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LIMITS IN THE SEAS



No. 77

**MARITIME BOUNDARIES:
INDIA - SRI LANKA**

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LIMITS IN THE SEAS

No. 77

Maritime Boundaries:

India-Sri Lanka

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The Geographer
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Bureau of Intelligence and Research

MARITIME BOUNDARIES: INDIA-SRI LANKA

The Government of the Republic of India and the Republic of Sri Lanka signed an agreement on March 23, 1976, establishing maritime boundaries in the Gulf of Manaar and the Bay of Bengal. Ratifications have been exchanged and the agreement entered into force on May 10, 1976, two years after the two countries negotiated a boundary in the Palk Strait.

The full text of the agreement is as follows:

AGREEMENT BETWEEN INDIA AND SRI LANKA ON THE MARITIME BOUNDARY BETWEEN THE TWO COUNTRIES IN THE GULF OF MANAAR AND THE BAY OF BENGAL AND RELATED MATTERS

The Government of the Republic of India and the Government of the Republic of Sri Lanka,

RECALLING that the boundary in the Palk Strait has been settled by the Agreement between the Republic of India and the Republic of Sri Lanka on the Boundary in Historic Waters between the Two Countries and Related Matters, signed on 26/28 June, 1974,

AND DESIRING TO extend that boundary by determining the maritime boundary between the two countries in the Gulf of Manaar and the Bay of Bengal,

HAVE AGREED as follows:

Article I

The maritime boundary between India and Sri Lanka in the Gulf of Manaar shall be arcs of Great Circles between the following positions, in the sequence given below, defined by latitude and longitude:

Position 1 m :	09° 06'.0 N.,	79° 32'.0 E
Position 2 m :	09° 00'.0 N.,	79° 31'.3 E
Position 3 m :	08° 53'.0 N.,	79° 29'.3 E
Position 4 m :	08° 40'.0 N.,	79° 18'.2 E
Position 5 m :	08° 37'.2 N.,	79° 13'.0 E
Position 6 m :	08° 31'.2 N.,	79° 04'.7 E
Position 7 m :	08° 22'.2 N.,	78° 55'.4 E
Position 8 m :	08° 12'.2 N.,	78° 53'.7 E
Position 9 m :	07° 35'.3 N.,	78° 45'.7 E
Position 10m :	07° 21'.0 N.,	78° 38'.8 E
Position 11m :	06° 30'.8 N.,	78° 12'.2 E
Position 12m :	05° 53'.9 N.,	77° 50'.7 E
Position 13m :	05° 00'.0 N.,	77° 10'.6 E

The extension of the boundary beyond Position 13 m will be done subsequently.

Article II

The maritime boundary between India and Sri Lanka in the Bay of Bengal shall be arcs of Great Circles between the following positions, in the sequence given below, defined by latitude and longitude:

Position 1 b :	10° 05'.0 N.,	80° 03'.0 E
Position 1 ba :	10° 05'.8 N.,	80° 05'.0 E
Position 1 bb :	10° 08'.4 N.,	80° 09'.5 E
Position 2 b :	10° 33'.0 N.,	80° 46'.0 E
Position 3 b :	10° 41'.7 N.,	81° 02'.5 E
Position 4 b :	11° 02'.7 N.,	81° 56'.0 E
Position 5 B :	11° 16'.0 N.,	82° 24'.4 E
Position 6 b :	11° 26'.6 N.,	83° 22'.0 E

Article III

The coordinates of the positions specified in Articles I and II are geographical coordinates and the straight lines connecting them are indicated in the chart annexed hereto, which has been signed by the surveyors duly authorised by the two Governments respectively.

Article IV

The actual location at sea and on the seabed of the positions specified in Articles I and II shall be determined by a method to be mutually agreed upon by the surveyors authorised for the purpose by the two Governments, respectively.

Article V

(1) Each Party shall have sovereignty over the historic waters and territorial sea, as well as over the islands, falling on its side of the aforesaid boundary.

(2) Each Party shall have sovereign rights and exclusive jurisdiction over the continental shelf and the exclusive economic zone as well as over their resources, whether living or non-living, falling on its side of the aforesaid boundary.

(3) Each Party shall respect rights of navigation through its territorial sea and exclusive economic zone in accordance with its laws and regulations and the rules of international law.

