



भारतीय नौसेना जलसर्वेक्षण विभाग Indian Naval Hydrographic Department



वार्षिक विवरण २०२२-२३

Annual Report 2022-23



भारत सरकार के मुख्य जलसर्वेक्षक की वार्षिक रिपोर्ट

REPORT OF THE CHIEF HYDROGRAPHER TO THE GOVERNMENT OF INDIA

(01 JULY 2022 to 30 JUNE 2023)

यह रिपोर्ट राष्ट्रीय जल सर्वेक्षण कार्यालय, नौसेना सर्वेक्षण पोतों, राष्ट्रीय जल सर्वेक्षण संस्थान तथा अन्य सर्वेक्षण इकाइयों की गतिविधियों जैसे अंतराष्ट्रीय जल सर्वेक्षण सहयोग में योगदान, सामुद्रिक नक्शों का उत्पादन व प्रकाशन, मानव संसाधन विकास और भारतीय नौसेना जल सर्वेक्षण विभाग का आधुनिकरण तथा अन्य उपलब्धियों का वर्णन है।

This report gives an account of the activities and achievements of the National Hydrographic Office, Indian Naval Surveying Ships, National Institute of Hydrography and Survey Units with special emphasis on hydrographic survey operations, contribution towards foreign co-operation, production of Nautical Charts and Publications, Human Resource Development and modernisation of the Indian Naval Hydrographic Department.



National Hydrographic Office

107-A, Rajpur Road
Post Box No. 75
Dehradun - 248 001
Tel : +91 135-2747365
Fax : +91 135-2748373
Email : inho@navy.gov.in
Website : www.hydrobharat.gov.in

वाइस एडमिरल अधीर अरोड़ा, ए.वी.एस.एम., एन.एम.

Vice Admiral Adhir Arora, AVSM, NM

भारत सरकार के मुख्य जल सर्वेक्षक
Chief Hydrographer to the Government of India

01 जुलाई 23

01 July 23

मुख्य जल सर्वेक्षक की कलम से FROM CHIEF HYDROGRAPHER'S DESK

It is with great delight that I present you a glimpse into the significant achievements of the Indian Naval Hydrographic Department through this annual report. As an organisation mandated to ensure the safety of navigation at sea under the International Convention of Safety of Life at Seas (SOLAS), our responsibility becomes increasingly vital in light of the significant expansion of ports, captive jetties, and harbours as part of Project 'SAGARMALA' and the Government of India's focus on the Blue Economy.

The field of hydrography has experienced considerable advancements in technology over the years, revolutionising the manner in which hydrographic surveys and data analysis are conducted. In 2023, we continued to embrace contemporary methods, enhancing our capabilities and delivering reliable products and services.

It gives me immense pleasure to provide you an overview of the comprehensive surveys and subsequent charting activities undertaken by our department, both in Indian and Foreign waters. A total of 43 Hydrographic surveys comprising of 11 Navigation, 14 Defence, 6 Tidal, 11 Foreign Cooperation, and 01 survey in Antarctica were undertaken by the department. The extensive data, subjected to rigorous quality control, was effectively utilised to update the master database at the National Hydrographic Office resulting in the production of updated nautical products. Additionally, the department released 29 Paper and 45 Electronic Navigation Charts (ENCs).

Noteworthy mention must be made of the design and development of "India-WINS," a comprehensive digital Geographical Information System (GIS)-based catalogue of charts and navigation warnings in the Indian Ocean Region (IOR), covering an area of nearly 26 million square kilometres. This initiative serves as a one-stop input for mariners worldwide, enabling seamless access to vital near real time maritime safety information. The official website www.hydrobharat.gov.in experienced an overwhelming response with over one million visitors shortly after the introduction of the India-WINS module. India has released a comprehensive Maritime Information Chart, designed to enhance the safety of navigation in Indian waters and is freely downloadable from our official website. This chart provides information on recommended navigation routes, hazards and also serves as a ready reckoner of critical information required by mariners at sea. It serves as a valuable tool for



mariners, enabling them to make informed decisions and ensuring safer journeys across Indian waters.

The CAT 'A' and CAT 'B' certification, recognised by the International Hydrographic Organisation (IHO), signifies a high level of expertise and competency in hydrographic surveying. The department organised training programs and issued certificates to 17 officers from 13 nations. The department has actively participated in International Hydrographic endeavours, fostering partnerships and exchanging best practices with other nations. Notable achievements include providing hydrographic assistance through joint surveys, covering an area of 9768 square kilometres in Mauritius, Maldives, and Myanmar waters. We also co-hosted the first Oceanographers and Hydrographers conference under the umbrella of the Colombo Security Conclave held in India. The department also hosted the 42nd International Congress of the Indian National Cartographic Association. This event provided a valuable platform to the experts, researchers, and practitioners to showcase their

work, engage in discussions about emerging trends and foster collaboration in the realm of cartographic techniques. Our hydrographic cooperation and capacity building in the region have been significantly reinforced through the institution of five Memorandums of Understanding (MoU) and two Implementing Arrangements (IA). Additionally, there are five agreements in progress, highlighting our commitment to further enhance collaboration in this field. Being an active member of the International Hydrographic Organisation (IHO), the department continues to make substantial contributions through its participation in 17 working-level committees.

The department successfully fulfilled the significant demand of over half a million Electronic Navigation Chart (ENC) cells in the Indian Ocean Region. This substantial figure underscores the high level of trust and dependence that mariners have on the department's electronic navigational products. The department generated a revenue of Rs 71.15 Cr from the sales of charts, Electronic Navigation Charts, nautical publications and royalty earnings.

We are pleased to announce a significant milestone in infrastructure development with the successful launch of the third and fourth Survey Vessels (Large) built in India. These vessels, contracted with Garden Reach Shipbuilders and Engineers (GRSE) and constructed under the Public-Private Partnership (PPP) model, were launched on 26 Nov 22 and 13 Jun 23 respectively, at M/s L&T Shipbuilding in Katupalli. The first vessel of the Survey Vessel (Large) class, 'Sandhayak', equipped with state of art survey equipment is expected to be commissioned by the end of 2023.



None of these accomplishments would have been possible without the unwavering commitment and dedication of our team of hydrographers, cartographers, and supporting staff. Their tireless efforts, expertise, and professionalism have been instrumental in achieving our goals and keeping us at the forefront of meeting mariners expectations. The commendable efforts of the department were acknowledged and honoured when the National Hydrographic Office (NHO) was awarded the prestigious "Certificate of Appreciation" by Lt Gen Gurmit Singh PVSM, UYSM, AVSM, VSM (Retd), the Hon'ble Governor of Uttarakhand. This recognition serves as a testimony to the department's dedication and contribution in its field of expertise.

As we gauge the future, we are preparing for the evolving challenges and opportunities in the maritime domain. The rapid coastal development, climate change and emerging technology necessitate constant adaptation and innovation. We remain committed to maintaining our position at the forefront of hydrographic endeavours, embracing new knowledge and collaborating with our national and international counterparts to overcome these challenges.

The department will strive hard to keep pace with the increasing demand of a rapidly transforming hydrographic environment. It will be our endeavour to provide accurate bathymetric information and associated products to the maritime community to ensure safe navigation. In keeping with the Government of India's initiative 'SAGAR', the department will extend all efforts to reach out to our friendly maritime neighbours. I am convinced that the department is well-poised to meet all future challenges that lie ahead of us.

Sam No Varuna

Jai Hind

A handwritten signature in blue ink, likely belonging to Vice Admiral Adhir Arora, is positioned above the printed name and title.

वाइस एडमिरल अधीर अरोड़ा, ए.वी.एस.एम., एन.एम.

Vice Admiral Adhir Arora, AVSM, NM

भारत सरकार के मुख्य जल सर्वेक्षक

Chief Hydrographer to the Government of India

अनुक्रमणिका

CONTENTS

MILESTONES	5
------------	---

IN SURVEY SHIPS

NIRUPAK	6
INVESTIGATOR	7
JAMUNA	8
SUTLEJ	9
DARSHAK	10
SARVEKSHAK	11
MAKAR	12

IN SURVEY UNITS

NATIONAL INSTITUTE OF HYDROGRAPHY, GOA	13
NAVAL CHART DEPOT, MUMBAI	15
NAVAL CHART DEPOT, VISAKHAPATNAM	16



HYDROGRAPHIC SURVEY UNIT, MUMBAI	17
HYDROGRAPHIC SURVEY UNIT, KARWAR	18
HYDROGRAPHIC SURVEY UNIT, KOCHI	19
HYDROGRAPHIC SURVEY UNIT, VISHAKHAPATNAM	20
HYDROGRAPHIC SURVEY UNIT, PORT BLAIR	21
HYDROGRAPHIC SERVICE, MAURITIUS	22

NATIONAL HYDROGRAPHIC OFFICE

ORGANISATIONAL CHARTS	23
OPERATIONS	25
MATERIAL	28
MARITIME SAFETY INFORMATION SERVICES & PUBLICATIONS	29
HYDROGRAPHIC DATA MANAGEMENT	30
HYDROGRAPHIC PRODUCTION	31



SALES & DISTRIBUTION	32
PRINTING PRESS	33
INTERNATIONAL AFFAIRS	34
ADMINISTRATION AND WORKS	36
PERSONNEL AND TRAINING	37
HONOURS & AWARDS	38
BEST SURVEY SHIP	39
UNIT CITATION -2021-22	40
PAPER CHARTS	41
ELECTRONIC NAVIGATIONAL CHART	42
HYDROGRAPHERS	44
SAILORS (HYDRO)	46
LIST OF POLICY LETTERS	48
ADIEU HYDRO SAILORS	49
GLIMPSES	50



महत्त्वपूर्ण उपलब्धियाँ

MILESTONES

Foreign Cooperation. In continuation of the cooperation being extended in the field of hydrography, IN survey ships were deployed to Mauritius, Maldives and Myanmar during survey season 2022-23. The details of joint hydrographic surveys undertaken are as follows:-

Mauritius. INS Darshak was deployed to carryout Foreign Cooperation surveys jointly with Mauritius for a duration of 63 days from 22 Oct to 23 Dec 22.

Maldives. INS Investigator was deployed to carryout Foreign Cooperation surveys jointly with Maldives for a duration of 43 days from 17 Jan -28 Feb 23.

Myanmar. INS Sutlej was deployed to carryout Foreign Cooperation surveys jointly with Myanmar for a duration of 60 days from 07 Feb -07 Apr 23.

Unit Citation. INS Sutlej was awarded Unit Citation for the year 2021-22. The award was received by Capt A Murlidhar at the investiture ceremony conducted at Vishakapatnam on 31 May 23.

Certificate of Appreciation. National Hydrographic office, Dehradun was awarded "Certificate of Appreciation" by HE Governor of Uttarakhand Lt Gen Gurmit Singh PVSM, UYSM, AVSM, VSM (Retd) for exceptional service, devotion to duty, professional expertise and bravery for the year 2022-23 on 25 Jan 23.

Meetings.

(a) Vice Admiral Adhir Arora, AVSM, NM, Chief Hydrographer to the Govt of India and Cmde Peush Pawsey, Cmde (H)-CB & Press visited Bali, Indonesia to attend the 21st meeting of North Indian Ocean Hydrographic Commission from 22-25 Aug 22.

(b) Vice Admiral Adhir Arora, AVSM, NM Chief Hydrographer to the Govt. of India and Capt Kuldeep Singh visited Monaco to attend the 3rd meeting of International Hydrographic Organisation Assembly from 02-05 May 23.





CDR SAHIL SAGOCH
Commanding Officer



भा.नौ.पो. निरूपक
INS NIRUPAK
ACCURACY INGENUITY ADAPTABILITY
J-20 1985



Introduction. The ship commenced survey operations from 03 Oct 22 and completed two minor and one major HIs of Survey season 2022-23. The ship has also completed one major HI of survey session 2021-22. Ship was placed under AMP from 04 Jul to 28 Aug 22. The ship underwent hospital ship conversion on 12 - 13 Jan 23 as part of OP TAIYAAR. In addition, ship has actively participated in command activities and operational commitments. During the operational period, ship has completed two command commitments and reports of the same were rendered. Ship was placed under ERDD from 01 Apr 23 and is tentatively scheduled for decommissioning in the year 2023. As part of ERDD, ship was docked at Surya Dock, ND(V) on 24 May 23 for progressing underwater repairs/ degutting. Additionally, de-equiping and disposal of stores is in progress.

Conduct of Surveys. The surveys undertaken by the ship during the survey season are as follows:-

- (a) Tidal Observations – Rambilli
- (b) Tidal Observations - Carnicobar
- (c) DSRV deployment area Off Vizag
- (d) Outer Approaches to Kakinada
- (e) Submarine exercise area off Rambilli

Command Tasks. Ship also undertook following additional command commitments in the year gone by:-

- (a) Bathymetric Ops - Submarine shed, VLM Jetty
- (b) Beach Gradient Survey of HOPE Island.
- (c) Beach Gradient Survey off Kakinada.

Visits.

- (a) Rear Admiral Manish Sharma, NM, Chief Staff Officer (Operation) inspected the ship at harbour on 04 Jan 23 and at sea on 05 Jan 23.
- (b) Surg Rear Admiral R Ravi, Command Medical Officer inspected the ship on 12-13 Jan 23 during hospital ship conversation.





भा. नौ. पो. इन्वेस्टीगेटर

INS INVESTIGATOR

J-15 THE LEGEND 1990



CDR PRAVEEN THOMAS
Commanding Officer

Introduction. Ship underwent extended Short Refit - 21 at Kochi from 01 Apr 21 to 29 Jul 22, followed by BST and OST by INWT in Jul and Oct 22 respectively. Ship in the survey season 22-23 completed four hydrographic Instructions and one Tidal HI of Kandla. Detached Survey Team comprising one officer and two sailors was also deputed from 26 Apr-04 May 23, with INCOIS reps, for joint validation of Tide Gauge Benchmarks at Kochi, Bepore and Kollam. Additionally, various command commitments like Joint Forward Area Tour (JFAT) to Lakshadweep Islands DSSC officers embarked, consort duties for ships undergoing OST at SNC by INWT, MP/MLA/GoK Officials 'Day at Sea', SNC 'family day at sea' to witness planned evolutions and Op Demonstrations by SNC ships

Foreign Cooperation Survey. Ship was deployed for the India-Maldives Joint Hydrographic Survey from 17 Jan-01 Mar 23. During the deployment, ship undertook hydrographic survey of Ihavandhippolhu and Thiladhanmathee Atoll, EEZ surveillance of Maldives and also imparted training to personnel from Maldives National Defence Force and Maldives Hydrographic Service.

Class Authority Inspection. The ship's Class Authority Inspection was held on 10 - 11 Jan 23, wherein Capt N Dheeraj, Capt (H)-Ops and Cdr SK Sajjan, OiC HSU (Kochi) undertook the Class Authority Inspection.

Conduct of Surveys. The surveys undertaken by the ship during the survey season are as follows:-

- (a) New Coast Guard Jetty and Amba Jetty at Kochi.
- (b) Approaches to Pathfinder Inlet at Vadinar.
- (c) Approaches to Port of Okha.
- (d) Ihavandhippolhu Atoll.

