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Ref. T2-NAVSEC/2.7.1

COLREG.2/Circ.54
28 May 2004

NEW AND AMENDED TRAFFIC SEPARATION SCHEMES

1 The Maritime Safety, at its seventy-eighth session (12 to 21 May 2004), adopted, in accordance with the provisions of resolution A.858(20), new and amended existing traffic separation schemes and associated routeing measures, listed at annexes 1 to 5 as follows:

- .1 "Off Ra's al kuh" (new scheme);
- .2 "Approaches to the Port of Ra's al Khafji" (new scheme);
- .3 "In the Adriatic Sea" (new scheme);
- .4 "Between Korsoer and Sprogoe" (amended scheme); and
- .5 "In the Singapore Strait" (amended scheme).

2 The new and amended traffic separation schemes (listed in subparagraphs 1.1 to 1.4 above and detailed at annexes 1, 2, 3 and 4 will be implemented at 0000 hours UTC on 1 December 2004, while the amendment to the existing traffic separation scheme "In the Singapore Strait" (annex 5) will be implemented at 0000 hours UTC on 1 January 2005.

ANNEX 1

**NEW AND AMENDED TRAFFIC SEPARATION SCHEMES AND
ASSOCIATED ROUTEING MEASURES**

NEW TRAFFIC SEPARATION SCHEME OFF RA'S AL KUH

(Reference chart: British Admiralty Chart No: 2851

Note: This chart is based on World Geodetic System 1984 Datum (WGS 84))

The new traffic separation scheme (TSS) off Ra's al Kuh consists of:

- Two traffic lanes 2 miles wide;
- One intermediate traffic separation zone 2 miles wide;
- One associated inshore zone.

The direction of the navigation is:

- TSS inner traffic lane: 320°(T) inbound course and 330°(T) outbound course towards the Strait of Hormuz; and
- TSS outer traffic lane: 150°(T) inbound and 140°(T) outbound course towards the Gulf of Oman.

Description of the new traffic separation scheme off Ra's al Kuh:

(a) Outer traffic separation line bounded by a line connecting the following geographical positions:

- | | | |
|-----|---------------|---------------|
| (1) | 25° 45'.50 N | 057° 03'.30 E |
| (2) | 25° 39'.60 N | 057° 07'.10 E |
| (3) | 25° 34'.05 N0 | 057° 12'.00 E |

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

- | | | |
|-----|--------------|---------------|
| (4) | 25° 47'.50 N | 057° 07'.20 E |
| (5) | 25° 42'.25 N | 057° 10'.55 E |
| (6) | 25° 36'.65 N | 057° 15'.55 E |
| (7) | 25° 35'.30 N | 057° 13'.80 E |
| (8) | 25° 40'.90 N | 057° 08'.80 E |
| (9) | 25° 46'.50 N | 057° 05'.30 E |

(c) The limits of the inshore traffic zone along the coastline lies between the following geographical positions:

- | | | |
|------|--------------|---------------|
| (10) | 25° 48'.45 N | 057° 09'.15 E |
| (11) | 25° 43'.55 N | 057° 12'.25 E |
| (12) | 25° 39'.30 N | 057° 19'.10 E |
| (13) | 25° 52'.50 N | 057° 17'.30 E |
| (14) | 25° 45'.30 N | 057° 26'.70 E |

- (d) An outer traffic lane for south-east-bound shipping established between the separation zones described in (a) and (b).
- (e) An inner traffic lane for north-west-bound shipping established between the traffic separation zone described in (b) and the associated inshore traffic zone described in (c).

ANNEX 2

**NEW TRAFFIC SEPARATION SCHEME FOR THE APPROACHES TO THE PORT OF
RA'S AL KHAFJI**

(Reference chart: British Admiralty Chart No: 3774 published June 1999

Note: This chart is based on World Geodetic System 1984 Datum (WGS 84))

The new traffic separation scheme for the Ra's Al Khafji approaches will consist of:

Two traffic lanes and one traffic separation zone between them.

