



**PAKISTAN
NATIONAL REPORT**

23rd MEETING

**NORTH INDIAN OCEAN HYDROGRAPHIC COMMISSION (NIOHC)
2024**

Chiang Me, Thailand

21 – 23 May 2024

BY

NATIONAL HYDROGRAPHIC OFFICE PAKISTAN

NATIONAL HYDROGRAPHIC OFFICE PAKISTAN

1. National Hydrographic Office (NHO), previously recognized as Pakistan Navy Hydrographic Department (PNHD) was established in 1949, operates as the primary authority entrusted with conducting hydrographic surveys within Pakistan. Its core mandate revolves around the meticulous production and dissemination of nautical charts, comprehensive publications and Electronic Navigation Charts (ENCs) crucial for safe maritime navigation in Pakistani waters. Pakistan being signatory of Safety of Life at Sea (SOLAS) convention is responsible for survey and charting of all waters under national jurisdiction. On behalf of Govt of Pakistan, National Hydrographic Office (NHO) is conducting hydrographic surveys of waters under national jurisdiction of Pakistan and publishing nautical charts, relevant publications and representing Pakistan at all national and international hydrographic related forums. In addition, NHO is also responsible for survey/ charting as per Pakistan Navy requirement, data collection/ support for various marine related researches and support to Federal Govt. w.r.t. delimitation of maritime boundaries. To meet these functions, a system of well-defined procedures is followed for surveys, data handling and product preparation.

HYDROGRAPHIC SURVEYS

2. Pakistan's coast is over 1000 Km long and by virtue of its unique characteristics, is divided into 02 categories; Makran coast & Indus Delta (creek area). The later lies from east of Karachi till Sir Creek and is mainly comprised of deltaic region due to outfall of Indus River. Whereas, Makran Coast lies west of Karachi till Gwatar Bay bordering with Iran, consisting of sandy shores and sedimentary cliffs. Hydrographic cum oceanographic survey vessels BEHR PAIMA & BEHR MASAH conduct survey of coastal as well as deep waters. Continuous efforts have been made to survey critical areas for safe navigation within Pakistani waters. NHO is presently involved in fresh surveys of areas of interest. Detailed information in this regard is as under:

- a. **Coverage of New Survey** Survey activities from coast to 200m offshore is being undertaken to improve the coverage in A1 category area and about 98% coverage is complete. Nautical charts of deep sea area that falls under A2 category are relatively old. Work to complete deep sea (> 200m) area using high definition survey equipment and techniques is in progress at a moderate pace due to survey commitments in high priority areas. However, a considerable portion of deep sea area has been surveyed including offshore Indus delta. The same is being utilized to update small scale charts of major shipping routes.
- b. **Problems Encountered** No problems were encountered w.r.t conduct of hydrographic surveys.

NEW CHARTS AND UPDATES

3. **ENCs** ENC Division was established in 2005 and since then it is progressing ENC production. Detail of the same is given below:

- a. ENC's of all major ports and approaches i.e. Karachi, Port Muhammad Bin Qasim and Gwadar Deep Water Port are available to mariners. ENC's including local series are completed.
- b. Small scale ENC cells of INT-751 (Bombay to Masqat) and INT 7019 (Karachi to Ras Al-Hadd), covering shipping route through Arabian Sea, have been produced.
- c. **ENC Distribution Method.** Pakistan being member of IC-ENC is utilizing its services for data validation and distribution of ENC's. Necessary quality checks of ENC's are conducted prior forwarding to IC-ENC for validation through different software's which improves the quality of products.
- d. **RNCs.** NHO is neither producing nor has plans to produce RNCs.
- e. **INT / National Paper Charts.** NHO have published 41 charts of different scales covering entire coast and off shore waters of Pakistan. These are kept up to date. Out of these, 8 charts presently form part of INT area "I & J" of S-11.
- f. **Other Charts.** NHO is not producing any other type of charts as per requirements of different organizations.
- g. **Problems Encountered.** No problems were encountered w.r.t production of Charts/ ENC's.

