



THAILAND

NATIONAL REPORT

19th MEETING OF THE NORTH INDIAN OCEAN
HYDROGRAPHIC COMMISSION (NIOHC19)

MUSCAT, OMAN

25th – 28th March 2019

CONTENTS

1.	Hydrographic Office / Service	3
2.	Surveys	3
3.	New Charts & Updates	4
4.	New Publications & Updates	8
5.	Maritime Safety Information (MSI)	8
6.	C-55	8
7.	Capacity Building	10
8.	Oceanographic Activities	10
9.	Other activities	11
10.	Conclusion	12

1. Hydrographic Office / Service

Established in 1921, Hydrographic Department, Royal Thai Navy or “HDRTN” is Thailand national hydrographic office whose mission is to carry out the function of organization covering hydrographic and oceanographic surveys, tidal prediction, aids to navigation maintenance, marine environment, nautical charts and publications, standard time keeping, marine meteorological forecasting and other activities for safety of navigation to support both public and military need in the Gulf of Thailand and the Andaman Sea. The present Director General is Vice Admiral Winai Maneeprag, who has held this position since 1st October 2017 up until now.



Figure.1 The Organizational Structure of HDRTN

2. Surveys

2.1 *Hydrographic Survey Activities*

HDRTN conducted 6 hydrographic surveys since last year. The results of such hydrographic surveys were utilized for production of nautical charts and other charts required by Royal Thai Navy and maritime community.

Type of survey	FY 2018
Harbor Survey	3
Approach Survey	2
Coastal Survey	1
General Survey	-
Total	6



To meet IHO S-44 standard, HDRTN has been strengthening the hydrographic infrastructure construction, pushing forward the generalization and application of new technology and equipment, and improving the capability and quality of hydrography. Currently, HDRTN possesses a series of modern equipment, such as multi-beam echo-sounders, side-scan sonar, high accuracy GPS/DGPS, UAV, 1 offshore hydrographic survey vessel “HTMS. Chantara”, 1 multipurpose vessel for hydrographic surveying “HTMS. Pharuehatsabodi”, 3 coastal survey boats namely Loma1, Loma2, and Loma3 equipped with modern survey instruments on board and make great progress in the function exploration and technical application of advanced equipment.

3. New Charts and Updates

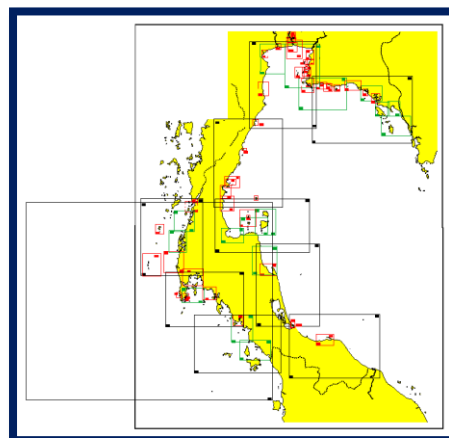
The production of nautical charts and Electronic Navigation Charts (ENCs) are progressing well with the improvement of modern software and hardware capabilities. The results of those mentioned surveys in 2017-2018 were then implemented to produce Thai nautical charts and other related charts in Thai waters.

3.1 Paper Charts

HDRTN has produced totally 80 paper charts (large, medium, small scales) covering Thai waters.

- Offshore passage/Small scale: 2 paper charts
(out of 5 planned charts) = 40%
- Coastal passage/Medium scale: 20 paper charts
(out of 20 planned charts) = 100%
- Approaches & Ports/Large Scale: 58 paper charts
(out of 58 planned charts) = 100%

charts



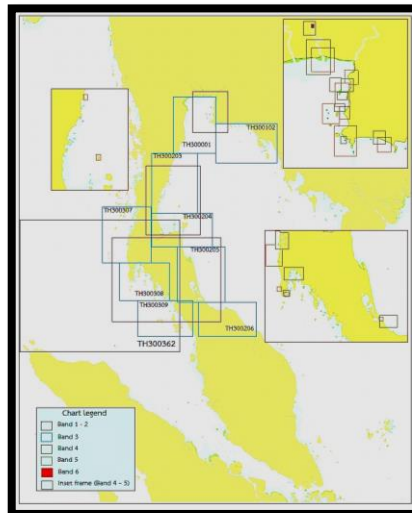
3.2 Electronic Navigation Chart (ENC)

