



NATIONAL HYDROGRAPHIC OFFICE OF SRI LANKA



**NATIONAL REPORT
TO THE
19TH NORTH INDIAN OCEAN HYDROGRAPHIC COMMISSION
Muscat Oman [26th -28th March 2019]**

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1. Introduction - National Hydrographic Office

The National Hydrographic Office [NHO] of the government of Democratic Socialist Republic of Sri Lanka was established in 1984 under the purview of National Aquatic Resources and Research Agency [NARA]. The NARA is a statutory body, which provides services for development and sustainable utilization of living and non-living aquatic resources in the country and the National Hydrographic Office has been vested with the responsibility of conducting country's Hydrographic and Nautical Charting operations by NARA Act of No. 54 of 1981 as amended Act No. 32 of 1996.

At present, the NHO is jointly administered by NARA and Sri Lanka Navy Hydrographic Service [SLNH] having entered into an MOU with NARA in 2016 in order to expedite national hydrographic operations which is demanded by SOLAS. This has enabled joint Hydrographic surveys and expedited updating of existing nautical charts around the country and paved the way for an efficient development in providing of Hydrographic services within the waters of Sri Lanka during the recent past, thus meeting the SOLAS requirements.

In addition, this amalgamation has shown a remarkable progress in the field as the same has facilitated to share resources and professionalism to achieve common goals. Thereby today the NHO of Sri Lanka has been capable to complete long outstanding survey requirements within a very short span of time.

The SLN's involvement has also facilitated to conduct joint Hydrographic surveys with the assistance of the Indian Navy Hydrographic Department along the west coast to east coast where it's considered navigationally significant. This could be considered as significant benchmarks in the field of Hydrographic surveying in Sri Lanka.

The principle services of the NHO include conducting of systematic Hydrographic surveys for national, defence and commercial requirements. Further, NHO produces and disseminates information in support of maritime navigation safety and marine environment preservation, exploration and research & management plans.

2. Surveys

Hydrographic surveys, which are conducted by NHO within the waters of Sri Lanka are a joint effort of NARA and the Sri Lanka Navy Hydrographic Service [SLNHS]. So far, two surveys were completed for navigation purposes and two surveys are underway to produce new navigational charts for the country.

Apart from the said surveys, SLNHS conducts defence surveys in support of naval operations in the country.

Since 2017, SLNHS and the Indian Navy Hydrographic Department have been conducted joint

surveys to produce new INT chart of scale band 3 from Colombo to Sangamankanda and one new chart for Weligama bay at the scale band 4. Accordingly, during the phase I, the area of beyond 200m contour falls within BA 813 had completed including survey of Weligama Bay area. During the second phase, Off Colombo harbour was completed. During the third phase of the joint survey in 2018-2019 the area depicted in Fig. 1 and 2 has been completed.