NEW PUBLICATIONS & UPDATES

4. **New / Updated Publications** Following publications are produced by National Hydrographic Office on weekly and annual basis:
 - a. Weekly Notices to Mariners (NTMs).
 - b. Annual Summary of NTMs.
 - c. Annual Pakistan Tide Table.
 - d. Annual Sun & Moon Rise / Set Table.

MARITIME SAFETY INFORMATION

5. Pakistan being NAVAREA-IX Coordinator is responsible for transmission of MSIs. Under GMDSS, following two types of MSI are issued:
 - a. NAVAREA IX warnings through International Safety Net.
 - b. Coastal warnings.

c. **NAVAREA IX Warnings** NAVAREA IX broadcast is passed daily at 0300 and 1500 UTC through INMARSAT and IRIDIUM Satellites whereas, unscheduled broadcast for urgent navigational warnings is made as and when required. All NAVAREA IX warnings are also made available on website (www.pak.gov.pk/hydro). Numerical list of all enforced NAVAREA IX warnings is broadcasted each Saturday. Reprint of all NAVAREA IX warnings, issued during a week, is also included in the weekly edition of Pakistan Notices to Mariners.

d. **Coastal Warnings** Coastal warnings are broadcasted as and when required. Weather messages are transmitted at 0800 and 1800 UTC daily. All navigational warnings are transmitted through INMARSAT and IRIDIUM.

e. **Monitoring of MSI Broadcast** In order to ensure integrity of MSIs being received by mariners, Coordinator NAVAREA IX monitors its broadcast through INMARSAT C terminal.

f. **Delayed Reception of Navigational Information** Navigational hazards are communicated by relevant state through fax, email and telephone, for further issuance of Navigational warnings by NAVAREA-IX HQ. The most effective mean has been through email. However, at times such communication is made through fax and post, which causes delays.

C-55

6. Status of C-55 is as under:

Depth	A	B	C
<200m	98	02	0
>200m	55	45	0

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.

CAPACITY BUILDING

7. In order to maintain quality of hydrographic products as per recognized international standards, National Hydrographic Office attaches special emphasis on capacity building aspect of officers and men. National School of Hydrography is conducting Cat B Hydrographic Surveying course for both PN and International students since 2009. Presently, 03 x Pakistani Officers are undergoing said course since 18 Mar 24. Accordingly, officers undergo Cat B course from Australia/USA and Cat A from UK as they progress in the hydrographic service. Officers are also trained in traditional and electronic cartography from renowned international institutes.

Sufficient training facilities are available to train the survey recorders within country also. Presently, 02 officers of NHO are undergoing Cat B Hydrographic Surveying Course from Australia. Furthermore, National Hydrographic Office offers assistance to regional countries in following areas:

- a. Hydrographic surveys.
- b. Basic Survey Recorder / Technician Course (6 months).
- c. Assistance in ENC production line procedures and quality management system.
- d. Handling of MSIs.
- e. Cat B Hydrographic Course.

OCEANOGRAPHIC ACTIVITIES

8. General Oceanographic activities in Pakistan are carried-out by NHO in collaboration with Pakistan National Institute of Oceanography (NIO). Oceanographic cruises are arranged in which scientists from both the organizations participate actively for various oceanographic observations and data collection. The processing of data is carried out at NIO, which is adequately equipped for undertaking such tasks. National Hydrographic Office provides services of survey vessels to NIO on request basis for oceanographic cruises.

- a. Tide Gauge Network include four in number automated tide gauges i.e. at Karachi, Ormara, Gwadar and Keti Bandar have been installed with the assistance of IOC. The tidal data besides supporting Tsunami warning analysis is also being used for sea level measurements and tidal analysis for subsequent tide predictions.
- b. The new survey vessel PNS BEHR MASAH is equipped with Wave meter, ADCP and Rosette Water Sampler. Induction of these equipment has significantly enhanced the oceanographic capability of NHO Pakistan.

