



**INDIAN**  
**NOTICES TO MARINERS FOR 2004**  
(PUBLISHED FORTNIGHTLY ON 1<sup>ST</sup> & 16<sup>TH</sup> OF EVERY MONTH)  
EDITION No. 16 DATED 16 AUG 2004  
(CONTAIN NOTICES 326 TO 339)

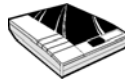
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Write to  
National Hydrographic Office  
107-A, Rajpur Road  
Dehradun – 248 001  
INDIA



Fax to  
+91- 135 - 2748373



Contact Person  
Deputy Hydrographer  
Marine Safety Services  
+91- 135 - 2747360-65



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**Mariner's Obligation and A Chart maker's Plea:** Observing Changes at sea proactively and reporting them promptly to the concerned charting agency, is an obligation that all mariners owe to the entire maritime community towards SOLAS. Mariners are, therefore, requested to notify the Chief Hydrographer to the Govt. of India at the following address/fax No, immediately on discovering new or suspected dangers to navigation, on observing changes/defects to navigational aids, and of short comings in Indian charts or publication. The Hydrographic Note [Form IH – 102] is a convenient form on which to notify such changes. Specimen form is attached at Section X with this notice.

**Chief Hydrographer  
to the Government of India**

**National Hydrographic Office  
Post Box No. 75  
Dehradun 248 001  
India**

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For the Indian Ocean Area  
**INSIST OF INDIAN CHARTS AND  
PUBLICATIONS**  
(Original, Authentic and Most Up-to-date)

## EXPLANATORY NOTES

**Corrections to Charts and Publications** The Notices in section I provide information on new Indian Charts and Publications where as section II and III contains information for correcting the charts and publications. Mariners should insist on corrected charts from their chart distributors/agents.

- (a) Geographical positions given are in the horizontal datum of the current edition of the chart, unless otherwise stated.
- (b) Bearings are True, reckoned clockwise from 000° to 359°. Bearing to lights are from seaward.
- (c) Symbols referred to are those shown on the chart INT 1 (5020).
- (d) Alterations to depth contours, deletion of depths to make way for new detail, etc; are not normally mentioned, unless they have some navigational significance.
- (e) Blocks and notes, if any, accompanying the Notices in Sections II and III are placed after Section X.

**Temporary and Preliminary Notices** These are indicated by (T) and (P) after the Notice number, and are placed in Section III. A SI Nos. of those in force published quarterly on 1<sup>st</sup> Jan, 01 Apr, 01 Jul and 01 Oct, and their text are published in Annual Edition of Indian Notices to Mariners. These corrections are not inserted on the charts before they are issued to the users. They should be inserted in pencil, by the user, on receipt.

**Source of Information** A star adjacent to the number of a Notice indicates that the notice is based on original source of information.

**Sailing Directions** Corrections for the Sailing Directions are given in Section VI. A summary of corrections in force will be issued in Section VI of the Edition dated 1<sup>st</sup> January, 1<sup>st</sup> April, 1<sup>st</sup> July and 1<sup>st</sup> October.

**Lights** Corrections to Light List is given in Section VII, where affected Light List number is quoted.

- (a) these corrections should be incorporated as per instructions given on page 11 of the list of Lights.
- (b) Such correction notices to light of list may be published in either an earlier or a later Edition of N to M than the Edition containing the Notice to the chart correction.
- (c) the range of a light given is its nominal range. Its geographical range is given in parenthesis only, if it is less than the nominal range.

**Radio Signals** The corrections in Section VIII should be cut and pasted in the appropriate volumes of the List of Radio Signals.

**Radio Navigational Warnings** (a) These are broadcast as serially numbered NAVAREA warnings by the concerned NAVAREA coordinator through GMDSS and Area Radio Broadcasts.

- (b) They contain important information affecting navigational safety, which cannot await the publication of the next edition of N to M.
- (c) It should be borne in mind that they may be based on reports which can not always be verified before promulgation.
- (d) It is therefore necessary to be selective, and promulgate only the more important warnings to avoid over loading users; the less important information should be included in the forthcoming edition of N to M or the Chart/publication concerned.

**Laws and Regulations** While in the interest of the safety of shipping, the Hydrographic Office makes every endeavour to include in its publications details of the laws and regulations of all countries pertaining to navigation, it must be clearly understood: -

- (a) that no liability whatsoever can be accepted for failure to publish details of any particular law or regulation, and
- (b) that publication of details of a law or regulation is solely for the safety and convenience of shipping and implies no recognition of the International validity of the law or regulation.

**Correction of Charts and Publications by the users** Notices to Mariners contain important information concerning safety of navigation at sea, hence, they should be used to keep the specified Charts and publications up to date.

**Reliance on Charts and Associated Publications** While every effort is made by the Hydrographic Office to ensure the accuracy of the information on Charts and Publications before they are published, it should be appreciated that it may not always be complete and up-to-date. The mariner must be the final judge for the reliance he can place on the information available, bearing in mind his particular circumstances, local pilotage guidance and judicious use of available navigational aids.

**Use of Global Positioning System (WGS 84) positions**

(a) The positions of Hydrographic objects shown on Indian charts and publications are in Everest datum. However, the positions of vessels obtained from Global Positioning System (GPS) are on World Geodetic System 1984 datum. There will always exist a difference in the position values obtained by visual fixing (Everest Datum) and GPS position (WGS 84 datum).

(b) Where ever these differences have been ascertained, their average values are published as a cautionary Note on the chart concerned, as shifts in Latitude and Longitude values whilst plotting GPS positions on charts, the shift values as given on the chart must be applied, before making any assessment of the navigational situation vis-à-vis the other charted information.

(c) These datum shift values are not uniform, particularly in areas off Andaman & Nicobar and Lakshadweep Islands, as these places are not linked to mainland network ( Everest datum). Mariners are advised to use alternate source of position information such as Visual or Radar, particularly when closing the shore or navigating in the vicinity of danger.

**Source Data on Charts** All Indian charts contain specific information on their source of hydrographic data. In areas where the source data is very old, incomplete and less reliable, the mariner must use such Charts with prudence. Mariner should always use the largest scale charts available for the area. Apart from being the most detailed, the larger scale charts are usually corrected first.

Hydrographic information may be sparse on small scale charts. On such charts, a charted shoal may be in error as regards position, least depth and extent. Uncharted dangers may also exist, particularly in areas away from well-established routes. Mariners must exercise due caution.

**Further Guidance** The Mariner's Hand Book (NP 100) gives full explanation on the use of charts and the type of information contained on charts. In their own interest, all users of charts should refer to it.