Joint Survey with Indian Navy from 2018-2019

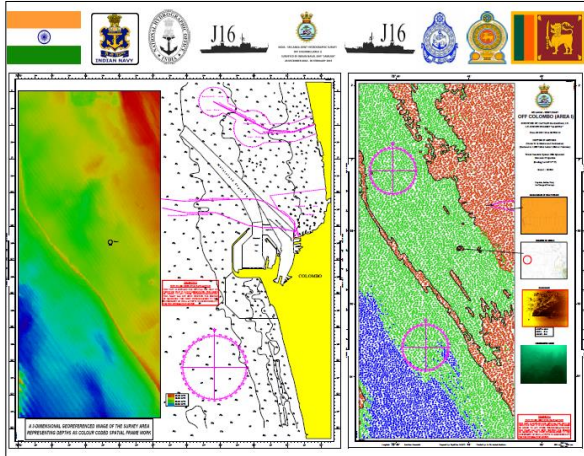


Fig.1

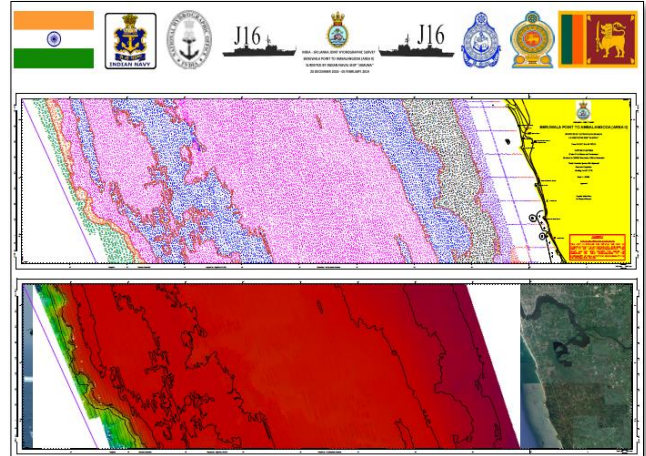


Fig. 2

Besides the above, NHO has conducted several other surveys around the waters of Sri Lanka. Colombo Harbour, Approaches to Colombo, Surveys in north of Sri Lanka, Southern coast can be identified as major works under taken by NHO during 2018.

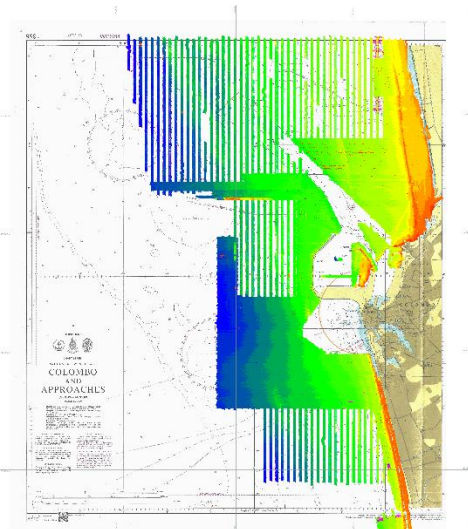


Fig. 3

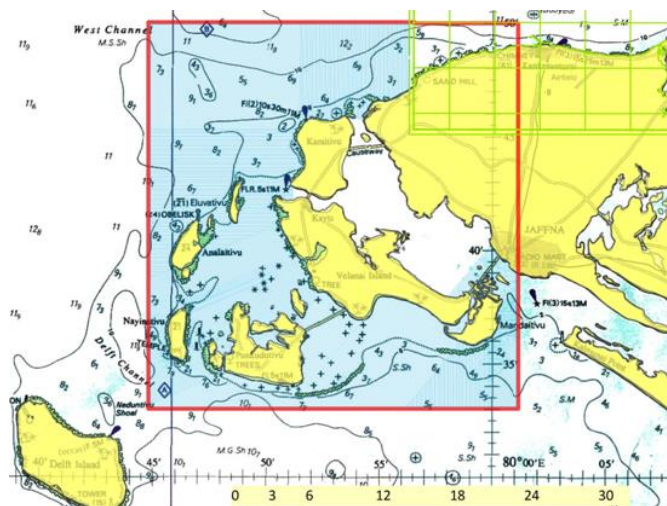


Fig. 4

2.1 Coverage of New Surveys

Presently, following new surveys are being carried out in view of producing coastal and approaches charts.

SR.No.	Name of the Chart	Scale Band	Remark
01	Approaches to Colombo	4	In progress
02	Colombo Harbour	5	-do-
03	Colombo to Weligama	3	-do-
04	Colombo to Sangamankanda	3	-do-
05	Trincomalee to Kudiramalai	3	-do-
06	Little Basses to Trincomalee	3	-do-
07	KKS to Delft	4	New Chart
08	Kalpitiya Lower	4	-do-
09	Trincomalee to Kudremalai	3	-in progress-

Table 1 – Coverage of New Surveys

In addition to the above new surveys, NHO has involved in bathymetric surveys providing consultancy services to local institutes such as Coast Conservation and Coastal Resources Management Department, Sri Lanka Ports Authority, Ceylon Fishery Harbour Corporation, Shell Gas Company, Ceylon Electricity Board and Ceylon Petroleum Corporation etc.

