



INDIAN NOTICES TO MARINERS FOR 2004

(PUBLISHED FORTNIGHTLY ON 1ST & 16TH OF EVERY MONTH)

EDITION No. 20 DATED 16 OCT 2004

(CONTAIN NOTICES 393 TO 407)

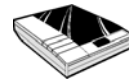
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Mariner's Obligation and A Chart maker's Plea: Observing Changes at sea proactively and reporting them promptly to the concerned charting agency, is an obligation that all mariners owe to the entire maritime community towards SOLAS. Mariners are, therefore, 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 ON 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 1st 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 1st January, 1st April, 1st July and 1st 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 393 to 407 contained in this Edition

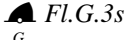




INDIAN H.O. Chart No.	Folio No.	Notice No.	ADMIRALTY Chart No.	Folio No.	Notice No.
21	1	397	81	32	394
22 (INT 752)	2	406(T)	158 (INT 7008)	32	394
31	3	402	675	32	394
205	2	397	2882	40	395
207	2	405(T)	3736 (INT 7258)	40	396
211	3	407(T)	3737 (INT 7255)	40	396
212	3	399, 406(T)	3738 (INT 7254)	40	396
214	3	406(T)	3790	40	396
252 (INT 7325)	2	397	4037	45	404
253 (INT 7328)	2	397	4040	46	404
254	2	405(T)	4041	46	404
255 (INT 7334)	3	407(T)			
256 (INT 7340)	3	399			
257 (INT 7343)	3	406(T)			
288	1	395			
292 (INT 7021)	2	397, 405(T), 407(T)			
308	5	401			
361	7	402			
2016 (INT 7336)	3	407(T)			
2020	3	400, 406(T)			
2022 (INT 7345)	3	406(T)			
2039	2	398			
2054	2	397			
2078 (INT 7346)	3	400, 406(T)			
2082	2	398			
3002 (INT 7410)	5	401			
3012 (INT 7411)	5	401			
3021	7	402			
4011	6	403			
4017	6	403			


396 (20/04) BAHRAIN – Mina ‘ Salman and approaches – Recommended track. Buoyage. Beacon. Legend. Obstruction.

Source: BA Notice 4350./04.



(HJ/1133/69)

BA Chart 3736 (INT 7258) [previous update 98/04]




Insert	recommended track, pecked line, joining:	(a)	26° 10'.41N., 50° 43'.98E. (existing track)
		(b)	26° 10'.10N., 50° 42'.90E.
		(c)	26° 10'.00N., 50° 41'.40E.
	legend, <i>Recommended Track</i> (see Note), along:	(b)-(c)	above
	 Fl.G.3s	(d)	26° 11'.39N., 50° 37'.41E.
Substitute	 Q for  Fl(2)8s		26° 11'.91N., 50° 36'.65E.
	 Obstn for  Obstn		26° 10'.00N., 50° 42'.90E.

Delete	former recommended track, pecked line, and associated legend, <i>Recommended Track</i> (see Note) 261°-081°, joining:	(a)	above 26° 10'.04N., 50° 41'.41E.
	 , close SW of:	(d)	above

BA Chart 3737 (INT 7255) [previous update 98/04]

Insert	recommended track, pecked line, joining:	(a)	26° 10'.40N., 50° 43'.90E. (existing track)
			26° 10'.10N., 50° 42'.90E.
			26° 10'.00N., 50° 41'.40E.
Substitute	 Obstn for  Obstn		26° 10'.00N., 50° 42'.90E.
Delete	former recommended track, pecked line, and associated legend, 261°-081°, joining:	(a)	above 26° 10'.04N., 50° 41'.41E.

BA Chart 3738 (INT 7254) [previous update 98/04]

Insert	recommended track, pecked line, joining:	(a)	26° 10'.40N., 50° 44'.00E. (existing track)
			26° 10'.10N., 50° 42'.90E.
			26° 10'.00N., 50° 41'.40E.
	 YB		26° 07'.28N., 50° 39'.26E.
Substitute	 Obstn for  Obstn		26° 10'.00N., 50° 42'.90E.