Article VI

If any single geological petroleum or natural gas structure or field, or any single geological

structure or field of any mineral deposit, including sand or gravel, extends across the boundary referred to in Articles I and II and the part of such structure or field which is situated on one side of the boundary is exploited, in whole or in part, from the other side of the boundary, the two countries shall seek to reach agreement as to the manner in which the structure or field shall be most effectively exploited and the manner in which the proceeds deriving therefrom shall be apportioned.

Article VII

The Agreement shall be subject to ratification. It shall enter into force on the date of exchange of instruments of ratification which shall take place as soon as possible.

Sd/-Kewal Singh
FOR THE GOVERNMENT OF
THE REPUBLIC OF INDIA

Sd/-W.T. Jayasinghe
FOR THE GOVERNMENT OF
THE REPUBLIC OF SRI LANKA

New Delhi, March 23, 1976

ANALYSIS

The maritime boundaries in the Gulf of Manaar and the Bay of Bengal are depicted on the attached DMA/HC charts 63010 and 63015, respectively. The lines on the attached maps are rhumb lines, whereas, according to the treaty, they should be segments of great circles. Copies of the official treaty maps (Indian Hydrographic Office charts Nos. 32 and 358), however, were used for this analysis.

The May 1976 treaty, together with the 1974 agreement on the Palk Bay boundary and the July 1976 agreement among India, Maldives, and Sri Lanka establishing the trijunction point, completes the India-Sri Lanka boundary delimitation of the marine region within 200 nautical miles of each country's coast.¹ The combined India-Sri Lanka maritime boundaries total approximately 604 miles.²

Gulf of Manaar

The boundary in the Gulf of Manaar consists of 13 turning or terminal points and totals

¹ See *Limits in the Seas No. 66*, "Historic Water boundary: India-Sri Lanka," Office of The Geographer, U.S. Department of State.

² All mileage figures are nautical miles.

288.33 miles. Geographical information on the boundary is presented in table 1.³

³ Coordinates of relevant basepoints were derived from treaty charts, and geodesic distances were calculated by computer. It should be noted that distances were calculated using a spheroid different from the type of used by the two countries. Slight discrepancies may therefore appear in any comparisons.

Table 1

GULF OF MANAAR

TURNING POINT BETWEEN	NEAREST INDIA TERRITORY*	DISTANCE TO BOUNDARY (NAUTICAL MILES)		NEAREST SRI LANKA TERRITORY*	DISTANCE TURNING POINTS (NAUTICAL MILES)
1M					6.01
2M	Land's End	10.54	10.55	Unnamed Island West of Manaar I.	7.24
3M	Land's End	16.55	16.30 15.88	Unnamed Island West of Manaar I. Low Tide Elevation Northwest of Arippu	16.89
4M	Land's End	30.37	29.96 29.47	Low Tide Elevation Northwest of Arippu Karaitivu	5.86
5M	Land's End Point East of Manalli Tivu	34.68 34.60	33.82	Karaitivu	10.16
6M	Muli Tivu Talairi Tivu	39.67 39.28	39.43	Bar Pt.	12.85
7M	Talairi Tivu Tiruchendur	46.80 47.50	47.04	Point West of Kalpitiya	10.09
8M	Tiruchendur	48.51	47.91 47.77	Point West of Kalpitiya Point Southwest of Kalpitiya	37.57
9M	Manappad Pt.	62.31	62.41 61.88	Point North of Chilaw Chilaw	15.80
10M	Manappad Pt.	69.97	69.99	Chilaw	

* The Adams Bridge Islands apparently were not considered in the calculation of an equidistant line.

TURNING POINT BETWEEN	NEAREST INDIA TERRITORY*	DISTANCE TO BOUNDARY (NAUTICAL MILES)		NEAREST SRI LANKA TERRITORY*	DISTANCE TURNING POINTS (NAUTICAL MILES)
			69.90	Negombo	
11M	Cape Comorin	100.87	100.68	Colombo	56.35
			101.25	Gona Gala	
12M	Cape Comorin	131.00	131.20	Gona Gala	42.51
			131.09	Barbeyn	
13M	Cape Comorin	184.90	185.57	Point Southwest of Ambalangoda	66.91

Point 1M coincides with the southernmost point of the 1974 Historic Water Boundary. On the official map point 1M appears to lie in a low-tide area of an island amid the Adams Bridge island group.