The direction of navigation will be:

- inbound traffic lane, 270°(T) from the seaward limit of the scheme to the turning point 5 miles NNW of the Umm al Gharabi shoal, thence 210°(T) to the southern limit of the scheme immediately north of the tanker anchorage;
- outbound traffic lane, 030°(T) as far as the turning point 3.5 miles NNW of the Umm al Gharabi shoal, thence between 090°(T) and 093°(T) to the seaward limit of the scheme.

Description of the new traffic separation scheme for Ra's Al Khafji approaches:

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

| | | |
|-----|--------------|---------------|
| (1) | 28° 38' 24"N | 049° 07' 00"E |
| (2) | 28° 38' 24"N | 048° 45' 50"E |
| (3) | 28° 30' 18"N | 048° 40' 40"E |
| (4) | 28° 30' 04"N | 048° 41' 07"E |
| (5) | 28° 38' 12"N | 048° 46' 18"E |
| (6) | 28° 38' 12"N | 049° 07' 00"E |

(b) A traffic lane for inbound traffic between the separation zone and the following geographical positions:

| | | |
|-----|--------------|---------------|
| (7) | 28° 39' 24"N | 049° 07' 00"E |
| (8) | 28° 39' 24"N | 048° 45' 02"E |
| (9) | 28° 30' 49"N | 048° 39' 35"E |

(c) A traffic lane for outbound traffic between the separation zone and the following geographical positions:

| | | |
|------|--------------|---------------|
| (10) | 28° 29' 36"N | 048° 42' 03"E |
| (11) | 28° 37' 10"N | 048° 46' 54"E |
| (12) | 28° 36' 06"N | 049° 07' 00"E |

ANNEX 3**NEW TRAFFIC SEPARATION SCHEMES IN THE ADRIATIC SEA****IN THE NORTH ADRIATIC SEA – EASTERN PART**

Reference chart: No. 435 of the Italian Navy Hydrographical Institute, Edition 1993, Datum ED-50, and No. 101 of the Hydrographical Institute of the Republic of Croatia, Edition 1998, Datum Hermanskögel, Bessel Elipsoid.

The co-ordinates listed below are in WGS 84.

Description of the traffic separation scheme

4. A separation zone is bounded by a line connecting the following geographical positions:

| | | | |
|-------------------|---------------|-------------------|---------------|
| (4a) 44° 05'.90 N | 014° 03'.97 E | (4c) 44° 55'.30 N | 013° 21'.17 E |
| (4b) 44° 06'.70 N | 014° 05'.77 E | (4d) 44° 54'.80 N | 013° 19'.57 E |

5. A traffic lane for northbound traffic is established between the separation zone and a line connecting the following geographical positions:

| | | | |
|------------------|---------------|------------------|---------------|
| (5a) 44° 08'.20N | 014° 08'.77 E | (5b) 44°56'.90 N | 013° 24'.67 E |
|------------------|---------------|------------------|---------------|

6. A traffic lane for southbound traffic is established between the separation zone and a line connecting the following geographical positions:

| | | | |
|-------------------|---------------|-------------------|----------------|
| (6a) 44° 04'.40 N | 014° 00'.97 E | (6b) 44° 53'.20 N | 013° 16'. 17 E |
|-------------------|---------------|-------------------|----------------|

The established directions of traffic flow are: 327°-147°

IN THE NORTH ADRIATIC SEA – WESTERN PART

Reference chart: No. 435 of the Italian Navy Hydrographical Institute, Edition 1993, Datum ED-50, and No. 101 of the Hydrographical Institute of the Republic of Croatia, Edition 1998, Datum Hermanskögel, Bessel Elipsoid

The co-ordinates listed below are in WGS 84.

Description of the traffic separation scheme

8. A separation zone is bounded by a line connecting the following geographical positions:

| | | | |
|-------------------|---------------|-------------------|---------------|
| (8a) 43° 58'.30 N | 013° 52'.47 E | (8d) 44° 44'.50 N | 012° 55'.67 E |
| (8b) 44° 00'.80 N | 013° 54'.97 E | (8e) 44° 43'.80 N | 012° 53'.50 E |
| (8c) 44° 28'.00 N | 013° 06'.77 E | (8f) 44° 26'.0 N | 013° 03'.47 E |

9. A traffic lane for northbound traffic is established between the separation zone and a line connecting the following geographical positions:

