

# PAKISTAN



**NATIONAL REPORT, 7<sup>th</sup> RSAHC MEETING**

**20-22 Feb 17**

**Muscat, OMAN**

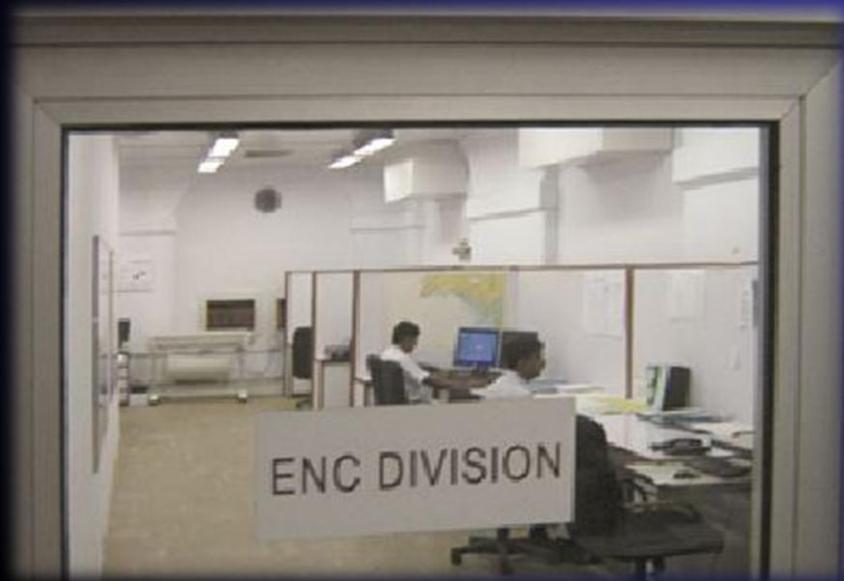
# INTRODUCTION

- Pakistan Navy Hydrographic Department (PNHD) was established in 1949 and became member of IHO in 1957
- Responsible for conducting hydrographic surveys & publishing nautical charts / publications
- Department is well equipped to undertake surveys



# INTRODUCTION

- PNHD comprises Charting Centre, Chart Depot, ENC Division, HQ NAVAREA IX, Dredging Wing, Survey Vessel/ boats and Hydrographic School



# HYDROGRAPHIC SURVEYS

- Pakistan's coast is over 1000 Km and divided into 02 parts
- Sindh coast lies from east of Karachi till Pakistan - India border at Sir Creek
- Makran coast lies from west of Karachi to Gwatar Bay
- PN Hydrographic Department is responsible for undertaking hydrographic survey activities



# HYDROGRAPHIC SURVEYS

- Survey Vessel BEHR PAIMA conducts survey of coastal waters & deep sea
- The department is presently involved in resurveys of important areas along with systematic deep sea surveys



# COVERAGE OF NEW SURVEYS

- Survey activities from coast to 200m offshore is being undertaken to improve the coverage in A1 category
- Work to complete deep sea (> 200m) area using new survey equipment is in progress
- Oceanographic surveys of a considerable portion of deep sea area has been recently surveyed

# NEW TECHNOLOGIES/ EQUIPMENT

- SV BEHR PAIMA is well equipped to undertake all kind of hydrographic and physical oceanographic surveys
- State-of-the-art sensors are part of ship's inventory