The salient basepoints affecting the direction of the equidistant line are located on the southwest coast of India from Pamban Island (Land's End) to Cape Comorin and on the west coast of Sri Lanka from an island west of Manaar Island to a point southwest of Ambalangoda. The information in Table 1 indicates that the states apparently have agreed to a modified equidistant line and/or to one created by a selective choice of relevant basepoints. For example, point 5M is approximately equidistant from Land's End (India), a point east of Manalli Tivu (India) and Karaitivu (Sri Lanka).

In a "true equidistant" line two of these basepoints along with a new basepoint would have to determine turning point 6M. However, not one of the three basepoints appears to affect the determination of point 6M. Therefore, at least one and probably more turning points were generated which the two states agreed to ignore. Similarly, in a "true equidistant" calculation other turning points should appear between points 6M and 7M, 8M and 9M, 10M and 11M, and 12M and 13M.

Apparently the two countries decided to disregard as basepoints the small Adams Bridge islands. The basepoints equidistant to point 2M are Pamban Island (India) and an unnamed island immediately to the west of Manaar Island (Sri Lanka).

For the first 15 miles, points 1M to 3M, the boundary traverses relatively shallow water with depths ranging from 1 to 20 meters. A short distance seaward of point 3M a sharp break occurs in the geological continental shelf, and in the 17 miles between points 3M and 