Delete	former recommended track, pecked line, and associated legend, 261°-081°, joining:	(a)	above 26° 10'.04N., 50° 41'.41E.
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BA Chart 3790 [previous update 292/04]

Substitute	 Obstn for  Obstn		26° 09'.90N., 50° 42'.86E.
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397 (20/04) INDIA – West Coast – Veraval – Radar beacon.

Light List Vol. F, 0410

LRS Vol.2 7894.5

Source: Navarea VIII 519/04.

(HJ/1130/09)

Chart 21 [previous update 374/04]

Insert radar beacon, Racon (K), at light 20° 54'.5N., 70° 21'.2E.

Chart 205 [previous update 77/04]

Insert radar beacon, Racon (K), at light 20° 54'.64N., 70° 21'.20E.

Chart 252 (INT 7325) [previous update 77/04]

Insert radar beacon, Racon (K), at light 20° 54'.60N., 70° 21'.15E.

Chart 253 (INT 7328) [previous update N.E. 31/08/00]

Insert radar beacon, Racon (K), at light 20° 54'.50N., 70° 21'.19E.

Chart 292 (INT 7021) [previous update 283/04]

Insert radar beacon, Racon (K), at light 20° 54'.25N., 70° 21'.20E.

Chart 2054 [previous update 211/04]

Insert radar beacon, Racon (K), at light 20° 54'.64N., 70° 21'.21E.

398 (20/04) INDIA – West Coast – Gulf of Khambhat – Dahej Harbour – Outfall. Buoy.

Source: LNG, Petronet.

(HJ/1030/19)

Note: Cancel former INM 320(P)/04

Chart 2039 [previous update 123/04]Insert outfall, , joining: 21° 39'.85N., 72° 32'.26E. (shore)
21° 39'.48N., 72° 29'.82E.

21° 39'.46N., 72° 29'.70E.

Chart 2082 [previous update 123/04]Insert outfall, , joining: 21° 39'.85N., 72° 32'.26E. (shore)
21° 39'.48N., 72° 29'.82E.

21° 39'.46N., 72° 29'.70E.

Chart 2082 (Plan, Dahej Harbour) [previous update 123/04]Insert outfall, , joining: 21° 39'.85N., 72° 32'.26E. (shore)
21° 39'.48N., 72° 29'.82E.**399 (20/04) INDIA – West Coast – Murud Janjira Harbour to Ratnagiri – Wreck.**

Source: RoS INS Nirdeshak C(N) 453.

(HJ/1030/76)

Chart 212 [previous update 206/04]Insert  PA 17° 30'.00N., 73° 04'.00E.

17° 22'.90N., 73° 10'.40E.

399 (20/04) INDIA – West Coast – Murud Janjira Harbour to Ratnagiri – Wreck (continued).**Chart 256 (INT 7340)** [previous update 186/04]

Insert	 PA	17° 30'.00N., 73° 04'.00E.
	 PA	17° 22'.90N., 73° 10'.40E.

400 (20/04) INDIA – West Coast – Port of Mormugao – Buoy.

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

Chart 2020 [previous update 330/04]

Delete	 No 5	15° 24'.86N., 73° 47'.82E.
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Chart 2078 (INT 7346) [previous update 358/04]

Delete	 No 5	15° 24'.86N., 73° 47'.82E.
	 No 6	15° 24'.80N., 73° 47'.93E.

401 (20/04) INDIA – East Coast – Vishakhapatnam Harbour – Depth. Limit.

Source: Vishakhapatnam Port Trust.
(HJ/1029/76)

Chart 308 [previous update 331/04]

Delete	existing firm line, from:	17° 41'.51N., 83° 18'.20E.
	to:	17° 41'.78N., 83° 18'.38E.

Chart 3002 (INT 7410) [previous update 331/04]

Delete	existing firm line, from:	17° 41'.52N., 83° 18'.20E.
	to:	17° 41'.60N., 83° 18'.35E.