2.2 New Technologies and Equipment

Having pooled resources of SLNHS and NARA, the NHO utilizes state of the art modern technologies, equipment and software applications to conduct surveys and produce nautical charts.

2.3 Problems Encountered

NHO requires to build capacities in maintaining its new chart portfolio when it is completed. Accordingly, it is required that to prepare and publish supporting nautical publications covering its waters, which include new Sailing Directions for Sri Lankan coast, new List of Lights, Tide Tables etc. enabling mariners to use its new products.

3 New Charts and Updates

3.1 ENC's

In 2018, NHO published a new ENC in the scale band 4 [LK401500] for Weligama Bay. With that NHO has produced 3 ENC cells of band 4 and 5. Apart from that NHO is planning to produce 04 new ENC cells of the scale bands of 3, 4 and 5 in 2019. At present, the SOLAS requirements of maintaining up to date nautical products within the waters of Sri Lanka are met by UKHO under a bilateral arrangement with Sri Lanka.

3.2 INT Charts

Sri Lanka has not produced any INT charts yet. However, NHO is planning to produce new INT chart for Approaches Colombo and Colombo Harbour, Hambantota Harbour and Approaches and Colombo to Weligama on completion of joint survey with Indian Hydrographic Department and other ongoing surveys.

3.3 National Paper Charts

Two new national charts were produced during the year 2018.

SR. No.	Name of the Chart	SL Chart No.	Scale	Scale Band	Remark
01	Approaches to Trincomalee	112	1:75,000	4	New Chart- Print on demand
02	Approaches to Kankasanthurai	113	1:30,000	4	-do-

Table 2

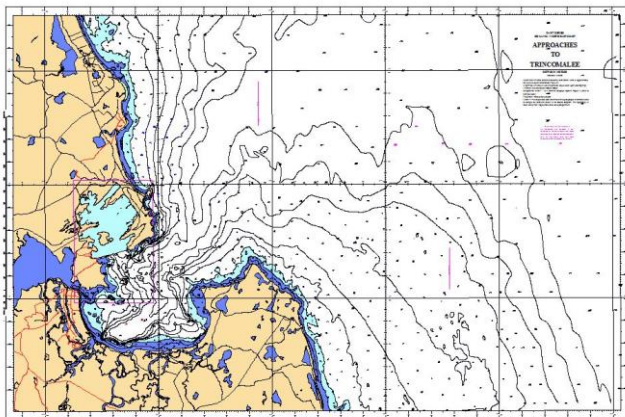


Fig. 5 Approaches to Trincomalee

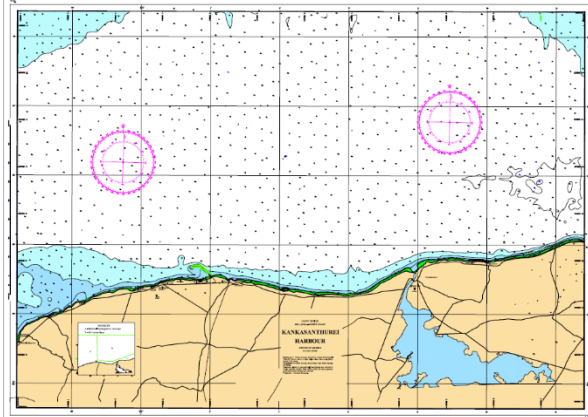


Fig. 6 Approaches to Kankasanthurai

4. New Publications and Updates

NIL

5. Maritime Safety Information [MSI]

Relevant details are enclosed as Annex 'A' to this report

6. C-55 [Updated Table]

The updated C-55 table is attached as Annex 'B' to this report.

