



# **THAILAND**

# **NATIONAL REPORT**

to the

**15<sup>th</sup> NORTH INDIAN OCEAN HYDROGRAPHIC  
COMMISSION (NIOHC) CONFERENCE**

Muscat, Oman

15<sup>th</sup> – 18<sup>th</sup> March 2015

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## 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 Supote Klangvichit, who has held this position since 1<sup>st</sup> October 2014 up until now.



Figure.1 The Organizational Structure of HDRTN

## 2. Surveys

### 2.1 *Hydrographic Survey Activities*

HDRTN had conducted 6 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 2014
Harbor Survey	3
Approach Survey	1
Coastal Survey	1
General Survey	1
<b>Total</b>	<b>6</b>



To meet IHO S-44 standard, HDRTN has been strengthening the hydrographic infrastructure construction, pushing forward the generalization and application of new technology and equipments, and improving the capability and quality of hydrography. Currently, HDRTN possesses a series of modern equipments such as multi-beam echo-sounders, side-scan sonar, high accuracy GPS/DGPS, 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 2014 were then implemented to produce Thai nautical charts and other related charts in Thai waters. Nautical charts produced in 2014 are shown as follows:

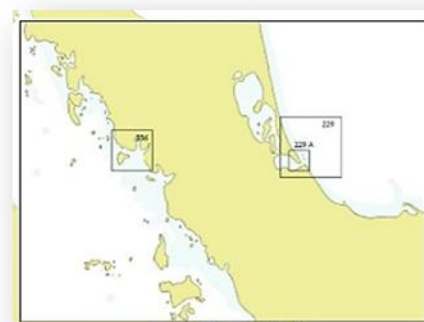
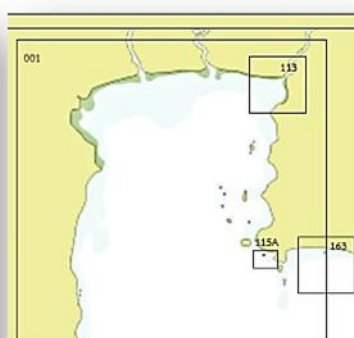
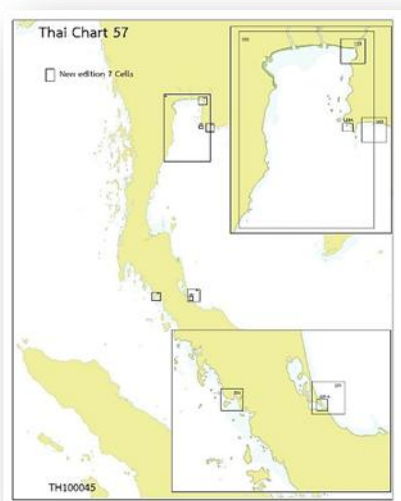
Type of Production	FY 2014
New Edition	7
<b>Total</b>	<b>7</b>

#### 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 2014.

##### *Produced 7 New Edition Charts*

Thai Chart Number	INT Chart	Title	Scale	Datum
001	-	Gulf of Thailand, Prachuap Khiri Khan to Ko Chuang	240 000	INDIAN 1975
229	-	Entrance to Songkhla Harbour	45 000	WGS84
336	-	Entrance to Kantang	35 000	WGS84
113	-	Entrance to Mae Nam Bang Pakong	22 000	WGS84
163	-	Map Ta Phut Industrial Port and Approaches	22 000	WGS84
229A	-	Songkhla Harbour	12 000	WGS84
115A	-	Sattahip Commercial Port (Chuk Samet Harbour)	8 000	WGS84