Change of Command. Captain Pradeep Singh handed over command to Commander Praveen Thomas on 23 May 23.

Visits.

- (a) Mrs. Mariya Ahmed Didi, Minister of Defence of the Republic of Maldives on 26 Feb 23.
- (b) Mr. Munu Mahawar, High Commissioner of India in Maldives on 21 Jan 23.
- (c) Brig Gen (Retd) Zakariyya Mansoor, Head of Maldives Hydrographic Service on Feb 23.
- (d) Vice Admiral Adhir Arora, AVSM, NM, Chief Hydrographer to the Government of India on 27 Jun 22.
- (e) Rear Admiral Lochan Singh Pathania, Joint Chief Hydrographer on 03 Oct 22.





CDR CYRIL I SPEECHLY
Commanding Officer



भा.नौ.पो. जमुना
INS JAMUNA
PIONEERS IN SEA SURVEYING
J-16 1991



Introduction. Ship underwent Short Refit - 22 from 15 Apr 22 to 29 Nov 22, wherein ship was docked at CSL during period 01 Jul - 13 Aug 22. SR-22 work package included routines on singlebeam and multibeam transducers, draft marking at multibeam gondola and calibration of singlebeam echo sounder. Post SR-22, ship successfully completed seven Hydrographic Instructions.

OST/FOLSAT. Ship completed FOLSAT by INWT on 01-04 Oct 22. The ship also completed OST-23 by INWT and was adjudged overall 'Good'.

Survey Tasks. The surveys undertaken by the ship during the survey season are as follows:-

- | | | |
|----------------------------------|---|-----------------------|
| (a) Tidal Observations at Dwarka | (b) Deep Sea Area Off Trivandrum | (c) Port Blair (DSRV) |
| (d) Off Port Blair | (e) Deep Sea Area - Campbell Bay and Anderson Bay | |
| (f) Off Swaraj Island | (g) Vizhinjam Harbour | |



Command Tasks. Ship also undertook following additional command commitments in the year gone by:-

- (a) 'Family Day at Sea' on 07 Dec 22.
- (b) On 07 Jan 23 with NCC cadets embarked for day at sea.
- (c) Survey familiarisation training for SNOM Officer trainees and DRDO scientists in Feb 23.

Inspection. The ship's Class Authority Inspection was held on 09 Jan 23, wherein Capt N Dheeraj, Capt (H)-Ops and Cdr SK Sajan, OiC HSU (Kochi) undertook the Class Authority Inspection.





भा.नौ.पो. सतलज

INS SUTLEJ

EXCELLENCE IS TRADITION
J-17 1993



CAPT A MURALIDHAR
Commanding Officer

Introduction. The Ship was operational throughout the period and completed nine Hydrographic Instructions including three Foreign Cooperation (FC) surveys at Myanmar. The ship participated in Op Demo rehearsals conducted on 28 Nov, 30 Nov, 02 Dec and on 04 Dec 22 on the occasion of Navy Day. Hospital Ship conversion was undertaken from 12 – 13 Jan 23 as part of exercise OP 'Taiyar'. The ship in the year gone received awards namely Unit Citation, Best Ship-SNC and "Excellence Award" by IMD for recording maximum and accurate weather observations at sea for the year 2021-22.

Conduct Surveys. The surveys undertaken by the ship during the period are as follows:-

- | | |
|--|---------------------------------|
| (a) Tidal Data Collection Jakhau. | (b) Port of Mormugao |
| (c) Base Route Survey - Goa South | (d) Approaches to Godia Creek |
| (e) Approaches to Dawei Deep Sea | (f) Port of Mormugao and Panaji |
| (g) Dawei Deep Sea Port Project Area | (h) Heinze Island |
| (j) Western Deep sea area of Gulf of Kachchh | |

Command Tasks. Ship also additionally undertook following Command tasking in the year gone by:-

- SAR cover off Lakshadweep Islands towards visit of Hon'ble Raksha Rajya Mantri Shri Ajay Bhatt on 29 Jul-02 Aug 22.
- Hydrographic Survey at Mandovi Channel by DST from 04 to 19 Aug 22 to verify the depth at Mandovi channel for safe passage of INSV Tarini.
- Ship sailed on 26 Sep 22 for five days with 12 DSSC student officers + 02 Directing staff embarked from DSSC Willington to UTL for Forward Area Tour.
- Hydrographic Survey of Mattanchery channel close to Q2, Q3 berth for post dredging survey from 12 – 13 Sep 22
- Ship sailed from Mormugao harbour on 12 Oct 22 to locate MIG 29-K and carried out extensive multibeam and side scan sonar operations in the area from 12 -21 Oct 22. The exact location shared by ship of the fuselage ensured salvage operations successfully undertaken by divers.
- Ship was tasked with Consort duty for INS Delhi on 15 Nov 22 wherein ship

undertook Night RAS with INS Delhi.

Visits.

- Rear Admiral Lochan Singh Pathania, Joint Chief Hydrographer, NHO, Dehradun visited on 03 Oct 22
- Surg Cmde Ashok K Yadav, Commanding Officer, INHS Sanjivani inspected the ship during hospital ship conversion on 12 Jan 23
- Cmde Ben H Berson, NIETT director visited onboard on 01 Feb 23.
- Commander Naing Oo, Acting Chief Hydrographer Myanmar Navy along with six Officers and two Sailors visited onboard for Joint Coordination meeting on 11 Feb 23.

Innovations in Survey Operations.

- Design and Installation of Flood alarm in all SMBs.
- In-house method to extend life of steel wire Steering cables of SMBs without use of clamping equipment

Awards.

- Ship was adjudged Best Aviation Ship in 2022 & 2023 in SNC.
- Admiral Jal Cursetji trophy was awarded to the Ship for being Best Survey Ship for the Survey Season 2021-22.
- Ship was awarded with Unit Citation on the Occasion of Navy Day for the third time in her Commission.
- "Excellence Award" by IMD for recording maximum and accurate weather observations at sea for the year 2021-22.
- Overall Best ship of SNC for the year 2023 during SAFLAN 23.





CAPT RM THOMAS
Commanding Officer



भा.नौ.पो. दर्शक
INS DARSHAK
THE GUIDE
J-21 2001



Introduction. The ship was fully operational and completed eleven Hydrographic Instructions including six Foreign Cooperation (FC) surveys at Mauritius. During the Overseas deployment, ship also participated in Aapravasi Divas at Mauritius, wherein ship organised deck reception onboard for dignitaries and Indian Diaspora. The President, Deputy Prime Minister and Ministers of Mauritius and High Commissioner of India were hosted onboard on 13 Dec 22.

Conduct of Survey.

- | | | |
|-------------------------------------|-------------------------------|---|
| (a) Tidal Data Collection - Daman | (b) Deep Sea off Ramayapatnam | (c) Deep Sea Off North Of Bay Of Bengal |
| (d) Deep Sea Off East Of Andaman | (e) Agalega Jetty | (f) East of Mauritius |
| (g) East to South East of Mauritius | (h) St. Brandon | (j) Northern Area of Mauritius |
| (k) Around Mauritius | (l) North Passage Island | |

Command Tasks. The ship undertook command commitments including DLPs for INS Parundu, EFORI, OTH radar trials of NIOT off Kalpakkam, consort and SAR duties for ORI of Dega, hospital ship conversion as a part of TROPEx – 23, DLQ,s for INS Rajaji and Hydrographic survey of Hutbay and Butler Bay.

Visits.

- Deputy Prime Minister of Mauritius/Minister of Housing and Land Use Planning, Minister of Tourism on 13 Dec 22.
- High Commissioner of India in Mauritius on 13 Dec 22.
- Commissioner of Police of Mauritius on 13 Dec 22.
- Senior Chief Executive of Ministry of Housing and Land Use Planning on 13 Dec 22.
- Cmde HA Hardas, Cmde (H)-O&A, NHO, Dehradun undertook the Class Authority Inspection.

Inspections. Ship's Class Authority Inspection was held on 27-28 Mar 23 in survey grounds off Port Blair and underwent Annual Inspection on 03 Jul 23 (Harbour) and 06 Jul 23 (Sea phase).





भा.नौ.पो. सर्वेक्षक
INS SARVEKSHAK
PATHFINDER TO THE SEAFARER
J-22 2002



CAPT TRIBHUVAN SINGH
Commanding Officer

Introduction. The ship underwent Short Refit from 15 Aug 22 to 15 Dec 22. The ship completed FOLSAT and OST in Oct 22 and Mar 23 respectively. The ship completed four Hydrographic Instructions of Survey season 2022-23.

Conduct of Surveys. The surveys undertaken by the ship during the survey season are as follows:-

- (a) Tidal Data Collection - Ghogha
- (b) Port of New Mangalore
- (c) Deep Sea Area between Dwarka and Mumbai
- (d) Submarine Exercise Area

Command Tasks. The ship was tasked with Consort duties for OST of INS Kabara on 01 & 03 Feb 23. The ship has conducted maiden Astern fueling along with various seamanship evolutions including SKBDL, light jackstay and boat lowering and hoisting as part of OSTDEP.

Change of Command. Capt GA Mathew handed over command to Capt Tribhuvan Singh on 30 Jun 23.

Inspection. Class Authority Inspection of the ship was conducted by Cmde HA Hardas, Cmde(H)-O & A.

Visits. Cmde HA Hardas, Cmde (H)-O & A, NHO, Dehradun visited the ship on 30 -31 Mar 23.





CDR RAHUL BHATT
Commanding Officer



भा.नौ.पो. मकर
INS MAKAR
THE TRAIL BLAZER
J-31 2012



Introduction. The ship underwent Short Refit - 22 from 15 Jun to 26 Dec 22. On getting operational, ship completed three Hydrographic Instructions for survey season 2022-23. In addition, ship was also deployed for detection of Mine Like Objects (MILOs) and NRDM as a part of MILDENEX -22 exercise conducted by HQWNC. Ship also participated in TROPEX-23 from 19 Jan to 02 Feb 23.

AUV Trials. Ship successfully undertook and completed both Harbour and sea AUV trials post repair in the presence of OEM.

Conduct of Surveys. The surveys undertaken by the ship during the survey season are as follows:-

- | | |
|---------------------------------------|--|
| (a) Base Route Survey – Karwar North. | (b) Base Route Survey – Karwar South |
| (c) App to Port of New Mangalore | (d) Check survey- Phase II B Project seabird |

Command Tasks. The following tasks were undertaken:-

- | | |
|--|---|
| (a) Check survey of 'E' berth of Karwar Naval harbour | (b) Survey of buoys of Karwar Naval harbour |
| (c) Check survey of Karwar Naval harbour for INS Vikrant | (d) MILDENEX – 22 |

Operational Sea Training (OST-23). Operational Sea Training (OST-23) was conducted from 13 Mar to 25 Mar 23 by LWT (W) in Mumbai. During the OST, the ship's company displayed utmost professionalism and high morale which was duly acknowledged by LWT (W).

Innovation.

Seapath Heading. Ship indigenously developed and proved successfully in a cost effective manner, an alternative for Gyro compass in case of any emergency with an accuracy of 0.075° with redundancy in display by configuring Seapath 200 system available onboard through a program code developed in 'C' language and providing an alternate heading value with nil settling time unlike Gyro.

Inspection. Cmde Ashish Goyal CSO/HQKNA inspected the ship on 26 Apr 23 as part of Annual Inspection, ships Class Authority Inspection was also conjoined with AI-23, which was undertaken by Cmde HA Hardas, Cmde(H)-O & A.

Visits.

- Rear Admiral LS Pathania, Joint Chief Hydrographer on 06 Oct 22.
- Vice Admiral SN Gormade, PVSM, AVSM, NM, ADC Vice Chief of Naval staff on 28 Dec 22.
- Cmde SK Nair, OIC NIH on 05 Jan 23.
- Shri Vishwajit Sahay, Addl Secretary & FA, Ministry of Science & Technology, GOI on 22 Apr 23.
- Cmde Ashish Goyal, NOIC (KTK).
- Cmde HA Hardas, Cmde (H)- O & A.

Miscellaneous.

- The ship has submitted a technical paper with International Hydrographic Review magazine on "Employability of Multibeam Echosounder - Back Scatter Data for Wreck Investigation
- A technical paper on "Hydrographic Services Essential towards Advancing Blue Economy Goals of India" was submitted from the ship. The paper was selected for oral presentation and was presented at National Hydrographic Office, Dehradun during the INCA.



राष्ट्रीय जल सर्वेक्षण संस्थान, गोवा

NATIONAL INSTITUTE OF HYDROGRAPHY, GOA



CMDE SK NAIR
Officer-in-Charge

Introduction. The Institute conducted all scheduled courses as per Biennial Training Programme 2022-24. A total of 102 Officers and 145 Sailors and 07 Civilians from India as well as from Friendly Foreign Countries (FFCs) have undergone training in training year from 01 Jul 22.

(a) **1st Hydrographers and Oceanographers Conference.** Hydrographers and Oceanographer delegates from Sri Lanka, Mauritius, Maldives, Bangladesh and other National Scientific Organisations visited the Institute as a part of 1st Hydrographers and Oceanographers Conference, under Colombo Security Conclave on 17 Nov 22.

(b) **Thematic Audit of the Institute.** Thematic audit of the Institute was conducted by CAG's Thematic audit team from O/o Director General of Audit (Navy) from 12- 29 Dec 22.

(c) **Courses Conducted as per BTP 2022-24.** The Institute has conducted 15 out of 16 scheduled courses from 01 Jul 22 to 28 Feb 23 as per BTP 2022-24 and one course was cancelled in view lack of sufficient nominations. Presently four courses are in progress. Details of the same are tabulated below:-

Ser.	Name of course	From	To	Strength
Officers				
(a)	Long 'H' (83:044)	24 Jan 22	11 Feb 23	04 + 12 (F)
(b)	Basic 'H' (83:247)	27 Jun 22	14 Jan 23	05 + 05 (F)
(c)	Long ND (I) (83:060)	26 Sep 22	01 Oct 22	35
(d)	Long N (F) (83:064)	10 Oct 22	15 Oct 22	16 (F)
(e)	Advance 'H' (83:111)	04 Jul 22	10 Sep 22	04
(f)	Civilian 'H' (83:030)	30 Jan 23	08 Apr 23	07
Sailors				
(a)	Basic 'Q' HY (83:618)	02 May 22	20 Aug 22	13 + 04 (F)
(b)	ESEO (83:619)	06 Jun 22	09 Jul 22	16
(c)	LS 'Q' HY (83:620)	18 Jul 22	01 Oct 22	26 + 02 (F)
(d)	PO 'Q' HY (83:621)	05 Sep 22	21 Jan 23	26 + 01 (F)
(e)	Basic 'Q' HY (83:622)	17 Oct 22	04 Feb 23	16 02 (F)



(i) **Courses Conducted.**

Ser.	Name of course	From	To	Strength
Officers				
(a)	Long 'H' (83:045)	23 Jan 23	10 Feb 24	07 + 07 (F)
(b)	Ref Civ 'H' (83:030)	30 Jan 23	08 Apr 23	07
Sailors				
(a)	PO 'Q' HY (83:625)	13 Feb 23	01 Jul 23	13 + 01 (F)
(b)	LS 'Q' HY (83:624)	23 Jan 23	08 Apr 23	23 + 02 (F)

ii **Courses in Progress.**

Ser.	Name of course	Duration	Remarks
(a)	Long 'H' (83:043)	17 Oct 22 to 12 Nov 22	Complex Multidisciplinary Field Project
(b)	Basic 'H' (83:247)	14 Nov 22 to 10 Dec 22	Training Survey
(c)	Basic 'Q' HY (83:618)	01 Aug 22 to 20 Aug 22	Training Survey
(d)	LS 'Q' HY (83:620)	19 Sep 22 to 01 Oct 22	Training Survey
(e)	PO 'Q' HY (83:621)	02 Jan 23 – 14 Jan 23	Training Survey
(f)	Basic 'Q' HY (83:622)	16 Jan 23 – 28 Jan 23	Training Survey



Survey Undertaken.