OTHER ACTIVITIES

9. NHO actively participates in various hydrographic and oceanographic related activities. Salient activities held during period under review are as under:

- a. MSI training course sponsored by IHO was attended by 01 officer in Oct 2023 in Masqat, Oman. The training was aimed to provide practical guidance to personnel concerned with the drafting of radio navigational warnings/ issuance of MSI.
- b. 02 x meetings of WWNWS were held from 28 February - 02 March 2023 and from 04 - 08 September 2023. NHO representatives attended both meetings virtually and presented self-assessment report during the meetings.

CONCLUSION

10. National Hydrographic Office is carrying out surveys of waters under national jurisdiction as per IHO standards. In addition, NHO is actively participating in all national, regional and international maritime activities / forums. NHO has completed the surveys of entire coast of Pakistan and has published relevant charts. At present, resurveys of critical areas and new surveys including deep sea surveys are being undertaken. As a coordinator of NAVAREA IX, responsibility for promulgation of navigational warnings is being effectively fulfilled. In addition, ENC cells concerning major ports and small scale ENCs adequately covering shipping route of Arabian Sea have been made available to commercial shipping.

INPUT TO IHO PUBLICATION P-5 (YEARBOOK)

Following changes have been incorporated in IHO Publication P – 5 (Yearbook):

National Hydrographer or equivalent	Hydrographer of Pakistan Rear Admiral Muhammad Saleem HI(M) Postal address: Naval Headquarters, 11 Liaquat Barracks, KARACHI, 75530, Pakistan Tel: +92 21 485 06151 Fax: +92 21 9920 1623 E-mail: hydrogk@paknavy.gov.pk
Other point(s) of contact	Deputy Hydrographer of Pakistan Captain Muhammad Wasim PN Director of Hydrography Captain Haris Sarwar Rana PN Commander Hydrography Cdr Zahoor Khan PN Commander Dredging Cdr Tanveer Shams PN Area Coordinating Officer Lt Cdr Syed Saad PN Staff Officer Hydrography Lt Cdr Faraz Siddique PN Computer/System Manager Lt Cdr Tabinda Iqbal PN Officer Incharge PN Chart Depot Lt Cdr Muhammad Yasrab PN Manager ENC Lt Waqas Muhammad PN
Total number of paper charts Published	41 (Large and small scale) charts

Input to IHO publication C-55

Updated status of C-55 is as under:

Depth	A	B	C
<200m	98	02	0
>200m	55	45	0

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.

MSI Assessment for NAVAREA-IX

Reporting period from 1st Jan 2023 to 31 December 2023

Submitted by: National Hydrographic Office Paksitan

SUMMARY

Executive Summary: Background information and overview of activities undertaken within NAVAREA IX since WWNWS 14

