THAILAND

NATIONAL REPORT

17th NORTH INDIAN OCEAN HYDROGRAPHIC COMMISSION (NIOHC) CONFERENCE

Cairo, Egypt

17th – 20th July 2017

CONTENTS

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 needs in the Gulf of Thailand and the Andaman Sea. The present Director General is Vice Admiral Charin Boonmoh, who has held this position since 1st October 2015 up until now.

Figure.1 The Organizational Structure of HDRTN

2. Surveys

2.1 Hydrographic Survey Activities

HDRTN had conducted 4 hydrographic surveys during last fiscal year. The results of such hydrographic surveys have been utilized for production of nautical charts and other charts required by Royal Thai Navy and maritime community.

Type of survey	FY 2016
Harbor Survey	1
Approach Survey	3
Coastal Survey	-
General Survey	-
Total	**4**

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 DGNSS, etc.

3. New Charts and Updates

The production of nautical charts and Electronic Navigational Charts (ENCs) are progressing well with the improvement of modern software and hardware capabilities. The results of those mentioned surveys in 2015-2016 were then implemented to produce Thai nautical charts and other related charts in Thai waters. Nautical charts produced in 2016 are shown as follows:

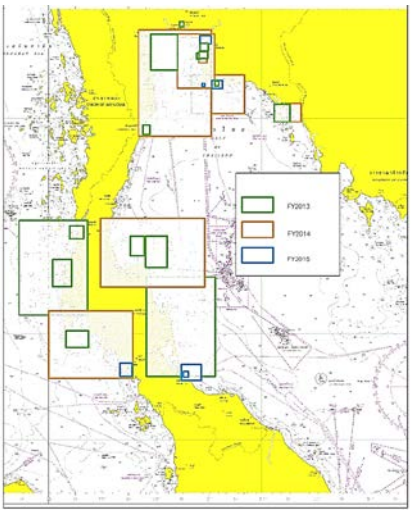
Type of Production	FY 2016
New Edition	4
Total	**4**

3.1 Paper Charts

HDRTN has produced totally 79 paper charts (large, medium, small scales) covering Thai waters. The followings are the charts produced in 2016.

Produced 4 New Edition Charts

Thai Chart Number	INT Chart	Title	Scale	Datum
115	-	Ao Sattahip and Approaches	45 000	WGS84
138	-	Maenam Chao Phraya from Samutprakarn to Krung Thon Bridge	22 000	WGS84
175	-	Klong Samphasamit to Kanchanapisek Brodge	12 000	WGS84
354	-	Ko Rang Nok to Kantang	80 000	Indian 1975

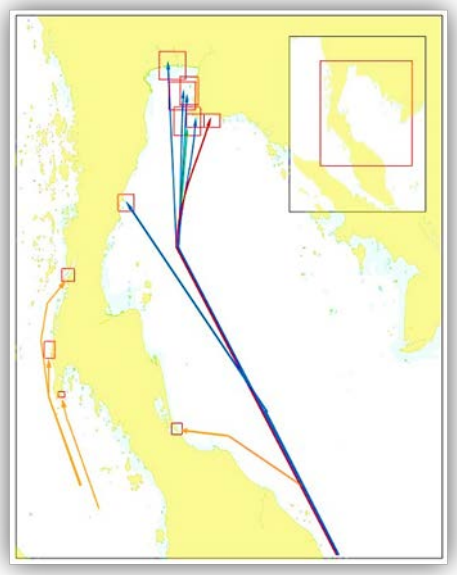


Fiscal Year	New edition
FY 2013	15
FY 2014	6
FY 2015	6
FY 2016	4
Total	**31**

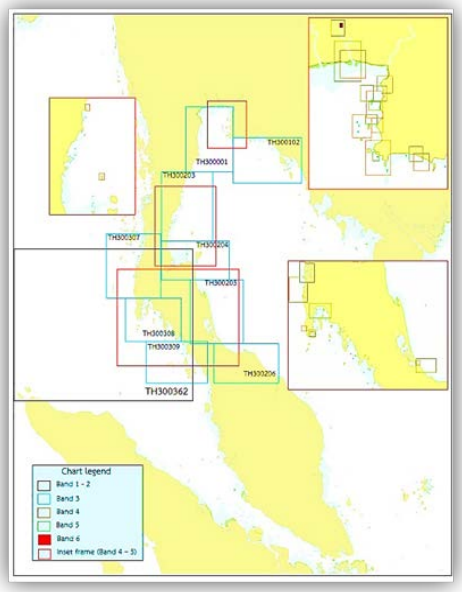
TH Paper charts produced in 2016

3.2 Electronic Navigational Chart (ENC)

HDRTN has plan to produced ENC only 44 cells covering 11 Thailand main shipping routes starting from 2006 to 2012 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.87%) and the remaining 5 cells, mostly large scales, needed to be re-surveyed 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 cells.