## SECTION – I

**List of charts affected by**  
**the Notices 326 to 339 contained in this Edition**

INDIAN H.O. Chart No.	Folio No.	Notice No.	ADMIRALTY Chart No.	Folio No.	Notice No.
20	1	327, 328	38 (INT 7019)	41	328
21	1	328	2851	40	328
31	5	331	2883	40	327
32 (INT 754)	5	331	2887	40	338 (P)
245	1	326	2889	40	338 (P)
288	1	327	3175	40	338 (P)
289	1	327	3176	40	338 (P)
355 (INT 7405)	5	331	3411	40	338 (P)
356	5	331	3412	40	338 (P)
2020	3	330	3739 (INT 7220)	40	338 (P)
2022 (INT 7345)	3	330	3831	45	335, 337
2031	2	329	3833	45	335
2055	2	326	4035	45	333, 334
2068	2	326, 329	4036	45	333
2078 (INT 7346)	3	330	4038	46	332
2099	1	326	4039	46	332, 333
3008	5	331	4040	46	332, 333, 334
3026	5	331	4041	46	333, 334, 335
4004	6	326	4043	46	336, 337
4011	6	339 (P)	4044	46	336, 337
4017	6	339 (P)			
7706 (INT 706)	1	331			
8004	1	338 (P)			

**SECTION – II: PERMANENT NOTICES.****INDIAN HYDROGRAPHIC CHARTS AND PUBLICATIONS****\*326 (16/04)**Source: NHO, Dehradun  
(HJ/NM/Pub)**(a): INDIAN CHARTS PERMANENTLY WITHDRAWN**

Chart to be withdrawn	Main Title
-----------------------	------------

2055	APPROACHES TO OKHA
2099	APPROACHES TO KHAWR FAKKAN AND PORT OF FUJAYRAH PORT OF FUJAYRAH KHAWR FAKKAN
4004	PLANS IN THE NICOBAR ISLANDS

**(b) CHARTS AFFECTED BY THE FOREGOING**


<u>Chart No.</u>	<u>Last Correction</u>	<u>Details</u>
245	(58/01)	Delete existing magenta limit and chart number 2099 as follows: Limits: North 25° 33'.05N East 56° 51'.80E. South 24° 59'.00N; West 56° 12'.00E.
2068	(306/03)	Delete existing magenta limit and chart number 2055 as follows: Limits joining: (a) 22° 43' 30"N., 69° 50' 00"E. (b) 22° 43' 30"N., 69° 25' 06"E. (c) 22° 24' 00"N., 69° 25' 06"E.

**327 (16/04) IRAN – Ra's ol Motaf West-south-westwards – Depths.**


Source: BA Notice 3605/04.

(HJ/1131/79)

**Chart 20** [previous update 307/04]

Insert	depth 44 enclosed by 50m contour	(a)	27° 30'.99N., 50° 56'.21E.
Delete	 Rep, close S of:	(a)	above

**Chart 288** [previous update 307/04]

Insert	depth 44 enclosed by 50m contour	(a)	27° 30'.99N., 50° 56'.21E.
Delete	 Rep, close SE of:	(a)	above

**327 (16/04) IRAN – Ra’s ol Motaf West-south-westwards – Depths(continued).****Chart 289** [previous update 294/04]

Substitute depth 44 enclosed by 50m contour for  Rep(2000) 27° 30'.99N., 50° 56'.21E.

**B.A. Chart 2883** [previous update 100/04]

Insert depth 44 enclosed by 50m contour (a) 27° 30'.99N., 50° 56'.21E.

Delete  Rep(2000), close SE of: (a) above

**328 (16/04) GULF OF OMAN – IRAN – Chah Bahar South-south-westwards and Damagheh-ye Meydan South-westwards – Explosives dumping ground.**

Source: BA Notice 3604/04.

(HJ/1131/49)

**Chart 20** [previous update 327/04]

Insert limit of restricted area, joining: (a) 24° 23'.97N., 60° 13'.94E.  
 (b) 24° 23'.97N., 60° 27'.94E.  
 (c) 24° 33'.98N., 60° 13'.94E.  
 (d) 24° 33'.98N., 60° 27'.94E.  
 and  
 (e) 24° 59'.98N., 58° 29'.92E.  
 (f) 24° 59'.98N., 58° 39'.92E.  
 (g) 24° 52'.98N., 58° 32'.92E.

legend, *Explosives Dumping Ground*, within: (a)-(d) above

legend, *Explosives Dumping Ground*, close E of: (e)-(g) above

**Chart 21** [previous update 241/04]

Insert limit of restricted area, joining: (a) 24° 23'.97N., 60° 13'.94E.  
 (b) 24° 23'.97N., 60° 27'.94E.  
 (c) 24° 33'.98N., 60° 13'.94E.  
 (d) 24° 33'.98N., 60° 27'.94E.  
 and  
 (e) 24° 59'.98N., 58° 29'.92E.  
 (f) 24° 59'.98N., 58° 39'.92E.  
 (g) 24° 52'.98N., 58° 32'.92E.

legend, *Explosives Dumping Ground*, within: (a)-(d) above

legend, *Explosives Dumping Ground*, close E of: (e)-(g) above

**B.A. Chart 38 (INT 7019)** [previous update 25/10/01]

Insert limit of restricted area, joining: (a) 24° 24'.0N., 60° 14'.0E.  
 (b) 24° 24'.0N., 60° 28'.0E.  
 (c) 24° 34'.0N., 60° 14'.0E.  
 (d) 24° 34'.0N., 60° 28'.0E.

legend, *Explosives Dumping Ground*, within: (a)-(d) above

**328 (16/04) GULF OF OMAN – IRAN – Chah Bahar South-south-westwards and Damagheh-ye Meydan South-westwards – Explosives dumping ground (continued).**

**B.A. Chart 2851** [previous update 282/04]

Insert	limit of restricted area, joining:	(a)	24° 24'.0N., 60° 14'.0E.
		(b)	24° 24'.0N., 60° 28'.0E.
		(c)	24° 34'.0N., 60° 14'.0E.
		(d)	24° 34'.0N., 60° 28'.0E.
			and
		(e)	25° 00'.0N., 58° 30'.0E.
		(f)	25° 00'.0N., 58° 40'.0E.
		(g)	24° 53'.0N., 58° 33'.0E.
	legend, <i>Explosives Dumping Ground</i> , within:		(a)-(d) above
			(e)-(g) above

**\*329 (16/04) INDIA – West Coast – Okha Harbour – Pilot boarding place.**

Source: Gujarat Maritime Board  
(HJ/1131/20)

**Chart 2031** [previous update 129/04]

Move	⬇ from:	22° 30'.45N., 69° 04'.56E.
	to:	22° 30'.60N., 69° 04'.70E.

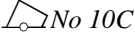
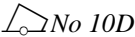
**Chart 2068** [previous update 306/03]

Move	⬇ from:	22° 30'.45N., 69° 04'.56E.
	to:	22° 30'.60N., 69° 04'.70E.

**\*330 (16/04) INDIA – West Coast – Port of Mormugao – Pilot boarding station. Limits. Buoy. Depth. Anchorage.**



Source: Mormugao Port Trust  
(HJ/1030/56)

**Chart 2020** [previous update 400/03]




Insert	⬇	15° 24'.56N., 73° 44'.22E.
	limit of channel, pecked line, from:	15° 24'.86N., 73° 45'.15E. (existing limit)
	to:	15° 24'.75N., 73° 44'.50E.
	from:	15° 24'.73N., 73° 45'.20E. (existing limit)
	to:	15° 24'.62N., 73° 44'.52E.
	from:	(a) 15° 24'.40N., 73° 48'.68E.
	to:	(b) 15° 24'.02N., 73° 48'.62E.
	 No 10C	15° 24'.33N., 73° 48'.67E.
	 No 10D	15° 24'.14N., 73° 48'.65E.