Command Tasks.

- (a) The height elevation measurement of buildings in the approach path of INS Hansa runway was carried out on 29 Jul 22.
- (b) Survey for calculation of ground elevation of Plot no. 32 of survey no. 175/B which is Part of Sancoale Village, Mormugao Taluka, South Goa, Goa was conducted on 23 Aug 22.

Annual Inspection 2023. Rear Admiral J Singh, NM, VSM Chief of Staff, Southern Naval Command inspected the Institute on 13 Mar 23, in which unit was adjudged "Excellent".

Initiative/Achievements in Training.

- (a) **Smooth transition from GIS to Paper Chart Composer Software (PCC):-** Training to all Hydrographic units was carried out at the Institute on usage of Caris PCC software and subsequently implemented in the training curriculum for all courses conducted.
- (b) The Syllabi for the Agniveer course has been approved from HQSNC and the preparation of dockets is in progress.
- (c) Affiliation has been granted from Goa University to MSc Hydrography Programme for three academic years i.e 2022-23, 2023-24 and 2024-25 for Long 'H' course.
- (d) Refurbishments and upgrading of Survey Software Training Centre with dual display monitors and touch screen lecture display.
- (e) Lecture-cum-demonstration display board for classroom/ SSTC.

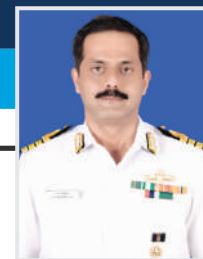
Visits. Following visited the Institute during the period of report :-

S No.	Date	Visit By
(a)	02 Aug 22.	Capt LP Wafula from Kenya High Commission
(b)	03 Aug 22	Cmde Ajay Shukla, Cmde (Trg), Headquarters, Southern Naval Command
(c)	07 & 08 Oct 22	RAdm LS Pathania, Joint Chief Hydrographer
(d)	05 Nov 22	Six IN officers (DA/NA (desig)), Bharat Darshan programme
(e)	17 Nov 22	VAdm Adhir Arora, AVSM, NM, Chief Hydrographer to the Govt. of India
(f)	17 Nov 22	1 st Hydrographers and Oceanographers Conference, under Colombo Security Conclave (Hydrographers and Oceanographer delegates from Sri Lanka, Mauritius, Maldives, Bangladesh and Other National Scientific Organisations)
(g)	12 Dec 22	RAdm J Singh, NM, Chief of Staff, Southern Naval Command
(h)	16 Dec 22	Brigadier General (Retired) Zakariyya Mansoor alongwith Maldivian Hydrography Delegation



नौसेना नक्शा आगार, मुम्बई

NAVAL CHART DEPOT, MUMBAI



CAPT M SOMASEKHAR
Officer-in-Charge

Introduction. Naval Chart Depot handled all the demands of Charts and Publication for Naval Ships, Coast Guard units and Chart vendors during the period of review. The Maritime Safety Information section ensured transmission of all safety information pertaining to Navarea VIII region promptly. The unit hosted the Annual Chart Vendors Meeting – 2022 on 22 Sep 22 which was presided by Cmde (H) - CB & Press, NHO.

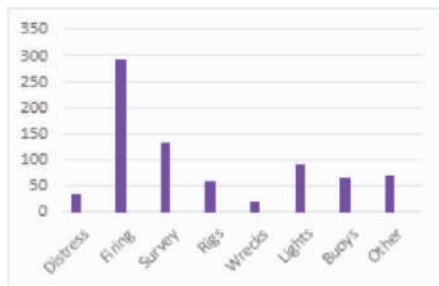
Indian Chart Section.

Issue/Sale	Number of Charts	Number of Publications	Amount
Naval Units	2468	161	51,84,100
Coast Guard Units	84	0	1,63,800
Chart Agents	1000	58	17,29,385

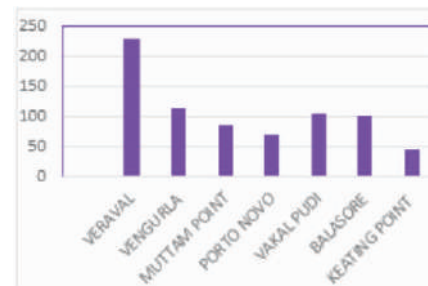
BA Chart section. The depot processed demands for 48 AVCS permits for various IN ships proceeding on OSD and supplied the requisite permits through National Hydrographic Office within the stipulated time. Additionally, a total of 719 BA charts, 42 publications and 30 NACs were also issued to IN on OSD during the period.

Navigational Warning Messages. A total of 767 Navigational warning and 698 NAVTEX messages were promulgated on INMARSAT, IRIDIUM, Safety Net and COMNETCEN (MB) for Naval vessel. The breakdown of warnings issued is shown in the graph below:-

NAVAREA VIII MSGs ISSUED IN 2022-23



NAVTEX MSGs ISSUED IN 2022-23



Material. The office building is scheduled to undergo special repairs in near future. The recommendation wrt shifting of office spaces is yet to be ascertained.

Visit. Rear Admiral Janak Bevli, VSM, CSO (Ops) visited on 27 Oct 22.

Inspections.

- Annual Inspection of depot was undertaken by CSO (Ops) on 27 Oct 22.
- Sailors from the depot undertook 25 SNIT during the period.
- CSAT Audit of the depot was carried out by HQWNC on 02 Dec 22.



नौसेना नक्शा आगार, विशाखापत्तनम NAVAL CHART DEPOT, VISAKHAPATNAM

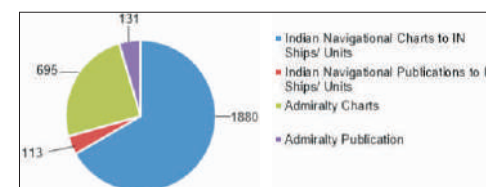


CDR KAMAL ASHRAF
Officer-in-Charge



Introduction. Naval Chart Depot, Visakhapatnam, is handling an independent BA Section and a Print-on-Demand Section in addition to *IN* section. NCD (VZG) strives to be a center of excellence with respect to issuance of charts, Publications and ENC's to the units of Eastern Naval Command, Coast Guard and nominated Chart agents by National Hydrographic Office, playing a key role in meeting the urgent operational demands of Charts and Publication at ENC. The endeavour of the organisation will be to facilitate and provide up to date charts, Publications and ENC's to all and achieve 100% compliance with respect to meeting user demand. It ensures timely issue of products like Navigational Charts, Publications and ENC's to Andaman & Nicobar Command, Coast Guard ships, units of COMCG (E) and to the chart agents. The present deployment pattern of ships in and around South East Asian countries to safe guard the area of responsibilities (AOR) has seen a surge in requirements of BA charts and publication which is being handled very effectively. Cdr Kamal Ashraf assumed charge as Officer-in-Charge on 09 May 23.

SI No	CHART AND PUBLICATION	ISSUES FOR 21-22	ISSUES FOR 22-23
(a)	Indian Navigational Charts	3865	1880
(b)	Indian Navigational Publication	1608	113
(c)	Admiralty Charts	3666	695
(d)	Admiralty Publication	170	131



Issue of Charts and Publications. Details of charts and publications issued to ships and establishments are as follows:-

Sale of Indian Charts and Publications.

- To Chart Agents.** During the period of report, the depot has registered sale of Indian charts and publications to the chart agents worth Rs. 4,11,900.00 (Rupees Four Lakhs Eleven Thousand and Nine Hundred only).
- To Coast Guard Ships & Units.** Sale of charts and publications to Coast Guard ships and units during this period is worth Rs. 10,50,000.00 (Rupees Ten Lakhs and Fifty Thousand only).

Annual Inspection 2022. RAdm Manish Sharma, NM, Chief Staff Officer (Operations) Headquarters Eastern Naval Command inspected the Depot on 22 Nov 22 and appreciated the unit for all the works and efforts. This was the second Annual Inspection since establishment of the unit. The remark of Chief Staff Officer (Operations) is appended below:-

"Was very pleased to inspect a very professional and motivated NCD. Thoroughly the space has been utilised to create new infrastructure is commendable. The new activities/ innovations progressed by NCD (VZG) needs to be continued with some josh and professionalism. Well done"

Visit.

- Rear Admiral Manish Sharma NM, Chief Staff Officer (Operations), Eastern Naval Command inspected the unit on 22 Nov 22.
- Cmde HA Hardas, Cmde (H) – O & A, National Hydrographic Office, Dehradun on 04 Jan 23.

CAG Thematic Audit. CAG's Thematic audit of the unit was carried out from 05 Dec to 09 Dec 22.

Involvement of Unit in other activity.

- NSPC Inspection of various ports in Eastern coast
- SNIT Inspection of various vessels in Eastern coast.
- OST of survey ships in Eastern Naval Command
- Safety audit of survey ships.

राष्ट्रीय जल सर्वेक्षण इकाई, मुम्बई

HYDROGRAPHIC SURVEY UNIT, MUMBAI



CDR VARUN GUPTA
Officer-in-Charge

Introduction. Hydrographic Survey Unit (Mumbai) has provided all Hydrographic support to command and has fulfilled all command commitment. The unit has provided professional advice to DGNP for calculation of dredge volume for capital dredging. The unit is continuously endeavoring to improve the infrastructure whilst keeping up with emerging technologies through training and creative thinking.

Command Tasks. The following Command commitments were carried out by the Unit:-

- (a) Monthly Hydrographic Survey of Naval Tidal Basin.
- (b) Survey of Middle ground and Oyster rock.
- (c) Survey of Seaward approaches to INWTC (MBI).
- (d) Fixing of various visibility landmarks for safe flying at INS Shikra.
- (e) Survey of water front at INS Shikra.
- (f) Member of NSPC team for inspection of Dahej LNG port terminal.
- (g) Worli sea phase accommodation survey
- (h) Op Demo requirement survey off Malwan

Annual Inspection. Rear Admiral Janak Bevli, CSO (Ops), Western Naval Command inspected the unit on 27 Oct 22

Class Authority Inspection. Maiden Class authority Inspection of the unit was carried out on 30 Mar 23 by inspection team headed by Cmde HA Hardas, Cmde (H)-O & A, NHO, Dehradun.

Visits.

- (a) Rear Admiral Janak Bevli, CSO (OPS), Western Naval Command on 27 Oct 22.
- (b) Cmde HA Hardas, Cmde (H)-O & A, NHO on 30 Mar 23

CAG Audit. CAG Thematic audit was undertaken from 31 Oct-11 Nov 22.





CDR DEEPENDRA SESODIA
Officer-in-Charge

जल सर्वेक्षक इकाई, कारवार HYDROGRAPHIC SURVEY UNIT, KARWAR



Introduction. The Hydrographic Survey Unit at Karwar has been established in 2021 to meet the survey requirement of Naval Base, Karwar. The unit is responsible for conduct of field hydrographic tasks at Karwar. The unit has fulfilled the positioning survey requirements as projected by the Karnataka Naval Area, as well as National Hydrographic Office. The unit participated in MILDENEX-22 & TROPEX. In addition, unit also undertook NSPC audits as directed.

Survey Tasks.

- (a) Phase IIB project Seabird
- (b) Likely landing point across Yamuna

Command Commitments.

- (a) Height survey in vicinity of Kadamba Parade Ground.
- (b) Assistance in Land Survey of INS Kadamba.
- (c) SSS Operations during MILDENEX-22.
- (d) SSS Operations for recovery of dummy mines.



राष्ट्रीय जल सर्वेक्षण इकाई, कोची

HYDROGRAPHIC SURVEY UNIT, KOCHI



CDR SK SAJAN
Officer-in-Charge

Introduction. The Hydrographic Survey Unit at Kochi has undertaken all the survey requirements projected by the SNC/NHO. The major tasks carried out during the season include Pre/Post dredging Surveys of Naval channel and IAC movement survey. In addition, navigational surveys of naval area and topographical surveys for ensuring flight safety were also undertaken.

Command Commitments.

- (a) Check Survey of Naval Channel.
- (b) Check Survey of Mattancherry Channel.
- (c) Check Survey for IAC.
- (d) Check Survey of Amba Jetty.
- (e) Height surveys.
- (f) Survey for dredging of Kochi Channel
- (g) Height surveys for infrastructure development

Class Authority Inspection. Maiden Class authority Inspection of the unit was carried out on 30 Mar 23 by inspection team headed by Cmde HA Hardas, Cmde (H)-O&A, NHO, Dehradun.





LT CDR CK SINGH
Officer-in-Charge

जल सर्वेक्षक इकाई, विशाखापत्तनम

HYDROGRAPHIC SURVEY UNIT, VISHAKHAPATNAM



Introduction. The Hydrographic Survey Unit at Visakhapatnam was established in 2020 to meet the survey requirements of Eastern Naval Command. The unit is responsible for conduct of Hydrographic survey in and around Visakhapatnam Naval harbor. The Unit has completed 13 command commitments. The unit is also continuing with around the clock tidal data collection. The unit has received one Survey Motor Boat from NIH, Goa on permanent basis on 23 May 22.

Command Commitments.

- Drawing of DI-CTDF at DG Bay for clearances of proposed jetty.
- Site elevation survey for proposed hangarage at INS Dega.
- Bathymetric Survey of Naval channel.
- Site elevation survey at INCS proposed site for INS Circars.
- Ashore survey of ENPET area for INS Circars.
- Ashore survey of SSP and IN-ICG jetties.
- Confirmation of tidal level gauge markings set up by contractor at IN-ICG jetty.
- Monitoring and data analysis of pre-dredge survey in Naval channel for DGNP.
- Ashore survey of Dolphin Hill area for INS Circars.
- Ashore survey of Naval Park area for INS Circars.
- Ashore survey of UMA promoters LLP for INS Dega.
- Embarked INS Gaj during 'OP Tayaar' and undertook operation in designated area.

Visits.

- Rear Admiral Manish Sharma, NM, CSO (Ops), Western Naval Command inspected the unit on 28 Nov 22.
- Cmde HA Hardas, Cmde (H) – O & A, National Hydrographic Office, Dehradun on 04 Jan 23.

CAG Audit. CAG Thematic audit was undertaken by CAG audit team.