HDRTN has plan to produced ENC only 44 cells covering 11 Thailand main shipping routes starting from 2006 as the first priority in order to support IMO ECDIS carriage mandatory by 2012. Such main shipping routes have currently covered by 39 cells in different bands (approx.89%) and the remaining 5 cells, mostly small and medium scales, needed to re-survey due to out of date data and non WGS 84 framework. However, as mentioned earlier, all Thailand main shipping routes to major ports are expected to be fully covered by ENCs in the year 2020. Coverage currently comprises 1 Overview,1 General, 9 Coastal, 14 Approach, 13 Harbour and 1 Berthing cell.

11 Thailand Main Shipping Routes



Thai ENC Coverage

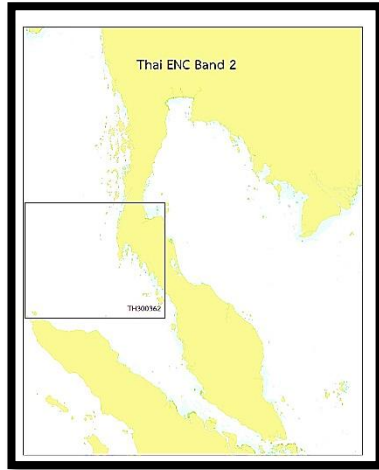


TH Overview Usage Band Coverage



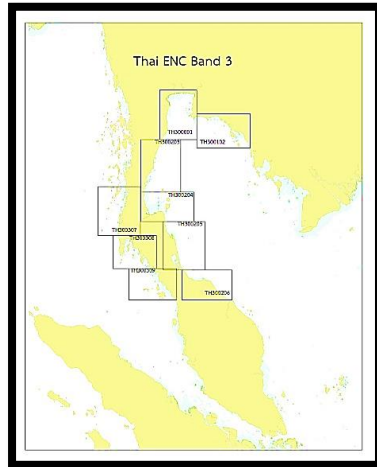
- TH100
045

TH General Usage Band Coverage



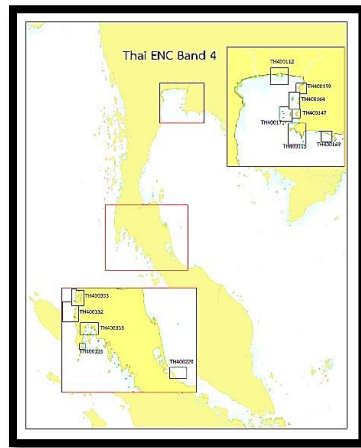
- TH200
362

TH Coastal Usage Band Coverage



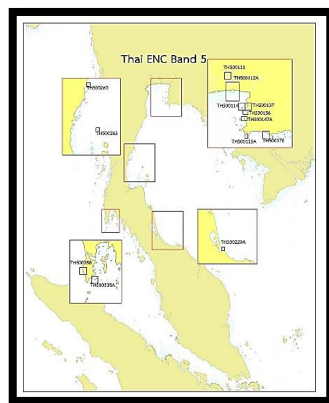
- TH300
001
- TH300
102
- TH300
203
- TH300
204
- TH300
205

TH Approach Usage Band Coverage

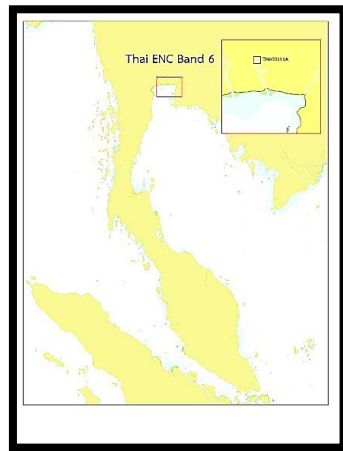


- TH4001
12
- TH4001
13
- TH4001
15
- TH4001
47
- TH4001
59
- TH4001
64
- TH4001
69
- TH4001
71
- TH4002
29
- TH4003
32
- TH4003
33
- TH4003
35
- TH4003
36
- TH4003
53