**\*330 (16/04) INDIA – West Coast – Port of Mormugao – Pilot boarding station. Limits. Buoy. Depth. Anchorage (continued).**


**Chart 2020** [previous update 400/03]

Amend	legend, dredged to 13.7m (1984) to, maintained depth 14.4, centred on:	15° 25'.07N., 73° 46'.63E.
Substitute	maintained depth 14.1 for 13.1	15° 24'.80N., 73° 48'.07E.
	maintained depth 14.1 for 12.1	15° 24'.55N., 73° 48'.36E.
Delete		15° 24'.70N., 73° 45'.01E.
		15° 26'.43N., 73° 47'.90E.
		15° 26'.19N., 73° 48'.39E.
	ferry route, pecked line, from:	15° 24'.80N., 73° 47'.48E.
	to:	15° 26'.97N., 73° 48'.28E.
	limit of channel, pecked line, from:	15° 24'.02N., 73° 48'.62E.
	to:	15° 24'.30N., 73° 48'.60E.

**Chart 2022 (INT 7345)** [previous update 241/04]

Insert		15° 24'.56N., 73° 44'.22E.
	limit of channel, pecked line, from:	15° 24'.86N., 73° 45'.15E. (existing limit)
	to:	15° 24'.75N., 73° 44'.50E.
	from:	15° 24'.73N., 73° 45'.20E. (existing limit)
	to:	15° 24'.62N., 73° 44'.52E.
	from:	15° 24'.40N., 73° 48'.68E.
	to:	15° 24'.02N., 73° 48'.62E.
Amend	legend, dredged to 13.7m (1984) to, maintained depth 14.4, centred on:	15° 25'.00N., 73° 46'.20E.
Substitute	maintained depth 14.1 for 12.1	15° 24'.35N., 73° 48'.48E.
Delete		15° 24'.70N., 73° 45'.01E.
		15° 26'.43N., 73° 47'.90E.
		15° 26'.19N., 73° 48'.39E.
	ferry route, pecked line, from:	15° 24'.80N., 73° 47'.48E.
	to:	15° 26'.97N., 73° 48'.28E.
	limit of channel, pecked line, from:	15° 24'.02N., 73° 48'.62E.
	to:	15° 24'.30N., 73° 48'.60E.





**Chart 2078 (INT 7346)** [previous update 123/04]

Insert		15° 24'.56N., 73° 44'.22E.
	limit of channel, pecked line, from:	15° 24'.86N., 73° 45'.15E. (existing limit)
	to:	15° 24'.75N., 73° 44'.50E.



**\*330 (16/04) INDIA – West Coast – Port of Mormugao – Pilot boarding station. Limits. Buoy. Depth. Anchorage (continued).**

**Chart 2078(INT 7346)** [previous update 123/04]

Insert	limit of channel, pecked line, from:	15° 24'.73N., 73° 45'.20E. (existing limit)
	to:	15° 24'.62N., 73° 44'.52E.
	limit of channel, pecked line, joining:	(a) 15° 24'.40N., 73° 48'.68E.
		(b) 15° 24'.02N., 73° 48'.62E.
	 No 10C	15° 24'.33N., 73° 48'.67E.
	 No 10D	15° 24'.14N., 73° 48'.65E.
Amend	legend, dredged to 13.7m (1984) to, maintained depth 14.4, centred on:	15° 25'.58N., 73° 46'.66E.
Substitute	maintained depth 14.1 for 13.1	15° 24'.83N., 73° 48'.14E.
	maintained depth 14.1 for 12.1	15° 24'.58N., 73° 48'.31E.
Delete		15° 24'.70N., 73° 45'.01E.
		15° 26'.43N., 73° 47'.90E.
		15° 26'.19N., 73° 48'.39E.
	ferry route, pecked line, from:	15° 24'.80N., 73° 47'.48E.
	to:	15° 26'.97N., 73° 48'.28E.
	limit of channel, pecked line, from:	(c) 15° 24'.02N., 73° 48'.62E.
	to:	(d) 15° 24'.30N., 73° 48'.60E.
	depth 14 <sub>2</sub>	15° 24'.64N., 73° 44'.57E.
	depth 14 <sub>5</sub>	15° 24'.70N., 73° 44'.76E.
	depth 13 <sub>3</sub>	15° 24'.79N., 73° 44'.93E.
	depth 13 <sub>5</sub>	15° 24'.76N., 73° 45'.11E.
	former hydrographic details within:	(a),(b) and (c),(d) above

**\*331 (16/04) INDIA – East Coast – Nizampatnam Anchorage – Light.**

List of Light Vol F, 0952.8, 0952.95

Source: DLL, Chennai.

(HJ/1029/59)

**Chart 31** [previous update 227/04]

Insert  Fl 23M 15° 52'.95N., 80° 38'.40E.

**Chart 32 (INT 754)** [previous update 226/04]

Insert  Fl 23M 15° 52'.95N., 80° 38'.40E.

**\*331 (16/04) INDIA – East Coast – Nizampatnam Anchorage – Light (continued).****Chart 355 (INT 7405)** [previous update 206/04]

Insert  Fl 5s 36m 23M 15° 52'.95N., 80° 38'.40E.


Amend  Fl R 5s 20m 8M to  16° 52'.73N., 80° 38'.50E.

**Chart 356** [previous update 425/03]

Insert  Fl 5s 36m 23M 15° 52'.95N., 80° 38'.40E.

Amend  Fl R 5s 20m 8M to  15° 52'.73N., 80° 38'.50E.

**Chart 3008** [previous update 309/96]

Insert  Fl 5s 36m 23M 15° 52'.95N., 80° 38'.40E.

Amend  Fl R 5s 20m 8M to  16° 52'.73N., 80° 38'.50E.

**Chart 3026** [previous update 15/01/01]

Insert  Fl 5s 36m 23M 15° 52'.95N., 80° 38'.40E.

Amend  Fl R 5s 20m 8M to  16° 52'.73N., 80° 38'.50E.

**Chart 7706 (INT 706)** [previous update 227/04]

Insert  15° 52'.95N., 80° 38'.40E.



**332 (16/04) SINGAPORE STRAIT – Singapore – Jurong Island South-westwards – Buoyage.**

Source: BA Notice 3534/04.

(HJ/927/16)



**B.A. Chart 4038** [previous update 213/04]

Insert  VQ(9)10s PKHDB-16A 1° 13'.13N., 103° 36'.07E.

Substitute  Fl.Y.2s PKHDB-16 for  VQ(9)10S PKHDB-16 1° 13'.08N., 103° 36'.29E.



**B.A. Chart 4039** [previous update 262/04]

Insert  VQ(9)10s PKHDB-16A 1° 13'.13N., 103° 36'.07E.

Substitute  Fl.Y.2s PKHDB-16 for  VQ(9)10S PKHDB-16 1° 13'.08N., 103° 36'.29E.



**B.A. Chart 4040** [previous update 262/04]

Insert  VQ(9)10s PKHDB-16A 1° 13'.13N., 103° 36'.07E.

Substitute  Fl.Y.2s PKHDB-16 for  VQ(9)10S PKHDB-16 1° 13'.08N., 103° 36'.29E.