Chart 3012 (INT 7411) [previous update 363/04]

Insert	high water line, bold firm line, joining:	(a)	17° 41'.61N., 83° 18'.00E.
		(b)	17° 41'.61N., 83° 18'.05E.
		(c)	17° 41'.66N., 83° 18'.12E.
	limit, - - - -, joining:		17° 41'.44N., 83° 18'.23E.
			17° 41'.37N., 83° 18'.24E.
			17° 41'.50N., 83° 18'.11E.
Amend	depth 11.0m to 16.5m		17° 41'.49N., 83° 18'.04E.
	depth 17.5m to 18.2m		17° 41'.50N., 83° 18'.15E.
Delete	limit, - - - -, line joining		17° 41'.41N., 83° 18'.23E.
			17° 41'.50N., 83° 18'.15E.
	all hydrographic details along with groyne and its legend within:	(c) above	
		(b) above	
			17° 41'.46N., 83° 18'.22E.
			17° 41'.58N., 83° 18'.33E.
	existing high water line from:	(a) above	
	to:	(c) above	
	limit, - - - -, line at:		17° 41'.40N., 83° 18'.22E.

402(20/04) BANGLADESH –Chittagong Southwards–Kutubdia Island – Light.

Light list Vol.F, 1054

Source: BA Notice 4352/04.

(HJ/1128/18)

Chart 31 [previous update 331/04]

Amend light to, Fl(2)10s20M 21° 51'.8N., 91° 50'.7E.

Chart 361 [previous update 312/04]

Amend light to, Fl(2)10s39m20M 21° 51'.8N., 91° 50'.7E.

Chart 3021 [previous update 312/04]

Amend light to, Fl(2)10s39m20M 21° 51'.84N., 91° 50'.71E.

403 (20/04) INDIA – Andaman Sea – Nicobar Islands – East Bay – Beacons.


Source: PMB, A & N Islands

(HJ/1030/76)

Note: Cancel INM 339(P)/04

Chart 4011 [previous update 346/03]Insert  (lighted) No 1 Fl G 07° 58'.76N., 93° 24'.56E.

G

 (lighted) No 2 Fl R 07° 58'.51N., 93° 24'.23E.

R

 (lighted) No 3 Fl G 5s 07° 58'.75N., 93° 23'.98E.

G

 (lighted) No 4 Fl R 5s 07° 58'.46N., 93° 24'.55E.

R

Chart 4011 (plan, East Bay) [previous update 346/03] (lighted) No 1 Fl G 07° 58'.76N., 93° 24'.56E.

G

 (lighted) No 2 Fl R 07° 58'.51N., 93° 24'.23E.

R

 (lighted) No 3 Fl G 5s 07° 58'.75N., 93° 23'.98E.

G

 (lighted) No 4 Fl R 5s 07° 58'.46N., 93° 24'.55E.

R

Chart 4011 (plan, Approaches to East Bay Jetty) [previous update 346/03]Insert  (lighted) No 2 Fl R 07° 58'.51N., 93° 24'.23E.

R

 (lighted) No 3 Fl G 5s 07° 58'.75N., 93° 23'.98E.

G

403 (20/04) INDIA – Andaman Sea – Nicobar Islands – East Bay – Beacons (continued).

Chart 4017 [*previous update 384/03*]

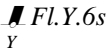
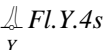
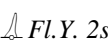

Insert	■ (lighted) <i>No 1 Fl G</i> G	07° 58'.76N., 93° 24'.56E.
	■ (lighted) <i>No 2 Fl R</i> R	07° 58'.51N., 93° 24'.23E.
	■ (lighted) <i>No 3 Fl G 5s</i> G	07° 58'.75N., 93° 23'.98E.
	■ (lighted) <i>No 4 Fl R 5s</i> R	07° 58'.46N., 93° 24'.55E.

404 (20/04) SINGAPORE – Marina South – Buoyage. Works.

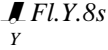
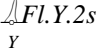
Source: BA Notice 4351/04.