- (9a) 44° 02'.80 N 013° 57'.37 E (9c) 44° 45'.40N 012° 59'.40 E
(9b) 44° 30'.50 N 013° 08'.47 E

10. A traffic lane for southbound traffic is established between the separation zone and a line connecting the following geographical positions:

- (10a) 43° 55'.80 N 013° 49'.97 E (10c) 44° 43'.10 N 012° 50'.20 E
(10b) 44° 23'.50 N 013° 00'.97 E

The established directions of traffic flow are: 308° - 128°
336° - 159°

PRECAUTIONARY AREA AT THE SOUTHERN LIMITS OF THE TRAFFIC SEPARATION SCHEME

Description of the precautionary area

Precautionary area is established by a line connecting the following geographical position:

- (3) 43° 49'.65 N 014° 01'.18 E (6a) 44° 04'.40 N 014° 00'.97 E
(4) 43° 59'.85 N 014° 16'.61 E (9a) 44° 02'.80 N 013° 57'.37 E
(5a) 44° 08'.20N 014° 08'.77 E (8a) 43° 58'.30 N 013° 52'.47 E
(4b) 44° 06'.70 N 014° 05'.77 E (8b) 44° 00'.80 N 013° 54'.97 E
(4a) 44° 05'.90 N 014° 03'.97 E (10a) 43° 55'.80 N 013° 49'.97 E

APPROACHES TO GULF OF TRIESTE

Reference chart: No 435 of the Italian Hydrographical Institute, Edition 1993, Datum ED-50, and No. 101 of the Hydrographical Institute of the Republic of Croatia, Edition 1998, Datum Hermanskögel, Bessel Elipsoid

The co-ordinates listed below are in WGS 84.

Description of the traffic separation scheme

11. A separation zone is bounded by a line connecting the following geographical positions:

- (11a) 45° 08'.60 N 013° 06'.47 E (11c) 45° 23'.20 N 013° 06'.47 E
(11b) 45° 09'.40 N 013° 10'.97 E (11d) 45° 21'.50 N 013° 02'.57 E

12. A traffic lane for northbound traffic is established between the separation zone and a line connecting the following geographical positions:

- (12a) 45° 10'.50 N 013° 17'.17 E (12b) 45° 22'.50 N 013° 13'.27 E

13. A traffic lane for southbound traffic is established between the separation zone and a line connecting the following geographical positions:

(13a) 45° 07'.50 N 013° 00'.37 E (13b) 45° 19'.00 N 012° 56'.87 E

The established directions of traffic flow are: 347° - 167°

APPROACHES TO GULF OF VENICE

Reference chart: No 435 of the Italian Hydrographical Institute, Edition 1993, Datum ED-50, and No. 101 of the Hydrographical Institute of the Republic of Croatia, Edition 1998, Datum Hermanskögel, Bessel Elipsoid

The co-ordinates listed below are in WGS 84.

Description of the traffic separation scheme

14. A separation zone is bounded by a line connecting the following geographical positions:

(14a) 44° 55'.30 N 012° 43'.97 E (14c) 45° 12'.70 N 012° 35'.97 E
(14b) 44° 56'.80 N 012° 47'.97 E (14d) 45° 11'.30 N 012° 31'.97 E

15. A traffic lane for northbound traffic is established between the separation zone and a line connecting the following geographical positions:

(15a) 44° 57'.50 N 012° 50'.47 E (15b) 45° 13'.60 N 012° 38'.77 E

16. A traffic lane for southbound traffic is established between the separation zone and a line connecting the following geographical positions:

(16a) 44° 54'.20 N 012° 41'.47 E (16b) 45° 10'.40 N 012° 29'.47 E

The established directions of traffic flow are: 333° - 153°

IN THE GULF OF TRIESTE

Reference chart: No. 39 of the Italian Navy Hydrographical Institute, Edition 1991, Datum Roma 40, and No. 100-15 of the Hydrographical Institute of the Republic of Croatia, Edition 1998, Datum Hermanskögel, Bessel Elipsoid.

The co-ordinates listed below are in WGS 84.