**333 (16/04) SINGAPORE STRAIT – Singapore – Pulau Sebarok Eastwards – Obstruction.**

Source: BA Notice 3537/04.

*(HJ/927/16)***B.A. Chart 4035** [*previous update 160/04*]Substitute  *Obstn* for  *Obstn* 1° 12'.079N., 103° 48'.221E.**B.A. Chart 4036** [*previous update 262/04*]Substitute  *Obstn* for  *Obstn* 1° 12'.079N., 103° 48'.221E.**B.A. Chart 4039** [*previous update 332/04*]Substitute  *Obstn* for  *Obstn* 1° 12'.08N., 103° 48'.22E.**B.A. Chart 4040** [*previous update 332/04*]Substitute  *Obstn* for  *Obstn* 1° 12'.08N., 103° 48'.22E.**B.A. Chart 4041** [*previous update 317/04*]Substitute  *Obstn* for  *Obstn* 1° 12'.08N., 103° 48'.22E.**334 (16/04) SINGAPORE – Sentosa – Landmark.**

List of Light Vol F, 1720

Source: B.A. Notice 3536/04

*(HJ/927/16)***B.A. Chart 4035** [*previous update 333/04*]Insert  TOWER (147) (R Lt) 1° 15'.298N., 103° 49'.056E.**B.A. Chart 4040** [*previous update 333/04*]Insert  TOWER (147) (R Lt) 1° 15'.30N., 103° 49'.06E.**B.A. Chart 4041** [*previous update 333/04*]Insert  TOWER (147) (R Lt) 1° 15'.30N., 103° 49'.06E.

**335 (16/04) SINGAPORE STRAIT – Indonesia Teluk Jodah Northwards – Wreck. Buoyage. Radar beacon.**

Source: BA Notice 3533/04.

(HJ/927/16)

**B.A. Chart 3831** [previous update 299/04]

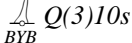
Insert



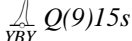
(a) 1° 13'.45N., 103° 57'.70E.

radar beacon, *Racon (O)*, at light-buoy

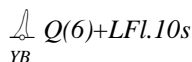
(a) above



1° 13'.30N., 103° 57'.93E.



1° 13'.30N., 103° 57'.50E.



1° 13'.08N., 103° 57'.70E.

Move



from:

(b) 1° 13'.32N., 103° 57'.70E.



to:

1° 13'.38N., 103° 57'.74E.

Delete

*Fl(2)5s*, close E of:

(b) above

**B.A. Chart 3833** [previous update 317/04]

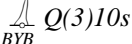
Insert



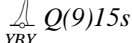
(a) 1° 13'.45N., 103° 57'.70E.

radar beacon, *Racon (O)*, at light-buoy

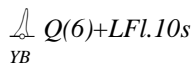
(a) above



1° 13'.30N., 103° 57'.93E.



1° 13'.30N., 103° 57'.50E.



1° 13'.08N., 103° 57'.70E.

Move



from:

(b) 1° 13'.32N., 103° 57'.70E.



to:

1° 13'.38N., 103° 57'.74E.

Delete

*Fl(2)5s*, close E of:

(b) above

**B.A. Chart 4041** [previous update 334/04]

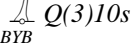
Insert



(a) 1° 13'.45N., 103° 57'.70E.

radar beacon, *Racon (O)*, at light-buoy

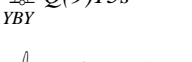
(a) above



1° 13'.30N., 103° 57'.93E.



1° 13'.30N., 103° 57'.50E.



1° 13'.08N., 103° 57'.70E.

Move



from:

(b) 1° 13'.32N., 103° 57'.70E.



to:

1° 13'.38N., 103° 57'.74E.

Delete

*Fl(2)5s*, close E of:

(b) above

**336 (16/04) JOHOR STRAIT – Eastern Part – Singapore – Pulau Ubin Southwards – Mooring buoy.**

Source: BA Notice 3535/04.  
(HJ/927/16)

**B.A. Chart 4043** [previous update 267/04]

Insert  *KT-1* 1° 24'.01N., 103° 58'.15E.

**B.A. Chart 4044** [previous update 214/04]

Insert  *KT-1* 1° 24'.01N., 103° 58'.15E.

**B.A. Chart 4044 (plan A, Serangoon Harbour)** [previous update 214/04]

Insert  *KT-1* 1° 24'.011N., 103° 58'.152E.

**337 (16/04) SINGAPORE – Changi North-eastwards – Angler Bank Southwards – Wreck. Buoy.**

Source: BA Notice 3532/04.  
(HJ/927/15)


**B.A. Chart 3831** [previous update 335/04]

Insert  *Wk* (a) 1° 20'.02N., 104° 02'.91E.

 *Fl(2) 10s*, close N of: (a) above

**B.A. Chart 4043** [previous update 336/04]

Insert  *Wk* (a) 1° 20'.02N., 104° 02'.91E.

 *Fl(2) 10s*, close N of: (a) above

**B.A. Chart 4044** [previous update 336/04]

Insert  *Wk* (a) 1° 20'.02N., 104° 02'.91E.

 *Fl(2) 10s*, close N of: (a) above

**SECTION – III: TEMPORARY AND PRELIMINARY NOTICES****338 (P) (16/04) UNITED ARAB EMIRATES – Approaches to Dubayy – Works.**

Source: B.A. Notice 3409(P)/04

*(HJ/1132/54)*

1. Work has started on the construction of Dubai Maritime Cty. This project covers approximately 2,500,000 square metres and will be located on reclaimed land between Mina' Rashid (25° 16'.7N., 55° 16'.7E.) and Dubayy Dry Dock (25° 15'.2N., 55° 15'.8E.)
2. To maintain safety and assist craft working on this project, and exclusion zone for all unauthorized vessels has been established within the following limits:
  - a. A straight line joining position 25° 15'.00N., 55° 15'.50E. (shore) to position 25° 14'.59N., 55° 15'.05E.
  - b. An arc, centred on the Port Rashid Control Tower (25° 15'.65N., 55° 16'.22E.) radius 1.5M, extending from position 25° 14'.59N., 55° 15'.05E. to position 25° 17'.16N., 55° 16'.21E.
  - c. A straight line joining position 25° 17'.16N., 55° 16'.21E. to position 25° 16'.80N., 55° 16'.22E. (shore).
3. Phase 1 will involve the construction of a new breakwater 300m north-westwards of the seaward end of the Dubayy Dry Dock Main Breakwater.
4. Appropriate warning lights will be exhibited and all vessels are warned to keep well clear of the area.
5. Reclamation work has also started on the 'World Island' project. An entry prohibited area has been established.
6. For the latest information about these projects, mariners are advised to consult the local port authority.
7. Further information will be promulgated as it becomes available.
8. Former Notice 442(P)/03 is cancelled.