(HJ/927/16)

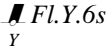
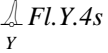


BA Chart 4037 [previous update 264/04]

Insert	 Fl.Y.6s	1° 16'.295N., 103° 52'.145E.
	 Fl.Y.4s	(a) 1° 16'.172N., 103° 52'.233E.
	 Fl.Y. 2s	(b) 1° 15'.911N., 103° 51'.874E.
	 Fl.Y.8s	1° 16'.034N., 103° 51'.785E.
	maritime limit, pecked line, joining:	(c) 1° 16'.424N., 103° 52'.050E.(shore) (a) above (b) above
	legend, Works in progress (2004), within:	(d) 1° 16'.167N., 103° 51'.691E.(shore) (a)-(d) above

BA Chart 4040 [previous update 334/04]

Insert	 Fl.Y.8s	1° 16'.03N., 103° 51'.79E.
	 Fl.Y.2s	(a) 1° 15'.91N., 103° 51'.87E.
	maritime limit, pecked line, joining:	(b) 1° 15'.93N., 103° 51'.90E. (E border) (a) above
	legend, Works in progress (2004), within:	(c) 1° 16'.17N., 103° 51'.69E.(shore) (a)-(c) above

BA Chart 4041 [previous update 382/04]

Insert	 Fl.Y.6s	1° 16'.30N., 103° 52'.15E.
	 Fl.Y.4s	(a) 1° 16'.17N., 103° 52'.23E.
	 Fl.Y.2s	(b) 1° 15'.91N., 103° 51'.87E.
	 Fl.Y.8s	1° 16'.03N., 103° 51'.79E.
	maritime limit, pecked line, joining:	(c) 1° 16'.42N., 103° 52'.05E. (shore) (a) above (b) above
	legend, Works in progress (2004), within:	(d) 1° 16'.17N., 103° 51'.69E. (shore) (a)-(d) above

SECTION – III: TEMPORARY AND PRELIMINARY NOTICES***405 (T) (20/04) INDIA – West Coast – Approaches to Gulf of Kachchh – Buoy.**

Source: Nav VIII warning 588/04

(HJ/1130/08)

1. Lateral green channel marking buoy relaid in position 20° 36'.6N., 71° 58'.5E.
2. Cancel former INM 233(T)/04

Charts affected: 207 – 254 – 292 (INT 7021)***406 (T) (20/04) INDIA – West Coast – Arabian Sea – Data Buoy.**

Source: NIOT, Chennai

(HJ/1031/50)

1. Following data collecting light buoys will be on station in the position given below until further notice.

<u>Buoy</u>	<u>Lat</u>	<u>Long</u>	<u>Colour</u>	<u>Light</u>
DS1	15° 28'.7N	069° 13'.3E	Yellow	Fl(5)20s
SW3	15° 24'.0N	073° 45'.0E	Yellow	Fl(2)5s
SW2	17° 01'.2N	072° 29'.1E	Yellow	Fl(2)5s

2. Mariners are advised to exercise caution and not to anchor or trawl in the operation 1000m of moored data buoy.
3. Cancel former INM 199 (T)/04, 201(T)/04

Charts affected: 22 (INT 752) – 212 – 214 – 256 (INT 7340) – 257 (INT 7340) – 2020 – 2022 (INT 7345) – 2078 (INT 7346)***407 (T) (20/04) INDIA – West Coast – Approaches to Mumbai – Restricted Area.**

Source: Nav VIII warning 485/04

(HJ/1030/87)

1. Number of wrecks in addition to wrecks exist on the chart 2016 have been reported in the area.
2. Area considered unsuitable for navigation.
3. All vessels are advised to avoid the area bounded by the following limits.
18° 50'.5N., 72° 43'.5E; 18° 53'.5N., 72° 43'.5E.
18° 53'.5N., 72° 39'.0E; 18° 50'.5N., 72° 39'.0E.