Description of the traffic separation scheme

17. A separation zone is bounded by a line connecting the following geographical positions:

(17a) 45° 31'.34 N 013° 20'.90 E (17c) 45° 36'.97 N 013° 32'.83 E
(17b) 45° 35'.48 N 013° 32'.62 E (17d) 45° 32'.84 N 013° 20'.00 E

18. A traffic lane for north-east-bound traffic is established between the separation zone and a line connecting the following geographical positions:

(18a) 45° 29'.30 N 013° 22'.10 E (18b) 45° 34'.24 N 013° 32'.20 E

19. A traffic lane for south-west-bound traffic is established between the separation zone and a line connecting the following geographical positions:

(19a) 45° 34'.74 N 013° 18'.90 E (19b) 45° 38'.74 N 013° 32'.80 E

The established directions of traffic flow are: 058° - 248°

APPROACHES TO/FROM KOPER

Reference chart: No. 39 of the Italian Navy Hydrographical Institute, Edition 1991, Datum Roma 40, and No. 100-15 of the Hydrographical Institute of the Republic of Croatia, Edition 1998, Datum Hermanskögel, Bessel Elipsoid.

The co-ordinates listed below are in WGS 84.

Description of the traffic separation scheme

21. A separation zone is bounded by a line connecting the following geographical positions:

(21a) 45° 35'.24 N 013° 35'.00 E (21c) 45° 36'.44 N 013° 37'.50 E
(21b) 45° 35'.04 N 013° 39'.50 E

23. A traffic lane for eastbound traffic is established between the separation zone and a line connecting the following geographical positions:

(23a) 45° 34'.24 N 013° 35'.00 E (23b) 45° 33'.94 N 013° 39'.40 E

24. A traffic lane for northwestbound traffic is established between the separation zone as defined in Paragraph 21. and a separation zone connecting the following geographical positions:

(24a) 45° 36'.34 N 013° 39'.70 E (24c) 45° 36'.34 N 013° 41'.80 E
(24b) 45° 35'.44 N 013° 41'.00 E

The established directions of traffic flow are: 094° - 315°

APPROACHES TO/FROM MONFALCONE

25. A separation zone is bounded by a line connecting the following geographical positions:

(25a) 45° 40'.34 N 013° 38'.00 E (25c) 45° 42'.74 N 013° 37'.30 E
(25b) 45° 40'.34 N 013° 37'.30 E (25d) 45° 42'.74 N 013° 38'.00 E

26. A traffic lane for northbound traffic is established between the separation zone and a line connecting the following geographical positions:

(26a) 45° 4 0'.34 N 013° 38'.65 E (26b) 45° 42'.74 N 013° 38'.65 E

27. A traffic lane for southbound traffic is established between the separation zone and a line connecting the following geographical positions:

(27a) 45° 42'.74 N 013° 36'.50 E (27b) 45° 40'.34 N 013° 36'.50 E

The established directions of traffic flow are: 360° - 180°

PRECAUTIONARY AREA IN THE GULF OF TRIESTE

Description of the precautionary area

A precautionary area is established by a line connecting the following geographical positions:

(18b) 45° 34'.24 N 013° 32'.20 E (21c) 45° 36'.44 N 013° 37'.50 E
(17b) 45° 35'. 48 N 013° 32'.62 E (21a) 45° 35'.24 N 013° 35'.00 E
(17c) 45° 36'.97 N 013° 32'.83 E (23a) 45° 34'.24 N 013° 35'.00 E
(19b) 45° 38'.74 N 013° 32'.80 E

AREA TO BE AVOIDED

IN THE NORTH ADRIATIC SEA

Reference chart: No. 435 of the Italian Navy Hydrographical Institute, Edition 1993, Datum ED 50, and No. 101 of the Hydrographical Institute of the Republic of Croatia, Edition 1998, Datum Hermanskögel, Bessel Elipsoid.

The co-ordinates listed below are in WGS 84.

Description of the area to be avoided

7. In order to avoid the risk of pollution due to damage of oil rigs, oil and gas pipelines in this area the area described below should be avoided by ships of more than 200 gross tonnage.