**Charts affected: 8004 – B.A. 2887 – 2889 – 3175 – 3176 – 3411 – 3412 – 3739 (INT 7220)****\*339 (P) (16/04) INDIA – Nicobar Islands – Katchall Island – Approaches to East Bay – Beacons.**

Source: HN INS Trinkat

*(HJ/928/76)*

1. Mariners are informed of changes to the beacons in the approaches to East Bay.
2. New beacons have been established in the following positions:
  - 07° 58'.74N., 93° 24'. 06E. (Green)
  - 07° 58'.52N., 93° 24'. 30E. (red)
  - 07° 58'.74N., 93° 24'. 65E. (Green)
  - 07° 58'.48N., 93° 24'. 61E. (red)
  - 07° 58'.77N., 93° 25'. 12E.
  - 07° 58'.48N., 93° 25'. 02E.
3. Cancel former INM 331(P)/03

**Charts affected: 4011 – 4017**

**SECTION – IV: MARINE INFORMATION****Ship Reporting System (INDSAR)**

A ship reporting system INDSAR has been activated w.e.f 01 Feb 2003 in the Indian Search and Rescue Region (ISRR), for timely position reporting which is critical for quick response and ensuring safety of life at sea. Mariners in the ISR Region are requested to pass relevant rescue information to the Maritime Rescue Coordinating Centre (MRCC) Mumbai on INMARSAT Code 43, or using any of the following Contact details:-

**MRCC Mumbai contact details**

Tel : 022-24376133  
Fax : 022-24333727  
INMARSAT : 00583 441 907 210  
E-mail : [indsar@vsnl.net](mailto:indsar@vsnl.net)

**SECTION – V: NAVIGATIONAL WARNINGS IN FORCE**

1. For details of NAVAREA limits and organization/coordination, please refer to Notice No. 12 of the Special edition of Indian Notice to Mariners – 2004.

2. NAVAREA Warnings in force :- The serial numbers of all the NAVAREAS warnings in force as on 01 Aug 2004, covering the entire world are listed below against the respective NAVAREA

<b><u>NAVAREA No.</u></b>	<b><u>Location</u></b>	<b><u>Last NAVAREA Sl. received</u></b>	
I	N.E. Atlantic	270	2001 series: 510 2003 series: 080 261 417. 2004 series: 139 208 211 212 218 220 222 231 233 239 240 242 255 257 262 266 268 269 270 271.
II	E. Atlantic	Nil	2002 series: 472 497 2003 series: 028 071 239.
III	Mediterranean	374	2004 series: 280 285 296 299 300 327 328 330 349 353 355 357 364 365 369 373 374.
IV	N.W. Atlantic	239	2003 series: 108. 2004 series: 128 184 190 198 200 207 226 232 237 238 239.
V	W. Atlantic	Nil	2001 series: 1368. 2003 series: 1346. 2004 series: 606
VI	S.W. Atlantic	Nil	Nil.
VII	S.E. Atlantic	103	2004 Series: 077 094 097 098 100 101 102 103.
VIII	Indian Ocean	513	2004 series: 392 395 412 414 417 425 436 439 449 450 454 461 462 464 465 468 470 471 480 481 482 483 484 485 490 491 492 493 499 500 501 502 503 506 508 509 510 511 512 513.
IX	Persian Gulf, Red Sea, NW Arabian Sea	195	2001 series : 312. 2003 series : 023 120 138 177 236 237 239 273. 2004 series : 025 026 036 050 052 070 079 084 088 107 109 111 133 134 135 151 156 158 161 162 165 167 169 175 183 184 185 186 187 189 190 191 192 193 194 195.
X	Australia, New Guinea	007	2004 series: 007
XI	Malacca Strait, China Sea, N. Pacific	0334	1996 series: 0925. 1998 series: 0655 1999 series: 0053 0153 0187 0310 0613. 2000 series: 0022 0054 0555 0677 0687. 2001 series: 0182 0584 0637 0705 0775 0863.



			2002 series: 0839. 2003 series: 0106 0273 0287 0303 0304 0321 0566 0568 2004 series: 0026 0037 0074 0083 0091 0178 0227 0235 0246 0267 0271 0272 0274 0283 0285 0289 0291 0293 0294 0297 0298 0301 0302 0303 0312 0315 0321 0328 0329 0331 0332 0334.
XII	N.E. Pacific	201	2004 series: 186 192 197 198 200 201.
XIII	N.W. Pacific	Nil	Nil
XIV	S.W. Pacific	042	2004 series: 041.
XV	S.E. Pacific	Nil	Nil
XVI	E. Pacific	Nil	1998 series: 151 2004 series: 166
Hydropacs	Pacific, Indian Ocean	1130	2001 series: 1976. 2002 series: 205 206 2330. 2003 series: 207 506 993 998 1041 1330 1395 1699 1911 1982 2265. 2004 series: 23 278 329 402 455 694 701 727 754 763 776 778 779 795 801 817 840 842 843 880 890 891 904 910 912 932 940 948 965 967 981 987 988 996 1000 1004 1011 1013 1014 1021 1024 1025 1033 1035 1036 1040 1044 1049 1050 1052 1055 1056 1059 1060 1063 1065 1066 1068 1069 1071 1072 1076 1077 1079 1080 1081 1082 1083 1084 1089 1090 1091 1092 1095 1096 1098 1099 1101 1102 1107 1112 1113 1114 1115 1120 1121 1122 1123 1124 1125 1126 1127 1128 1129 1130.
Hydrolants	Atlantic, Mediterranean	1152	2002 series: 245 246 . 2003 series: 604 1242 1422 1472 1999 2203 2297 2406 2407 2408 2409 2410 2413 2414 2416 2418 2419 2420. 2004 series: 224 272 631 649 650 668 805 843 850 858 867 913 918 952 977 997 1003 1010 1018 1019 1031 1033 1042 1043 1046 1051 1058 1065 1068 1071 1076 1077 1078 1080 1084 1087 1088 1089 1092 1094 1102 1103 1104 1105 1109 1112 1115 1117 1121 1126 1128 1129 1130 1133 1136 1138 1139 1141 1142 1143 1144 1146 1147 1149 1150 1151 1152.







**SECTION – VIII: CORRECTION TO LIST OF RADIO SIGNALS****VOL. 1, 1987***(Last correction: Edition No. 01 dated 01 Jan 2004)***NIL****VOL. 2, 1995***(Last correction: Edition No.15 dated 01 Aug 2004)***NIL****B.A. VOL. 3 Part 1, NP 283(1), 2002/03***(Last correction: Edition No. 19 dated 01 Oct 2003)***NIL****VOL. 5, 1997/98***(Last correction: Edition No. 02 dated 15 Jan 2004)***NIL****VOL. 6, 1987***(Last correction: Edition No. 18 dated 15 Sep 2003)***NIL****B.A. VOL. 7, 1997/98-PART 2***(Last correction: Edition No. 16 dated 15 Aug 2000)***NIL****VOL. 8, 1999***(Last correction: Edition No. 15 dated 01 Aug 2004)*

		<b>tx fx (KHz)</b>	
Keating Point DGPS Station Normal	09° 15'.4N., 092° 46'5E.	317	<b>2243</b>
(Nav VIII 500/04)			(16/04)
Hazira DGPS Station Normal	21° 05'.5N., 072° 38'6E.	314	
(Nav VIII 501/04)			(16/04)
East Island DGPS Station Normal	13° 37'.8N., 093° 08'.0E.	313	
(DLL, Port Blair)			(16/04)

**SECTION – IX: PLOTTING OF GPS POSITIONS IN INDIAN CHARTS**

All mariners are advised to exercise extreme caution while using the Global Positioning System positions in WGS 84 datum on the Indian navigational charts produced in Everest datum. The variation in these parameters is considerable along the Indian coast and in Andaman & Nicobar and Lakshadweep islands (300 to 800 metres variations). Mariners are also advised to apply datum shift parameters (if available) on the Indian navigational charts before using Global Positioning System positions on Indian charts. These shift parameters are specified on the charts where observed, at a suitable position under legend note. Mariners are advised to use alternate methods of fixing while operating in restricted waters and in vicinity of dangers.