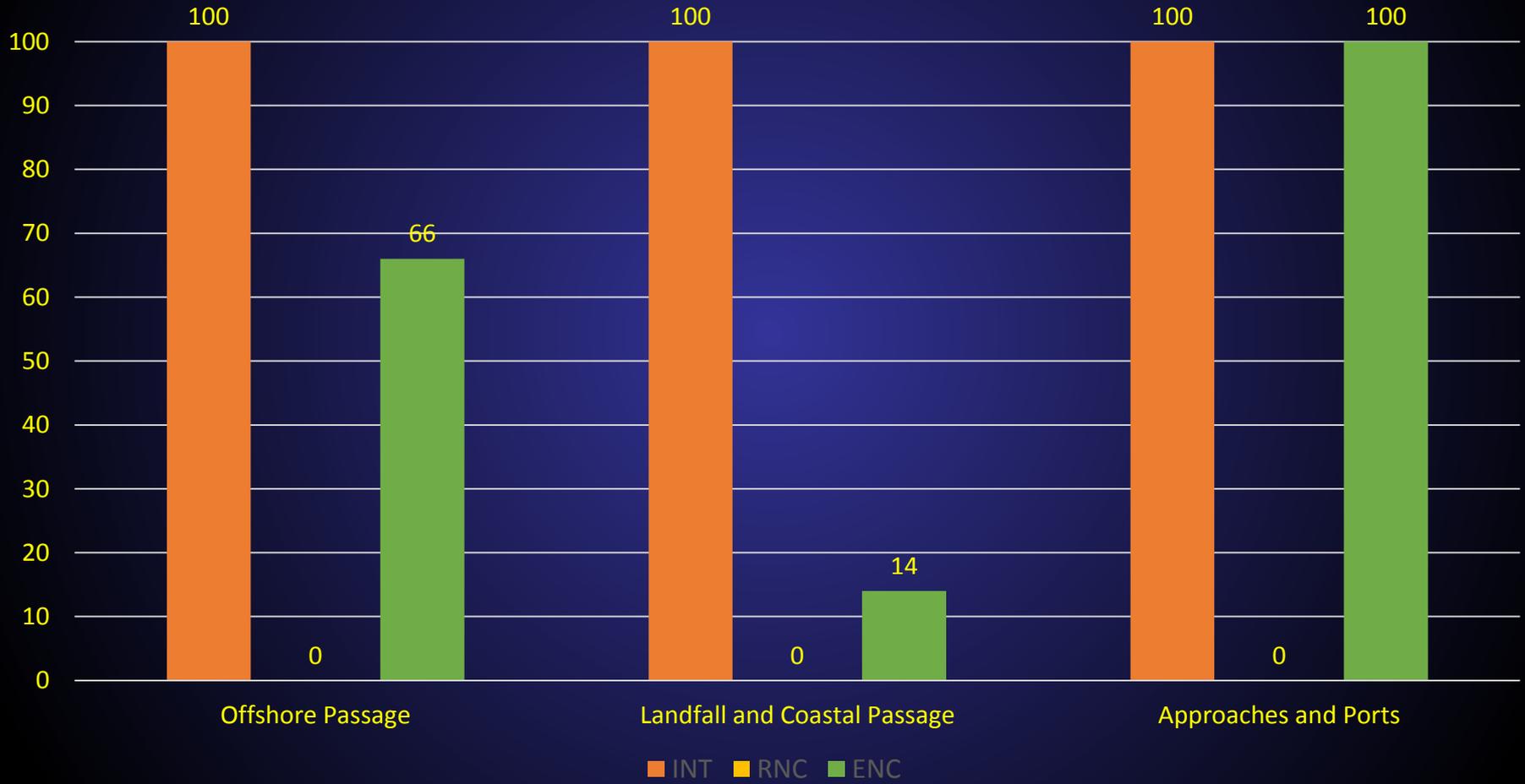
# NEW CHARTS AND UPDATES

## ENCs

- ENC division was established in 2005
- ENCs of all major ports i.e Karachi Harbour, Port Qasim and Gwadar Deep Water Port are available
- Coastal charts that can facilitate mariners and fall within the major shipping routes have been converted to ENCs

# NEW CHARTS AND UPDATES

## Coverage of Charts Published



# NEW CHARTS AND UPDATES

## ENC Distribution Method

- Pakistan being member of IC-ENC is utilizing its services for data validation and distribution of ENCs
- Necessary quality checks of ENCs are conducted prior forwarding to IC-ENC

