



# **NATIONAL REPORT**

## **NATIONAL HYDROGRAPHIC OFFICE**

### **INDIA**



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**NATIONAL REPORT TO 19<sup>TH</sup> CONFERENCE OF THE SOUTH AFRICAN AND ISLANDS  
HYDROGRAPHIC COMMISSION (SAIHC)**

**REPUBLIC OF INDIA - AUG 2023**

**1. Hydrographic Office/ Service/ Organisation.**

1.1 The Indian Naval Hydrographic Department (INHD), with the National Hydrographic Office located at Dehradun, is the 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 six modern ocean-going survey ships and one twin hulled catamaran survey vessel, fully equipped with modern 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 Government of India. The Institute conducts courses for hydrographic officers, sailors, technicians, civilian personnel as well as personnel from the Indian Ocean littorals including Area 'H' nations. The Long 'Hydro' (IHO recognised Cat 'A') and Basic 'Hydro' (IHO recognised Cat 'B') courses are conducted by the Institute. The details of training courses conducted along with duration are as follows:-

<b><u>Ser</u></b>	<b><u>Courses</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 M.Sc degree from Goa University, India	43 Weeks
(b)	<b><u>Basic 'H' Course.</u></b> CAT 'B', course recognised by IHO	29 Weeks
(c)	<b><u>PO 'Q' HY Course.</u></b> An advanced level course for sailors. On completion of PO 'Q' HY course a Diploma in Hydrography is awarded from Kochi University of Science & Technology.	20 Weeks
(d)	<b><u>LS 'Q' HY Refresher.</u></b> A mid-level sailor refresher course	11 Weeks
(e)	<b><u>Basic 'Q' HY Course.</u></b> An entry level qualifying course on Hydrography	16 Weeks
(f)	<b><u>Orientation course for Port Surveyors.</u></b> Tailor made course based on requirement projected	3-4 Weeks

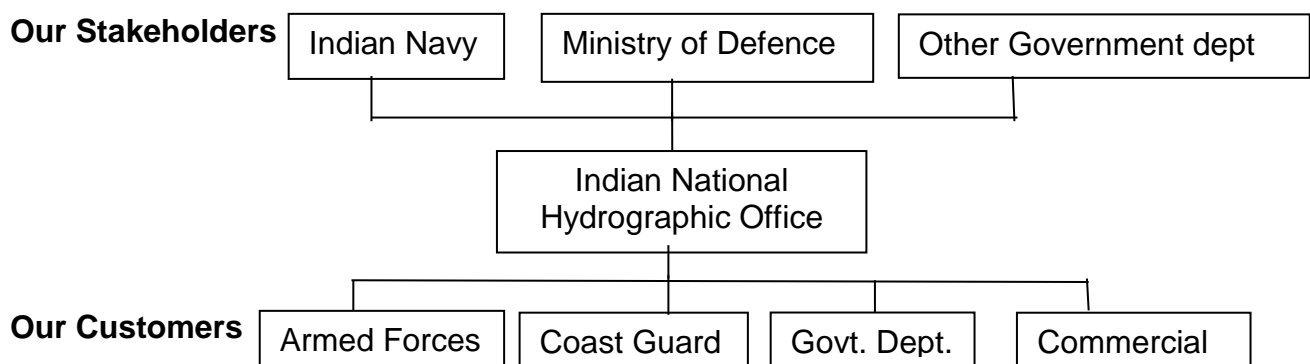
1.3 ENC and Chart production workshop is also conducted at NHO, Dehradun for FFC (Friendly foreign countries) based on requirement projected.

## 2. INHD Partners

2.1 INHD actively cooperates with all stake holders associated with Marine Services and is responsible for providing appropriate services w.r.t Hydrography for the waters of Indian responsibilities. INHD in addition has also been mandated with the responsibility of representing India in all International Hydrographic and Maritime Forums.

2.2 In addition to meeting SOLAS obligations, INHD has the responsibility to deliver hydrographic support to Indian Armed Forces to facilitate their operations and is additionally also engaged in providing technical assistance to other friendly nations on request.

2.3 The details of our various stake holders and customers are as mentioned below:-



## 3. Production Systems

3.1 INHD works with a complete digital production, beginning from the data collection to processing, undertaking of QC and final production of nautical products for the mariners. INHD presently is having the complete capability to undertake and meet the mariners requirement in terms of both paper and digital charts including requisite publications.

## 4. Co-operation and Partnership

4.1 INHD is fully committed towards forging partnership with other national and international government hydrographic organisation and institutions involved in the field of hydrography towards ensuring deliverables of better and user friendly Nautical products to mariners through bilateral agreements and MOUs.