TH Harbour Usage Band Coverage



TH Berthing Usage Band Coverage



- TH501 12A
- TH501 15A
- TH501 47A
- TH502 29A
- TH503 35A
- TH601 11A
- TH500 114
- TH500 137
- TH500 156
- TH500 170
- TH500 260
- TH500 265
- TH500 358

3.3 INT Charts

Earlier, HDRTN has proposed 4 paper charts to be recognized as INT charts under the coordination of Area “J” Coordinator. On 26 Nov 2015, Coordinator J cancelled the 4 Thai INT charts, and informs coordinator “K” to consider for allocation of new INT numbers in area “K”

Item	Thai Chart No.	INT Chart No.	Chart Name
1.	308	7448	Phuket to Kantang
2.	335	7449	Phuket Harbour
3.	335A	7450	Ao Man and Approaches
4.	362	7033	Satun to Ranong

4. New Publications and Updates

HDRTN has been producing and updating a number of publications, including

- IHO S-100 Universal Hydrographic Data Model, 2019
- Tide table in Thai Water A.D.2019
- Sunrise-Sunset and Moonrise-Moonset Thailand A.D.2019



5. Maritime Safety Information (MSI)



In 2018, HDRTN issued 42 NTMs and 63 Navigational Warnings both in Thai and English Languages. They were distributed through the Navy Radio stations run by Royal Thai Navy and Bangkok Radio coast stations run by CAT Telecom (Public) Co. Ltd. Notices to Mariners and marine weather forecast were issued by such two organizations but the latter one provides 4 coastal stations to additionally service telecommunication between ship to shore and among

ships via VHF, MF and HF bands. Such information is mostly concerned with nautical charts update, safety of navigation, maritime distress monitoring, natural disaster warning and other information necessary to mariners.

6. C-55 (See Annex A.)

6.1 *Status of Hydrographic survey of all navigable waters, including internal waters, out of the limits of the EEZ.*

Survey coverage, where:

A = percentage which is adequately surveyed.

B = percentage which requires re-survey at larger scale or to modern standards.

C = percentage which has never been systematically surveyed.

	A	B	C
Depth < 200 m	67	33	0
Depth > 200 m	40	60	0

6.2 Status of Nautical Charting Information

Coverage of charts published by HDRTN, where:

A = percentage covered by INT series, or a paper chart series meeting the standards in M-4.

B = percentage covered by Raster Navigational Charts (RNCs) meeting the standards in S-61.

C = percentage covered by ENC's meeting the standards in S-57.

	A (% PaperCharts)	B (% RNC)	C (% ENC)
Offshore passage/Small scale	100	-	100
Landfall and Coastal passage/Medium scale	100	-	100
Approaches & Ports/Large Scale	100	-	100

Note: - Paper Charts

- HDRTN has already produced 80 paper charts (out of 83 planned charts)
- Offshore passage/Small scale: 2 paper charts (out of 5 planned charts)
- Landfall and Coastal passage/Medium scale: 20 paper charts (out of 20 planned charts)
- Approaches & Ports/Large Scale: 58 paper charts (out of 58 planned charts)

- ENC's

- HDRTN has already produced 39 ENC's (out of 44 planned ENC's)
- Offshore passage/Small scale: 2 ENC's (out of 5 planned ENC's)
- Landfall and Coastal passage/Medium scale: 9 ENC's (out of 11 planned ENC's)
- Approaches & Ports/Large Scale: 28 ENC's (out of 28 planned ENC's)

6.3 Status of Maritime Safety Information

6.3.1 Navigational Information

SERVICE	Yes	No	Partial	Notes
Local warnings	/			Issued by HDRTN Coordinated with CAT Telecom Co,Ltd.
Coastal warnings	/			
Navarea warning NAVAREA	/			By NAVAREA XI
Information on ports and harbours	/			By Port Authority and Marine Department

6.3.2 GMDSS Implementation

SERVICE	Yes	No	Partial	Notes (run by)
Master Plan	/			Under proceeding by Marine Department
A1 Area1			/	
A2 Area2		/		
A3 Area3		/		
NAVTEX	/			CAT Telecom Co.Ltd.
Safety NET	/			