जल सर्वेक्षक इकाई, पोर्ट ब्लेयर

HYDROGRAPHIC SURVEY UNIT, PORT BLAIR



LT CDR PK GURUNG
Officer-in-Charge



Introduction. Hydrographic Survey Unit at Port Blair is responsible for conduct of all field Hydrographic tasks in and around Port Blair and in the sea areas of Andaman & Nicobar Islands. The unit advises Command on Hydrographic aspects of Naval Operations, establish a network of Geodetic Stations, establish vertical datum in the area and assist in SAR operations. Lt Cdr PK Gurung assumed the charge as Officer-in-Charge from Cdr Kamal Ashraf on 08 May 23.

Command Commitment. The unit has carried out various Hydrographic Surveys and command requirements task as follows:-

- (a) Geodetic survey of Ross Island
- (b) Bathymetric Survey of Malakka Jetty and Mus Harbour
- (c) Search of Lost Anchor
- (d) Assistance in Beaching Operation
- (e) Verification of NOC

Class Authority Inspection 23. Maiden Class authority Inspection of the unit was carried out on 29 Mar 23 by inspection team headed by Cmde HA Hardas, Cmde (H)-O&A, NHO Dehradun

Visits. Cmde HA Hardas, Cmde(H)-Ops & Admin, NHO on 29 Mar 23.





CDR ANKUSH SACHDEVA
Officer-in-Charge

मॉरिशस जल सर्वेक्षक सेवा MAURITIUS HYDROGRAPHIC SERVICE



Introduction. Mauritius Hydrographic Service (MHS) continues to provide technical advice and assistance to the Government of Mauritius on hydrographic matters, strengthening Maritime Safety Information Services and updating nautical products of Mauritian waters. The office is also the face of the Ministry of Housing and Land Use Planning of Mauritius, at various Regional and International Levels.

Conduct of Survey. The details of surveys carried out are tabulated below:-

- | | |
|---|---------------------------------|
| (a) Le Morne. | (b) Navigational Passes |
| (c) Ile Aux Aigrettes | (d) Embarkation Point at Jerome |
| (e) Victoire (1804) wreck at Pte aux Cannoniers | |

Any Other Points of Interest.

(a) **Protocol on Sale of Navigational Products.** The new protocol on 'Sale of Navigational Products', was signed between Republic of Mauritius and Republic of India on 10 Oct 22. This protocol makes additional provision for revenue accrued through the sale of derived products (in addition to the traditional paper charts and the electronic navigational charts) which have been generated and marketed by private entities.

(b) **Participation in STEM-2022.** MHS showcased the science and technology behind hydrography through exhibition of equipment and software related to bathymetric data collection and processing. The exhibition was organised by High Commission of India and was open to public from 31 May – 04 Jun 22.

(c) **North Indian Ocean Hydrographic Commission (NIOHC) Plenary Meet.** Oi/C along with senior members of the Government of Mauritius attended the 21st NIOHC plenary meet at Indonesia from 23 – 25 Aug 22.

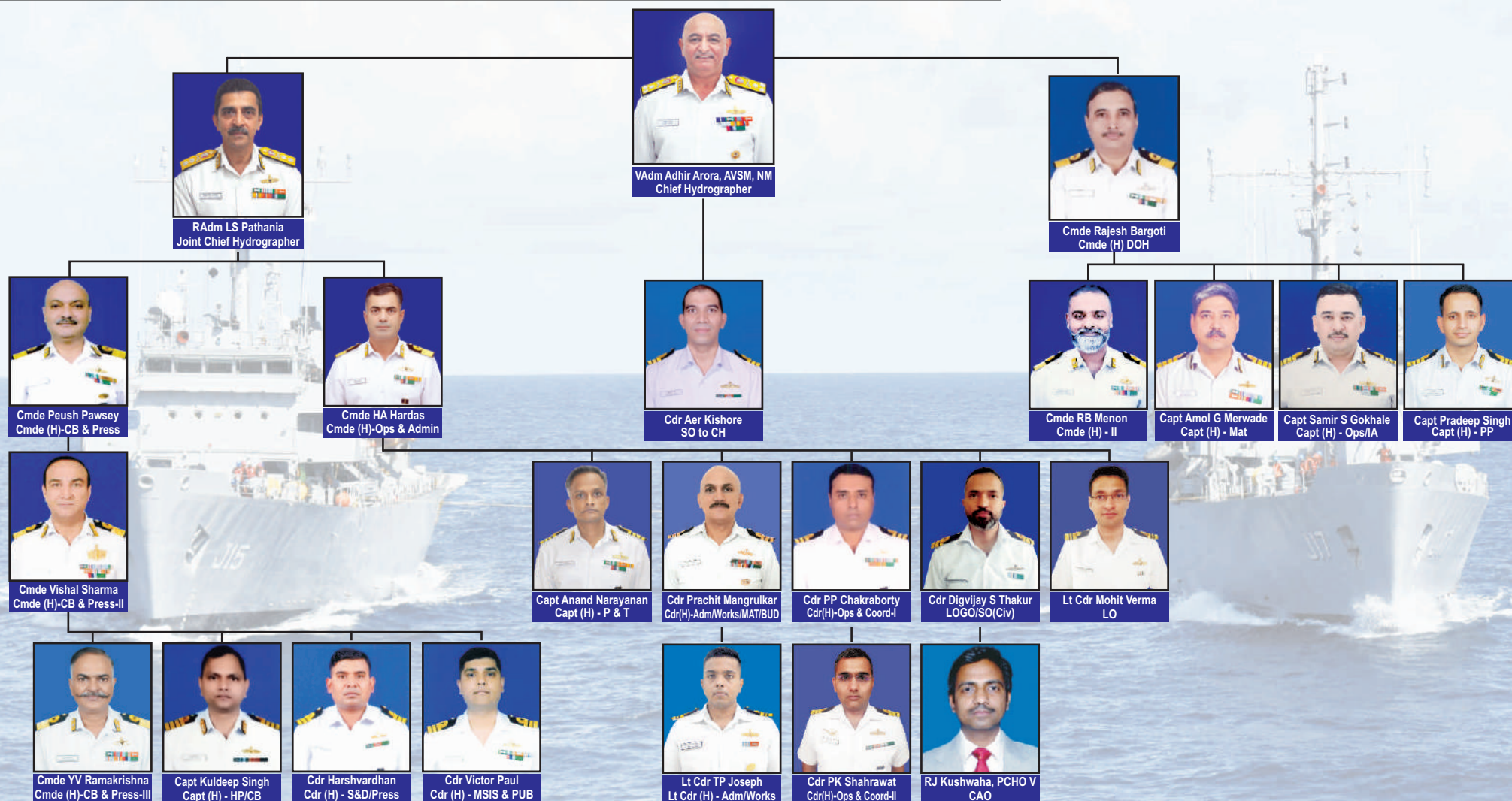
(d) **Compendium of the Survey Undertaken for Demarcation of Beaches, Swimming Zones and Embarkation Points of Mauritius.** MHS has published "Compendium of the Survey Undertaken for Demarcation of Beaches, Swimming Zones and Embarkation points of Mauritius" since its inception in 2013. The information in the document will be a vital contributor to the Mauritius Government MSDI website "Ocean Observatory E-Platform". The compilation will publicise the availability of hydrographic data for projects related to Blue Economy.

Change of INHTT. The 5th INHTT under Cdr Ankush Sachdeva took over the charge of MHS from Cdr Praveen Thomas and team on 26 Feb 23.



मुख्य जल सर्वेक्षक की संगठनात्मक संरचना

ORGANISATIONAL STRUCTURE OF CHIEF HYDROGRAPHER



जल सर्वेक्षक उत्पादन की संगठनात्मक संरचना

ORGANISATIONAL STRUCTURE OF HYDROGRAPHIC PRODUCTION



संचालन OPERATIONS



CDR PP CHAKRABORTY
Cdr (H) – Operations & Coord-I

The Operations Section is the nodal section which plans and allocates survey tasks to the ships and units. The section monitors the progress of surveys and professional guidance is rendered to ships and units as required. In addition, the Section plays a key role in coordinating and interacting with various national agencies. Confidential Navy Order for Class authority Inspection of Survey ships and units was promulgated and ISAC was established at NIH. Additionally, ISSI for Foreign Cooperation Survey deployment was also promulgated.

Important Activities.

(a) **International Hydrographic Co-operation.** In furtherance to International Hydrographic Co-operation with littoral nations in the Indian Ocean Region, the Department has undertaken eleven international cooperation hydrographic surveys in Mauritius, Maldives and Myanmar during the period of report.

(b) **Antarctica Survey Programme.** India is a member of International Hydrographic Organisation - Hydrographic Committee on Antarctica (IHO-HCA) and has the responsibility of producing the charts 9050 and 9051 of the Princess Astrid Coast in collaboration. Lt Cdr Denish Ganesan and Biltu Chhel, LS (HY), from the Department participated in the XLII Antarctica Expedition from Oct 22 to Mar 23.

(c) **Annual Hydrographic Conference (AHC).** Annual Hydrographic Conference-22 was held at NHO on 03-05 Aug 22 for reviewing survey season 2021-22. Discussions were held on professional issues pertaining to the conduct of hydrographic surveys and training related issues. The hydrographic surveys for the forthcoming survey season 2022-23 were also discussed.

(d) **Navigational Safety of Port Committee (NSPC) Inspection.** Chief Hydrographer is a member of the Navigational Safety of Ports Committee (NSPC) for undertaking inspection of all new ports on navigational safety aspects. The details of ports inspected during year for safety aspects are as follows:-

Ser.	Port
I.	APM Terminals Pipavav
II.	Gopalpur Ports Limited
III.	Dahej LNG Port
IV.	Dhamra Port
V.	DHIL
VI.	Krishnapatnam Port Pvt Ltd
VII.	Bhogat Offshore (CAIRN)
VIII.	Finolex industries
IX.	Konkan LNG Terminal-Dabhol
X.	Sikka
XI.	Adani Ports and Sez Ltd, Mundra

Ser.	Port
XII.	Chempast Cuddalor Vinyls Ltd
XIII.	Chemplast Karaikal Port
XIV.	Cooromondel, Ennore Minor port
XV.	Adani Petronet (Dahej)
XVI.	Dighi port
XVII.	Reliance Dahej Marine Terminal (RDMT)
XVIII.	Dahej LNG Port
XIX.	Muldwarka
XX.	AMNS Hazira
XXI.	Jaigarh port ltd





CDR PP CHAKRABORTY
Cdr (H) – Operations & Coord-I

संचालन - श्रेणी प्राधिकरण निरीक्षण OPERATIONS - CLASS AUTHORITY INSPECTION



Class Authority Inspection. The Chief Hydrographer is designated as the Class Authority for Survey Ships and Units. In order to streamline and closely monitor the survey activities, the ships and units of the Department are inspected regularly by a senior officer from the Hydrographic cadre. The inspection consists of two phases, first being at harbour and second phase at sea. During the inspection, various procedures and methodology of survey planning, execution, data compilation and crew efficiency are assessed.

The details of Class Authority Inspection under taken during period of report are as follows:-

Ser	Ship&Unit	Inspected By	Date
(a)	INS Investigator	Capt N Dheeraj, Capt (H)-Ops & Coord, Cdr SK Sajjan, OiC HSU (Kochi)	10-11 Jan 23
(b)	INS Jamuna	Capt N Dheeraj, Capt (H)-Ops & Coord, Cdr SK Sajjan, OiC HSU (Kochi)	9 Jan 23
(c)	INS Darshak	Cmde HA Hardas, Cmde (H)-O & A, Capt N Dheeraj, Capt(H)-Ops & Coord	27-28 Mar 23
(d)	HSU (PBR)	Cmde HA Hardas, Cmde (H)-O & A, Capt N Dheeraj, Capt(H)-Ops & Coord	29 Mar 23
(e)	HSU (Kochi)	Cmde HA Hardas, Cmde (H)-O & A, Capt N Dheeraj, Capt(H)-Ops & Coord, Cdr PK Shahrawat Cdr (H)-Ops & Coord-II	30 Mar 23
(f)	INS Sarvekshak	Cmde HA Hardas, Cmde (H)-O & A, Capt N Dheeraj, Capt(H)-Ops & Coord, Cdr PK Shahrawat Cdr (H)-Ops & Coord-II	30-31 Mar 23
(g)	HSU (Mumbai)	Cmde HA Hardas, Cmde (H)-O & A, Cdr PP Chakraborty, Cdr(H)-Ops & Coord-I	24 Apr 23
(h)	INS Makar	Cmde HA Hardas, Cmde (H)-O & A, Cdr PP Chakraborty, Cdr(H)-Ops & Coord-I	26 Apr 23



संचालन - सर्वेक्षण कार्य

OPERATIONS - SURVEY TASK



CDR PK SHAHRAWAT
Cdr (H) – Operations & Coord-II

Hydrographic Surveys. During the year 2022-23, the Department has completed 43 Hydrographic Surveys, which includes Navigational, defence, tidal and 11 International co-operation surveys and one survey in Antarctica. The list of Navigational Surveys, Foreign cooperation surveys and Tidal Sureys is tabulated below:-

SI	Area	Unit	SI	Area	Unit
EAST COAST					
1.	Outer Approaches to Kakinada	Nirupak	2.	Deep Sea Off Ramayapatnam	Darshak
WEST COAST					
1.	Approaches to Port of New Mangalore	Makar	5.	Western Deep Sea Area of Gulf of Kachchh	Sutlej
2.	Deep Sea Area Off Trivandram	Jamuna	6.	Port of New Mangalore	Sarvekshak
3.	Port of Mormugao	Sutlej	7.	Deep Sea Area between Dwarka to Mumbai	Sarvekshak
4.	Mormugao and Panaji	Sutlej			
ANDAMAN AND NICOBAR					
1.	Survey Off North Passage Island	Darshak	3.	Survey Off Swaraj Island	Jamuna
2.	Deep Sea off East of Andaman	Darshak	4.	Deep Sea Area - Campbell Bay and Anderson Bay	Jamuna
FOREIGN COOPERATION					
1.	Agalega Jetty	Darshak	8.	Thiladhunmathee Uthuruburi Atoll	Investigator
2.	East of Mauritius	Darshak	9.	Dawei Deep Sea Port Project Area	Sutlej
3.	East to South East of Mauritius	Darshak	10.	Heinze Islands	Sutlej
4.	St. Brandon	Darshak	11.	Approaches to Dawei Deep Sea Port	Sutlej
5.	Northern Area of Mauritius	Darshak	12.	Antarctica Survey	NHO
6.	Around Mauritius	Darshak			
7.	Ihavandippolhu Atoll	Investigator			
TIDAL HI's					
1.	Carnicobar	Nirupak	4.	Dwarka	Jamuna
2.	Daman	Darshak	5.	Jakhau	Sutlej
3.	Kandla	Investigator	6.	Ghogha	Sarvekshak



CDR PRACHIT MANGRULKAR

Cdr (H)-Mat



The material section endeavors to support all the ships/ units by efficient monitoring and conducting of repairs and maintenance of existing equipment. Foreign surveys, yearly Antarctica expedition and domestic survey season 2022-23 were supported materially.