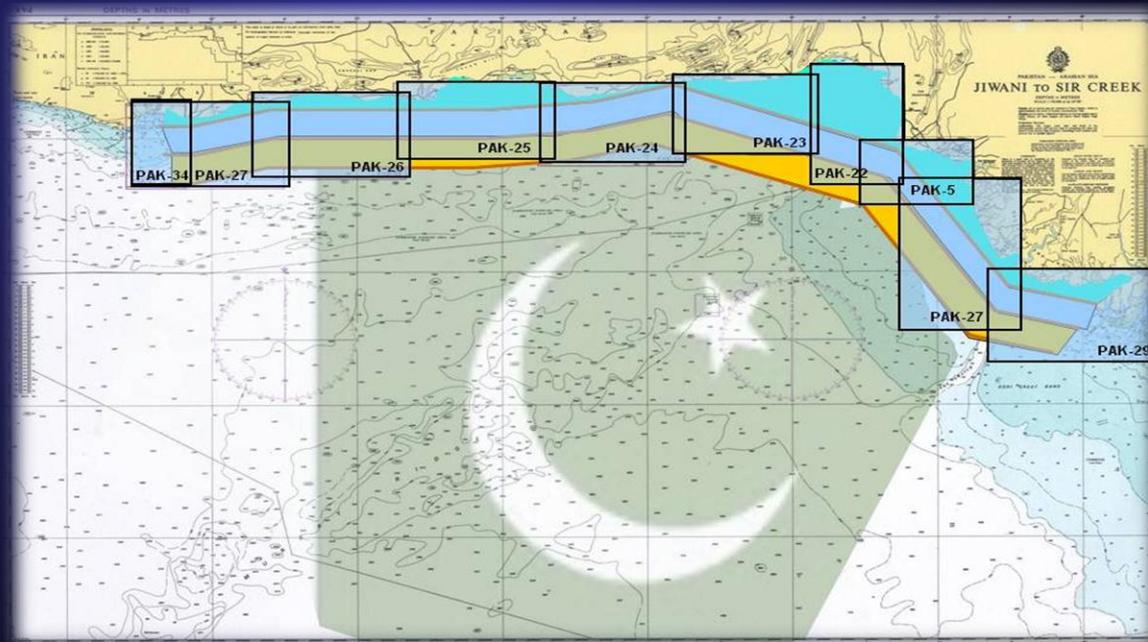
## RNCs

- PNHD is neither producing nor has plans to produce RNCs

# NEW CHARTS & UPDATES

## INT /National Paper Charts

- Published 41 charts of different scales covering entire coast and offshore waters of Pakistan
- 8 charts presently form part of INT Area “I & J”



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## New Charts

- Karachi Deep Water Container Terminal Harbour Chart
- Sonmiani Bay Large Scale Chart

# NEW PUBLICATIONS & UPDATES

## New / Updated Publications

- Weekly Notices to Mariners (NTMs)
- Annual Summary of Pakistan NTMs
- Annual Pakistan Tide Table
- Annual Sun & Moon Rise / Set Table
- Information on navigational warnings and NTMs are also available on website
- NAVAREA IX warnings through International Safety Net
- Coastal warnings through NAVTEX (Presently Non-ops)

# NEW PUBLICATIONS & UPDATES

## NAVAREA IX Warnings

- NAVAREA IX broadcast is passed daily at 0300 and 1500 UTC
- Unscheduled broadcast for urgent navigational warnings is done at any time
- A reprint of all NAVAREA IX warnings issued during a week is also included in the weekly edition of Pakistan Notices to Mariners

# NEW PUBLICATIONS & UPDATES

## Coastal Warnings

- Coastal warnings are also being disseminated through Safety Net

## Monitoring of MSI Broadcast

- To ensure the integrity of MSIs being transmitted, Coordinator NAVAREA IX monitors broadcast
- The existing MSI system is being upgraded to a modern GIS database system

# NEW PUBLICATIONS & UPDATES

## Problems Encountered

- Navigational hazards occurring in the region are effectively communicated
- Most effective mean has been through e-mail
- Messages / warnings sent through postal mail arrives late at times even after the event date has passed over

