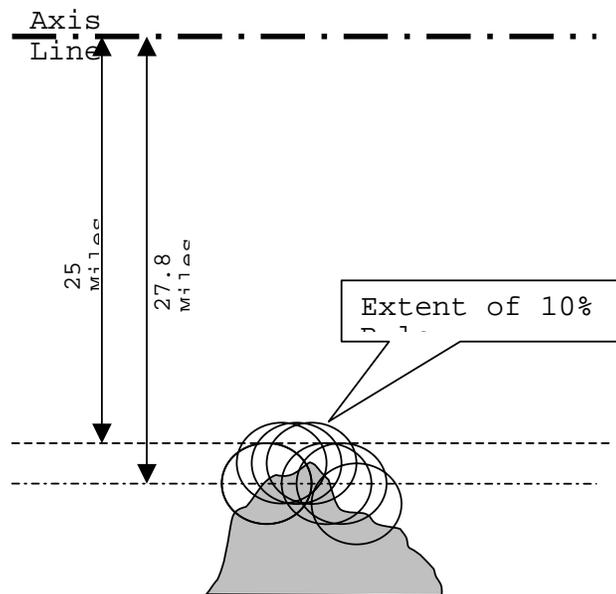


Diagram 1

2. An internal UKHO meeting was held on 29 January 2003, to determine whether the depiction on Admiralty charts should be exactly as suggested in Ships' Routeing, or whether the outer limits of the ASL lanes should be shown in full. It was concluded that:
  - 2.1. The 10% Rule could be misinterpreted; it was essential that Admiralty publications were unambiguous.
  - 2.2. As much information as possible should be shown on the face of Admiralty

charts, with supporting information in related publications, to avoid any conflict or misunderstandings within these waters.

2.3. Passage could be taken either side of islands situated within the lanes.

2.4. The 10% Rule could restrict or cut off normal passages used by vessels. (See Admiralty Chart 2056 for example).

3. It was therefore decided that the full length and width of the ASL would be shown on all charts, except charts on scales smaller than 1:1.5M. (For these latter charts only the axis line would be charted). This would provide users with the complete picture, negating the need to calculate the 25 miles from the axis line, or the 10% distances from coastlines. It would show which passages are now “closed” to them if in ASL Passage. It would also draw attention to ASLs even where the Axis Line or adjacent coastline does not fall on the chart. (See Admiralty Chart 918 or NM block correction for chart 3017 – NM3624/03 – for good examples of this).
4. Islands that fall wholly within the lane would need the 10% Rule applied around the whole of the island.
5. The outer limit, , needed to be shown through black and magenta detail without obscuring it. It was therefore decided to insert the symbol as a 30% stipple. (This method had been used successfully for pipelines in congested areas, such as on Admiralty chart 333 in the Gulf of Suez).
6. It was also decided to use 30% stipple for the axis line, partly to avoid the need to break it for black and other magenta detail, but also, it was considered that by reducing its emphasis in this way, there would be less risk that mariners might interpret the axis line as a route.
7. Preliminary Notice to Mariners 1103(P)/03 was issued immediately, giving details of the routes, explanatory notes and a diagram of the routes.
8. New UKHO symbology was developed for both the axis line and the outer lane limit. (This was issued as NM block correction 3373/03 to UKHO symbols booklet 5011 (INT 1), and shows both the symbology agreed by CSC, and the UKHO adaptation).
9. A macro was developed to calculate the 10% Rule (see item C.2. below).
10. UKHO informed the Chief Hydrographer, Dinas Hidro – Oseanografi, Indonesia, the Australian HO and US (NIMA) of these decisions.
11. Indonesian Weekly NM 4, dated 24 January 2003, received in UKHO 13 March 2003, made it clear that the Indonesian Government’s concept is that all foreign vessels and aircraft must exercise ASL Passage through their waters. This reinforced the decision to show the full depiction on Admiralty charts.
12. Discussion with chart users has also confirmed that the greater detail shown on Admiralty charts will help in passage planning and navigation through the archipelago.