The area to be avoided is bounded by a line connecting the following geographical positions:

(7a) 44° 13'.50 N 013° 38'.67 E (7e) 44° 41'.90 N 013° 24'.97 E
(7b) 44° 17'.00 N 013° 43'.77 E (7f) 44° 52'.00 N 013° 17'.07 E
(7c) 44° 25'.30 N 013° 37'.47 E (7g) 44° 52'.00 N 013° 05'.77 E
(7d) 44° 34'.50 N 013° 25'.47 E (7h) 44° 30'.50 N 013° 08'.47 E

OTHER ROUTEING MEASURES

RECOMMENDED DIRECTIONS OF TRAFFIC FLOW IN THE CHANNEL OF OTRANTO, SOUTHERN AND CENTRAL ADRIATIC SEA

Reference chart: No. 435 of the Italian Navy Hydrographical Institute, Edition 1993, Datum ED-50, and No. 101 of the Hydrographical Institute of the Republic of Croatia, Edition 1998, Datum Hermanskógel, Bessel Elipsoid.

The co-ordinates listed below are in WGS 84.

Description of the recommended directions of traffic flow

1. Recommended directions of traffic flow, which should remain as in the present, are established between the parallels of latitudes:

(1a) 40° 25'00 N

(1b) 43° 10'01N

2. Recommended directions of traffic flow, which should be in accordance with the description as per chart in appendix 1 of document NAV 49/3/7, are established between the parallel of latitude:

(2a) 43° 10'01 N

and the precautionary area at the southern limits of the traffic separation scheme.

ANNEX 4

**AMENDMENT TO TRAFFIC SEPARATION SCHEME BETWEEN KORSOER AND
SPROGOE**

(Reference chart: Danish chart 143 (INT 1369), 14th edition 1999

Note: This chart is based on World Geodetic System 1984 datum WGS 84))

Description of the traffic separation scheme

- (a) A separation line connects the following geographical positions:
- (1) 55°21'.75 N, 011°02'.13 E (2) 55°19'.23 N, 011°02'.19 E
- (b) A traffic lane for northbound traffic is established between the separation line and a line connecting the following geographical positions:
- (3) 55°21'.70 N, 011°02'.77 E (4) 55°19'.49 N, 011°02'.80 E
- (c) A traffic lane for southbound traffic is established between the separation line and a line connecting the following geographical positions:
- (5) 55°21'.81 N, 011°01'.35 E (7) 55°20'.43 N, 011°01'.51 E
(6) 55°21'.02 N, 011°01'.59 E (8) 55°18'.91 N, 011°01'.42 E

Notes:

- 1 See mandatory ship reporting system "In the Great Belt Traffic area" in part G, section I.
- 2 The minimum free water depth in the northbound traffic lane is 17 m and in the southbound traffic lane 19 m.
- 3 Ships should reduce speed to maximum 20 knots before entering the appropriate lane of the scheme.

ANNEX 5

**AMENDMENT TO TRAFFIC SEPARATION SCHEME IN THE SINGAPORE STRAIT
(MAIN STRAIT)**

(Reference charts: Indonesian Chart 40, November 1977 edition)

Note: This chart is based on World Geodetic System Datum (WGS 84))

1 Amend the existing Traffic Separation Zone to establish an anchorage area in the separation zone as follows:

A separation zone bounded by the following:

(a) Outer co-ordinates:

| | | | | | |
|------|------------|-------------|------|------------|-------------|
| (85) | 01°10'.35N | 103°34'.90E | (89) | 01°05'.90N | 103°43'.38E |
| (86) | 01°10'.35N | 103°39'.85E | (90) | 01°03'.60N | 103°38'.98E |
| (87) | 01°07'.50N | 103°43'.72E | (91) | 01°07'.06N | 103°32'.96E |
| (88) | 01°08'.60N | 103°45'.43E | | | |

(b) Inner co-ordinates:

| | | |
|-------|-------------|--------------|
| (85a) | 01° 09'.40N | 103° 36'.60E |
| (86a) | 01° 09'.10N | 103° 38'.60E |
| (89a) | 01° 05'.50N | 103° 40'.80E |
| (90a) | 01° 04'.50N | 103° 38'.90E |
| (91a) | 01° 06'.80N | 103° 35'.00E |