Action to be taken: In accordance with Paragraph 12

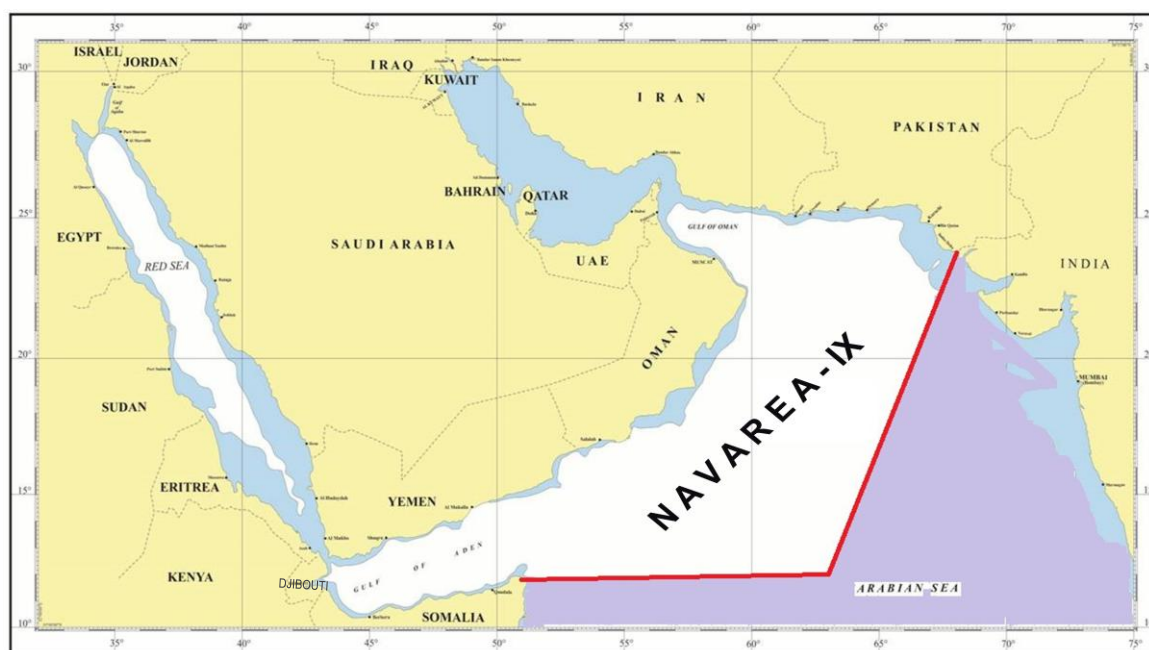
Related documents: None

1. General Information:

1.1. Organization

On behalf of Government of Pakistan, Hydrographer of Pakistan (HoP) performs the responsibilities of NAVAREA-IX Coordinator. The National Hydrographic Office (NHO) Pakistan, at Karachi is the focal point for the services related to Navigational safety. NHO is responsible for the transmission of Maritime Safety Information (MSI) to 16 countries of NAVAREA-IX. Limits of NAVAREA IX area are as under:

- | | | | | | |
|----|------------|------------|----|------------|------------|
| a. | 23° 48' N. | 068° 05' E | c. | 12° 00' N. | 050° 45' E |
| b. | 12° 00' N. | 063° 00' E | d. | 30° 00' N. | 032° 00' E |



1.2. Operational Points of Contacts (POCs) for National Coordinators within the NAVAREA-IX limits are as follows:

Country	Institution	Telephone	Facsimile	Email
Bahrain	MENAS Maritime Operation Centre Bahrain	+973 17810011	+97317725591	m.khurshid@menas.com.bh Rashid.alsuwaidi@slrb.gov.bh
Djibouti	Ministry of Transport and Telecommunication	+253 353475 +253 353208	+253351538	-
Egypt	Egyptian Authority for Maritime Safety (EAFMS)	+20 34801006	+ 2034802233	e.n.h.d@hotmail.com hydro@enhd.gov.eg
Eritrea	Department of Maritime Transport	+291 1 552346, +291 1 552931	+2911 552157	motcrez@eol.com.er
Iraq	Ministry of Transport and communication	-	-	-
Iran	Port and Maritime Organization, Maritime Affairs Department	+9821 84932171 +9821 84932143 +9821 84932152	+9821 8493 2190	parizi@pmo.ir pasandeh@pmo.ir
Jordan	Jordan Maritime Authority	+962 3201 4031	+962 3201 6320	info@aqabaports.gov.jo
Kuwait	Ministry of Communication Marine Department Hydrographic Survey Division	+965 6691 6969	+965 24990333	mazidi@moc.kw.or Kholoud@moc.gov.kw
Oman	Sultanate of Oman, Ministry of Defence, Oman National Hydrographic Office, Royal Navy of Oman	+968 24312350 +968 24322831	+968 24312460	ONHO@mod.gov.om hydromo@mo.gov.om
Pakistan	National Hydrographic Office Pakistan	+9221485 06151 +9221485 06152 +9221485 06821	+ 92 21 99201623 + 92 21 99203246	hydropk@paknavy.gov.pk hydrpk@gmail.com
Qatar	Customs & Ports General Authority, Department of	+974 4426 2100	+974 9426 5454	vjankovic@mme.gov.qa SKandy@mme.gov.qa