7. Capacity Building

7.1 Training Received

Since the last NIOHC, following training opportunities has been received from regional navies and through IHO Capacity Building as follows:

SR.No	Name of Training	Sponsored by	Country	Duration	No. of berths
1	CAT "A" Hydrography	Indian Navy	India		02
2	CAT "B" Hydrography	Indian Navy	India		02
3	CAT "B" Cartography	UKHO	UK	15 Weeks	01
6	MSI Training	IHO CB	India	05 Days	01
7	Survey Recorder I	Indian Navy	India	18 Weeks	02
8	Cartography	Indian Navy	India	04 Weeks	02
6	Survey Recorder I	Bangladesh Navy	Bangladesh	24 Weeks	01
7	Survey Recorder II	Indian Navy	India	10 Weeks	05
8	Survey Recorder III	Indian Navy	India	16 Weeks	03

7.2 Training Provided

Sri Lanka Navy Hydrographic School was established in 2014, since then the school has provided annually one Survey Recorder III course and from 2016 onwards one Survey Recorder II course for the sailors of Sri Lanka Navy Hydrographic Service.

Faculty of Geomatics, Sabaragamuwa University of Sri Lanka is conducting 4 year degree programme in geomatics. The expertise of NHO conduct lectures for student those who are specialized in Hydrography in the said degree programme. The programme is accredited as IHO/FIG/ICA Category B in Hydrography.

In addition, NHO supports University of Ruhuna and Uva Wellassa University conducting Hydrographic modules in their degree programmes covering theory and practical aspects of Hydrography.

7.3 Training Needs

NHO expects capacity building on following aspects to meet future objectives of the NHO through NIOHC and IHO Capacity Building Fund:

- a. On the Job training on MB surveying and processing
- b. Training on MSI
- c. Training on MSDI
- d. Cartographic training for production of ENC's, AMLs & Paper Nautical Charts and their maintenance
- e. CAT 'A' and CAT 'B' Hydrography training
- f. Training on Database Management

8. Oceanographic Activities

Oceanographic activities were focused on enhancing ocean observation, prediction and forecasting. In addition, scientific and technological services were provided to a wider range of applications such as coastal constructions, living and non-living resource exploitation, and energy harnessing including feasibility studies and environmental impact assessments (EIA).

8.1 Work Done by the Oceanography Division/NARA in 2018

8.1.1 Sea Glider Deployment in the East and South Coast

Sea gliders were deployed at 80.4°E (off Weligama) and 7.5 – 8.5°N (Off Batticaloa) were deployed on the south and east coast of Sri Lanka. The Sea Gliders are intended to measure salinity, temperature, dissolved Oxygen profile in the water column up to thousand meter water depth. The main objective of this deployment was to study the extent of East Indian Coastal Currents around Sri Lanka. Further the results can be utilised to study the southern upwelling and frontal boundary between two water masses.

8.1.2 Wave Climate studies

During this year one wave miniature buoys was deployed off the west coast for a period of one month.

8.1.3. Data downloading from Pressure Inverted Echo-sounders (PIEs)

Two pressure inverted echo-sounders were deployed in south of Sri Lanka at the depths of 500m and 4000ms. The purpose of these deployments was to understand the extent of East Indian Coastal Currents (EICC).

8.1.4 Tide Gauge Network

Three real time transmitting permanent sea level stations are operating in west (Colombo), south (Mirissa) and east coasts (Trincomalee) of Sri Lanka. Colombo sea level station has equipped with 02 pressure sensors, 02 floating gauges and radar sensors. It measures sea level every 01 minute and transfers data every 15 minutes via Japanese Meteorological Satellite (JMA) and MeteoSat. New two Stations were established at Colombo and Mirissa (down South) and measure sea levels every 01 minute and transfer data every 15 minutes via GPRS technology.

Apart from that, tide monitoring at 7 stations around the country has been in progress since 2015 by SLNHS in view of re-establishing Mean Sea Level thus the Chart Datum around Sri Lanka.

9. Other Activities

9.1 Support for National Interests

Contribution to NOAC [National Ocean Affairs Committee] with expertise and Hydrographic survey assistance in view of the extension of EEZ of Sri Lanka beyond 200 nm to the Commission on the Limits of the Continental Shelf [CLCS].

9.2 Introduction of new Database Management Policy for NHO

This database management policy was developed by NHO under the guidance of National Geophysical Data Center [NGDC], USA.

9.3 Introduction of Integrated Management System for NHO

All the activities and functions from field activities to chart production are integrated to support the management to increase the efficiency and effectiveness of the nautical chart production.