4M, the water depth increases from 20 meters to over 1,000 meters. Points 4M to 9M fall in an area of the Gulf where the seabed lies between 1,000 and 2,000 meters below the water surface. Over 60 percent of the total boundary length (points 9M to 13M) lies in a region where the water depth ranges from 2,000 to 3,000 meters.

This treaty ends with point 13M, although provision is made in the text to extend the boundary at a future date. On July 31, 1976, India, Maldives, and Sri Lanka determined the trijunction point between the three countries to be situated at 4°47'04"N, 77°01'40"E. This point is 15.65 miles seaward of point 13M.

Bay of Bengal

The Bay of Bengal boundary consists of 8 turning or terminal points and totals 214.30 miles in length.

The two countries have apparently agreed upon a modified equidistant line similar to the gulf of Manaar delimitation. Table II provides information on salient basepoints and relevant distances.

The terminal point 6b is calculated to be 197.86 miles from India and 198.95 miles from Sri Lanka. The intent was to continue the boundary to 200 miles from each coast; the discrepancy may be partially explained by use of different spheroids in the distance calculations.

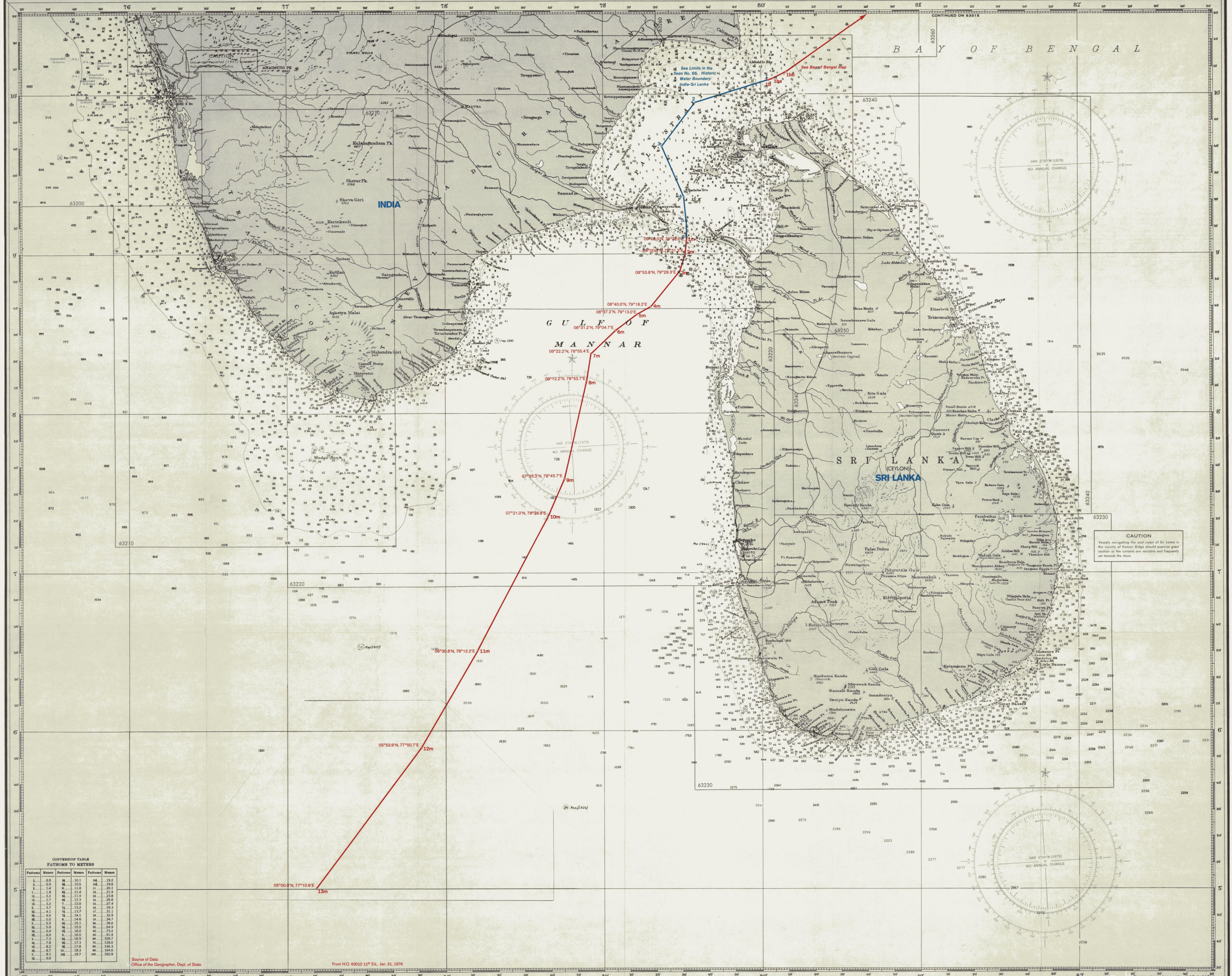
Less than 25 percent of the boundary is situated in an area of relatively shallow water. The 200-meter (approximately 100-fathom) isobath crosses the boundary between points 1bb and 2b. The remainder of the boundary continues into deep waters of the Bay with depths ranging up to 3,800 meters.