The Chief Hydrographer to the Govt. of India shall not be responsible for any marine accidents arising as a result of usage of GPS positions in WGS 84 datum in Indian navigational charts in Everest datum without the application of Datum Transformation Parameters/corrections where available or listed in the charts.

## **SECTION – X: REPORTING OF NAVIGATIONAL DANGERS**

### **Instructions for raising Hydrographic Note (Form IH 102)**

#### **Appeal to all Mariners:**

1. Mariners at sea whilst on passage, or whilst entering / leaving ports / harbours and other waterways, are requested to look out for new or suspected dangers to navigation, changes in aids to navigation, or corrections to published charts and Sailing Directions. Whenever any such changes / dangers are observed, mariners are requested to notify the same to the Chief Hydrographer to the Government of India at the following address: -

National Hydrographic Office  
107-A, Rajpur Road,  
Post Box No. 75, Dehradun - 248 001  
(UTTARANCHAL), INDIA  
e-mail: - [nho@sancharnet.in](mailto:nho@sancharnet.in)  
Fax No.: (0135) 2748373  
WEB: [www.hydrobharat.org](http://www.hydrobharat.org)

#### **Instructions for filling up Form IH 102 (Overleaf)**

2. Kindly follow the instructions below in order to help the Hydrographic Office (the recipient) to quickly issue NAVAREA warning / Notice to Mariners for the benefit of all other mariners at sea.

#### **Position Reporting**

3. When a position is defined by bearings (true or magnetic to be specified) more than two bearings should be used in order to provide a check. Distances observed by Radar should be corrected for index errors. Latitude and Longitude obtained from GPS / DGPS should specify the datum (WGS 84 or other). A copy / tracing from the largest scale chart may be used for forwarding details, with the corrections and additions being shown thereon in red.

#### **Depth Reporting**

4. When soundings are obtained using Echo Sounders, the echo-gram should be duly annotated with date, time, position and depth, etc., before enclosing it with the Form IH 102. It is important to state whether echo sounder is set to register depths below the surface or below the keel; in the latter case the vessel's draught should be given. Time and date should be given in order that corrections for the height of the tide may be applied where necessary. The make, name and type of echo sounder should also be given. Care should be taken to set the echo sounder to the largest scale / phase, so as to obtain maximum details of echo of the feature. Efforts should be made to identify and negate false echoes if any.

5. Reports, which cannot be confirmed or are lacking in certain details should not be withheld. Limitations or shortcomings should be duly notified in the form.

6. Reports on shoal soundings, uncharted dangers and navigational aids out of order should be reported through fastest available means at the mariner's discretion, and also be made by radio to the nearest coast radio station. The draught of modern tankers is such that any uncharted depth under 50 metres should be of sufficient importance to justify a radio message.

7. Port information should be forwarded on form IH 102a together with IH 102. Form 102a contains the information required for Sailing Direction and should be used as an *aide memoir*. Where there is insufficient space on the form, additional sheet should be used.

*Please Note:* - The receipt of all Hydrographic Notes will be duly acknowledged by the Hydrographic Office. Normally, the sender's ship or name is quoted as the source when the Notices to Mariners reporting the change is issued, unless the information is received through a foreign Notices to Mariners. Further communication from the Hydrographic Office to the sender of the hydrographic note will only be necessary to verify unusual features or abnormal values reported.

I.H. 102a (Revised 2003)

HYDROGRAPHIC NOTE FOR PORT INFORMATION

(For Reporting Changes to Port Information)

(To accompanying Form I.H. 102)

Name and address of ship / sender:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Ref No.: \_\_\_\_\_  
Date : \_\_\_\_\_

Fax No.: \_\_\_\_\_, E-mail: \_\_\_\_\_

1.	a) <b>NAME OF THE PORT</b> : _____ b) Location : <b>Lat:</b> _____, <b>Long:</b> _____ c) Listing in Guide to Port Entry: <b>Yes/No.</b> _____ <b>Sl. No.:</b> _____	
2.	<b>NAME AND ADDRESS OF PORT AUTHORITIES</b> a) Name b) Address c) Phone d) Fax e) E-mail	
3.	<b>GENERAL REMARKS</b> a) Principal activities and trade b) Latest population figures and date c) Number of ships and tonnage handled per year d) Maximum size and draught of vessels handled. e) Copy of Port Handbook <i>if available.</i>	
4.	<b>ANCHORAGES</b> a) Type / Purpose b) Minimum Depth at anchorage c) Shelter afforded d) Holding ground e) Recommended pilotage to the anchorage	
5.	<b>PILOTAGE</b> a) Authority for requests. b) Embarkation position c) Regulations d) Documents to be provided	
6.	<b>DIRECTIONS</b> a) Entry and berthing information. b) Tides (Height) c) Tidal Streams. d) Navigational aids.	
7.	<b>POLLUTION CONTROL</b> a) Local regulations in force (if any)	



<p>8. <b>TUGS</b></p> <ul style="list-style-type: none"> <li>a) Number available</li> <li>b) Max. hp.</li> <li>c) Requesting authority</li> <li>d) Availability times</li> <li>e) Communication with Tugs</li> <li>f) Hiring Charges</li> </ul>	
<p>9. <b>BERTHING AND WHARVES</b></p> <ul style="list-style-type: none"> <li>a) Number of berths available</li> <li>b) Length,</li> <li>c) Depth alongside</li> <li>d) Facilities available.</li> <li>e) Procedures for requesting berthing and hiring charges</li> </ul>	
<p>10. <b>CARGO HANDLING</b></p> <ul style="list-style-type: none"> <li>a) Containers</li> <li>b) Lighters</li> <li>c) Roll on/ roll off, etc.</li> </ul>	
<p>11. <b>CRANES</b></p> <ul style="list-style-type: none"> <li>a) Brief details and max. capacity.</li> <li>b) Container handling facilities</li> </ul>	
<p>12. <b>BRIDGES</b></p> <p>Vertical clearances</p>	
<p>13. <b>REPAIRS</b></p> <ul style="list-style-type: none"> <li>a) Hull, machinery and underwater</li> <li>b) Ship and boat yards</li> <li>c) Docking or Slipway facilities (Give size of vessels handled or dimensions)</li> <li>d) Hards and ramps.</li> <li>e) Divers / Diving Assistance</li> </ul>	
<p>14. <b>RESCUE AND DISTRESS</b></p> <p>Salvage, lifeboat, coastguard, etc.</p>	
<p>15. <b>SUPPLIES</b></p> <ul style="list-style-type: none"> <li>a) Fuel with type and quantities available.</li> <li>b) Freshwater and rate of supply.</li> <li>c) Provisions</li> <li>d) Chart Agents</li> </ul>	
<p>16. <b>SERVICES</b></p> <ul style="list-style-type: none"> <li>a) Radio Telegrams/Telephony</li> <li>b) Medical.</li> <li>c) Quarantine</li> <li>d) Consuls.</li> <li>e) Ship chandlery and stevedores,</li> <li>f) Compass adjustment,</li> <li>g) Tank cleaning,</li> <li>h) Hull painting.</li> <li>j) Diving and underwater examination</li> <li>k) Police / Ambulance / Fire</li> <li>l) Navigational warnings and weather bulletins</li> <li>m) Garbage Disposal</li> <li>n) Telephones</li> <li>p) Waste oil disposal</li> </ul>	
<p>17. <b>COMMUNICATIONS</b></p> <ul style="list-style-type: none"> <li>a) Road, rail and air services available</li> <li>b) Nearest airport or airfield.</li> <li>c) Port Radio and Information service (Frequencies and operating hours)</li> </ul>	