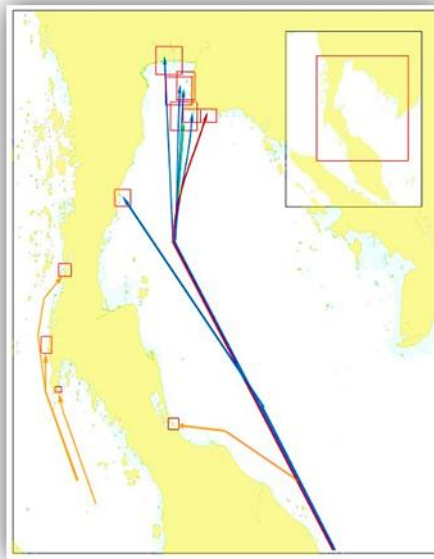


TH Papercharts produced in 2014

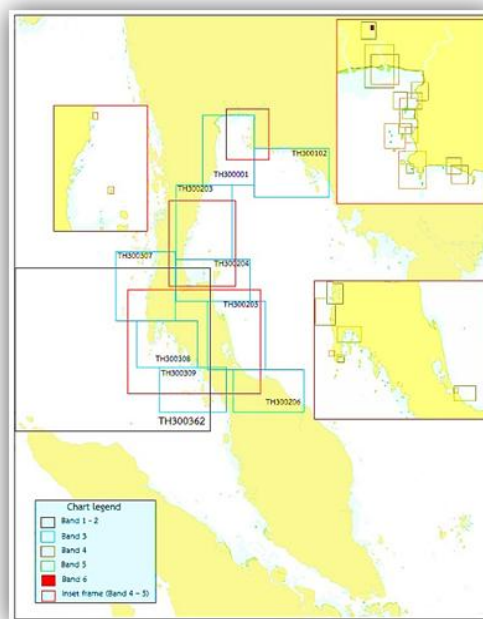
### 3.2 Electronic Navigational Chart (ENC)

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 37 cells in different bands (approx.84%) and the remaining 7 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, 12 Approach, 13 Harbour and 1 Berthing cells.

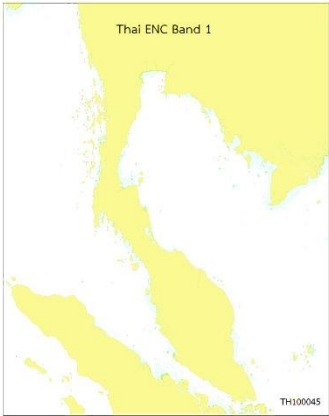
#### 11 Thailand Main Shipping Routes



#### Thai ENC Coverage

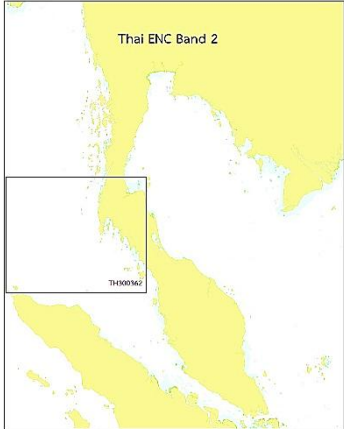


### TH Overview Usage Band Coverage



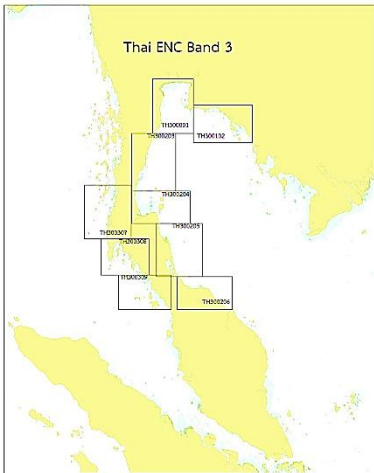
- TH100045

### TH General Usage Band Coverage



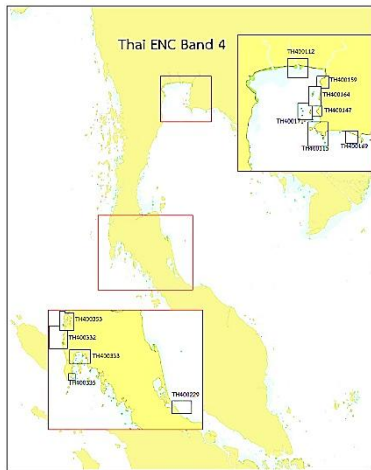
- TH200362

### TH Coastal Usage Band Coverage



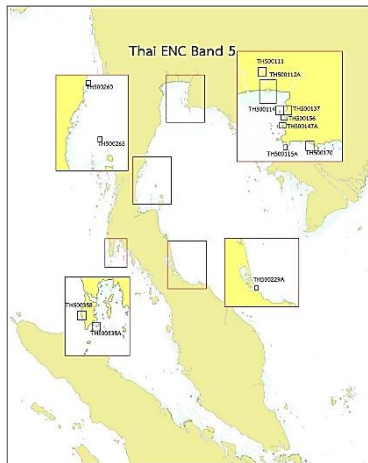
- TH300001
- TH300102
- TH300203
- TH300204
- TH300205
- TH300206
- TH300307
- TH300308
- TH300309