### **C. The 10% Rule**

1. The definition of the 10% Rule needed to be clarified:
  - 1.1. IMO SN/Circ.206 states that “Where an island borders the sea lane, ships in ASL passage may not navigate closer to the coast than 10% of the distance between the

nearest point on the island and the axis line of the sea lane”.

1.1.1. This implies that, for example, where the nearest point of an island is 10 miles from the axis line then ships can navigate to within one mile of the coast of that island, no matter how far the remaining coast is from the axis line.

1.1.2. No mention is made of islands that fall wholly within the sea lanes.

1.1.3. No mention is made for those islands that are beyond 25 miles from the axis line where, when the 10% Rule is applied to them, the exclusion limit encroaches into the sea lane.

1.2. UKHO’s Law of the Sea officer’s understanding, from meetings that he attended on this matter, was that ships in ASL passage could not navigate closer to the coast than 10% of the distance from the axis line to adjacent section of coast. This is a safer interpretation.

1.2.1. This interpretation means that the 10% zone would vary around the coastline, becoming wider the further the coastline is from the axis line.

1.2.2. Islands that fall wholly within the sea lanes would have the 10% Rule applied as in 1.2.1.

1.2.3. Islands within 27.8 miles of the axis would have the 10% Rule applied and the lane outer limit would be amended accordingly.

2. A macro was developed to determine the position of the outer limit where the 10% rule applies. A digital overlay to the chart is produced, showing the axis line and coastline within 27.8 miles of it, with a limited amount of generalisation. The macro would construct lines at 90° from the axis lines to the coastline (AB), calculate the length of that line, find the point (C) at 10% of that distance from the coastline (B) then draw a circle radius BC centred on point B, see Diagram 2 below.

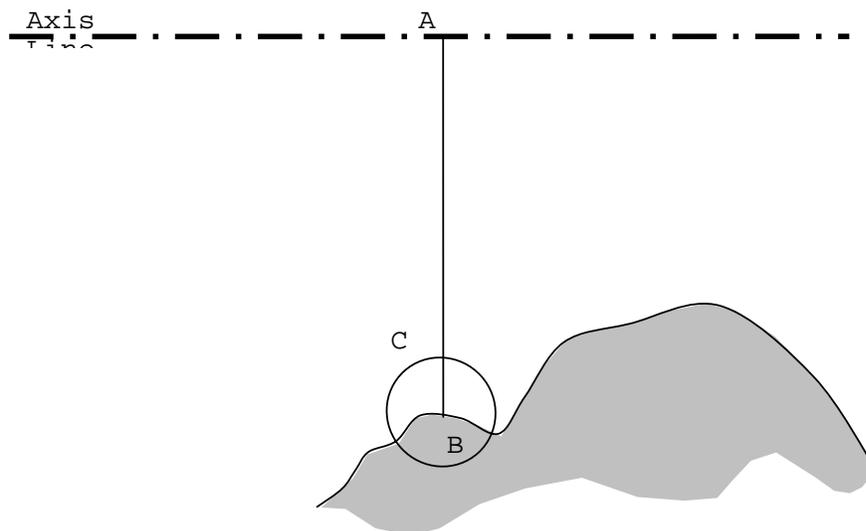


Diagram 2

- This action is repeated at intervals according to the complexity of the coastline, but generally at intervals of 2mm on the face of the charts. Where coastline doubled back on itself or where the far side of islands needed to be captured the process was repeated by deleting the coastline that previously “blanked” these sections of coastline, see Diagram 3 below.