4.2 INHD have been a part of International Hydrographic Organisation (IHO) and has been actively participating and contributing to various IHO sub-committees, with the aim of doing our best to support International Capacity building.

4.3 Indian Naval Hydrographic Department (INHD) has undertaken Hydrographic Surveys both in Indian and International waters. On the national front, various hydrographic surveys are being undertaken for updating existing nautical charts of the Indian coast and Island territories. At an average about 45 navigation and defence surveys

are conducted annually. In the year gone by, one navigation survey at Mauritius was undertaken in the countries of Area 'H'.

4.4 ENCs. The Hydrographic Production Database is being seamlessly populated from usage band 6 upwards. NHO has reviewed the CATZOC classification and categorised all surveys appropriately. Currently the thrust is to populate the database in usage bands 2 and 1 with most of the ENCs in other bands having been completed. So far, 34 ENCs and 31 equivalent paper charts have been published for Area 'H'. This includes INT charts produced by the INHD Area 'H'.

4.5 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 INHD website. These paper charts are updated by fortnightly Notice to Mariners, which are available on the INHD website [www.hydrobharat.gov.in](http://www.hydrobharat.gov.in). A digital chart catalogue is also incorporated in the web page to enable the mariners to easily identify the required charts.

4.6 ENC Distribution. Indian ENCs are distributed worldwide through UKHO, and PRIMAR.

## 5. Regional Activities

5.1 Presently INHD is engaged with Mauritius, Seychelles, Kenya, Tanzania and Mozambique of the SAIHC members. INHD is committed and is progressively working with these nations for ensuring capacity building in the field of Hydrography.

5.2 As part of our commitment towards SAIHC member nations, INHD have been engaging with few nations, wherein concerted efforts are being progressed towards capacity building of these nations in the field of Hydrography, Undertaking of joint hydrographic surveys, printing of Charts and production of ENCs with latest updated data are also simultaneously progressed.

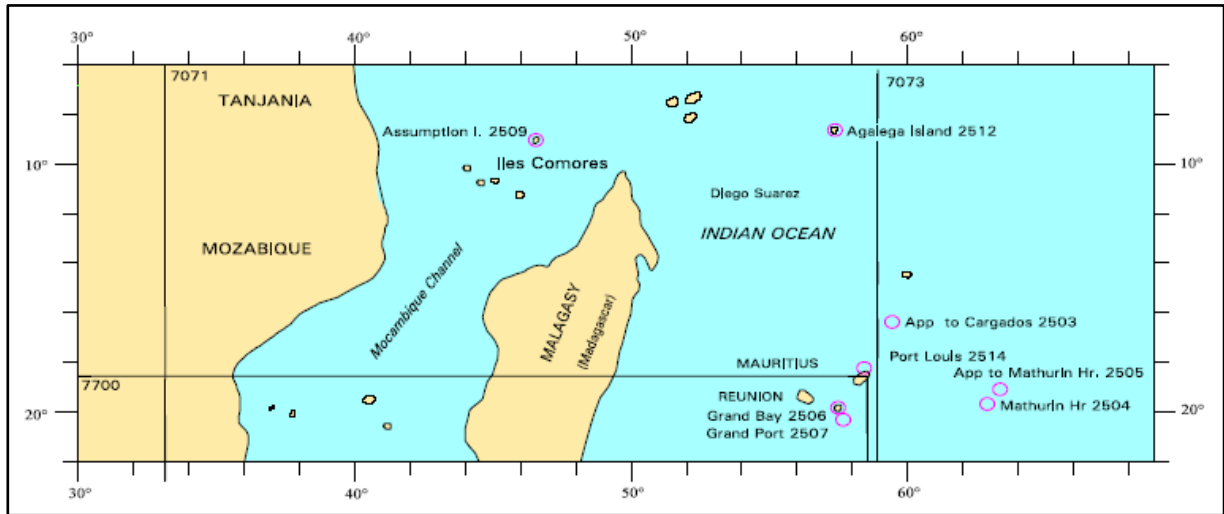
## 6. Surveys.

6.1 In the year gone by, one navigation survey was undertaken in Area 'H'

6.2 INT Charts. The details of the INT charts produced by the INHD, India in Area 'H' is as tabulated below: -

<u>INT No.</u>	<u>Prod.</u>	<u>National No.</u>	<u>TITLE/ TITRE</u>	<u>Scale/ Echelle</u>		
				<u>1:</u>	<u>Lat</u>	<u>ENC</u>
7739	IN	2514	Approaches to Port Louis	37,500	20°00'00S	Yes
			Port Louis	12,500		
77391	IN	2503	Approaches to Cargados Carajos Shoals (Saint Brandon)	75,000	16°33'00S	Yes
77392	IN	2504	Mathurin Harbour	12,500		Yes
77393	IN	2505	Approaches to Mathurin	25,000	20°00.00'S	Yes