Charts affected: 211 – 255 (INT 7334) – 292 (INT 7021) - 2016

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

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 15 Oct 2004, covering the entire world are listed below against the respective NAVAREA

<u>NAVAREA No.</u>	<u>Location</u>	<u>Last NAVAREA Sl. received</u>	
I	N.E. Atlantic	348	2001 series: 510 2003 series: 261 417. 2004 series: 220 222 240 242 255 257 281 301 303 312 313 314 316 317 319 325 327 332 338 345 346 347 348.
II	E. Atlantic	Nil	2002 series: 472 497 2004 series: 266.
III	Mediterranean	521	2004 series: 447 448 453 454 455 459 467 474 478 487 491 494 495 497 506 509 512 513 514 515 516 517 518 519 520 521.
IV	N.W. Atlantic	275	2003 series: 108. 2004 series: 128 198 226 232 243 265 270 271 272 273 274 275.
V	W. Atlantic	Nil	2004 series: 606
VI	S.W. Atlantic	Nil	Nil.
VII	S.E. Atlantic	130	2004 Series: 114 118 121 125 127.
VIII	Indian Ocean	638	2004 series: 481 482 483 485 532 551 556 561 562 575 577 588 594 599 601 606 607 608 612 616 617 618 620 621 622 623 625 628 629 630 631 632 633 634 635 636 637 638.
IX	Persian Gulf, Red Sea, NW Arabian Sea	239	2001 series : 312. 2003 series : 023 120 138 177 236 237 239 273. 2004 series : 025 036 070 079 088 107 109 133 134 135 151 156 167 184 187 192 194 196 206 207 208 214 217 224 225 227 228 238 239.
X	Australia, New Guinea	010	2004 series: 007 009 010.
XI	Malacca Strait, China Sea, N. Pacific	0439	1996 series: 0925. 1998 series: 0655 1999 series: 0053 0153 0187 0310 0613. 2000 series: 0555 0677 0687. 2001 series: 0182 0775 0863. 2002 series: 0839. 2003 series: 0106 0273 0303 0304 0566 0568

			2004 series: 0026 0037 0074 0083 0091 0227 0246 0267 0271 0272 0283 0285 0321 0331 0338 0339 0361 0366 0367 0380 0389 0390 0391 0394 0395 0396 0397 0398 0399 0402 0416 0419 0426 0435 0436 0437 0439.
XII	N.E. Pacific	227	2004 series: 186 197 218 225 226 227.
XIII	N.W. Pacific	Nil	Nil
XIV	S.W. Pacific	062	2004 series: 052 054 057 059 062.
XV	S.E. Pacific	Nil	Nil
XVI	E. Pacific	Nil	1998 series: 151 2004 series: 166
Hydropacs	Pacific, Indian Ocean	1316	2001 series: 1976. 2002 series: 205 206 2330. 2003 series: 207 506 993 998 1041 1330 1395 1699 1911 1982 2265. 2004 series: 23 278 329 402 455 694 727 754 763 776 778 779 795 801 817 840 842 843 890 891 904 910 932 940 948 967 981 988 996 1000 1011 1025 1033 1044 1049 1050 1052 1066 1076 1081 1082 1084 1089 1090 1092 1096 1101 1107 1112 1113 1115 1122 1123 1124 1127 1128 1135 1138 1139 1143 1146 1151 1152 1153 1155 1156 1157 1167 1177 1180 1182 1192 1193 1214 1215 1216 1218 1219 1220 1221 1222 1225 1227 1229 1232 1233 1238 1239 1244 1254 1263 1265 1266 1268 1271 1272 1273 1274 1275 1278 1281 1282 1284 1285 1286 1288 1289 1293 1295 1297 1298 1305 1306 1309 1310 1311 1312 1313 1314 1316.
Hydrolants	Atlantic, Mediterranean	1340	2002 series: 245 246 . 2003 series: 604 1422 1472 1999 2203 2297 2406 2407 2408 2409 2410 2413 2414 2416 2418 2419 2420. 2004 series: 224 272 631 649 650 668 805 850 952 1018 1019 1033 1042 1051 1077 1084 1087 1092 1103 1104 1105 1121 1130 1136 1141 1146 1162 1174 1195 1199 1214 1219 1220 1231 1235 1240 1241 1250 1251 1252 1256 1265 1266 1269 1271 1272 1274 1276 1279 1280 1286 1290 1297 1298 1300 1303 1308 1311 1314 1320 1323 1325 1326 1330 1331 1332 1333 1334 1335 1336 1337 1338 1339 1340.