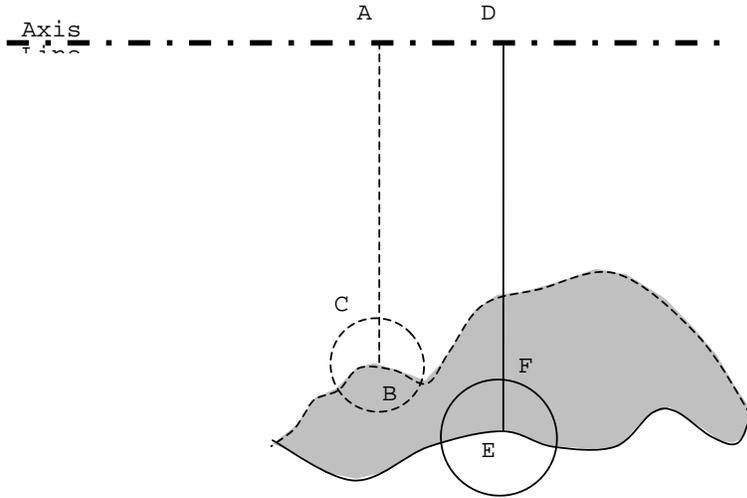


Diagram 3

- The resulting circles, see Diagram 4 below, gave a very precise definition of the 10% Rule and formed the base line from which to generate the outer lane symbol.

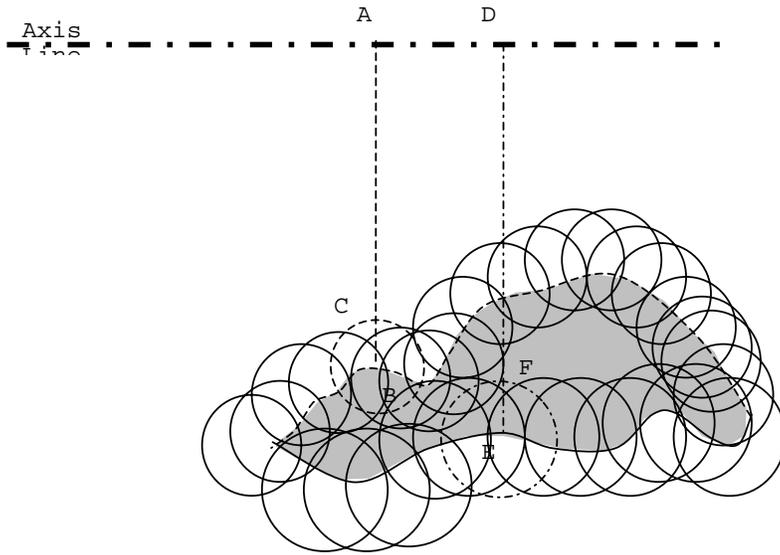


Diagram 4

5. In areas on the acute side of turns in the axis line it was essential to construct a division between the two sections to ensure that the macro did not create circles based on the wrong section. This was created by constructing a line from the axis turning point to where the 25 mile offset lines intersected. If this division was not made then some areas would have exclusion areas greater than 10%, see Diagram 5 below.
6. The macro was unable to be worked in areas on the obtuse side of the turn in the axis lines. In these areas any regions requiring the 10% Rule were constructed manually by radiating lines from the axis turning point to the outer limit, not forgetting that this was an arc of 25 miles from the axis point, 27.8 miles to the outer edge. Once the line was constructed the same process as used in the macro of producing the 10% distance was undertaken.