CAMC cases. All major survey equipment namely Geodetic GPS sets, MBES, SBES, Motion Sensors, CTD System, ADLS and Side Scan Sonars are maintained through CAMC. Efforts are underway for timely renewal of CAMC so as ensure availability of equipment. The following CAMC cases have been concluded in 2022-23:-

- | | |
|---|---|
| (a) Ship Multibeam system - INS Sarvekshak. | (b) Ship Multibeam system – INS Investigator. |
| (c) DWMB System of INS Jamuna & Sutlej. | (d) Hypack & Hysweep |
| (e) Single Beam Echo Sounder. | |



Repair Cases. Breakdown repair cases for equipment which are not under AMC are initiated as and when required. The following repair cases were concluded in 2022-23:-

- | | |
|---|------------------------------|
| (a) Hemisphere DGPS sets. | (b) Total station. |
| (c) Digital Level. | (e) Water Level Meter (WLM). |
| (f) Autonomous under water vehicle (AUV) - INS Makar. | |

New Procurement. 18 sets of DGPS have been procured for *IN* Surveying Ships & Units. The commissioning and training by OEM rep for the DGPS sets was undertaken at NIH Goa.

Future Plans.

Construction of four Survey Vessels (Large). Contract was concluded for construction of four Survey Vessels (Large) with M/s GRSE, Kolkata on 30 Oct 18. The delivery of first SV (L) is scheduled in Sep 23.

Miscellaneous. The procurement of following hydrographic equipment has been initiated / in progress:-

- | | |
|--|---|
| (a) Motion sensor (21). | (b) Current Meters (12.) |
| (c) DGPS (25). | (d) Single Beam Echo sounders (19). |
| (e) Geodetic GPS (29). | (f) Portable Echo sounder (07). |
| (g) CTD (05). | (h) Deep Water Multibeam for INS Darshak & Sarvekshak (02). |
| (j) Shallow Water Multibeam for INS Darshak & Sarvekshak (04). | |



समुद्री सुरक्षा सूचना सेवाएँ

MARITIME SAFETY INFORMATION SERVICES

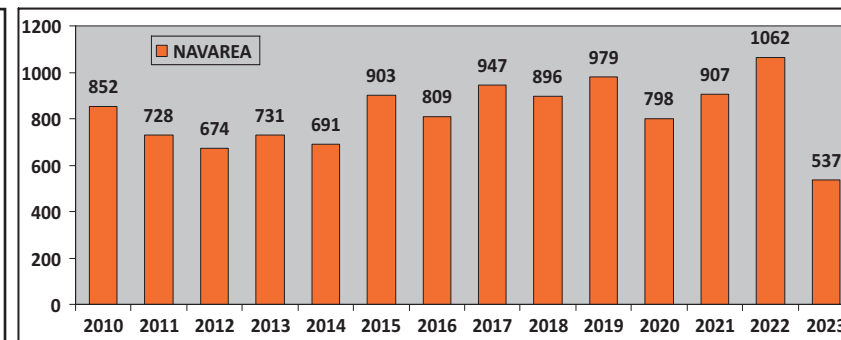
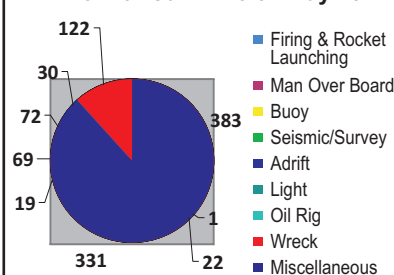


K VICTOR PAUL
Cdr(H)-MSIS/Pub

Maritime Safety Information Services (MSIS) section is responsible for promulgation of critical information on navigational safety to Mariners through Notices to Mariners (N to M) and NAVAREA Warnings. During this period, 164 N to M, have been promulgated in which 78 are permanent, 86 are temporary & preliminary notices and 537 NAVAREA warnings.

Type of NAVAREA	Numbers
Firing & Rocket Launching	383
Buoy	22
Seismic/Survey	331
Adrift	19
Light	69
Oil Rig	72
Wreck	30
Man Overboard	01
Miscellaneous	122
Total	1049

Breakdown of Navarea Warning From 01 Jul 22 To 31 May 23



Breakdown of NAVAREA warnings from 01 Jul 22 to 31 May 23 is as shown in the matrix above.

India-WINS.

India-WINS is a one-stop solution for Mariners world over to access digital Geographical Information System (GIS) based catalogue of charts and navigation warnings in IOR covering an area of nearly 26 million sq. Km. With launch of India-WINS module, the usage of website www.hydrobharat.gov.in by the users has increased manifold.



प्रकाशन

PUBLICATION

The primary role of this section is to publish Nautical Publications, revised editions and periodical updates of all Indian Nautical Publications. Data for these publications are collected from various sources like Port authorities, Report of Surveys, Hydrographic Notes and interaction with other Hydrographic Offices. All the INHD Publications (updated) are available for Indian Naval ships through NUD.

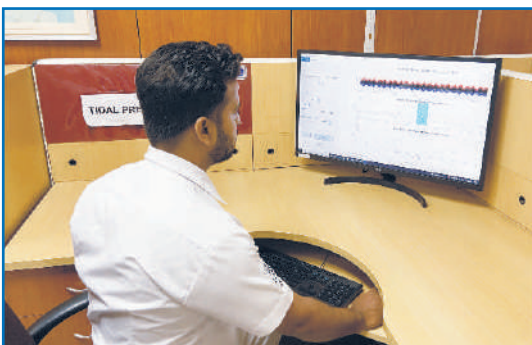
On Going Publications. The following New Edition are under preparation during the period of report:-

Ser.	Publication
(a)	Indian List of Radio Signals Vol VI
(b)	Compendium of Sailing Directions for Foreign Ports/ Approaches Covered by Indian Charts



CMDE YV RAMAKRISHNA
Cmde (H)–CB&Press-III/ HDM

जल सर्वेक्षण डाटा प्रबंधन HYDROGRAPHIC DATA MANAGEMENT



Introduction. The HDM section is responsible for review of the hydrographic data collected in the field by the *IN* surveying Ships/Units and stringent QC checks are carried out prior to data acceptance for charting. The aim of the section is undertake the review of the survey data immediately on receipt. The streamlined QC procedures are in place for the same.

In order to meet the ever increasing requirement of storing digital hydrographic data, the Unified storage device has been upgraded to 96 TB storage. Ancillary database management system has been procured and data is being populated progressively.

Review Status. The QC of hydrographic surveys for the period Jul 22 – May 23 as on 05 Jun 23 is as tabulated below:-

- (a) 43 Hydrographic surveys for survey season 2021-22 have been received. 30 out of 41 hydrographic surveys are reviewed.
- (b) 32 Hydrographic surveys for survey season 2022-23 have been received. 04 out of 32 hydrographic surveys were reviewed.



Tidal Predictions (INP 12). Tidal Prediction for Secondary Ports (INP 12) is compiled by the section. Predictions for a total 89 secondary ports were published in 2023 out of which 65 are predicted at NHO using NHO data and 24 have been obtained from Survey of India. The predictions were subjected to stringent QC procedures. To refine the predictions for the year 2024, various port authorities were requested to provide tidal data. The office received encouraging responses and the predictions for the year 2024 are being refined.

Original Document Section Database (ODS). The section has updated the BDB with all the surveys upto 2020-21. The data received at ODS including old records is being retrieved and archived digitally in ODS database on Unified Storage Device (USD) in a phased manner. Further, newly received survey data accepted post QC checks is being populated in USD. Original Document Section has been reorganized for easy access of inventory. The review reports rendered post QC is refined with detailed attributes for future reference and streamlined portability to BATHY DATA BASE as well HPD.



Development of Software Form Based ROS. An initiative has been taken to minimise typing effort, thereby reducing typographical and data translational errors and inconsistencies. The software developed would enable ships and units to input relevant data, avoid duplication and render an objective report of survey. The software also offers adequate flexibility to input comments and remarks to describe relevant information. It is aimed to economise the efforts in compiling reports and enhance digital records with objective assessments.

In a joint venture, the National Hydrographic Office deployed field teams with INCOIS staff for validation of Benchmarks, Tide stations for improving the field procedures and observations towards quality control.

A project initiative for digitizing and retrieving old manuscripts in consultation with WESEE is under progress. The envisaged deliverables of this project is to retrieve old manuscripts and overlay other digital data for time series comparison to draw insights about changes for further studies.

जल सर्वेक्षण उत्पादन

HYDROGRAPHIC PRODUCTION



CAPT KULDEEP SINGH
Capt (H) - HP

Role and Responsibilities. Hydrographic Production plays a vital role in chart production in accordance with stipulated international standards and procedures. The Department is continuously striving hard to meet the ever growing demands of charts and its allied products to the mariners. Chart production through Hydrographic Production Database (HPD) has stabilised and currently all charts of mainland up to scale 1:1,50,000 have been published from HPD. Efforts are on to transform the entire production through HPD. The induction of HPD has ensured simultaneous production of paper charts and ENC's and has resulted in release of 600+ products from HPD. The products generated from HPD are consistent and coherent in data across all verticals. The production timelines have been considerably reduced and able to meet the growing demand with short period.

Paper Charts. Production of paper charts has been the backbone of NHO. During the year, 10 New Charts and 8 New Edition paper charts were produced. Regular updating of paper charts database has led to the production of 25 reprints during the last one year.

Electronic Navigation Charts (ENCs). The office is well poised to play a leading role as ENC producer in the region as per IHO specification. Till date, 349 ENC cells have been released in the market and efforts are underway for improving the larger ENC coverage including 90 international cells. During last year, 13 new ENC cells and 39 new edition ENC cells were produced and released in the market. With IHO and IMO striving hard for noticeable requirement of ENC's worldwide, this Office is well equipped with latest technologies to meet the future challenges. Additionally, the ENC cells released into the market are being regularly updated fortnightly.

International Charting Scheme. In its constant endeavour for regional cooperation, India has played a crucial role in this region for providing better coverage. Accordingly, international series charts on various scales were planned and till date INHD has produced 94 INT charts and 05 new INT charts have been schemed.

Foreign Charts. As part of International Hydrographic Cooperation, NHO has bilateral arrangements with neighboring Nations to produce INT Charts in their waters. A total of 06 Charts have been produced.

ENC/ Paper Chart Production Course for Foreigners. ENC Production Course empowers the trainees on the theory and concepts of Charts/ ENC production 'from

review of data to release of products'. ENC Production Course for officers "Capsule Course for Long H" was conducted from 26 Sep – 08 Oct 22. 12 Foreign trainees were trained on ENC/ Paper Chart production in 2022. Till date 851 foreign trainees have been trained at NHO.

Bathy Data Base. Base Data Base is used for data population into BDB server and for data archival of complete database. BDB has replaced existing CARIS GIS and is being used for all the tasks being undertaken using CARIS GIS which include data thinning, data analysis and data modeling for production of Charts/ENCs. 100 % data has been populated into BDB Server from GIS Database.

Maritime Information Chart 5071. Maritime Information Chart 5071 has been produced and was launched on Navy Day 2022 at NHO. The chart is being utilised navy-wide at Naval War College, Defence Services Staff College, Maritime Warfare Centers, other training institutions for strategic studies etc. The chart is also very helpful for mariners to understand the Indian Ocean region and its maritime and strategic importance. The chart is freely downloadable from official website <https://www.hydrobharat.gov.in>.

Temporary & Preliminary N to M Corrections. Dissemination of Temporary and preliminary navigational significant information in the form of ENC update for ECDIS users has implemented. It corresponds to the service that N to M offers to the paper chart users.

S-100 Roadmap. NHO has commenced the implementation strategy for transition to S-100 based products. This includes training and augmentation of infrastructure. NHO is currently examining the product specifications and current data availability.

Migration to Gridded ENC. NHO has evolved a roadmap which includes training, augmentation of infrastructure and transition to Gridded ENC's. Once implemented this will provide an opportunity to include enriched data content for production of S-101 ENC's in future.

42nd INCA International Congress. 42nd INCA International Congress on the focal theme of "Digital Cartography to Harness Blue Economy" was organised at NHO from 09 to 11 Nov 22. Participants from various institutions and academia attended the same.

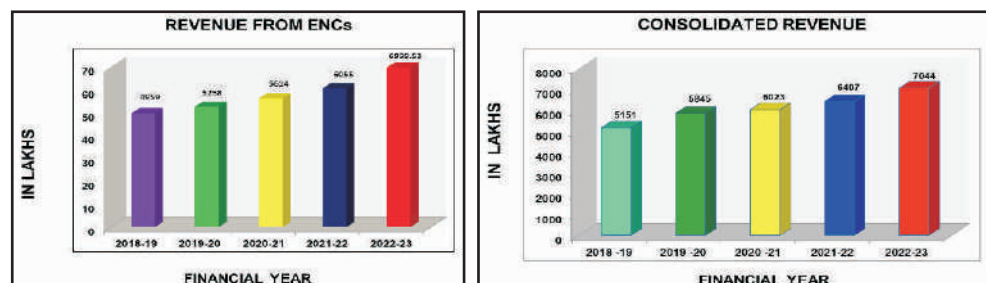


CDR HARSHVARDHAN SAVARNA
Cdr (H)-S&D

विक्रय एवं वितरण SALES & DISTRIBUTION

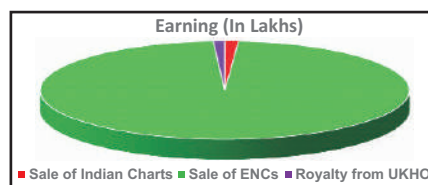
The revenue from sales of charts, ENC's and publications has seen a significant growth during the period of 2022-23. It has been the endeavour of the section to make the various products of the department widely available through the network of Naval Chart Depots, Charts agents and as well as Value Added Resellers. S&D has taken suitable measures to ensure proactive and prompt response to meet national requirements. The modern approaches has also resulted in better co-ordination amongst all the stake holders to improve the sales.

Sale of Charts, Publications & ENC's. The comparative year-wise breakdown of sales of charts, publications and ENC's for the last five years are as follows:-



Revenue earned: - The breakdown of revenue earned through sale of charts, ENC's and Royalties is as follows:-

Item	Earning (Rs)
Sale of Indian Charts (01 Jan 22 – 31 Dec 22)	84.04 Lakhs
Sale of ENC's (01 Jan 22 – 31 Dec 22)	6959.5 Lakhs
Royalty from UKHO (01 Jan 22 – 31 Dec 22)	71.23 Lakhs
Total	7114.77 Lakhs



Achievements during the Year.

- Royalty payment to Host countries from 2021 to 2022
- Launching of NHO portal

- Comprehensive AMC of CTP system
- Renewal of sales price of charts and publication
- Implementation of GST on Paper Charts
- Availability of regular ENC updates to all Naval ships on NUD
- Installation of NAS server
- Restructuring of S&D/Press organisation for efficient functioning
- Printing of ILRS Vol- 5
- Copyright allocation to I/N Charts and Publications
- Proactive provisioning of ENC towards successful Op Kaveri for evacuation of Indians from Sudan



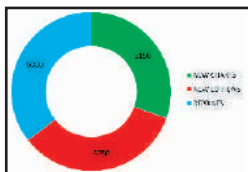
मुद्रणालय PRINTING PRESS

CDR HARSHVARDHAN SAVARNA
Cdr (H)-S&D



Installation of NAS server. The installation of a NAS server for old data backup has been completed.