	Maritime Affairs & Transport			
Saudi Arabia	Saudi Port Authority	+966 920 000 427 ext 1700	+966 114647589	hydro@gasgi.gov.sa
Somalia	-	-	-	-
Sudan	Sudanese Maritime Administration	+249 918 377 1659	+249 918 379 0189	Profesadig54@rocketmail.com
U.A.E	Federal Transport Authority Land & Maritime	+9712651900 +971 2641 3321	+971 2 651691 97126415566	msd2000@emirates.net.ae admin@uaesurbey.ae
Yemen	Ministry of Transport Maritime Affairs Authority	+9672203521	+967 2 205805	ypa@y.net.ye

1.3. GMDSS Master Plan

MSIs related to navigational warnings are issued by NAVAREA-IX coordinator, weather warnings are transmitted by Pakistan Metrological Department (PMD) whereas Maritime Rescue and Coordination Center (MRCC) at Pakistan Maritime Security Agency (PMSA) is looking after all search and rescue related issues.

2. NAVAREA EGC

NAVAREA-IX office houses an indigenously developed system to display, monitor and store MSIs. One node of this system is designed to access Land Earth Stations (LES) for MSI transmission purpose.

2.1. Details of EGC Services

NAVAREA-IX office transmitted all MSIs through mobile satellite broadcast (INMARSAT & IRIDIUM) at 0300 and 1500 UTC daily during the period under review. Urgent messages are broadcast immediately

Broadcast Equipment/ Software	Broad cast schedule/Satellite	Manufacturer/ Location (LES)/ Implementation
INMARSAT Safety NET	0300 and 1500, IOR	Burum
Iridium Safety Cast	0300 and 1500	Iridium
Monitoring Equipment/ Software		Manufacturer/ Software
Safety NET		Inmarsat C
Iridium Safety Cast		Iridium

2.2. NAVTEX

NAVTEX stations coverage area are shown at Annex 'A' and contact details of NAVTEX stations are as under:

B ₁ 518 kHz	B ₁ 490 kHz	NAVTEX Station	Email	Telephone	Status
B	-	Hamala (Bahrain)	info@menas.com.bh	+973 17828541	Ops
V	-	Al Qusayr (Egypt)	hydro@enhd.gov.eg	+20 65 330001	Ops
F	I	Bandar-e- Shahid Rajai (Iran)	abbasradio@pmo.ir	+98 761 4514032	Ops
A	D	Bushehr (Iran)	bushenradio@pmo.ir	+98 771 2530074	Ops
M	-	Muscat (Oman)	ONHO@mod.gov.om	+968 24571400	Off air
P	-	Karachi (Pakistan)	hydrpk@gmail.com	+92 21 45901161	Off air
-	W	Umm Qasr (Iraq)	aqilsarah@yahoo.com	+964 7801440543	Ops
H	O	Jeddah (Saudi Arabia)	navtex@gamep.gov.sa	+966 124 237376	Ops

2.3. Other methods of promulgation

For local authorities, fisherman etc., local means of communications are used (VHF, courier, fax etc) to update them with ongoing activities.

3. NAVAREA Matrixes

3.1. NAVTEX information received for 2022-2023 are as under:

2022-2023							
Country	NAVTEX station name	B1 Character or Coastal Warning Area	Broadcast schedule times UTC (only for EGC)	Total number of warning broadcasts	Number of warnings broadcast with urgent priority (EGC) or vital (NAVTEX)	Total number of warnings broadcast, including repetitions	Broadcast data in megabytes
Bahrain	Hamala	B	0010 0410	362	-	-	-

			0810 1210 1610 2010				
Iran	Bushehr	A	-	40	-	680	66
	Bandar-e Shahid Rajaei	F	-	183	-	732	76
Iraq	Umm Qasr	W	-	6	-	24	8

3.2. NAVAREA Warnings Broadcasts

Provider	2021			2022			2023		
	Total number of warnings issued	Total number of warnings broadcast including repetitions	Broadcast data in megabytes	Total number of warnings broadcast	Total number of warnings broadcast including repetitions	Broadcast data in megabytes	Total number of warnings broadcast	Total number of warnings broadcast including repetitions	Broadcast data in megabytes
Safety Net	517	649	0.31	526	606	0.29	479	530	0.25
Safety Cast	517	-	-	526	-	-	479		

