



**NATIONAL REPORT OF THE HYDROGRAPHIC DEPARTMENT,  
ROYAL THAI NAVY**

## 1. Hydrographic Office / Service

Established in 1921, Hydrographic Department, Royal Thai Navy or “HDRTN” is a 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 Nirut Hongprasit, who has held this position since 1<sup>st</sup> October 2011 up until now.



Fig-1 The Organizational Structure of HDRTN

## 2. Surveys

### 2.1 Hydrographic Survey Activities

HDRTN conducted 6 hydrographic surveys in 2010 up until now (February 2011). It also simultaneously performed significant role in survey of boundary river for future demarcation among neighboring countries. 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 2010	FY 2011
Harbor Survey	4	1
Approach Survey	0	2
Coastal Survey	2	2
<b>Total</b>	<b>6</b>	<b>5</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 echosounders, side-scan sonar, high accuracy GPS/DGPS, the new built multipurpose vessel for hydrographic surveying “HTMS Pharuehatsabodi”, 3 small 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 equipments.

### **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 2011 were then implemented to produce Thai nautical charts and other related charts in Thai waters. Nautical charts produced in 2011 are shown as below:

<b>Type of Production</b>	<b>FY 2011</b>
New Chart	1
New Publication	1
New Edition	3
Re-Print	2
<b>Total</b>	<b>7</b>

**3.1 Paper Charts** - HDRTN has produced totally 76 paper charts (large, medium, small scales) covering Thai waters. The followings are the charts produced in the year 2011

**3.1.1 Produced 1 New Chart**

- No.265, Ko Tao, scale 1:12,000, WGS84

**3.1.2 Produced 1 New Publication Chart**

- No.260, Prochuap Harbour, scale 1:12,000, WGS84

**3.1.3 Produced 3 New Edition Charts**

- No.171, Ko Phai to Ko Lan, scale 1:22,000, WGS84

- No.350, Ko Tarutao to Satun, scale 1:80,000, Indian 1975 datum

- No.352, Ko Khai Yai to Ko Phayam, scale 1:60,000, Indian 1975 datum

**3.1.3 Produced 2 Reprinted Charts**

- No.045, Krung Thep to Singapore, scale 1:1,850,000, Indian 1975 datum

- No.223, Entrance to Mae Nam Mae Klong, scale 1:25,000, Indian 1975 datum

### **3.2 Electronic Navigation Chart (ENC)**

HDRTN has produced 76 paper charts (large, medium, small scales) covering Thai waters. For ENCs, it has plan to produced only 44 cells covering 10 Thailand main shipping routes starting from 2006 to 2012 as the first priority in order to support IMO ECDIS carriage mandation by 2012. Such main shipping routes have currently covered by 31 cells in different bands (approx.75%) and the remaining 13 cells, mostly large 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 2012.

### **3.3 INT Charts Activities**

For INT Chart in Area J, HDRTN proposed to produce 4 INT Charts on the Andaman Coast which were referred to the National Hydrographic Office of India, as INT Chart Coordinator region J, for allocation of INT Chart Numbers as below. However, HDRTN planned to resurvey in this area.

<b>INT No.</b>	<b>Producer</b>	<b>National No.</b>	<b>Scale 1:</b>
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7033	TH	362 (Satun to Ranong)	700,000
7448	TH	308 (Phuket to Kantang)	200,000
7449	TH	335 (Phuket Harbour)	22,000
7450	TH	335A (Ao Man and Approaches)	8,000

#### **4. New Navigational Publications and Updating**

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

- INT 1 symbols, abbreviations, terms used on charts (translated into THAI)
- List of Lights and Buoys in Thai Water 2012
- Tide table in Thai Water 2012
- Table of Moon Rise/Set book year 2012, Sun Rise/Set book year 2012, Sunrise-Sunset and Moonrise-Moonset Thailand 2012
- Notice to Mariners Reports in Thai and English 2012, Annual Summary of Notices to Mariners 2012, etc.

#### **5. Mariners Safety Information**

HDRTN issued 155 notices to mariners (NMs) in 2011 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 coast 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.

#### **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	38	0
Depth > 200 m	15	89	85

##### ***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	B	C

	(%INT Charts)	(%RNC)	(%ENC)
Offshore passage/Small scale	40	-	40
Landfall and Coastal passage/Medium scale	100	-	73
Approaches & Ports/Large Scale	93	-	75

**Note: - Paper Charts**

- HDRTN has already produced 76 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: 54 paper charts (out of 58 planned charts) = 93%

**- ENC**

- HDRTN has already produced 31 ENCs (out of 44 planned ENCs)
- Offshore passage/Small scale: 2 ENCs (out of 5 planned ENCs) = 40%
- Landfall and Coastal passage/Medium scale: 8 ENCs (out of 11 planned ENCs) = 73%
- Approaches & Ports/Large Scale: 21 ENCs (out of 28 planned ENCs) = 75%

**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**

- 1 officers, sponsored by International Hydrographic Organization Capacity Building Fund, attended the Workshop on Port and Shallow Water Surveys, South Africa.
- 1 officers, sponsored by CBSC, attended the Workshop on ENC production and Quality Assurance, Indonesia.
- 12 officers of Thai and 12 officers of EAHC member states, sponsored by CBSC, attended the Workshop on Database Design and Management, Thailand.

**8. Oceanographic Activities**

### ***8.1 Tide Prediction***

The HDRTN provides tide table on 28 sites within Chao-Phraya River, Gulf of Thailand, Andaman Sea and part of Malacca strait. The tide prediction use raw data from HDRTN, Port Authority of Thailand, and Marine Department tide gauge networks.

### ***8.2 Sea Level determination***

Providing sea level data to Permanent Service for Mean Sea Level and University of Hawaii Sea Level Center (UHSLC)

### ***8.3 Tide gauge programme***

Two tide gauges have been upgraded along the Chao-Phraya River. The upgrade involves real-time capability and change sensor to acoustic/radar tide gauges. The similar modification for three tide gauges in Gulf of Thailand and other two in Andaman Sea will be carried on in this fiscal year.

## **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, 75 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.

### ***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***

During January 2011 to July 2011, HDRTN participated in the international activities as follows:

January 2011 - attended 6<sup>th</sup> East Asia Hydrographic Commission (EAHC) ENC Task Group Meeting and 5<sup>th</sup> EAHC Coordinating Meeting, Indonesia

February 2011 - attended 11<sup>th</sup> NIOHC Meeting, India

April 2011 - attended 1<sup>st</sup> Ad Hoc Discussion Group (ADG) Meeting, Republic of Korea

- May 2011 - attended 9<sup>th</sup> Capacity Building Sub Committee Meeting and 3<sup>rd</sup> Inter-Regional Coordination Committee Meeting, Brazil
- June 2011 - attended 26<sup>th</sup> IOC Session of the Assembly, France
- June 2011 - attended ENC Harmonization Meeting, Malaysia and Indonesia
- July 2011 - attended 7<sup>th</sup> Hydrographic Commission (EAHC) ENC Task Group Meeting, China
- July 2011 - attended ENC Production and Quality Assurance Workshop (2<sup>nd</sup> East Asia Hydrographic Commission (EAHC), Indonesia)
- July 2011 - attended 15<sup>th</sup> ICA (General Assembly of the International Cartographic Association) and 25<sup>th</sup> International Cartographic Conference (ICC), France

## **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 have 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. Even though it sometimes, like the MSs, get difficult in budget constraints, HDRTN still will do its best to maintain its mission and responsibility and to meet the future challenge of the changing world.

For any further information or clarification, please contact:

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