Charts and Publications. The details of charts printed during the year are as follows:-



DESCRIPTION	COPIES
New Charts	4850
New Editions	1990
Reprints	9843





CMDE YV RAMAKRISHNA

Cmde (H)-CB&Press-III/ IA

अंतराष्ट्रीय प्रसंग

INTERNATIONAL AFFAIRS

The National Hydrographic Department has established good relations for strengthening hydrographic cooperation with our maritime neighbours and extended the reach to other littoral states. The department has carried out a wide spectrum of activities under Foreign Cooperation Initiatives including signing of MsoU/IA's with Friendly Foreign Countries (FFCs), conduct of Foreign Cooperation Surveys & customised training courses, participation at International Level meetings etc in order to strengthen our ties in the region and worldwide.

REPRESENTATION IN INTERNATIONAL FORA.

1. **North Indian Ocean Hydrographic Commission (NIOHC).** VAdm Adhir Arora AVSM, NM, Chief Hydrographer to the Govt of India and Cmde Peush Pawsey, Cmde (H)-CB&Press visited Bali, Indonesia to attend the 21st meeting of NIOHC from 22-25 Aug 22.
2. **World Wide Navigational Warning Service Sub Committee (WWNWS).** Cdr K Victor Paul, Cdr (H) - MSIS attended the 14th meeting of World Wide Navigational Warning Service Sub Committee (WWNWS) via Video Tele Conference (VTC) from 12 - 16 Sep 22.
3. **Nautical Information Provision Working Group (NIPWG).** Cdr Harshvardhan Savarna, Cdr(H)-S&D attended the 9th meeting of Nautical Information Provision Working Group (NIPWG) meeting via VTC from 13-16 Sep 22.
4. **Advisory Board on the Law of the Sea (ABLOS).** Cmde Peush Pawsey, Cmde (H)-CB&Press attended the 28th Meeting of Advisory Board on the Law of the Sea (ABLOS), via VTC from 04-05 Oct 22.
5. **Nautical Cartography Working Group (NCWG).** Dr. BK Ramprasad, ACCHO attended the 8th meeting of Nautical Cartographic Working Group, via VTC from 15-18 Nov 22.



6. **Marine Spatial Data Infrastructure Working Group (MSDIWG).** Cdr PP Chakraborty, Cdr (H) - S&D attended the 14th Meeting of Marine Spatial Data Infrastructure Working Group (MSDIWG) via VTC from 30 Jan- 03 Feb 22.
7. **Data Quality Working Group (DQWG).** Shri PC Purohit, Principal Civil Hydrographic Officer from INHD attended the 18th Meeting of Data Quality Working Group (DQWG), via VTC from 07-09 Feb 23.
8. **Worldwide ENC Database Working Group (WENDWG).** Cmde Peush Pawsey, Cmde (H)-CB&Press attended the 12th Meeting of Worldwide ENC Database Working Group (WENDWG) via VTC from 21-23 Feb 23.
9. **Hydrographic Survey Working Group (HSWG).** Cmde Vishal Sharma, Cmde (H)-CB&Press II attended the inaugural meeting of Hydrographic Survey Working Group (HSWG) via VTC held 28 Feb-02 Mar 23.
10. **Tides, Water Level and Currents Working Group (TWCWG).** Shri MP Gupta, ACCHO attended the 6th Meeting of Tides, Water Level and Currents Working Group (TWCWG), via VTC from 28 Feb-02 Mar 23.
11. **Capacity Building Sub-Committee (CBSC).** Capt AG Merwade, Capt (H)-PP attended the 21st Intercessional meeting of Capacity Building Sub-Committee (CBSC) via VTC on 13 Mar 23.
12. **IHO Assembly (A-3).** Vice Admiral Adhir Arora, AVSM, NM, Chief Hydrographer to the Govt. of India and Capt Kuldeep Singh, Capt (H) – HP visited Monaco to attend the 3rd meeting of IHO Assembly from 02-05 May 23.
13. **Hydrographic Services and Standards Committee (HSSC).** Chief Hydrographer to the Govt of India attended 15th meeting of HSSC scheduled from 05-09 Jun 23 at Helsinki, Finland.

FOREIGN COOPERATION.

1. **India – Brazil.** A VTC towards discussion on Hydrographic interest among India, Brazil, Argentina and Uruguay was held on 04 Aug 22.



2. **India – Mozambique.** A maiden VTC was held with Mozambique Navy Delegation (MND) towards furthering hydrographic cooperation was held on 11 Aug 22.
3. **India – Turkmenistan.** A maiden VTC towards discussion on Hydrographic Cooperation with Turkmenistan was held on 08 Nov 22.
4. **India – Indonesia.** A VTC was held with Pushidrosal, Hydrography and Oceanography Centre, Indonesia Navy on 18 Oct 22.
5. **India – Maldives.** Three member delegation led by Brig. General Zakariyya Mansoor (Retd), Head of Maldives Hydrographic Service visited National Hydrographic Office (NHO), Dehradun on 14 Dec 22. The visit was followed up with team visiting NIH at Goa.
6. **India-Thailand.** A VTC with Hydrographic Department, Royal Thailand Navy (HDRTN) towards furthering hydrographic cooperation was held on 08 Feb 23.
7. **India-Tanzania.** A bilateral discussion between Rear

Admiral MM Mumanga, Commissioner of Research and Military Development (CMD) Tanzania and Cmde Peush Pawsey, Cmde (H)-CB&Press from Indian Naval Hydrographic Department (INHD) was held on 15 Feb 23 on side-lines of Aero India 23 at Bengaluru.

8. **India- Comoros.** A maiden meeting via VTC with Commander Comoros Coast Guard towards furthering hydrographic cooperation was held on 09 Mar 23.

9. **Colombo Security Conclave.** The first Oceanographers and Hydrographers conference under the umbrella of the Colombo Security Conclave was held from 15-18 Nov 22 at Goa and Hyderabad. The theme for the conference was 'Our Ocean is our future'. A concept paper for multinational cooperation in the field of hydrography with Member States of CSC has been shared with NSCS for streamlining the mechanisms from initiatives to deliverables among the CSC nations.





CDR PRACHIT MANGRULKAR
Cdr (H)-Adm/Works

प्रशासन एवं निर्माण ADMINISTRATION AND WORKS



Annapurna



Interaction with Veterans

The section is responsible for Administration, security, maintenance & running of the naval estate. It also handles Works, Regulating, Motor Transport, Medical, and Sports. This section is responsible for infrastructure development and security of the naval establishment in Uttarakhand. The following are some of the major activities undertaken:-

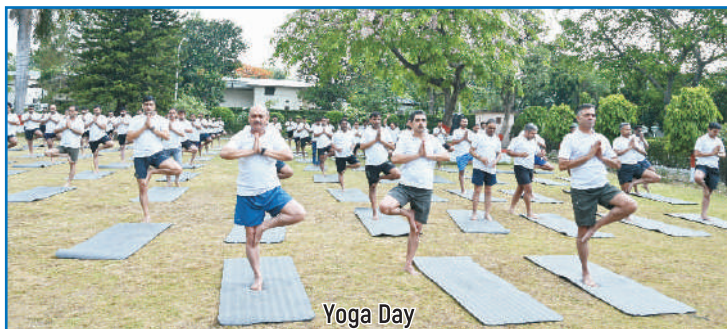
Administrative support. The NHO estate spanning 16.5 acres hosts various dignitaries and international delegations from various friendly foreign countries and also organises various events such as interaction with Veterans, INCA, Independence Day, Navy Day, interaction with VSF, Republic Day, AHC, Agniveer Recruitment etc.

Blood Donation. The office organised a blood donation camp on the occasion of Navy Day.

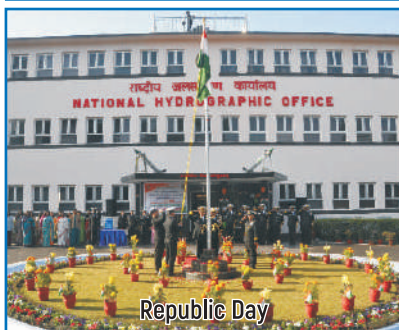
Renovations. In order to upgrade living conditions of sailors, following were undertaken:-

- Refurbished Naval Transit "Hydro Kutir" and Sailors Dining Hall "Annapurna" were inaugurated on 09 Jan 23 and 21 Mar 23 respectively.
- Inliving Sailors Accommodation "Basera" has been upgraded with latest facilities.
- A new borewell was commissioned to meet the demand of fresh water in the estate.

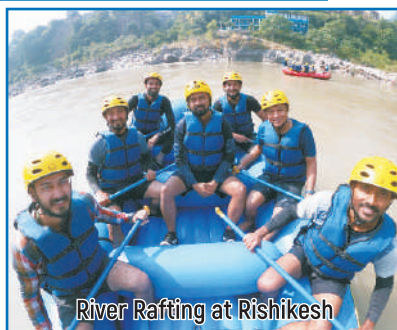
Sports Activities. To improve physical efficiency amongst the personnel, various sports/ adventure activities were conducted such as conducting of mass yoga on the occasion of "International Yoga Day", Cross Country, White Water River Rafting at Rishikesh, weekly sports etc.



Yoga Day



Republic Day



River Rafting at Rishikesh



Hydro Kutir



Blood Donation Camp



Blood Donation Camp

कार्मिक और प्रशिक्षण

PERSONNEL & TRAINING



CAPT ANAND NARAYANAN
Capt (H)-P&T

The department took steps towards managing the human resources of the Hydrographic Cadre to achieve efficient and effective manning of all survey ships and units. It enabled the resources to keep abreast with the rapidly advancing technology and latest International standards in Hydrographic surveying techniques / procedures. It provided advice to HQSNC on ways to standardise Hydrographic training and update hydrographic syllabus as per IHO/FIG/ICA standards of competence.

Turnaround of HTT Mauritius. Govt. sanction was obtained for turnaround of the crew of Indian Naval Hydrographic Training Team at Mauritius.

Conduct of HCMTC. The XIII Hydro Cadre Management and Training Conference (HCMTC) was held at Conference Hall, Sena Bhavan on 25 May 23 under the Chairmanship of VAdm Suraj Berry, AVSM, VSM, NM, Chief of Personnel. VAdm, Adhir Arora, AVSM, NM, Chief Hydrographer was also present.



सम्मान एवं पुरस्कार HONOURS AND AWARDS

The following Officers were commended:-

Ser.	Rank	Name	Commended by
(a)	Cdr	Kamal Ashraf	CINCAN
(b)	Lt Cdr	Denish Ganesan	CNS
(c)	Lt Cdr	Denish Ganesan	CNC
(d)	Lt Cdr	Yash Bhardwaj	CNC
(e)	Lt Cdr	Loghanathan V	CNC
(f)	Lt Cdr	Deepak Bisht	CNS



The following Sailors were commended:-

Ser.	Name	Rank	Commended by
(a)	SK Gupta	MCPO II (HY)	CNC
(b)	Nitesh Kumar	PO (HY)	CNS
(c)	Kapil Dev	PO (HY)	CNS
(d)	J Eswara Rao	PO (HY)	CNS
(e)	Darshan Kumar	PO (HY)	CNS
(f)	Kaushal Pratap Singh	PO (HY)	VCNS
(g)	G Ramakrishna	PO (HY)	CNC
(h)	Pardeep Kumar	PO (HY)	CNC
(j)	RK Shaw	PO (HY)	CNC
(k)	Prashant Singh	PO (HY)	CNC
(l)	Ashwani Kumar	LS (HY)	CNC
(m)	Vijay Kumar	LS (HY)	CINCAN
(n)	Shubham Singh	LS (HY)	CNC
(p)	Tarunjeet Singh	LS (HY)	CNC
(q)	SR Singh	Sea I (HY)	CNC
(r)	Ajay Kumar	SEA I (HY)	CNS

The following Officers/ sailors have been awarded 'Letter of Appreciation' on occasion of 74th Republic day by Honorable Governor of Uttarakhand:-

Ser.	Name
(a)	Cdr Victor Paul
(b)	Sanjit Kumar, MCPO II (HY)
(c)	Shri R J Kushwaha, PCHO VII

२०२१-२२ अवधि के लिए सर्वश्रेष्ठ जल सर्वेक्षण पोत BEST SURVEY SHIP FOR SURVEY SEASON 2021-22

'Admiral Jal Cursetji' - Best Survey Ship Rolling Trophy.

A Rolling Trophy has been instituted in the memory of Admiral Jal Cursetji, PVSM, ADC (Retd), former CNS, to be awarded annually to the best Survey ship of the season. The aim of the trophy is to encourage professionalism in optimisation of surveying resources, effective execution of survey tasks for meeting the specified standards and for achieving excellence in the quality of survey data rendered, whilst at the same time kindling the competitive spirit amongst the surveying ships. The trophy is presented by the Flag Officer Commanding-in-Chief in whose Command the survey ship is based, in the presence of the Chief Hydrographer.



INS SUTLEJ

During the survey season 2021-22, the ship was allotted fourteen Hydrographic Instructions. The ship, in addition to the allotted Hydrographic Instructions, also contributed to various requirements projected by the Command. The ship undertook arduous surveys and collected data with precision. The quality of the data rendered was of very high standard. The ship's company has shown exemplary professionalism, dedication and application in completing all the tasks allotted to the ship. The ship was commanded by Capt A Muralidhar during the period.



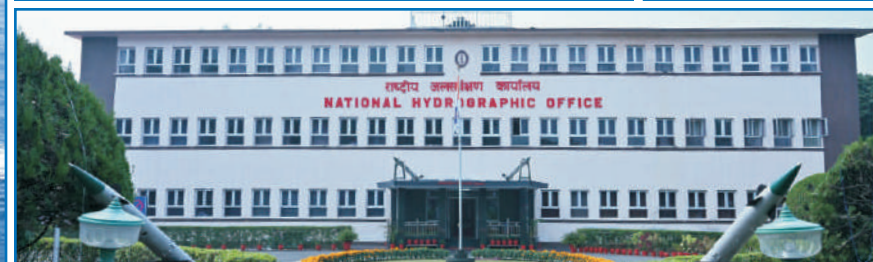
इकाई सम्मान पत्र UNIT CITATION



INS Sutlej was awarded Unit Citation for the year 2021-22 vide 460 IG dated 04 Dec 22, in recognition for her determined and innovative surveying methods employed to accomplish survey mission against all odds. It also acknowledge her sustained and significant acts of exceptionally outstanding contribution for the Indian Navy at national and international level, along with professionalism displayed in keeping with the highest tradition of service. INS Sutlej was also awarded Unit Citations on two previous occasions in 2005-06 and 2013-14.