9.4 Environmental Assessment of Lagoons

Development of lagoons of Sri Lanka has been identified as a strategy to uplift social and economic status of coastal communities through development of aquaculture, tourism, fishing and

infrastructure. The project was formulated to achieve targets set by Sustainable Development Goals by the Ministry of Fisheries and Aquatic Resources Development and Rural Economy.

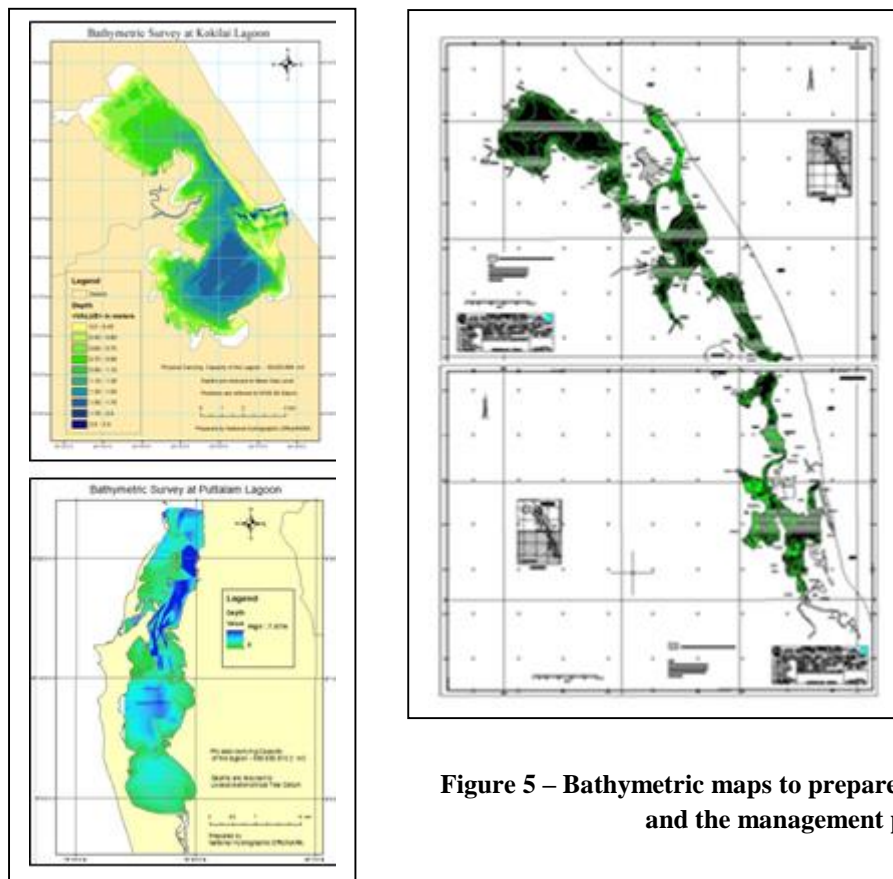


Figure 5 – Bathymetric maps to prepare environmental profiles and the management plans.

9.5 Future Plan

9.5.1 Production of Sri Lanka ENC's and INT Charts

It is envisaged that NHO in collaboration with Indian Navy Hydrographic Department, UKHO and other supportive hydrographic offices will develop capacities towards producing its own ENC's and INT charts within the waters of Sri Lanka within next couple of years.

Accordingly, priority will be given to accomplish ENC's and INT charts, which are of navigationally as well as commercially significant along the west coast and South coastal stretch of Sri Lanka.

10. Conclusion

With the new collaboration with Sri Lanka Navy, NHO is striving to carryout surveys for coastal

chart productions amidst budgetary constrain to provide updated nautical information for marines and keep in phase with acquisition of modern skills such as developing MSDI, developing capacity for ENC production, deriving shallow water bathymetry by using high resolution satellite imageries and evaluating existing charts for adequacy.

In this endeavour NHO seeks collaboration with regional Hydrographic offices through NIOHC achieving its future goals and objectives in view of providing professional Hydrographic services to its stakeholders.