18. <b>PORT AUTHORITY</b> Designation, address and telephone number.	
19. <b>SMALL CRAFT FACILITIES</b> a) Information and facilities for small craft /yachts visiting the port. b) Yacht clubs, berths etc.	
20. <b>SHORE LEAVE</b>	
21. <b>CLUBS / RECREATION / INFORMATION</b> KIOSKS – Their location.	
22. <b>VIEWS</b> (duly annotated) Photographs (where permitted) of the approaches, leading marks, the entrance to the harbour, etc. (Picture postcards may also be useful).	

*Signature of Observer/Reporter*.....

To

*The Chief Hydrographer to the Government of India*  
National Hydrographic Office  
107 A, Rajpur Road  
PO Box No. 75,  
Dehradun- 248001  
(UTTARANCHAL), INDIA  
I.H. 102 ( Revised 1973 )

E Mail : [nho@sancharnet.com](mailto:nho@sancharnet.com)  
Fax No.: 91- 0135- 2748373  
WEB: [www.hydrobharat.org](http://www.hydrobharat.org)

**I.H. 102 (Revised 2003)**

*HYDROGRAPHIC NOTE*

**(For Reporting Navigational Dangers/ Changes observed at Sea by Mariners)**

Date : .....  
Ref. No: .....

**Details of the Sender / Originator**

1. **Name of ship or sender:** .....
2. **Address of sender:** .....  
.....  
e-mail; Fax No.; Tel. No.: .....
3. **General Locality:** .....
4. **Chart / Publication Affected:**
  - a) Chart published by INHO / UKHO / other (Specify): .....
  - b) Chart No.: ..... Edition Date: .....
  - c) Latest Edition of Indian N to M held: .....

**Details of Changes / Dangers Observed**

5. <b>Object of Change:</b>	<b>Date/Time of observation</b>	<b>Charted</b>	<b>Observed</b>	<b>Position/Area</b>
(a) Bathymetry:				
(i) Depth - .....	.....	.....	.....	.....
(ii) Depth Contour - .....	.....	.....	.....	.....
(iii) Channel Depth - .....	.....	.....	.....	.....
(b) Navigational Dangers:				
(i) New Shoals.....	.....	.....	.....	.....
(ii) New Rocks.....	.....	.....	.....	.....
(iii) New Reefs.....	.....	.....	.....	.....
(iv) New Wrecks.....	.....	.....	.....	.....
(v) New Nav-aid (Specify) - .....	.....	.....	.....	.....
(c) Casualties to existing Nav-Aids:				
(i) Buoys.....	.....	.....	.....	.....
(ii) Lights.....	.....	.....	.....	.....
(iii) Fog signals.....	.....	.....	.....	.....
(iv) Racons.....	.....	.....	.....	.....
(v) Transit Marks .....	.....	.....	.....	.....
(vi) Leading Lines.....	.....	.....	.....	.....
(vii) Clearance bearings.....	.....	.....	.....	.....
(d) Designated Areas:				
(i) Exercise Areas .....	.....	.....	.....	.....
(ii) Prohibited Areas .....	.....	.....	.....	.....
(iii) Pilot Station .....	.....	.....	.....	.....
(iv) Anchorage .....	.....	.....	.....	.....
(v) Foul Ground .....	.....	.....	.....	.....

- (e) Port Information:
  - (i) Berthing .....
  - (ii) Cranage .....
  - (iii) Tugs .....
  - (iv) Dry Docks .....
  - (v) Repair Facilities .....
  - (vi) Pilotage .....
  - (vii) Fuel .....
  - (viii) Water .....
  - (ix) Any other (Specify) :.....
- (f) Environmental Data:
  - (i) Met information .....
  - (ii) Tides and Tidal Stream .....
  - (iii) Pollutants .....
  - (iv) Effluents.....
  - (v) Marine Life / Habitats .....
- (g) Other changes, if any, with Details: .....

6. **Information on the Positions of Danger / Changes Reported above:**

- (a) Positioning System used: .....
- (b) Datum (WGS/Everest/ Local (Specify) ) : .....
- (c) Accompanying plots / photographs if any: .....

7. **Information on the Soundings / Depths Reported above:**

- a) Echo Sounder (Type) used: .....
- b) Draught of Vessel set on Echo Sounder: .....
- c) Observed water depth vis-à-vis charted depth: .....
- d) Echo-gram accompanying this report: Yes / No .....
- e) Whether voltage drop existed in equipment at observation time .....
- f) Data and Time of depth observation .....

8. **Limitations if any in Reporting the changes above** .....

Signature of the Master / Reporter

Date:

To

**The Chief Hydrographer**  
 National Hydrographic Office  
 107-A, Rajpur Road,  
 Post Box No. 75, Dehradun - 248 001  
 (UTTARANCHAL), INDIA

E-mail: - [nho@sancharnet.in](mailto:nho@sancharnet.in)  
 Fax No.: (0135) 2748373  
 WEB: - [www.hydrobharat.org](http://www.hydrobharat.org)

**Please Note:**

1. Please see over leaf for Instructions for filling up this form.
2. Photograph / Sketches / Diagram, etc duly annotated will be useful supporting document.
3. Please rush this information to the Chief Hydrographer to the Govt. of India at the address given above, by the fastest available means.