3.3. Urgent EGC Warnings Nil

3.4. VITAL Coastal Warnings Nil

3.5. In-force warnings

3.5.1. In-force bulletins issued

Yes, enforced bulletins are uploaded on website on every Saturday. Bulletins remain available on website till cancellation. All warnings issued each week are published in weekly edition of Pakistan Notices to Mariners (PNTM) bulletin Section II.

3.5.2. Requests for In-force warnings

The following table shows the number of requests to NAVAREA IX for a list of enforced navigational warnings of last 03 years:

Year	2021	2022	2023
Total	407	256	262

4. **Operational Issues** Nil

5. **National Coordinator Communication**

5.1. **IRCC Strategic Performance Indicator**

NAVAREA IX did not receive any information in 2021 and 2022 from the following Coastal States:

<u>Coastal State / Country</u>	<u>Information Received</u>
Somalia	None
Djibouti	None
Eritrea	None
Sudan	None
Jordan	None

Details of information received from various Coastal States are as under:

Coastal State/ Country	E-mails	Fax	Letters
Pakistan	30		50
Bahrain (MENAS) (Qatar, UAE, Kuwait, and Iraq)	336		
Dubai	02		
Saudi Arabia	27		
Oman	06		
Egypt	04		
Iran	22		02
Miscellaneous (Information's received from various sources)	22		

5.2. **Procedures:**

NAVAREA-IX coordinator communicates with all National Coordinators of NAVAREA-IX to promulgate warnings. However no navigational warning was received from following member states during period under review:

- a. Somalia
- b. Djibouti
- c. Eritrea
- d. Sudan
- e. Jordan

6. **Contingency Planning**

An internal contingency plan is held. As an external contingency plan, collaboration with NAVAREA VII (South Africa) is agreed.

7. **Capacity Building**

Concept of MSI is relatively new. Therefore, capacity building programs including courses held under ambient of IHO for developing countries will help in improving effectiveness of national centers for NAVAREA warnings.

8. **Other Activities**

NHO / NAVAREA IX has been at the forefront in taking active part in IHO related activities. Pakistan recently attended North Indian Ocean Hydrographic Commission (NIOHC) and Regional Sea Area Hydrographic Commission (RSAHC) meetings held in Indonesia and Oman respectively.

9. **NAVAREA Website**

Navigation warnings are uploaded on NHO Pakistan website 'hydrography.paknavy.gov.pk' on daily basis.

10. **NAVAREA Contact Information**

REAR ADMIRAL MUHAMMAD SALEEM HI (M)
Hydrographer of Pakistan

Email: hydropk@paknavy.gov.pk
hydrpk@gmail.com

Tel: +92 21 48506151-2, +92 21 48506821,
+92 21 48506819, +92 333 2104611

Fax: +92 21-99201623, +92 21 99203246

Address: HQ NAVAREA IX
National Hydrographic Office
Naval Headquarters
11, Liaquat Barracks
Karachi – 75530
PAKISTAN

11. **Recommendations**

MSI courses for NAVAREA IX countries may be organized by IHO for active and effective participation of member states.

12. **Actions requested**

The Commission is requested to note this report.

13. **Summary**

Coordinator NAVAREA-IX transmits MSIs for all 16 countries in the region. Navigational Warnings are promulgated via INMARSAT and IRIDIUM satellites with all warnings being included in the weekly NTMs. All in-forced warnings and NTMs are regularly posted and monitored on NAVAREA IX website as well. NAVAREA IX accesses both service providers via internet and all broadcasts of both systems are monitored. Coastal warnings are being transmitted via Safety Net/ Safety Cast. The reception of all the NAVAREA warnings promulgated through Safety Net/ Safety Cast and coastal warnings are monitored at NHO through respective terminals at communication center.