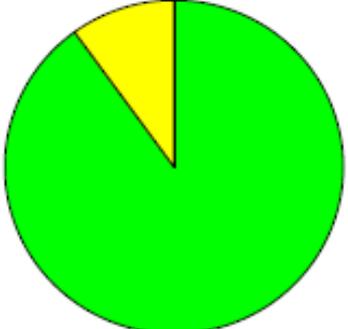
# HYDROGRAPHIC SURVEYING & NAUTICAL CHARTING WORLD WIDE (C-55)

- PNHD regularly assesses status of hydrographic surveying & nautical charting of all navigable waters
- Hydrographic Surveying and Nautical Charting Status Worldwide is kept updated

# HYDROGRAPHIC SURVEYING & NAUTICAL CHARTING WORLD WIDE (C-55)

## Pakistan (I)

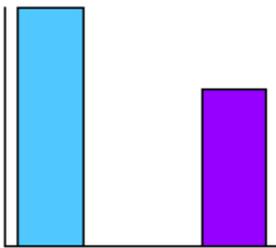
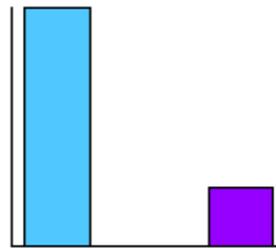
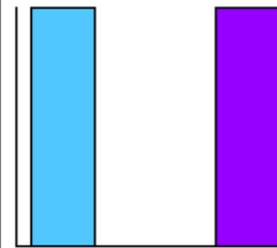
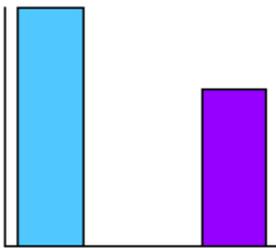
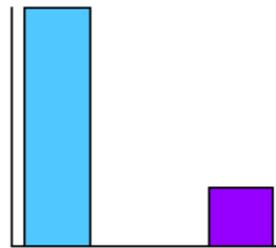
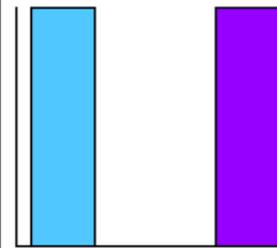
Hydrographic surveying / Levés hydrographiques / Levantamientos hidrográficos

Survey coverage Couverture hydrographique Cobertura hidrográfica		Depth < 200m Profondeur < 200m Profundidad < 200m			Depth > 200m Profondeur > 200m Profundidad > 200m		
<p><b>90%</b> Adequately surveyed Correctement hydrographié Adecuadamente levantado</p> <p><b>10%</b> Re-survey required Nécessitant de nouveaux levés Requiere nuevo levantamiento</p> <p><b>0%</b> Never systematically surveyed Jamais hydrographié systématiquement Nunca levantado sistemáticamente</p>		90	10	0	30	70	70
							
Notes Notes Notas	1. Data for depths > 200m (70%) is based on miscellaneous lines of soundings. The systematic surveying of these areas to modern standards is gradually being undertaken.						

# HYDROGRAPHIC SURVEYING & NAUTICAL CHARTING WORLD WIDE (C-55)

## Pakistan (I)

Nautical charting / Cartographie marine / Cartografía náutica

Coverage of charts published Couverture des cartes publiées Cobertura de cartas publicadas		Offshore passage Navigation au large Pasaje offshore			Landfall and Coastal passage Atterrissage et navigation côtière Recalada y Pasaje costero			Approaches and Ports Approches et ports Aproches y puertos		
	Covered by INT or other paper charts meeting S-4 Couvert par des cartes papier INT ou autres conformes S-4 Cubiertas por cartas de papel INT o otras cumpliendo S-4	100	0	66	100	0	25	100	0	100
	Covered by RNC meeting S-61 Couvert par des RNC conformes S-61 Cubiertas por RNC cumpliendo S-61									
	Covered by ENC meeting S-57 Couvert par des ENC conformes S-57 Cubiertas por ENC cumpliendo S-57									
Paper charts showing depth in meters Cartes papier avec les profondeurs en mètres Cartas de papel con profundidades en metros	0	Paper charts referenced to a satellite datum Cartes papier rapportées à un système géodésique satellitaire Cartas de papel referidas a un datum satelital			0	Data source Source des données Origen de los datos				
Notes Notes Notas	<p>1. Small scale ENC cells of INT-751 and INT 7019, adequately covering shipping route through Arabian Sea, are available to mariners.</p> <p>2. Coastal chart that can facilitate mariners and fall within the major shipping routes have been converted to ENC's. Adjacent cells to these ENC cells are also under production and will be available to mariners shortly.</p>									