SECTION – VI: CORRECTIONS TO SAILING DIRECTION**INP 1 INDIA WEST COAST PILOT (2003)****Chapter 1, West Coast of India Pilot –
Natural Conditions**

28

Title, *Replace by*:Predominant surface currents November
(1.155.6)

NHO, Dehradun (20/04)

SECTION – VII: CORRECTIONS TO INDIAN LIST OF LIGHTS

<u>No.</u>	<u>Name & Location</u>	<u>Position (Lat-Long)</u>	<u>Charact- eristics</u>	<u>Ht. mts.</u>	<u>Range miles</u>	<u>Structure & Height (mts)</u>	<u>Remarks</u>
D 6492.1	-- Inhaca. Rear. 814m from front	25 58.5 32 59.3	Fl(2+1)W 15s	109	23	White 6-sided tower 31	Vis 224°-212°(348°). Aeromarine.
	----	...	Iso R 4s	...	12	...	Vis 212°-224°(12°) over Baixo Danae Shoal *
D 7317.4	--S Dolphin	20 39.0 58 51.7	2 F G (vert) *	5	3	Metal column	
D 7317.5	--Inner Jetty	20 38.95 58 51.87	F W *	4	3	Metal column	
D 7322	Jazirat Fahl	23 40.82 58 30.05	Fl W 15s	95	7	White Δ on metal framework tower 6	Fl W 3s on red <i>SBM</i> No 1, 2.95M SE. Fl W 5s on <i>SBM</i> No 2, 2.3M ESE. Iso W 10s on <i>SBM</i> No 3, 2.3M SE. Mo (U) Y 15s on <i>SBM</i> No 4, 2.8M SE *
D 7340.2	--	26 22.0 56 21.8	Fl W 3s *	2	3	Green metal post	<i>fl</i> 1.Ra refl. R light on floodlit mast 0.52M NW
E 6150	-High Light	12 39.2 43 26.0	Fl(4)W 15s	85	24	Grey stone tower with embattled wall, white lantern 25	(<i>fl</i> 0.2, <i>ec</i> 2.1)x3, <i>fl</i> 0.2, <i>ec</i> 7.9. Operating at reduced intensity (T) 2004 *
F 0671	Azhikal	11 56.5 75 18.1	Fl(2)W 8s	24	10	---	Storm signals. TE 2004 *
F 0945.6	-Jawahar Dock	13 05.38 80 17.93	Lit				*
	* *	* *	* *	* *	* *	* *	*
F 0945.62	--	13 05.36 80 17.96	Lit				*
	* *	* *	* *	* *	* *	* *	*
F 1054	Kutubdia Island	21 51.85 91 50.72	Fl (2)W 10s *	39	20	Red and white \square on metal framework tower	Racon *
F 1259	Pulau Sarangbaung	1 42.17 97 26.33	Fl(2)W 8s	55	14	White tower *	TE 2004 *
F 1362.1	--- No V. Rear. 0.75M from front	3 47.37 98 43.00	Iso W 6s *	12	7	White framework tower 12	Vis 037°-007° (330°) *
F 1836.5	-Sekatung	4 47.67 108 01.23	Oc W 3s *	98	26	White metal framework structure 30	<i>ec</i> 1. TE 2004 *

