



**NATIONAL REPORT  
NATIONAL HYDROGRAPHIC OFFICE  
INDIA**

**NATIONAL REPORT TO REGIONAL HYDROGRAPHIC COMMISSION**  
**REPUBLIC OF INDIA- MAR 2018**

**1. Hydrographic Office /Service**

1.1 The Indian Naval Hydrographic Department (INHD), with the National Hydrographic Office located at Dehradun, is the sole national authority mandated with the responsibility of publication of nautical charts and other publications for navigation at sea. As part of its international responsibilities, the department provides coverage for Maritime Safety Information (MSI) in the region NAVAREA VIII comprising of Indian Ocean, Arabian Sea and Bay of Bengal. The department has a fleet of seven modern ocean-going survey ships and one twin hulled catamaran survey vessel, fully equipped with latest hydrographic and oceanographic sensors.

1.2 The National Institute of Hydrography (NIH), Goa, an integral part of the INHD, has the national responsibility for conduct of hydrographic training and functions under the overall professional supervision of the Chief Hydrographer to the Govt of India. The Institute conducts courses for hydrographic officers, technicians, civilians as well as personnel from the Indian Ocean littorals. The Long 'H' (IHO recognized Cat 'A' course) and Basic 'H' (IHO recognized Cat 'B' course) courses are conducted by the Institute. The courses conducted along with duration are as follows:-

<b><u>Sl</u></b>	<b><u>Course</u></b>	<b><u>Duration</u></b>
(a)	<b><u>Long H Course</u></b> Cat 'A' course recognized by IHO and on completion eligible students are also awarded a MSc degree from Goa University.	43 Weeks
(b)	<b><u>Basic H Course</u></b> Cat 'B' course recognized by IHO	29 Weeks
(c)	<b><u>PO 'Q' SR</u></b> An advanced level sailor course. On successful completion of PO 'Q' Course a Diploma in Hydrography is awarded from Cochin University of Science and Technology.	20 Weeks
(d)	<b><u>LS SR 'Q' Refresher</u></b> A mid-level sailor refresher course.	11 Weeks
(e)	<b><u>Basic 'Q'</u></b> An entry level sailor qualifying course.	16 Weeks

**2. Surveys**

2.1 Indian Naval Hydrographic Department (INHD) has undertaken Hydrographic Surveys both at National and International levels. In the national front, various hydrographic surveys are being undertaken towards the updation of existing charts of the Indian coast and Island territories. An average of 45 navigation and defence surveys are conducted annually. In the year gone by, five navigation surveys were undertaken in the countries of the Indian Ocean Region. In addition, the Department is engaged in undertaking deep sea surveys using Multibeam in Arabian Sea and Bay of Bengal to update the 'Miscellaneous lines of soundings'.

2.2 **New Technologies.** The Indian Naval Hydrographic Department (INHD) is at the forefront of utilization of modern and high end surveying equipment/ technologies. Two AUVs are being deployed onboard Catamaran hull survey vessel INS Makar over the last three years. Technology absorption for data collection and processing has been done with skills developed internally by the Department.

2.3 **Processing System/ Software.** The department is employing the latest software for data acquisition, quality control and chart production.

## 2.4 **Problems Encountered.** Nil

## 3. **New Charts & Updates**

3.1 **ENCs.** The HPD database is being seamlessly populated from usage band 6 upwards. NHO has reviewed the CATZOC classification and categorized all surveys appropriately. So far, 318 ENCs and equivalent paper charts have been published through Hydrographic Production Database (HPD) system with another 40 under various stages of production. The breakdown of the ENCs released with their respective usage band is tabulated below:-

<b><u>Category</u></b>	<b><u>Usage Band</u></b>	<b><u>No of ENCs</u></b>
Overview	1	6
General	2	29
Coastal	3	37
Approach	4	49
Harbour	5	119
Berthing	6	78
<b>Total</b>		<b>318</b>

3.2 **Foreign Water Charts and ENCs.** INHD has so far, published 32 ENCs and equivalent paper charts of foreign waters.

3.3 **INT Charts.** India has produced 78 out of 80 INT charts.

## 4. **New Publications and Updates**

4.1 The following charts / ENCs / publications have been printed since last NIOHC meeting: -

<b><u>Sl</u></b>	<b><u>Description</u></b>	<b><u>No</u></b>
(a)	New Charts	40
(b)	New Editions	16
(c)	Reprints	72
(d)	Publications	03
(e)	New ENCs	37
(f)	New Edition ENCs	26

4.2 **Paper Chart Distribution.** The paper charts and associated publications are made available through chart agents. The latest list of chart agents is available on the NHO website. These paper charts are updated by fortnightly Notice to Mariners, which are available on the NHO website [www.hydrobharat.nic.in](http://www.hydrobharat.nic.in). NHO has incorporated a digital chart catalogue in the web page to enable the mariners to easily identify the required charts.