CERTIFICATE OF APPRECIATION BY HONOURABLE GOVERNOR OF UTTARAKHAND NATIONAL HYDROGRAPHIC OFFICE - DEHRADUN

National Hydrographic Office (NHO), Dehradun was awarded "Certificate of Appreciation" by Lt Gen Gurmeet Singh, PVSM, AVSM, VSM (Retd), Honorable Governor of Uttarakhand on 25 January 23. The award was received by Vice Admiral Adhir Arora, AVSM, NM, Chief Hydrographer at special Investiture ceremony held at Raj Bhawan. NHO was also awarded the "Certificate of Appreciation" for outstanding service and dedicated efforts in the field of hydrography for promoting maritime safety.



कागज़ीय मानचित्र

PAPER CHART

List of New Charts and New Edition Charts published during the period are as follows:-

Ser	Chart No.	Title
New Chart		
1.	295	Lakshadweep to Maldives
2.	2597	Kaashidhoo to North Male Atoll
3.	2598	North Male Atoll and Approaches
4.	2599	Male Atoll
5.	4252	Diligent Strait to Kotara Anchorage
6.	227	Approaches to Male Atolls
7.	254	Approaches to Gulf of Khambhat
8.	3511	Approaches to Sittwe Harbour
9.	2025	Reliance Tanker berths
10.	3007	Nagapattinam anchorage
11.	2508	Agalega jetty
12.	2695	Western Approaches to Pemba Island
13.	2596	Kulhaudhuffushi anchorage
14.	302	Saagar Island to Dharma Port
15.	303	Dharma port to Paradip Port
16.	2033	Sikka channel
17.	2021	Sikka channel

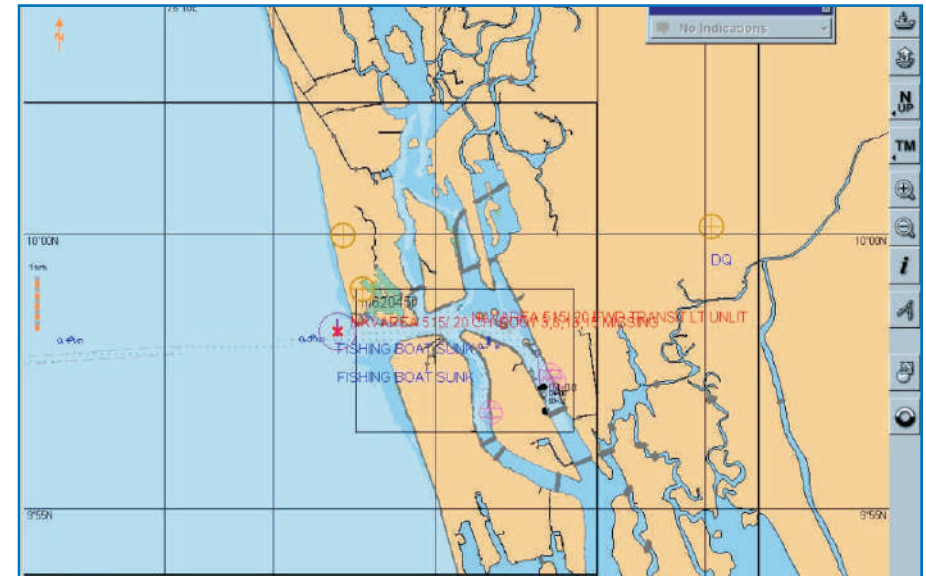
Ser	Chart No.	Title
New Edition		
1.	4104	Approaches to Port Meadows and Kotara Anchorage
2.	207	Diu Head to Gopinath
3.	253	Veraval to Pipavav
4.	315	Palk Strait
5.	3030	Bhimunipatnam Anchorage, Approaches to Bhimunipatnam
6.	3016	Mandapam Harbour
7.	292	Dwarka to Mumbai
8.	2015	Port of Mumbai
9.	2001	Mumbai docks
10.	2076	Jawagarlal Nehru Port and Trombay
11.	4006	Port Blair
12.	4012	Port Blair-inner Harbour

इलेक्ट्रॉनिक नौसंचालन मानचित्र ELECTRONIC NAVIGATIONAL CHART

New Electronic Navigation Charts released during the period are as follows:-

Ser	ENC No.	Title
01	IN3227MF	Approaches to Male Atoll
02	IN2268AA	Central Lakshadweep
03	IN63028E	Kamarajar Port
04	IN3405PA	Port Blair to Little Andaman Island
05	IN3406IT	Little Andaman to Ten Degree Channel
06	IN62034P	Hazira Port
07	IN42044H	Gulf of Khambhat Southern Portion
08	IN52101A	Approaches To Hazira
09	IN62108E	Essar Bulk Terminal
10	IN3203UK	Gulf of Kachchh, Extension of Navlakh
11	IN2273AA	Kadmat Island to Ihavandiffulu Atoll
12	IN62010N	Karwar Naval Harbour
13	IN42080A	Gulf of Kachchh Eastern Portion
14	IN52083S	Approaches to Sikka
15	IN62507P	Grand Port
16	IN52530A	Approaches to Grand Port
17	IN3216BA	Belekeri to Kundapura
18	IN52008A	Approaches to Karwar
19	IN42353A	Approaches to Karwar and Belekeri
20	IN42068G	Gulf of Kachchh Deep Water Route

Ser	ENC No.	Title
21	IN63037D	Dhamra Port
22	IN53038A	Approaches To Dhamra Port
23	IN62100B	Port Pipavav
24	IN42100D	Approaches To Port Pipavav
25	INI41ANI	Andaman Sea
26	IN2357AA	Point Calimere to Chennai
27	IN2261AA	Eight Degree Channel to Kannaykumari



इलेक्ट्रॉनिक नौसंचालन मानचित्र

ELECTRONIC NAVIGATIONAL CHART

New Edition Electronic Navigation Charts released during the period are as follows:-

SI No.	ENC No	Title
01	IN2263AA	Kanyakumari to Colombo
02	IN52556A	Inner App. To Port Victoria
03	IN3208AA	Gulf of Khambhat
04	IN53005C	Machilipatnam Anchorage
05	IN2354SA	Sacramento Shoal to Kalingapatnam
06	IN44206A	Approaches to Pulo Millow
07	IN54206A	Pulo Millow Anchorage
08	IN44207A	St. Georges Channel
09	IN2356CP	Chennai to Ramayapatnam
10	IN43034B	App. To Krishnapatnam
11	IN63034A	Krishnapatnam Port
12	IN2355RM	Ramayapatnam to Sacramento Shoal
13	IN122MBC	Mumbai to Cape Comorin
14	IN3207AA	Diu Head to Gopinath Point
15	IN2295AA	Lakshadweep to Maldives
16	IN44014A	Rangat Bay to Diligent Strait
17	IN44252A	Diligent Strait to Kotara Anchorage
18	IN2254A	Approaches to Gulf of Khamnhat



जल सर्वेक्षक HYDROGRAPHERS



SI	Rank	Name
1	VAdm	Adhir Arora, AVSM, NM
2	RAdm	Lochan Singh Pathania
3	Cmde	Rajesh Bargoti
4	Cmde	Peush Pawsey
5	Cmde	Sajeev K Nair
6	Cmde	Harshawardhan Arvind Hardas
7	Cmde	Satish Shivaji Bhosle
8	Cmde	Janakiraman Gurumani
9	Cmde	A Muralidhar
10	Cmde	Renny Markose Thomas

SI	Rank	Name
11	Cmde	Vishal Sharma
12	Cmde	Ramkumar Bhaskaran Menon
13	Cmde	Yellepeddy Venkata Ramakrishna
14	Capt	Mathew G Abraham
15	Capt	Tribhuvan Singh
16	Capt	Ajay Chauhan
17	Capt	Nattuva Dheeraj
18	Capt	Kuldeep Singh
19	Capt	Samir Shrikant Gokhale
20	Capt	Pradeep Singh

SI	Rank	Name
21	Capt(TS)	Bk Prasanna
22	Capt(TS)	Manamparambil Somasekhar
23	Capt(TS)	Anand Narayanan
24	Capt(TS)	Amol Gopal Merwade
25	Capt(TS)	Amit Pant
26	Cdr	Prachit Mangrulkar
27	Cdr	Satyabrata Senapati
28	Cdr	Sk Sajjan
29	Cdr	Partha P Chakraborty
30	Cdr	Shakeel Ahmed

SI	Rank	Name
31	Cdr	Kamal Ashraf
32	Cdr	Rahul Bhatt
33	Cdr	Chiriyankandath Praveen Thomas
34	Cdr	Kunduparambil Victor Paul
35	Cdr	Cyril Ignatius Speechly
36	Cdr	Ratheesh Ramachandran
37	Cdr	Parikshit Kumar Shahrawat
38	Cdr	Aer Kishore Padam Singh
39	Cdr	Deependra Sesodia
40	Cdr	Sree Ganesh Pillai
41	Cdr	Varun Gupta
42	Cdr	Amit Kumar Padha
43	Cdr	Madhusudana Rao Maradana
44	Cdr	Ankush Sachdeva
45	Cdr	Devender Singh
46	Cdr	Harshvardhan Savarna
47	Cdr	Kaustubh Kishor Kulkarni
48	Cdr	Urvish Kukreja
49	Lt Cdr	Praben Kumar Gurung
50	Lt Cdr	Chittaranjan Kumar Singh
51	Lt Cdr	Linga Karteek Reddy
52	Lt Cdr	P Kartik Muthukumar
53	Lt Cdr	Ashish Kumar
54	Lt Cdr	Pukhrambam Pratap Singh
55	Lt Cdr	Mridul Kishore Sharma
56	Lt Cdr	Yash Bhardwaj
57	Lt Cdr	Arjun Malik
58	Lt Cdr	Deepak Bhati

SI	Rank	Name
59	Lt Cdr	Abhishek Sharma
60	Lt Cdr	Rishabh Rawat
61	Lt Cdr	Joash Lopez
62	Lt Cdr	Abhisek Chandra Dey
63	Lt Cdr	Shaik Rafi
64	Lt Cdr	Denish Ganesan
65	Lt Cdr	Shreekant S
66	Lt Cdr	Varun Soni
67	Lt Cdr	Varun Jai
68	Lt Cdr	Tibu Philip Joseph
69	Lt Cdr	Kumar Shaswat
70	Lt Cdr	Tarun Katiyar
71	Lt Cdr	Rahul Dalal
72	Lt Cdr	Bipin Bhatt
73	Lt Cdr	Yerra Rohit Goud
74	Lt Cdr	Deepak Bisht
75	Lt Cdr	Shuli Pfoseo
76	Lt Cdr	Avishekh Yadav
77	Lt Cdr	Loghanathan Vedhachalam
78	Lt Cdr	Aniket Upadhyay
79	Lt Cdr	Vinay Sharma
80	Lt Cdr	Abhishek Chatak
81	Lt Cdr	Shreyas Rana
82	Lt Cdr	Rohin Sodhi
83	Lt Cdr	Shibin Babu
84	Lt Cdr	Anand Sangayya Charantimath
85	Lt Cdr	Umair Naeem Siddiqui
86	Lt Cdr	Prabhpal Singh

SI	Rank	Name
87	Lt Cdr	Bhaskar Chakraborty
88	Lt Cdr	Abhishake Sharma
89	Lt Cdr	Franklin Anto Jose
90	Lt Cdr	Mahmadyaseen Appasab Multani
91	Lt Cdr	Shivang Raina
92	Lt Cdr	Rajath G
93	Lt Cdr	Saurabh Thakur
94	Lt Cdr	Manjot Singh Gill
95	Lt Cdr	Manreep Singh Oberoi
96	Lt Cdr	Aman Yadav
97	Lt Cdr	Vyas Chaudhari
98	Lt Cdr	Aalampreet Singh Mamik
99	Lt Cdr	Rakesh Samal
100	Lt	Harsimranjeet S Sidhu
101	Lt	Nitin Yadav
102	Lt	Yogesh Bhatt
103	Lt	Ramchandra Barkur
104	Lt	SAditya
105	Lt	Anil Vishnoi
106	Lt	Shubham Vishnu Harne
107	Lt	C Pradeep
108	Lt	Vikrant Singh Thakur
109	Lt	Kaustubh S Jadoun
110	Lt	Ashish Kumar Yadav
111	Lt	Victor Manjilla
112	Lt	Satyam Tiwari

नाविक (हाइड्रो) SAILORS (HYDRO)

SI	Name
MASTER CHIEF PETTY OFFICER	
1	Rajeev K Singh
2	Rizwanullah Ansari
3	Sanjit Kumar
4	Rakesh Kumar Yadav
5	Subodh Kumar Gupta
6	Pramod Yadav
7	Arun K Nair
PETTY OFFICER & BELOW	
8	Ashwani Kumar
9	Amit Sharma
10	Brij Bhushan Pandey
11	Nagesh Pratap Singh
12	Sujeet Kumar
13	Vikas Dhiman
14	Debakanta Parida
15	Arvind Kumar
16	Pradeep
17	Manjeet
18	Kishor Kala
19	Pavanesh Kumar Verma
20	Hafijul Gain
21	Mahesh Singh Rana
22	Shiv Kumar
23	Shivender Singh
24	Darshan Kumar
25	Manaram Buriya
26	Mahipal Yadav
27	Girish Kumar Verma
28	Pavitter Singh
29	Harpreet Singh
30	Mahesh Kumar

SI	Name
31	Paramjeet Singh
32	Suraj Singh Bisht
34	Nitish Kumar Singh
35	Monu
36	Praveen Kumar
37	Vishal Sharma
38	G Ramakrishna
39	Pv Rao
40	Ranajit Behera
41	Bikash Chandra Samal
42	Subrat Kumar Biswal
43	Nihar Ranjan Panda
44	Ranjit Singh
45	Nikhil Yesudas
46	Krishna Kumar N
47	Kamlesh K Singh
48	Harish
49	Chittaranjan Sahu
50	Rajesh Kumar
51	Soumya Ranjan Sasmal
52	Janesh Tb
53	Vinay K Mahato
54	Vikash Kumar
55	Niranjan Kumar
56	Ranjan Kumar
57	Krishan K Sharma
58	Satyanarayan Swamy
59	Suraj Kumar
60	Deepak Kumar
61	Amit Kumar Mishra
62	Alok Singh
63	Vivek Kumar

SI	Name
64	Parikshit Tripathi
65	Aanand Tewari
66	Manish Kumar Yadav
67	Vikash Kumar
68	Pawan Kumar
69	Ravinder
70	Pardeep Kumar
71	Pramod Kumawat
72	Krishan Gopal
73	Sunil Lakshakar
74	Ramesh Das
75	Satvir
76	Gaurav Tiwari
77	Bharat Kumar Singh Rajput
78	Lalhmimgliana Hmar
79	Vanlalchhanchhuaha
80	Kaushal Pratap
81	Rishikesh Porte
82	Jawarkar Govinda Jaganna
83	Laxmikanta Sahoo
84	Pratyushman Rout
85	Biswajit Nayak
86	Dipti Ranjan Moharana
87	Bhukya Ranjith Kumar
88	Shashikant
89	Vijender Kumar
90	Vikas Yadav
91	Ankit Kumar
92	Ravindra Kumar Chaunsali
93	Surjeet Singh
94	Jagadish Dehury
95	Sibananda Behra