<u>No.</u>	<u>Name & Location</u>	<u>Position (Lat-Long)</u>	<u>Charact- eristics</u>	<u>Ht. mts.</u>	<u>Range miles</u>	<u>Structure & Height (mts)</u>	<u>Remarks</u>
K 0895.4	-	5 20.44 102 17.32 *	Fl W 5s	12	12	White beacon 10	<i>fl 0.5. Destroyed (T) 2004</i> *
K 1038	Beting Eka	5 17.53 106 54.50 *	Fl (2) W 10s	15	11	Black Ⓞ on black beacon, red bands 10	<i>fl 0.5, ec 1.5, fl 0.5, ec 7.5.</i> Ra refl. Racon *
K 1040	Beting Raja	5 12.50 106 44.66 *	Fl (2) W 10s	13	12	Black Ⓞ on black framework tower, red bands 12	<i>fl 0.5, ec 2.5, fl 0.5, ec 6.5.</i> Ra refl. Racon *
K 1144	Pulau Mandalika. Summit	6 23.0 110 55.5 *	Fl W 5s	86	40	White metal framework tower 16	<i>fl 0.5. Vis 069°-287°(218°).</i> Racon. TE 2004. *

SECTION – VIII: CORRECTION TO LIST OF RADIO SIGNALS

VOL. 1, 1987

(Last correction: Edition No. 17 dated 01 Sep 2004)

NIL

VOL. 2, 1995

(Last correction: Edition No.19 dated 01 Oct 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. 18 dated 15 Sep 2004)

Page 184, **DISTRESS, SEARCH AND RESCUE, INDIA, ANDAMAN & NICOBAR REGION,**
Read **MRSC PORT BLAIR** as **MRCC PORT BLAIR**
(MRCC PORT BLAIR)

(20/04)

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. 19 dated 01 Oct 2004)

NIL

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
Fax No.: (0135) 2748373
WEB: 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) NAME OF THE PORT : b) Location : Lat: _____, Long: _____ c) Listing in Guide to Port Entry: Yes/No. Sl. No.: _____	
2.	NAME AND ADDRESS OF PORT AUTHORITIES a) Name b) Address c) Phone d) Fax e) E-mail	
3.	GENERAL REMARKS 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.	ANCHORAGES a) Type / Purpose b) Minimum Depth at anchorage c) Shelter afforded d) Holding ground e) Recommended pilotage to the anchorage	
5.	PILOTAGE a) Authority for requests. b) Embarkation position c) Regulations d) Documents to be provided	
6.	DIRECTIONS a) Entry and berthing information. b) Tides (Height) c) Tidal Streams. d) Navigational aids.	
7.	POLLUTION CONTROL a) Local regulations in force (if any)	

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

18. PORT AUTHORITY Designation, address and telephone number.	
19. SMALL CRAFT FACILITIES a) Information and facilities for small craft /yachts visiting the port. b) Yacht clubs, berths etc.	
20. SHORE LEAVE	
21. CLUBS / RECREATION / INFORMATION KIOSKS – Their location.	
22. VIEWS (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

E Mail : nho@sancharnet.com

Fax No.: 91- 0135- 2748373

WEB: 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. Object of Change: | Date/Time of
observation | Charted | Observed | Position/Area |
|--------------------------------------|-------------------------------------|----------------|-----------------|----------------------|
| (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
Fax No.: (0135) 2748373
WEB: - 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		0.457	56		17.069	168	28	51.206	504	84	153.619
2		0.610	57	9	17.374	174	29	53.035	510	85	155.448
3		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		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	10	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	1	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	11	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	2	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	Metres	Inches	
19		5.791	75	12	22.860	282	47	85.954			
20		6.096	76		23.165	288	48	87.782	0.10	3.937	
21	3	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	93.469	0.40	15.748	
24	4	7.315	80		24.384	312	52	95.098	0.50	19.685	
25		7.620	81	13	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	4	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	14	26.518	354	59	107.899			
32		9.754	88		26.822	360	60	109.728			
33	5	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	15	28.346	390	65	118.872			
38		11.582	94		28.651	396	66	120.701			
39	6	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	16	30.175	426	71	129.845			
44		13.411	100		30.480	432	72	131.674			
45	7	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	8	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	Inches	Feet	Mtrs	Factors		
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	Fthms	Metres	Feet	Metres		
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	Factor = 1 mtr = 3.280839895 feet or					
37	121.391	20.232	93	305.118	50.853	39370078740 inches = 0.546806649 fthm					
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						