### TH Approach Usage Band Coverage



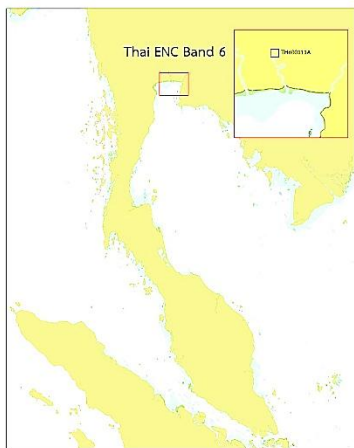
- TH400112
- TH400115
- TH400147
- TH400159
- TH400164
- TH400169
- TH400171
- TH400229
- TH400332
- TH400333
- TH400335
- TH400353

### TH Harbour Usage Band Coverage



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

### TH Berthing Usage Band Coverage



- TH60111A

### 3.3 INT Charts

HDRTN has proposed 4 paper charts to be recognized as INT charts under the coordination of Area J Coordinator.

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.2015
- Sunrise-Sunset and Moonrise-Moonset Thailand A.D.2015



### 5. Maritime Safety Information (MSI)



HDRTN had issued 157 notices to mariners since the last NIOHC conference until September 2014 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.

HDRTN has always disseminated navigational warning messages by mean of Temporary Notices to Mariners. Not until a participant from HDRTN to the MSI Course taken place in Oman returned did a seminar about the issue take place where MSI practices were being shared among our colleagues, and HDRTN realize that MSI needs to be separated from the Notices to Mariners. The process has started and we foresee that the full MSI will be underway in the very near future.



## 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 ENC's meeting the standards in S-57.

	A (%PaperCharts)	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%

#### - ENC's

- HDRTN has already produced 37 ENC's (out of 44 planned ENC's)
- Offshore passage/Small scale: 2 ENC's (out of 5 planned ENC's) = 40%
- Landfall and Coastal passage/Medium scale: 9 ENC's (out of 11 planned ENC's) = 81%
- Approaches & Ports/Large Scale: 26 ENC's (out of 28 planned ENC's) = 93%

### 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		/		CAT Telecom Co.Ltd.
NAVTEX	/			
Safety NET	/			

## 7. Capacity Building Program

### *In 2015*

- In preparation to send 1 officer to pursue Master's Degree in Physical Oceanography in USA/Canada/European countries within August 2015
- Sent 1 officer to attend H2 Hydrographic Survey Course (Cat B) in Indonesia.
- In preparation to send 1 officer to attend Basic Hydrography Course (Basic H), Jun 15, India
- In preparation to submit 1 applicant to the CAT B Cartography course, UKHO
- Submitted 1 applicant to Master of Science/ Cat A in Hydrographic Survey, USM, USA

### *In 2014*

- 1 officer is pursuing his MSc. in Geospatial and Mapping Science, U of Glasgow, UK
- Sent 1 officer to attend in the United Nations – The Nippon Foundation of Japan Fellowship Program Law of the Sea, 30 Mar 14 – 21 Dec 14, New York and The National Oceanography Centre and the Institute of Maritime Law of the University of Southampton, UK
- Proposed needed courses to JICA
- 4 officers were attending the 3 EAHC CB courses including the EAHC Training for Trainer Course (Cartography), 26 Oct – 8 Nov 14, Busan, ROK, the training course on Technical Aspects of Maritime Boundaries, Baselines and Extended Continental Shelf, 9-15 Nov 14, Jakarta, Indonesia, and the training course on Tides and Water Level for Hydrographic Survey, 7 – 13 Dec 14, Kuala Lumpur, Malaysia
- 1 officer was attending an NIOHC CB course in Establishment of MSI Structure and Basic MSI Procedure, 14 – 18 Dec 14, Muscat, Oman
- Sent 1 officer to attend H2 Hydrographic Survey Course (Cat B) in Indonesia.

## 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 were changed to radar tide gauges in 2014. Tide gauges 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 tasks 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:

- |                     |   |
|---------------------|---|
| <b>May 2014</b>     | - attended CBSC12 & IRCC6, Brest & Paris, France<br>- attended XVIII IALA Conference, A Coruna, Spain |
| <b>October 2014</b> | - 5 <sup>th</sup> EIHC, Monaco  |

## 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.

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