4.3 **ENC Distribution.** Indian ENCs are distributed worldwide through UKHO, M/s Jeppesen Marine and Norwegian Hydrographic Service. INHD also provides ENCs in S-63 format to the Indian Navy and other national agencies.

4.4 **Problems Encountered.** Nil

5. **Marine Safety Information**

5.1. **Existing Infrastructure for Marine Safety Information Transmission** All Radio Navigational Warnings for NAVAREA-VIII are issued by the Chief Hydrographer to the Government of India. The updated warnings including Notices to Mariners are available on the INHO website [www.hydrobharat.gov.in](http://www.hydrobharat.gov.in). A total number of 947 NAVAREA messages were promulgated in the year 2017. The country wise list of NAVAREA request received from the Coastal States in the region is as follows:-

<b><u>Country</u></b>	<b><u>Number of Messages</u></b>	<b><u>Topics/ Subject of Messages</u></b>
Bangladesh	10	Firing Exercise, Aid to Navigation
Kenya	01	Aid to Navigation
Maldives	01	Aid to Navigation
Mauritius	04	Aid to Navigation
Myanmar	35	Firing Exercise, Survey, Aid to Navigation
Seychelles	01	Aid to Navigation
Reunion Island	13	Firing Exercise, Aid to Navigation
Somalia	Nil	--
Sri Lanka	63	Firing Exercise, Aid to Navigation
Tanzania	01	Aid to Navigation

5.2. **Problems Encountered.**

5.2.1 Late receipt of NAVAREA warnings request. Many requests are received after the commencement of the operation.

5.2.2 Information received directly from the mariners instead of getting routed through National Coordinator.

5.2.3 Follow up reports for NAVAREA cancellation not received.

5.3. **Existing NAVTEX Coverage.** The status of NAVTEX existing is as follows:-

<b><u>Sl. No.</u></b>	<b><u>Station with B1 Character</u></b>	<b><u>Status</u></b>
(a)	Veraval (India) (H)	Transmitting on trial basis
(b)	Vengrula (India) (J)	Transmitting on trial basis
(c)	Muttam Point (India) (L)	Transmitting on trial basis
(d)	Porto Novo (India) (O)	Transmitting on trial basis
(e)	Vakalpudi (India) (Q)	Transmitting on trial basis

(f)	Balasure (India) (S)	Transmitting on trial basis
(g)	Keating Point (India) (V)	Transmitting on trial basis
(h)	Cassis (Mauritius) (C)	Operational
(i)	Mahe (Seychelles) (T)	Operational
	Mahe (Seychelles) (M)	

5.4. **MSI Training.** It is proposed to have a MSI training course for member states through IHO CB fund.

6. **C-55 (Updated Table)** The updated C-55 table is placed at Annexure to the National Report.

## 7. **Capacity Building**

7.1 India is providing hydrographic assistance to maritime nations of the region. This includes joint hydrographic surveys with onboard training, structured training at NIH and specialized courses for Multibeam and ENC production at NHO.

7.2 **Foreign Cooperation.** INHD has carried out hydrographic surveys in Maldives, Mauritius, Kenya, Tanzania, Myanmar, Sri Lanka and Seychelles over the last few years as per the request received from respective Governments. Avenues for cooperation are also being explored with other members of the region. Hydrographic cooperation with the following countries has been progressed in the recent past:-

7.2.1 **India -Tanzania.** In pursuance of existing MoU on co-operation in the field of Hydrography between the Governments of Republic India and the United Republic of Tanzania in 2015 , 06 navigational charts have been published. A hydrographic survey of Pemba Island has been completed in Dec 2017 and charting action is in progress.

7.2.2 **India- Mauritius.** INHD has completed 26 hydrographic surveys in the last ten years and 07 navigational INT series charts have already been published. A Hydrographic Survey Unit is being maintained in Mauritius, since Oct 2013, for undertaking local hydrographic survey and to assist in setting up Hydrographic Infrastructure in Mauritius. A hydrographic survey was completed for the chart Approached to Grand Port in Feb 2018.

7.2.3 **India – Seychelles.** INHO has conducted hydrographic surveys since 2013 and published 07 navigational charts in the Seychelles waters.

7.2.4 **India-Myanmar.** The second workshop on Cartography / ENC production was conducted for 03 Myanmar Navy officers from 06 Nov 17 to 02 Dec 17 at National Hydrographic Office (NHO) Dehradun.