7. Capacity Building Program

- 1 officer to attend Workshop on Lidar and Satellite Derive Bathymetry in Japan
- 1 officer to attend Workshop on Negotiating Maritime Boundaries in Singapore
- 1 officer to attend SAR Model Course in Australia
- 13 officer to attend Basic Cartographic Course held by HDRTN, Thailand
- 10 office to attend Basic Hydrographic Course held by HDRTN, Thailand

8. Oceanographic Activities

8.1 *Tide Prediction*

The HDRTN provides tide table on 29 sites within Chao-Phraya River, Gulf of Thailand and Andaman Sea. The tide prediction use raw data from HDRTN, Port Authority of Thailand, and Marine Department tide gauge networks.



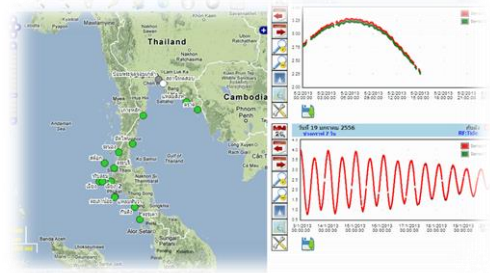
8.2 *Sea Level determination*

Supporting sea level data to Permanent Service for Mean Sea Level (PSMSL) and University of Hawaii Sea Level Center (UHSLC), Japan Coast Guard and National Oceanic and Atmospheric Administration (NOAA).

8.3 Tide gauge programme

Two tide gauges have been upgraded along the Chao-Phraya River. In Andaman Sea, eight radar tide gauges are already installed. Tide gauge in Gulf of Thailand are seven radar tide gauges, one acoustic tide gauge and two buoy tide gauges.

<http://203.147.22.19/Tsunami2011/ViewStation.aspx?RowID=6>



9. Other Activities

9.1 Aids to Navigation Activities

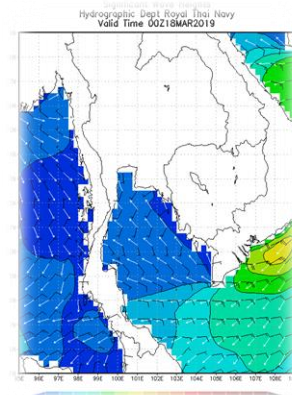
9.1.1 Maintenance of Aids to Navigation along The Gulf of Thailand and Andaman sea including 9 lighthouses, 79 beacons, 6 leading lights, 77 buoys.

9.1.2 Installation of Automatic Identification System (AIS) into Aids to Navigation along the Gulf of Thailand and Andaman sea including 8 Base Stations, and 39 *A to N* station.



9.2 Marine Meteorological Activities

In cooperation with meteorological authorities, HDRTN has established a couple of automatic weather stations along Thailand coast for the observation of air temperature, relative humidity, air pressure, wind, precipitation rainfall, and visibility. The action maximally realized the integration of resources and sharing of information, and serve directly to the mariners.



9.3 Standard Time Keeping Activity

One of the task of HDRTN is standard time keeping for the nation with cesium clocks including national standard time, international time telling service and time transfer. All time transfers can be traced back to international time standard provided by Bureau International des Poids et Mesures (BIPM).



9.4 International Activities

HDRTN participated in the international activities as follows:

MAY 2018 - Attended 19th IALA Conference, South Korea.

JULY 2018 - Attended ESRI Conference, USA

SEPT 2018 - Attended 13th EAHC Commission, Malaysia.

FEB 2019 - Attended 5th EAHC Steering Committee, Indonesia

10. Conclusion

Since established in 1921, HDRTN has been engaged in carrying out hydrographic/oceanographic surveys and observations. The outcome of these surveys and observations has been made beneficially available to mariners, military, private sectors and governments to make both safer navigation and sustainable country development.

In recent years, HDRTN has contributed such a great effort to increase the safety of navigation, to prevent marine disasters and to protect marine environment through its activities and making full use of the forefront technology. It has an intention to promote cooperation with other hydrographic officers not only on a regional basis but also on a global level.