Table 2**BAY OF BENGAL**

TURNING POINT	NEAREST INDIA TERRITORY	DISTANCE TO BOUNDARY (NAUTICAL MILES)		NEAREST SRI LANKA TERRITORY*	DISTANCE TURNING POINTS (NAUTICAL MILES)
1b					2.13
1ba	Pt. Calimere	16.46	16.43	Tondaimanar	
			16.46	Point East of Tondaimanar	
1bb	Pt. Calimere	18.45	18.52	Point East of Tondaimanar	5.14
			18.48	Palmyra Pt.	
2b	Point Northeast of Pt. Calimere	53.61	54.37	Palmyra Pt.	43.52
			53.00	Pt. Pedro	
3b	Point North of Vedaranniyam Nagappattinam	69.99 69.64	69.95	Pt. Pedro	18.41
4b	Point North of Karikal	122.42	123.34	Pt. Pedro	56.64
			122.88	Point Northeast of Mullaittivu	
5b	Point North of Karikal Palar River	150.20 150.41	150.79	Point Northeast of Mullaittivu	30.90
6b	Mahabalipuram	197.86	198.95	Mullaittivu	57.56

* The Adams Bridge Islands apparently were not considered in the calculation of an equidistant line.

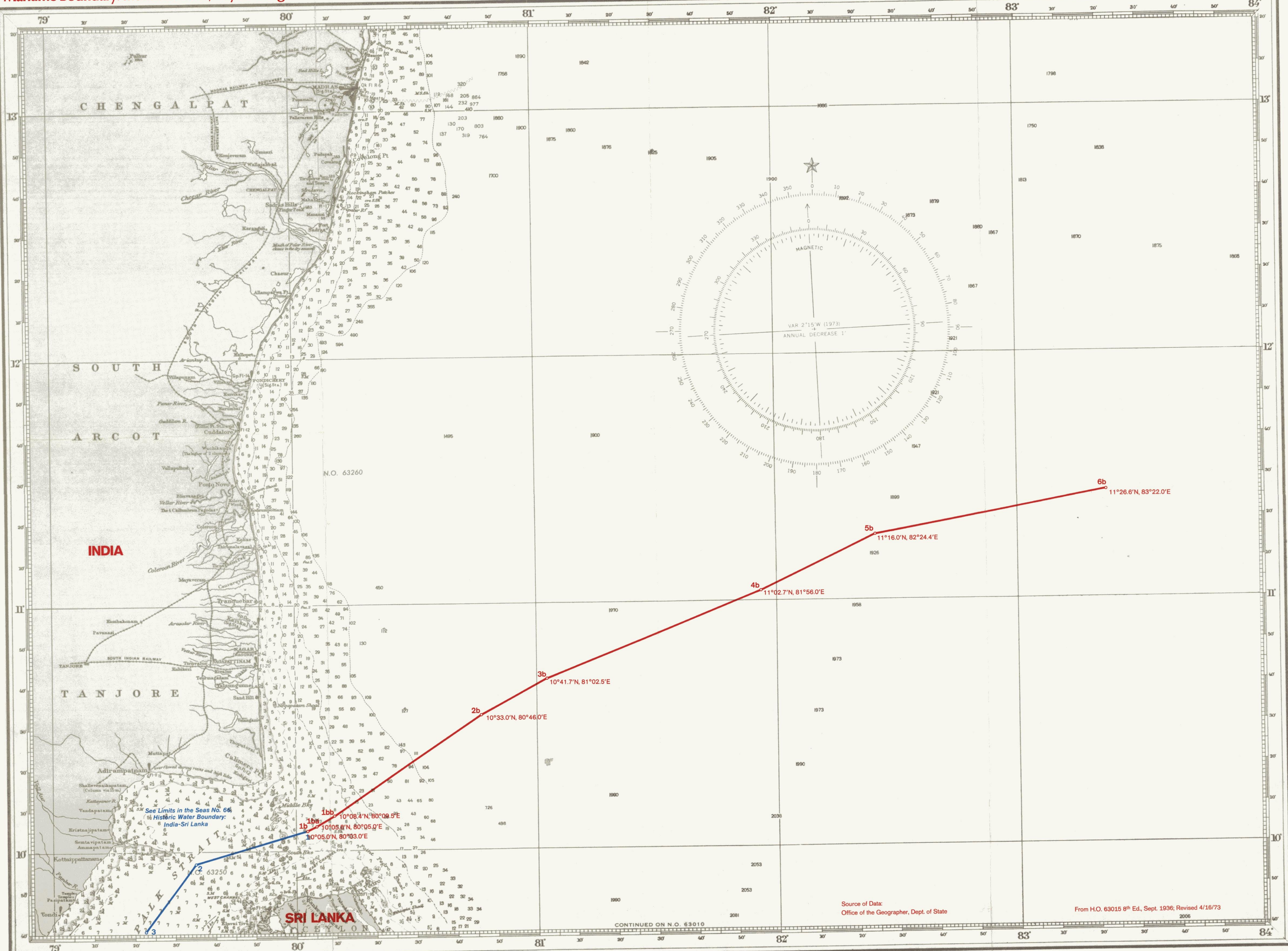
Maritime Boundary: India-Sri Lanka, Gulf of Manar



**CONVERSION TABLE
FATHOMS TO METERS**

Fathoms	Meters	Fathoms	Meters	Fathoms	Meters
1	0.5	56	10.1	108	19.7
1	0.9	61	11.2	113	20.9
1	1.4	66	12.2	118	21.8
1	1.8	71	13.1	123	22.8
1	2.3	76	14.0	128	23.8
1	2.7	81	14.9	133	24.7
1	3.2	86	15.8	138	25.6
1	3.7	91	16.8	143	26.5
1	4.1	96	17.7	148	27.4
1	4.6	101	18.6	153	28.3
1	5.0	106	19.5	158	29.3
1	5.5	111	20.5	163	30.2
1	6.0	116	21.4	168	31.1
1	6.4	121	22.4	173	32.0
1	6.9	126	23.3	178	32.9
1	7.3	131	24.3	183	33.8
1	7.8	136	25.3	188	34.7
1	8.2	141	26.3	193	35.6
1	8.7	146	27.2	198	36.5
1	9.1	151	28.1	203	37.4
1	9.6	156	29.1	208	38.3

Source of Data: Office of the Geographer, Dept. of State
From H.O. 63010 11th Ed., Jan. 31, 1976