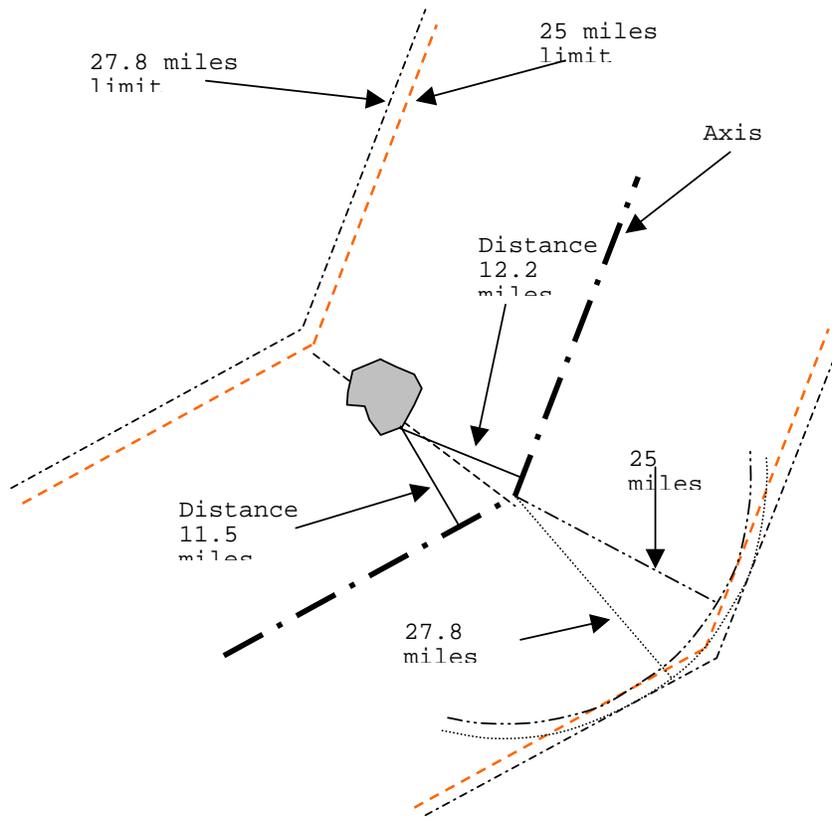


Diagram 5

**D. Chart note:**

1. The note as suggested in Ships' Routing:

**ASL - ARCHIPELAGIC SEA LANES**

Archipelagic Sea Lanes as defined in UNCLOS have been designated in the area of this chart. Vessels exercising archipelagic sea lanes passage shall not deviate more than 25 miles from the charted axis line and shall not navigate, while in archipelagic sea lanes passage, within the areas indicated thus: 

Where a traffic separation scheme exists in a narrow channel in a such a sea lane, rules for the use of traffic separation schemes apply. It should be noted that the axis line of the ASL does not indicate the deepest water, any route or recommended track.

was adapted slightly for use on Admiralty charts, in 2 versions:

Scales 1:1.5M and larger

**ASL - ARCHIPELAGIC SEA LANES**

Archipelagic Sea Lanes, as defined in UNCLOS, have been designated in the area of this chart. Vessels exercising archipelagic sea lanes passage shall not deviate more than 25 miles from the charted axis line and shall not navigate, while in archipelagic sea lanes passage, to shoreward of the areas indicated thus: 

The axis line of the ASL does not indicate the deepest water nor any recommended route or track. For further details, see The Mariner's Handbook and Admiralty Sailing Directions.

Scales 1:1.5M and smaller

**ASL - ARCHIPELAGIC SEA LANES**

Archipelagic Sea Lanes, as defined in UNCLOS, have been designated in the area of this chart. Vessels exercising archipelagic sea lanes passage shall not deviate more than 25 miles from the charted axis line. The axis line of the ASL does not indicate the deepest water nor any recommended route or track. For further details, see larger scale charts, The Mariner's Handbook and Admiralty Sailing Directions.

2. As implied by the above notes, information needed to be included in The Mariner's Handbook (NP100) and Admiralty Sailing Directions (NPs 31, 34, 35 and 36) covering these waters.
3. NM 09/1103(P)/03 listed the axis co-ordinates and changes to publications, giving ASL Definition, Purpose and positions of the axis lines. Additional updates were made to The Mariner's Handbook and Admiralty Sailing Directions in NMWeek 12/2003. Other publications (e.g. "Ocean Passages for the World" and Routing chart 5123) will be corrected at next revision.

**E Summary**

1. Though not precisely as envisaged by IMO, or the Chart Standardisation Committee of IHO, the charting of the full outer lane limit on BA charts is precise and clear.
2. The need to give as much unambiguous information to the mariner as possible on the face of the chart and in publications has been achieved.
3. The use of reduced strength magenta (30% stipple) symbol for the outer lane limits has meant that the full limit can be shown without obscuring existing black and magenta detail.
4. The use of reduced strength magenta (30% stipple) for the axis line has meant that it can be shown unbroken for other detail, and has reduced the risk of it being mis-interpreted as a route.



Section of UKHO chart 2056 (Edition 4 published 28 August 2003)