			Harbour			
77394	IN	2506	Plan A- Grand Bay	25,000	20°00.00'S	Yes
			Plan A- Grande Riviere Noire Bay	25,000		
77395	IN	2507	Grand Port	12,500		Yes
77396	IN	2512	Agalega Island	37,500	10°00.00'S	Yes
77397	IN	2527	Mauritius	1,25,000	20°00'00S	Yes



6.3 National Series Charts and ENC's in Area 'H': For charts published earlier are covered under the report of 2022.

6.4 New Publications and Updates: Summary of charts/ publications printed since last report as follows:-

<u>Ser</u>	<u>Publication</u>
(a)	Indian List of Radio Signals (INP 31 (5))

6.5 INHD continues to interact with the coastal states of SAIHC group in its endeavor to explore ways to strengthen the already established relationship which will not only be of mutually beneficial to both the nations but also support and take forward IHO objectives to enhance capacity building.

6.6 INHD is fully committed towards providing any assistance sought by the Coastal States. Team of experts available at INHD are fully capable of rendering assistance and providing specialist guidance in managing the various portfolio of survey and hydrographic development programme. Specialist from INHD, if requested, will be available to also provide guidance in matters related to development of hydrographic governance.

6.7 Distribution of Nautical Products: All Nautical Products being produced under the aegis of INHD can be found on the INHD website [www.hydrobharat.gov.in](http://www.hydrobharat.gov.in).

## 7. **Capacity building**

7.1 India is providing hydrographic assistance to maritime nations of Area 'H'. This includes joint hydrographic surveys with onboard training, structured training at NIH and specialised courses for ENC production at the National Hydrographic Office.

7.2 Training on Hydrography at NIH. The Long Hydrography CAT 'A' and Basic Hydrography CAT 'B' programmes conducted at National Institute of Hydrography, Goa are certified by IHO/ FIG/ ICA Board on Standards of Competence. 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 recertification for Cat 'B' course is completed and intersessional review of Cat 'A' syllabus is in progress. The Indian Naval Hydrographic Department has till date trained 858 foreign nationals of Indian Ocean Region in various programmes. Presently a total of twelve personnel from Sri Lanka, Tanzania, Ghana, Vietnam, Guyana, Nigeria and Bangladesh for the year 2022-23 are undergoing training in Hydrography at National Institute of Hydrography, Goa.

7.3 Cartographic Training Provided by INHD, Dehradun: National Hydrographic Office, Dehradun has recently commissioned a new training facility named as "Marine Cartographic Training Center". This facility has been recently established to meet capacity building requirement of the region. Regular ENC production workshop and cartographic training courses are being undertaken at this facility based on request received. As on date, 31 personnel from FFC have successfully undergone training at this center. In the year 2022-23 five personnel have completed the training out of which two personnel were from SAIHC nations. The existing facility at NHO is being used for conducting hands on training for the course on Cartography and ENC Production.

## 8. **Marine Safety Information**

8.1 Responsibilities: The primary responsibility of INHD is to ensure issuance of timely information to the Mariners at the earliest available opportunity in its area of responsibility i.e Navarea VIII, through Notices to Mariners, NAVAREA/ NAVTEX Warnings.

8.2 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 Naval Chart Depot at Mumbai coordinates the broadcast of all Navigational Warnings. Reports/ Information may be directly sent to Naval Chart Depot with a copy marked to National Hydrographic Office, Dehradun. The schedule of transmission of Navigational Warnings through Safety Net and Iridium is as follows: -

(a) Scheduled Broadcast of NAVAREA Warnings:-

(i) NAVAREA VIII Warnings are broadcasted at 1000 and 2200 UTC. Urgent warnings are broadcasted as occasion demands.

- (ii) Coastal warnings for Reunion are broadcasted at 0040 and 1240 UTC.
- (iii) Coastal warnings for Mayotte are broadcasted at 0330 and 1530 UTC.

(b) Scheduled Broadcast of Meteorological Warnings:-

(i) METAREA VIII (North) Warnings are broadcasted at 0900 and 1800 UTC.

(ii) METAREA VIII (South) Warnings are broadcasted at 0130 and 1330 UTC (for Mauritius/ Reunion and South of Equator). Tropical Cyclone Warnings prepared and issued by Reunion at 0000, 0600, 1200 and 1800 UTC.

(iii) Tropical Cyclone Warnings for Australia, if any are prepared and issued by Australia as unscheduled broadcasts for area South of Equator and East of 90.