Input to the IHO Publication P-5 (Yearbook)

Country: Thailand
Organization: Hydrographic Department Royal Thai Navy

(Please provide the information in English)

Contact information	
-National Hydrographer or equivalent	Post: Director General, Hydrographic Department, Royal Thai Navy. Name: VAdm. Winai Maneeprag Postal address: 222 Rimthangrotfaikao Rd, Bangna-Tai, Bangna, Bangkok, THAILAND 10260. Tel: +662-475-2007 Fax: +662-475-2181 Email: winai.m@navy.mi.th
-Head of the Hydrographic Office (if different from the person indicated above)	Post: Name: Postal address: Tel: Fax: Email:
-Other point(s) of contact	hydrotech@navy.mi.th
-Web site	http://www.hydro.navy.mi.th
Country information	
-Declared National Tonnage	Tonnage: 4286652.42 tons (2016)
-National day	5 December
-Date of establishment and Relevant National Legislation	16/01/1922

-Date first joined IHO	21/06/1921 (as Siam)			
-Date ratification Convention	13/03/1972			
-Remarks on membership				
Agency information/ Information sur l'agence/ Información sobre la agencia				
-Top level parent organisation	The Royal Thai Navy.			
-Principal functions of the organisation or the department	To collect, evaluate, compile, produce and distribute hydrographic and oceanographic information including nautical chart, sailing direction and aids to navigation.			
-Total number of staff employed	App 500			
-Number of INT charts published	4			
-Total number of paper charts published	80			
-Number of ENC cells published	39			
-Type of publications produced	Tide Table in Thai Waters (annually) List of Lights and Bouys in Thai Waters. Sun & Moon rise-set Table.			
-Detail of surveying vessels/ aircraft	-Name	-Displacement	-Date Launched	-Number of crew
	H.T.M.S. CHANTARA	966	1961	50
	H.T.M.S SUK	1526	1982	45

	H.T.M.S SURIYA	960	1979	54
	H.T.M.S PHARUEHATSABODI	1773	2008	52

ANNEX A.

Input to the IHO Publication C-55 (Status of Hydrographic Surveying and Charting Worldwide)

Country: THAILAND

(Please provide the information in English)

C-55 Summary for:				Comments on Charts:
Country:	THAILAND			Paper Charts - HDRTN has already produced 80 paper charts (out of 83 planned charts) - Offshore passage/Small scale: 2 paper charts (out of 5 planned charts) = 40% - Landfall and Coastal passage/Medium scale: 20 paper charts (out of 20 planned charts) = 100% - Approaches & Ports/Large Scale: 58 paper charts (out of 58 planned charts) = 100% ENCs - HDRTN has already produced 39 ENCs (out of 44 planned ENCs) - Offshore passage/Small scale: 2 ENCs (out of 5 planned ENCs) = 40% - Landfall and Coastal passage/Medium scale: 9 ENCs (out of 11 planned ENCs) = 81% - Approaches & Ports/Large Scale: 28 ENCs (out of 28 planned ENCs) = 100%
Country Iso Code:	TH			
Country SubCode:				
INT Region:	K			
Country/Depend:	C			
Last updated:	1/3/2019			
Provided by:	HDRTN			
Chart coverage	Passage (%)	Coastal (%)	Port (%)	Comments on Surveys:
INT	100	100	100	
RNC	0	0	0	
ENC	100	100	100	
Status of Paper Charts				
Paper charts with depths in meters (%)	100			
Paper charts referenced to a satellite datum (%)	56			
Status of surveys	Adequate (%)	Resurvey (%)	No survey (%)	
0-200m	67	33	0	
> 200m	40	60	0	
MSI	Y/N	Comments on MSI:		
Local warning	YES	Issued by HDRTN and Coordinated with CAT Telecom Co. Ltd.		
Coastal warning	YES	Issued by HDRTN and Coordinated with CAT Telecom Co. Ltd.		
Nav warning	YES	Issued by HDRTN and Coordinated with CAT Telecom Co. Ltd.		
Port warning	YES	By Port Authority of Thailand and Marine Department.		
GMDSS	Y/N	Comments on GMDSS:		
Master Plan	YES	Under proceeding by Marine Department		
Area A1	Partial	Under proceeding by Marine Department		
Area A2	NO			
Area A3	NO			
NAVTEX	YES	CAT Telecom Co. Ltd.		
SafetyNet	YES	CAT Telecom Co. Ltd.		