SI	Name
96	Dharamvir Singh
97	Gunadhar Chowdhury
98	Vidyanand Mandal
99	Rana Subish Singh
100	Ananta Pradhan
101	Pankaj Rana
102	Rakesh Kumar Shaw
103	Vineet Kumar
104	Rakesh Kumar Lenka
105	Srinivasan V
106	Prashant Singh
107	Biltu Chel
108	Amit
109	Manjeet
110	Suman Sedai
111	Harender
112	Hemant Singh Papola
113	Jerripothula Eswara Rao
114	Mayur Joshi
115	Amolak Singh
116	Ishwar Singh
117	Sandeep
118	Arun Kumar
119	Asim Abdullah
120	Anil Kumar
121	Sudipta Sahu
122	Kuldeep Singh
123	Vikas Kumar Shukla
124	Shamsher Singh
125	Alok Kumar Barik
126	Deepak
127	Satyajit Sahoo

SI	Name
128	Sameer Dattatray Kamble
129	Monu Kumar
130	Raju Karmakar
131	Balraj Choudhary
132	Manoj Kumar
133	Dinesh Kumar Prajapat
134	Indrajeet Kumar Mehta
135	Shinde Premjit Ratnasinha
136	Manjit Kumar
137	Gurvinder Singh
138	Navjot Singh
139	Vikender
140	Sachin
141	Nitesh Sharma
142	Vikash Kumar
143	Sonu Kumar
144	Sandeep
145	Balwan
146	Dilip Kumar Gupta
147	Nilmadhab Pal
148	Bimal Kumar Panda
149	Avinash Kumar Bharti
150	Rajeev Ranjan Akela
151	Kapil Dev
152	Bhoop Singh
153	Sandeep Kumar
154	Gopal Dudi
155	Ananda Ram
156	Hanuman Tholiya
157	Om Prakash
158	Trilok Yadav
159	Ashutosh Patel
160	Sumit Narayan
161	Sukh Veer Singh
162	Shivam Singh
163	Manendra Singh

SI	Name
164	Aditya Pratap
165	Aditya Bhagat
166	Manish Kumar
167	Vikram Singh
168	Nitin Sharma
169	Sandeep Kumar
170	Ashwani Kumar
171	Mukesh Yadav
172	Brajesh Kumar
173	Nikhil Singh Rajput
174	Mayank Sah
175	Sourav Kumar
176	Vikas Tiwari
177	Amit Kumar
178	Mukesh Saini
179	Pankaj Sharma
180	Sunil Kumar Sharma
181	Leishemba Mangang
182	Ankush Kumar Verma
183	Niraj Kumar Pande
184	Ram Bilash
185	Shubham Awasthi
186	Sandeep Kumar Vishwakarma
187	Zahid Husain
188	Dharminder Singh
189	Abhishek Kumar Sharma
190	Raman Kumar
191	Shyam Saritendra
192	Navpreet Singh
193	Manish Kumar Swami
194	Mukesh Kumar Tatarwal
195	Manoj Kumar Giri
196	Gaurav Mishra
197	Adeep Kumar
198	Sandesh N Waghmare
199	Nitendra Sherawat

SI	Name
200	Janki Raman
201	Omprakash
202	Vikash Kumar
203	Jitendra Saini
204	Lokendra Singh Rathore
205	Pawan Singh Shekhawat
206	Pulari Jagadeesh
207	Narendra Singh
208	Rakesh Singh
209	Diptiranjana Sahoo
210	Satnam Singh
211	Dharampal
212	Suryakant Thapliyal
213	Sanjay Singh Gusain
214	Mukesh Kumar
215	Shubham Singh
216	Kc Lallianpuia
217	Gopal Tomar
218	Vaibhav Kumar Singh
219	Saurabh Gupta
220	Mukul Kumar Sharma
221	Gurjeet Singh
222	Aman Kumar Verma
223	Harprit Singh
224	K Vanarajan
225	Anil Kumar Yadav
226	Vikram Singh
227	Gagan Behera
228	Sidhartha Sankar Jena
229	Haresha Kumar Jeda
230	Kuldeep Singh
231	Deepak Yadav
232	Himanshu Kumar Upadhyay
233	Vikas Awasthi
234	Shivam Kumar
235	Biswanath Nahak

SI	Name
236	Ravi Prakash
237	Pramod Kumar
238	Tara Chand Saini
239	Manepalli Manohar
240	Vikram Saini
241	Nalla Pradeep
242	Prahlad Ram
243	Tanuj Kumar
244	Shailesh Kumar Dixit
245	Mukesh Kumar Pathak
246	Vijay Kumar R
247	Anish Kumar
248	Siddula Ravi
249	Shukadev Jena
250	Ravi Kumar Yadav
251	Devender Kumar Rawat
252	Sukhwinder Singh
253	Vivek Puri
254	Kalicharan Kushwah
255	Devender Pal
256	Sombir
257	Vikram Singh Parmar
258	Pulaboina Sudhakar
259	Mangi Lal
260	Shakti Singh Shekhawat
261	Rahul Singh
262	Rinku
263	Harish Chander
264	Shivam Jaryal
265	Hardeep Singh Jasrotia
266	Vinod Bhandari
267	Vivek Kumar
268	Manjesh Kumar
269	Satish Patil
270	Sagolsem Ramesh Meitei
271	Harendra Singh

नीति पत्रों की सूची

LIST OF POLICY LETTERS

LIST OF POLICY LETTERS

Ser.	Policy	File No.
1.	Guidelines for EEZ Surveys	HO/REV/002/POLICY dated 17 Jan 2000
2.	Observation on Survey Data	HO/DM/GEN/0405 dated 07 Apr 05
3.	Information for Sailing Direction (Pilots)	HO/SD/Policy dated 26 Jul 10
4.	Revised Format for Operational Survey Return	HO/H/1000 dated 27 Dec 10
5.	Forwarding of Data in Digital Media	HO/DM/GEN/0407 dated 12 May 11
6.	Forwarding of Digital Side Scan Sonar Data	HO/DM/1007 dated 03 Nov 11
7.	Forwarding of Digital Side Scan Sonar Data	HO/DM/1007 dated 16 Jan 13
8.	Standardisation Caris File Nomenclature	HO/REV/006 dated 17 Jun 14
9.	Standardisation Caris Hips GIS Environment Variables	HO/REV/006 dated 01 Jul 14
10.	Standardisation Caris Hips GIS Environment Variables	HO/REV/006 dated 20 Aug 14
11.	Review of Survey Data	HO/H/1000 dated 19 Sep 14
12.	Acquisition and Rendering of Data	HO/DM/Policy dated 25 Sep 14
13.	Acquisition and Rendering of Data	HO/DM/Policy dated 04 Feb 15
14.	Survey Data Quality	HO/DM/Policy dated 09 Feb 15
15.	Standardisation Caris Hips GIS Environment Variables	HO/REV/006 dated 08 Sep 15
16.	Advisory-Shoal Investigation Tidal Stream Observation and Environment Variable of Caris GIS	HO/REV/006 dated 21 Sep 15
17.	Collection of Passage Sounding	HO/DM/503/POL/0440 dated 20 May 16
18.	Sound Velocity Profile Database	HO/DM/503/POL/0440 dated 23 May 16
19.	Forwarding of Templates for Field Observation	HO/DM/503/POL/0440 dated 27 Feb 17
20.	Revised Format for Operational Survey Return	HO/H/1000 dated 23 Mar 17
21.	Long Cast Survey Season	HO/H/1000/policy dated 27 Mar 17
22.	Class Authority Inspection	HO/H/1000/policy dated 31 Oct 17
23.	Rendering of Report of Survey	HO/DM/312/POL dated 29 Mar 17
24.	Withdrawal of Indian Charts and Provisioning of British Admiralty Charts	OP/PP/4471/Charts dated 27 Feb 18
25.	Policy on Conduct of NSPC Inspection	HO/H/1401/22 dated 29 Aug 20
26.	Collection of Passage Sounding Data	HO/H/1401/3 dated 22 Sep 20
27.	Amplifying Instructions for Functioning of Hydrographic Survey Units (HSUs)	HO/H/1000 dated 27 Oct 20
28.	Requirement of Zone of Confidence in Report of Survey	HO/DM/503/POL dated 18 Nov 20
29.	Forwarding of Multibeam Data	HO/DM/503/POL dated 03 Dec 20
30.	Forwarding of Fairsheet	HO/DM/503/POL dated 04 Dec 20
31.	Forwarding of S-57 Data	HO/DM/503/POL dated 07 Jan 21

Ser.	Policy	File No.
32.	Transmission on Automatic Weather Station (AWS)	HO/H/1501/AWS dated 28 Jan 21
33.	Forwarding of Water Level Meter Data	HO/DM/503/POL dated 09 Feb 21
34.	Forwarding of Photographs for Archival	HO/DM/503/POL dated 28 Jun 21
35.	Operationalisation of Hydrographic Survey Units	HO/PT/1003/16 dated 12 Jul 21
36.	Revision in Workflow for Rendering and Handling Digital Hydrographic Data	HO/DM/503/POL dated 22 Sep 21
37.	Forwarding of Digital Echo Trace – Deso 30 Echo Sounder	HO/DM/503/POL dated 02 Mar 22
38.	Seabed Classification using CARIS HIPS	HO/DM/503/POL dated 31 Mar 22

LIST OF ISSIs

Ser.	ISSI	ISSI No.
1.	UTM Computations using Revised Value of Semi Major Axis (a) as 6377301.243 meters for Everest Spheroid	ISSI 01/89 dated 28 Apr 89
2.	Coordination for Transfers of Survey Recorders Sailors	ISSI 01/91 dated 29 Apr 91
3.	Survey Ship Operating Guidelines for Commanding Officers	ISSI/1/98 Dated 30 Nov 98
4.	Amendment to ISSI 01/98	HO/H/1000/4/A dated 02 Jan 02
5.	Guidelines on Acquisition, Processing, Management and Rendering of Data Using ADLS	ISSI 2/98 dated 31 Dec 98
6.	Coastal Zone Regulation Surveys	ISSI/1/99 dated 27 Jan 99
7.	Procedures and Responsibilities – Project Surveys	ISSI/2/99 dated 12 Apr 99
8.	Revised Accounting Instructions for Project Surveys	OP/7380/01 dated 14 Jun 99
9.	Guidelines for Operating 9.2 M Survey Motor Boat	ISSI: 1/2003 dated 12 Dec 03
10.	Acquisition and Processing of Data from Sea Gravimeter	ISSI: 1/2004 dated 03 Feb 04
11.	Maintenance of Survey Equipment	ISSI 02/2004 dated 07 Apr 04
12.	Guidelines for Semi- Graphic Analysis of Tidal Streams	ISSI 01/11 dated 29 Mar 11
13.	Guidelines for Pre and Post Dredging Surveys	ISSI 01/14 dated 07 Aug 14
14.	Co-ordination for Transfers of Seaman (HY) Sailors	ISSI 01/2018 dated 20 Apr 18
15.	Coastal Regulation Zone Surveys	ISSI 01/2019 dated 21 Jul 19
16.	Survey Ship Operating Guidelines for Commanding Officers	ISSI 03/2019 dated 27 Aug 19
17.	Procedures and Responsibilities – Project Surveys	ISSI 02/19 dated 26 Aug 19
18.	Conduct of Hydrographic Survey in Lakes, Dams and Reservoirs by Detached Survey Party (DSP)	ISSI 01/22 Dated 29 Jul 22
19.	Guidelines for Pre and Post Dredging Surveys	ISSI 02/22 Dated 03 Nov 22

अलविदा हाइड्रो नाविक

ADIEU HYDRO SAILORS

The following personnel of the department have retired after rendering meritorious and distinguished service to the Navy. This Department wishes them a highly successful and satisfying second innings and urges them to keep in touch with the hydrographic fraternity.



Arunendra Mishra
CPO (HY)



Sarvjeet Kumar
CPO (HY)



Akshay Kumar
CPO (HY)



V V Ravindra
PO (HY)



Vinayak Singh
PO (HY)



Amit Rawat
PO (HY)



Ranjan Prasad Singh
PO (HY)



Rakesh Kumar
PO (HY)



Sunil Datt
PO (HY)



Yogesh Kumar Rathore
PO (HY)



Gaurav Sharma
PO (HY)



Raj Kumar
PO (HY)



Atul Krishnat Jadhav
PO (HY)



Rupesh Prakash Kadam
PO (HY)



Chandana Ashok
LS (HY)



Pushkar Kumar
SEA I (HY)





GLIMPSES



विश्व जल सर्वेक्षण दिवस एवं
अन्तर्राष्ट्रीय योग दिवस
WORLD HYDROGRAPHY DAY AND
INTERNATIONAL YOGA DAY





विदेशी FOREIGN





सहयोग COOPERATION





जहाजों की
SHIP'S

INS JAMUNA



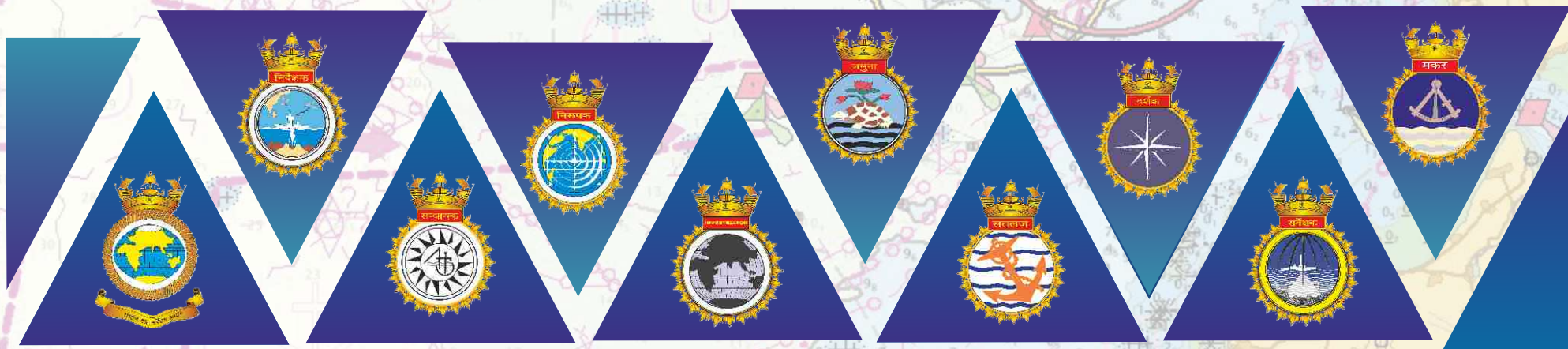
गतिविधियाँ
ACIVITIES





दौरे और गतिविधियाँ VISITS AND ACTIVITIES





NATIONAL HYDROGRAPHIC OFFICE
107-A, Rajpur Road, Dehradun - 248001, INDIA
Tel/Fax : +91-135-2746290, +91- 135-2748373
Email : info@navy.gov.in