# CAPACITY BUILDING

- PNHD attaches special emphasis on capacity building
- Officers undergo Cat B course at countries including Australia and USA and Cat A at UK
- Officers are also trained in traditional and electronic cartography
- Pakistan is amongst the few countries that have achieved Accreditation of Cat 'B' Course and course has been scheduled in this year

# CAPACITY BUILDING

- PNHD can offer assistance to countries in following areas
  - Hydrographic surveys
  - Geodetic and bathymetric data processing / production of charts
  - Basic Survey Recorder / Technician Course
  - Assistance in ENC production line procedures and quality management system
  - Handling of MSIs
  - Cat B Hydrographic Course
- PN Hydrographic School is contributing to train regional countries survey officers and technician

# CAPACITY BUILDING

Country	No. of Candidates	Year	Course Name
Nigeria	01	2008	Basic Cartographic Officers Course
Azerbaijan	01	2009	Basic Hydrography Officers Course
Sri Lanka	01	2009	Basic Hydrography Course
UAE	01	2009	Basic Hydrography Course
Sri Lanka	02	2009	Basic Cartographic Officers Course
Bangladesh	01	2009	Advance Professional Course
Sudan	01	2010	Advance Professional Course
Sudan	01	2010	Basic Hydrography Officers Course
Sri Lanka	01	2010	Basic Hydrography Officers Course
Nigeria	01	2010	Basic Hydrography Officers Course
Bangladesh	01	2010	Basic Hydrography Officers Course
Azerbaijan	01	2011	Basic Hydrography Officers Course
Sri Lanka	02	2012	Basic Cartographic Officers Course
Sudan	02	2012	Basic Cartographic Officers Course
Sudan	01	2012	Basic Hydrography Course
Bangladesh Sri Lanka Sudan	01 Each	2013	Basic Hydrography Officers Course

# OCEANOGRAPHIC ACTIVITIES

- Oceanographic activities undertaken in collaboration with National Institute of Oceanography (NIO) and marine universities
- Oceanographic cruises are arranged in which scientists & research scholars participate



# OCEANOGRAPHIC ACTIVITIES

- PNHD provides facilities of SV BEHR PAIMA
- Data processing is carried out at NIO



# OCEANOGRAPHIC ACTIVITIES

## Tide Gauge Network

- Pakistan is maintaining a network of IOC Tide Gauges
- At present, 4 tide gauges are working, data is being used for sea level measurements



# OTHER ACTIVITIES

## Participation in IHO Working Groups

- Pakistan participates in IHO activities and working group

## Participation in Hydrographic Activities

- Joint survey of Sir Creek with India in 2007
- Joint survey of RSNF harbour at Jeddah, Saudi Arabia
- Joint survey of Port Salalah approaches, Oman in 2007
- Joint international Hydrographic survey around Bird and Denis Islands in Seychelles Waters

# OTHER ACTIVITIES

## Dredging Activities

- PNHD is also involved in dredging activities in order to address PN requirements
- Trailing Suction Hopper Dredger (TSHD) of 2,500 Ton capacity was acquired in 2008



# CONCLUSION

- PNHD is carrying out surveys of waters under national jurisdiction as per IHO standards
- PNHD is actively participating in all national, regional and international maritime activities / forums
- PNHD has completed the surveys of entire coast of Pakistan and has published relevant charts
- Resurveys of critical areas and new surveys including deep sea surveys are being undertaken

# CONCLUSION

- Responsibility for promulgation of navigational warnings is being effectively fulfilled
- ENC cells concerning major ports and small scale ENCs adequately covering shipping route of Arabian Sea have been made available

**THANKS**