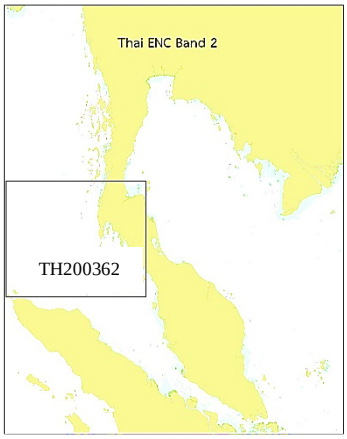


11 Thailand Main Shipping Routes

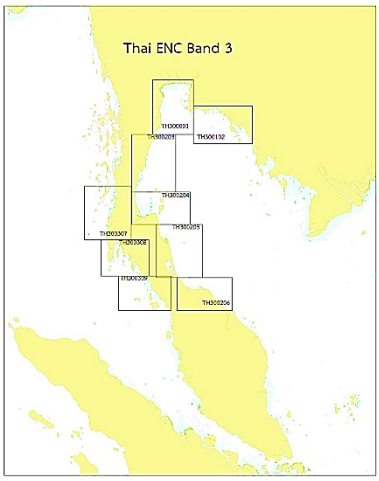


Thai ENC Coverage

TH Overview Usage Band Coverage

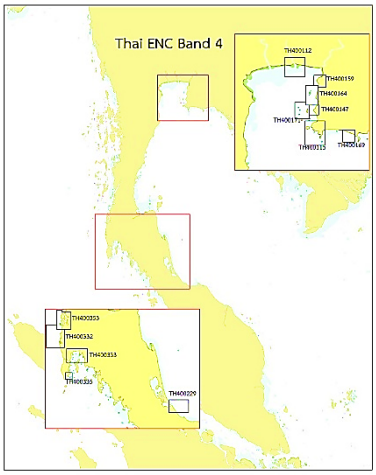


TH General Usage Band Coverage



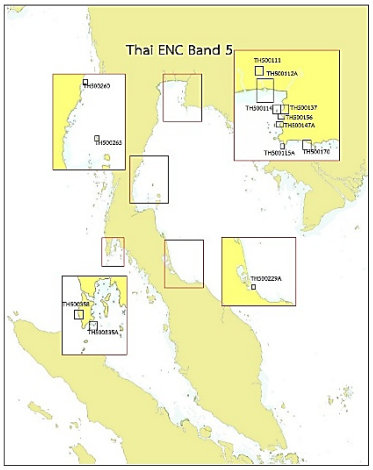
TH300001
TH300102
TH300203
TH300204
TH300205
TH300206
TH300307
TH300308
TH300309

TH Coastal Usage Band Coverage



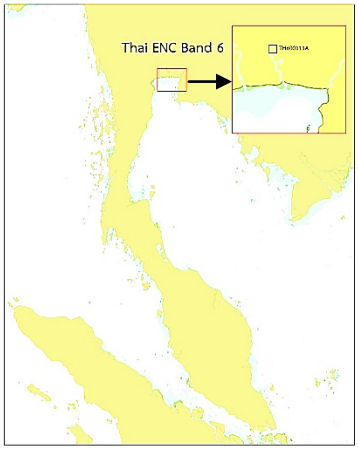
TH400112
TH400113 (NEW)
TH400115
TH400147
TH400159
TH400164
TH400169
TH400171
TH400229
TH400332
TH400333
TH400335
TH400336 (NEW)
TH400353

TH Approach Usage Band Coverage



TH50112A
TH50115A
TH50147A
TH50229A
TH50335A
TH500111
TH500114
TH500137
TH500156
TH500170
TH500260
TH500265
TH500358

TH Harbour Usage Band Coverage



TH60111A

TH Berthing Usage Band Coverage

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 inform 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

- The Electronic Navigational Chart's Handbook 2014
- List of Lights and Buoys in Thai Water 2012
- Tide table in Thai Water A.D.2016
- Sunrise-Sunset and Moonrise-Moonset Thailand A.D.2016

5. Maritime Safety Information (MSI)

HDRTN had issued 64 notices to mariners since the last NIOHC conference until March 2016 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 tele-communication 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.

Previously, HDRTN had disseminated navigational warning messages by mean of Temporary Notices to Mariners. After the completion of MSI Course in Oman, Thai participant delivered knowledge to Navigational information services division' staffs. From March 2016, 85 navigational warnings has been issued for safety of navigation within Thai waters.

6. C-55

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	100	30	0
Depth > 200 m	100	0	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 ENCs meeting the standards in S-57.

	A (%Paper Charts)	B (%RNC)	C (%ENC)
Offshore passage/Small scale	40	-	40
Landfall and Coastal passage/Medium scale	100	-	81
Approaches & Ports/Large Scale	98	-	93

Note: - Paper Charts
- HDRTN has already produced 79 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: 57 paper charts (out of 58 planned charts) = 98%

- 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) = 95%

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	/			
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

In 2016

- In preparation to submit 1 applicant to the IHO CAT B Cartography course, UKHO
- In preparation to submit 1 officer to attend Master's Degree in Ocean Mapping in UK
- In preparation to submit 1 officer to attend Master's Degree in Cartography in European Country
- 1 officer to attend Master's Degree in Meteorology in UK
- 1 officer to attend Master's Degree in Oceanogrphy in UK
- 1 officer to attend IHO CAT A Hydrography in USA
- 1 officer to attend IHO CAT A Hydrography in India
- 2 officer to attend EAHC Training For Trainer, Hydro in South Korea.

8. Oceanographic Activities

8.1 Tide Prediction

The HDRTN provides tide table on 29 sites along Chao-Phraya River, Gulf of Thailand and the Andaman Sea. The tide prediction uses 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, six radar tide gauges are already installed and two acoustic tide gauges was changed to radar tide gauges in 2014. Tide gauge in Gulf of Thailand are seven radar tide gauges, one acoustic tide gauge and two buoy tide gauges.

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:

Oct 2016	- Attended EAHC Charting and Hydrography Committee Meeting, Singapore
Feb 2017	- Attended EAHC 4th Steering Committee Meeting, Japan
	- Attended EAHC Training and Research Development Committee Board of Directors Meeting, Japan
April 2017	- Attended 1ST Session of the IHO Assembly, Monaco
June 2017	- Attended Intergovernmental Oceanographic Commission Assembly, France
July 2017	- Attended International Cartographic Conference, USA

10. Conclusions

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.