CHENGALPAT

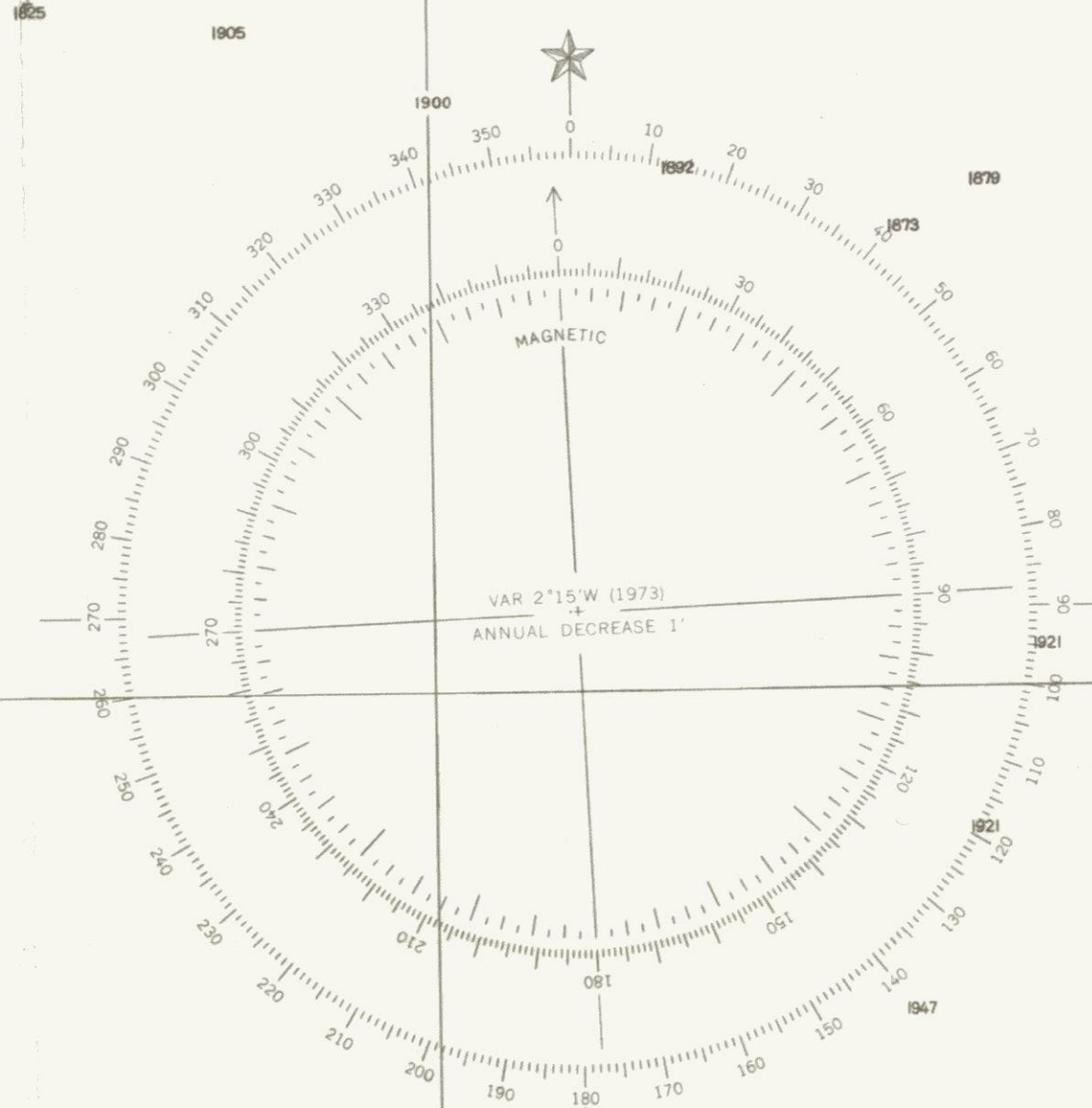
SOUTH

ARCOT

INDIA

TANJORE

SRI LANKA



See Limits in the Seas No. 66
Historic Water Boundary:
India-Sri Lanka

1bb 10°08.4'N, 80°09.5'E
1b 10°05.8'N, 80°05.0'E
10°05.0'N, 80°03.0'E

2b 10°33.0'N, 80°46.0'E

3b 10°41.7'N, 81°02.5'E

4b 11°02.7'N, 81°56.0'E

5b 11°16.0'N, 82°24.4'E

6b 11°26.6'N, 83°22.0'E

Source of Data:
Office of the Geographer, Dept. of State

From H.O. 63015 8th Ed., Sept. 1936; Revised 4/16/73

CONTINUED ON N.O. 63010