**TABLE FOR CONVERTING FEET AND FATHOMS TO METRES**

Feet	Fmt	Mtrs	Feet	Fmt	Mtrs	Feet	Fmt	Mtrs	Feet	Fmt	Mtrs
1		0.305	55		16.764	162	27	49.378	498	83	151.790
1.5	¼	0.457	56		17.069	168	28	51.206	504	84	153.619
2		0.610	57	9½	17.374	174	29	53.035	510	85	155.448
3	½	0.914	58		17.678	180	30	54.864	516	86	157.277
4		1.219	59		17.983	186	31	56.693	522	87	159.106
4.5	¾	1.372	60	10	18.288	192	32	58.522	528	88	160.934
5		1.524	61		18.593	198	33	60.350	534	89	162.763
6	1	1.829	62		18.898	204	34	62.179	540	90	164.992
7		2.134	63	10½	19.202	210	35	64.008	546	91	166.421
8		2.438	64		19.507	216	36	65.837	552	92	168.250
9	1½	2.743	65		19.812	222	37	67.666	558	93	170.078
10		3.048	66	11	20.117	228	38	69.494	564	94	171.907
11		3.353	67		20.422	234	39	71.323	570	95	173.736
12	2	3.658	68		20.726	240	40	73.152	576	96	175.565
13		3.962	69	11½	21.031	246	41	74.981	582	97	177.394
14		4.267	70		21.336	252	42	76.810	588	98	179.222
15	2½	4.572	71		21.641	258	43	78.638	594	99	181.051
16		4.877	72	12	21.946	264	44	80.467	600	100	182.880
17		5.182	73		22.250	270	45	82.296			
18	3	5.486	74		22.555	276	46	84.125	<b>Metres</b>	<b>Inches</b>	
19		5.791	75	12½	22.860	282	47	85.954			
20		6.096	76		23.165	288	48	87.782	0.10	3.937	
21	3½	6.401	77		23.470	294	49	89.611	0.20	7.874	
22		6.706	78	13	23.774	300	50	91.440	0.30	11.811	
23		7.010	79		24.079	306	51	93.269	0.40	15.748	
24	4	7.315	80		24.384	312	52	95.098	0.50	19.685	
25		7.620	81	13½	24.689	318	53	96.926	0.60	23.622	
26		7.925	82		24.994	324	54	98.755	0.70	27.559	
27	4½	8.230	83		25.298	330	55	100.584	0.80	31.496	
28		8.534	84	14	25.603	336	56	102.413	0.90	35.433	
29		8.839	85		25.908	342	57	104.242	1.00	39.370	
30	5	9.144	86		26.213	348	58	106.070			
31		9.449	87	14½	26.518	354	59	107.899			
32		9.754	88		26.822	360	60	109.728			
33	5½	10.058	89		27.127	366	61	111.557			
34		10.363	90	15	27.432	372	62	113.386			
35		10.668	91		27.737	378	63	115.214			
36	6	10.973	92		28.042	384	64	117.043			
37		11.278	93	15½	28.346	390	65	118.872			
38		11.582	94		28.651	396	66	120.701			
39	6½	11.887	95		28.956	402	67	122.530			
40		12.192	96	16	29.261	408	68	124.358			
41		12.497	97		29.566	414	69	126.187			
42	7	12.802	98		29.870	420	70	128.016			
43		13.106	99	16½	30.175	426	71	129.845			
44		13.411	100		30.480	432	72	131.674			
45	7½	13.716	102	17	31.090	438	73	133.502			
46		14.021	108	18	32.918	444	74	135.381			
47		14.326	114	19	34.747	450	75	137.160			
48		14.630	120	20	36.576	456	76	138.989			
49		14.935	126	21	38.405	462	77	140.818			
50		15.240	132	22	40.234	468	78	142.646			
51	8½	15.545	138	23	42.062	474	79	144.475			
52		15.850	144	24	43.891	480	80	146.304			
53		16.154	150	25	45.720	486	81	148.133			
54	9	16.459	156	26	47.549	492	82	149.962			

**TABLE FOR CONVERTING METRES TO FEET AND FATHOMS**

Mtrs	Feet	Fms	Metres	Feet	Fms	Metres	Feet	Fms	Metres	Feet	Fms
1	3.281	0.547	57	187.008	31.168						
2	6.562	1.094	58	190.289	31.715	5000	16404.20	2734.03			
3	9.843	1.640	59	193.570	32.262	6000	19685.04	3280.84			
4	13.123	2.187	60	196.850	32.808	7000	22965.88	3827.65			
5	16.404	2.734	61	200.131	33.355	8000	26246.72	4374.45			
6	19.685	3.281	62	203.412	33.902	9000	29527.56	4921.26			
7	22.966	3.828	63	206.693	34.449	10000	32808.40	5468.07			
8	26.247	4.374	64	209.974	34.996						
9	29.528	4.921	65	213.255	35.542	<b>Inches</b>	<b>Feet</b>	<b>Mtrs</b>	<b>Factors</b>		
10	32.808	5.468	66	216.535	36.089						
11	36.089	6.015	67	219.816	36.636	1	0.083	0.025	1 Inch=0.0254 mtr		
12	39.370	6.562	68	223.097	37.183	2	0.167	0.051	1 Foot=0.3048 mtr		
13	42.652	7.108	69	226.378	37.730	3	0.250	0.076	1 Fthm=1.8288 mtr		
14	45.932	7.655	70	229.659	38.276	4	0.333	0.102	or 6 feet		
15	49.213	8.202	71	232.940	38.823	5	0.417	0.127			
16	52.493	8.749	72	236.220	39.370	6	0.500	0.152			
17	55.774	9.296	73	239.501	39.917	7	0.583	0.178			
18	59.055	9.843	74	242.782	40.464	8	0.667	0.203			
19	62.336	10.389	75	246.063	41.010	9	0.750	0.229			
20	65.617	10.936	76	249.344	41.557	10	0.833	0.254			
21	68.898	11.483	77	252.625	42.104	11	0.917	0.279			
22	72.178	12.030	78	255.906	42.651	12	1.000	0.305			
23	75.459	12.577	79	259.186	43.198						
24	78.740	13.123	80	262.467	43.745	<b>Fthms</b>	<b>Metres</b>	<b>Feet</b>	<b>Metres</b>		
25	82.021	13.670	81	265.748	44.291						
26	85.302	14.217	82	269.029	44.838	200	365.760	700	213.360		
27	88.583	14.764	83	272.310	45.385	300	548.640	800	243.840		
28	91.864	15.311	84	275.591	45.932	400	731.520	900	274.320		
29	95.144	15.857	85	278.871	46.479	500	914.400	1000	304.800		
30	98.425	16.404	86	282.152	47.025	600	1097.280				
31	101.706	16.951	87	285.433	47.572	700	1280.160				
32	104.987	17.498	88	288.714	48.119	800	1463.040				
33	108.268	18.045	89	291.995	48.666	900	1645.920				
34	111.549	18.591	90	295.276	49.213	1000	1828.800				
35	115.829	19.138	91	298.556	49.759						
36	118.110	19.685	92	301.837	50.306	<b>Factor = 1 mtr = 3.280839895 feet or</b>					
37	121.391	20.232	93	305.118	50.853	<b>39370078740 inches = 0.546806649 fthm</b>					
38	124.672	20.779	94	308.399	51.400						
39	127.953	21.325	95	311.680	51.947						
40	131.234	21.872	96	314.961	52.493						
41	134.514	22.419	97	318.241	53.040						
42	137.795	22.966	98	321.522	53.587						
43	141.076	23.513	99	324.803	54.134						
44	144.357	24.059	100	328.084	54.658						
45	147.638	24.606	200	656.17	109.36						
46	150.919	25.153	300	984.25	164.04						
47	154.199	25.700	400	1312.34	218.72						
48	157.480	26.247	500	1640.42	273.40						
49	160.761	26.794	600	1968.50	328.08						
50	164.042	27.340	700	2296.59	382.76						
51	167.323	27.887	800	2624.67	437.45						
52	170.604	28.434	900	2952.76	492.13						
53	173.885	28.981	1000	3280.84	546.81						
54	177.165	29.528	2000	6561.68	1093.61						
55	180.446	30.074	3000	9842.52	1640.42						
56	183.727	30.621	4000	13123.36	2187.23						