7.2.5 **India – Sri Lanka.** A survey ship was deployed to Sri Lanka from 24 Oct to 22 Dec 17 for conduct of survey off Colombo. A team of four officers from Sri Lanka were trained on Cartography / ENC production from 28 Aug 17 to 22 Sep 17 at National Hydrographic Office (NHO) Dehradun.



7.2.6 **Antarctica Survey Programme.**

India is a member of the Hydrographic Committee on Antarctica. A delegation from INHD participated in the 37<sup>th</sup> Indian Antarctic expedition. India is committed to fulfilling the survey and charting requirements in Antarctica.



7.3. The Long Hydrography CAT 'A' and Basic Hydrography CAT 'B' programmes conducted at National Institute of Hydrography, Goa were recertified by IBSC upto 2019. The institute has adopted S-5A and S-5B versions of the syllabus for CAT 'A' and CAT 'B' courses as promulgated by IHO and implemented the same for the ongoing programmes. The Indian Naval Hydrographic department has trained 665 foreign nationals of IOR in various programmes. The details of International trainees trained by the Indian Naval Hydrographic Department in 2017-18 are tabulated below:-

<u>Sl</u>	<u>Course</u>	<u>Foreign Trainees</u>	<u>Countries</u>
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(a)	Long 'H' (CAT 'A')	09	02 each from Nigeria and Sri Lanka. 01 each from Bangladesh, Indonesia, Philippines, Thailand and Vietnam.
(b)	Basic 'H' (CAT 'B')	10	03- Sri Lanka and 01 each from Kazakhstan, Kenya, Nigeria, Micronesia, Myanmar, Philippines and Vietnam
(c)	PO 'Q'	07	02- Sri Lanka and 01 each from Bangladesh, Cameroon, Maldives, Mauritius and South Africa
(d)	Leading 'Q'	03	03- Sri Lanka
(e)	Basic 'Q'	05	02- Fiji, 01 Maldives, 02- Sri Lanka
(f)	ENC Production Workshop	07	04- Sri Lanka, 03- Myanmar

7.4. For the year 2018-19 Nine (09) International trainees from Bangladesh (02), Philippines (01), Indonesia (01), Vietnam (01), Maldives (01), Sri Lanka (02) and Australia (01) are undergoing CAT 'A' Long Hydrographic course at National Institute of Hydrography, Goa, India.

8. **Oceanographic Activities** NIL

9. **Other Activities**

9.1 **World Hydrographic Day Celebrations.** The World Hydrographic Day was celebrated in India at NHO Dehradun, National Institute of Hydrography (NIH), Goa and onboard Ships at Visakhapatnam, Kochi, Port Blair and Karwar. Keeping in view the theme "Bathymetry- the foundation for Sustainable Seas, Oceans and Waterways" Workshops, lectures, demonstrations and visits by undergraduate and senior school students were organized.

9.2 **Disaster Relief.** INHO has participated in the following disaster relief operations:-

9.2.1 Assisted in relief operations during the very severe cyclonic storm 'OCKHI' in the Arabian Sea.

9.2.2 Search and rescue operations conducted to locate the debris of an off shore oil rig helicopter off Mumbai Coast.

10. **Conclusion**

10.1. INHO is committed towards capacity building, imparting training and empowering the hydrographic offices in the Indian Ocean Region.

## Annexure 1(refers to Para 5 of National Report)

**IHO SPECIAL PUBLICATION C-55**  
**“STATUS OF HYDROGRAPHIC SURVEYING AND NAUTICAL CHARTING WORLD-WIDE”**  
**QUESTIONNAIRE**

C-55 Summary for:				Comments on Charts:
Country:	INDIA			
Country Iso Code:	IN			
Country SubCode:				
INT Region:	J			
Country/Depend:				
Last updated:	01/03/2018			
Provided by:	INDIA			
Chart coverage	Passage (%)	Coastal (%)	Port (%)	Comments on Surveys:
INT	100	100	100	
RNC	0	0	0	
ENC	100	100	100	
Status of Paper Charts				
Paper charts with depths in meters (%)			100	
Paper charts referenced to a satellite datum (%)			90	
Status of surveys	Adequate (%)	Resurvey (%)	No survey (%)	
0-200m	100	0	0	
> 200m	95	5	0	

MSI	Y/N	Comments on MSI:
Local warning	YES	via NAVAREA VIII (INHO, INDIA is the Coordinator for NAVAREA VIII). Changes to ports and harbours passed to charting authority.
Coastal warning	YES	
Nav warning	YES	
Port warning	YES	
GMDSS	Y/N	Comments on GMDSS:
Master Plan	YES	
Area A1	YES	
Area A2	YES	
Area A3	YES	
NAVTEX	YES	
SafetyNet	YES	