8.3 NAVAREA Warnings.

(a) A total of 828 NAVAREA messages were promulgated in 2021 as follows:-

<u>Type of NAVAREA</u>	<u>Nos 2021</u>	<u>Nos 2022</u>
Nav aids	249	216
Seismic/survey	106	243
Rig	86	80
Firing	323	390
Man overboard	01	02
Miscellaneous	141	131
<b>TOTAL</b>	<b>906</b>	<b>1062</b>

(b) The country wise list of NAVAREA warnings received from the region is as follows:-

<u>Country</u>	<u>Number of Messages</u>	<u>Topics/ Subject of Messages</u>
Bangladesh	01	Aid to Navigation
Kenya	02	Survey
Myanmar	03	Survey, Aid to Navigation
Reunion Island	04	Firing Exercise
Sri Lanka	01	Aid to Navigation
Tanzania	02	Survey
NAVAREA X	05	Space Debris

8.4 Problems Encountered.

Nil.

9. **New Technology**

9.1 The Indian Naval Hydrographic Department (INHD) is at the forefront of utilisation of modern and high end survey equipment and technologies. Technology absorption for data collection and processing is being undertaken with in-house skills and techniques. Two AUVS are being deployed periodically for data collection. Shallow and deep sea Multibeam Systems are being exploited by skilled manpower regularly to update production data base. Two new full ocean depth MBES have been installed on board ships to augment bathymetric and other associated data collection.

9.2 **Processing System/ Software.** The office is employing the latest software for data acquisition, quality control and chart production. A core team has been setup to monitor the progress on S100 product specifications and to execute the action plan for migration to S100.

9.3 All in force NAVAREA, NAVTEX and Temporary and Preliminary Notice are available for visualization along with details of affected Charts and ENC's are available for mariners on **INDIAN WARNING INFORMATION AND NAVIGATION SERVICES(INDIA- WINS)** on [www.hydrobharat.gov.in](http://www.hydrobharat.gov.in)

10. **Miscellaneous.**

10.1 **World Hydrography 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, Karwar and Port Blair. Keeping in view the theme, **“Hydrography-Underpinning the Digital; Twin of the Ocean”** Webinar, Workshops, lectures, Seminars and demonstrations were organized.

11. **International Activities**

11.1 INHD over the last seven plus decades have been engaged in the field of hydrography, gaining invaluable expertise and domain knowledge. The technical expertise and charting responsibility of Area 'J', contributes to INHD's representation at various IHO committees and sub committees. Details of same are as mentioned below:

<b><u>International Hydrographic Organisation (HSSC)</u></b> <b><u>(Members/ Observers)</u></b>	
HSSC	Hydrographic Services and Standards Committee
ABLOS	Advisory Board on the Laws of Sea
HSWG	Hydrographic Standard Working Group
NIPWG	Nautical Information Provision Working Group
NCWG	Nautical Cartography Working Group
TWCWG	Tides, Water Level & Currents Working Group
ENCWG	ENC Standards Maintenance Working Group



DQWG	Data Quality Working Group
HDWG	Hydrographic Dictionary Working Group
S100 WG	S-100 Working Group
WENDWG	Worldwide ENC Database Working Group
HCA	Hydrographic Commission on Antarctica
CSBWG	Crowd Source Bathymetry Working Group
CBSC	Capacity Building Sub-Committee
MSDIWG	Marine Spatial Data Infrastructure Working Group
WWNWS	Worldwide Navigational Warning Services
DCDB	IHO Data Center for Digital Bathymetry
NIOHC	North Indian Ocean Hydrographic Commission
SAIHC	Southern African and Island Hydrographic Commission

## 12. **Conclusion**

12.1 INHD continues to stand by its commitment to Southern African and Island Region, through SAIHC Chairperson and would like to continue its efforts and support both in terms of resources and technical support towards ensuring capacity building and growth of Hydrography in the region.

12.2 As part of our efforts we would also like to assure that we at INHD will be more than happy to work jointly with interested nations in common field of interest in the field of Hydrography so as to mutually benefit from sharing our expertise and experience.

## **INHD POINT OF CONTACTS**

INHD Website : [www.hydrobharat.gov.in](http://www.hydrobharat.gov.in)

The INHD address : National Hydrographic Office  
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For further details/ information on this report, please contact on

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### **For Capacity Building matters, within SAIHC region please contact:**

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### **For Bilateral arrangements and other international partnering matters within SAIHC please contact:**

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India – 248001  
Tele: 0135 - 2746109  
Email: [hdm-incho@navy.gov.in](mailto:hdm-incho@navy.gov.in)

**For matters related to Sailing directions/ issuance of NTM's please contact:-**

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Cdr (H) – MSIS/ Pub  
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India – 248001  
Tele: 0135 - 2746117  
Email: msis-inho@navy.gov.in

**For matters related to issuance of NAVAREA warning please contact:**

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