

EGYPT NATIONAL REPORT



18th NORTH INDIAN OCEAN
HYDROGRAPHIC COMMISSION
NIOHC

Goa, India
9th -12th April 2018



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1. Hydrographic Office / Service:

The Egyptian Navy Hydrographic Department (ENHD) was established in 1920, originally formed to serve the Egyptian fleet, and following the chain of command of the Egyptian Navy HQ. ENHD has evolved considerably throughout the years to become an active participant in the field of hydrography, and serving in the provision of the hydrographic services to both military and civilian sectors.

ENHD is the national hydrographic office of Egypt, and the official representative of the Egyptian government in the International Hydrographic Organization (IHO) and the respective hydrographic commissions of the Mediterranean (Mediterranean and Black Seas Hydrographic Commission (MBSHC)) and Red seas (North Indian Ocean Hydrographic Commission (NIOHC)).

ENHD's Experience has been gained by over 90 years of rigorous survey practice, and the implementation of a well-balanced strategy aiming to mix practice and education of all involved personnel to build upon the office's strong foundation. This went along with the support of the Egyptian Government in providing the most up to date hardware and software to ensure reliable and consistent hydrographic service.

Considering the missions of ENHD, and in order to grant the highest possible service efficiency, it has been structured to include several divisions as follows:

- The Hydrographic division.
- The Navigation Division.
- The Meteorological and Oceanographic Division.
- The Logistics Division.
- The Technical Support Division.

Key missions of ENHD:

- Collecting hydrographic data according to related IHO standards, primarily fed into the navigational charts data base. Also used to ensure the safety of surface navigation and the protection of the marine environment.
- Paper and Electronic charts production, distribution and updating for the Egyptian Territorial waters using fresh hydrographic data.
- Maritime Boundary Delimitation (Law of the sea implementation).
- Coastal zone management.
- Scientific studies related to the sea and near-shore zone
- Physical properties of the water column, tides, currents data gathering and processing.
- Ensure the timely dissemination of Maritime Safety Information.
- Hydrographic and oceanographic Support of naval operation.
- Providing the fleet with navigational equipment and publication.



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- Maintaining and repairing navigational equipment.

2. Surveys:

2.1 Coverage of new surveys:

Efforts have been made to plan, implement and prioritize the survey of the Egyptian waters covering Ports and approaches located on the Egyptian Mediterranean coast by reliable ENC's and Local Paper charts. Also, started to cover the Red Sea from the southern approaches of the Suez Canal to latitude of 22° north putting into consideration the most significant gaps across the Red Sea.

Extensive surveys have been conducted in the area of responsibility of ENHD along the coastline of Egypt on the Mediterranean from 2015 to 2018 mainly to serve the development plans of major Egyptian ports and the huge gas explorations at the Egyptian EZZ waters, such as "ZOHR" giant gas field. Fresh Hydrographic survey has been conducted in the Red Sea as follow:

2.1.1 Sokhna port



Figure 1, Sokhna port



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2.1.2 SUMED Sokhna terminal



Figure 2, SUMED Sokhna terminal

2.1.3 Ras Banas

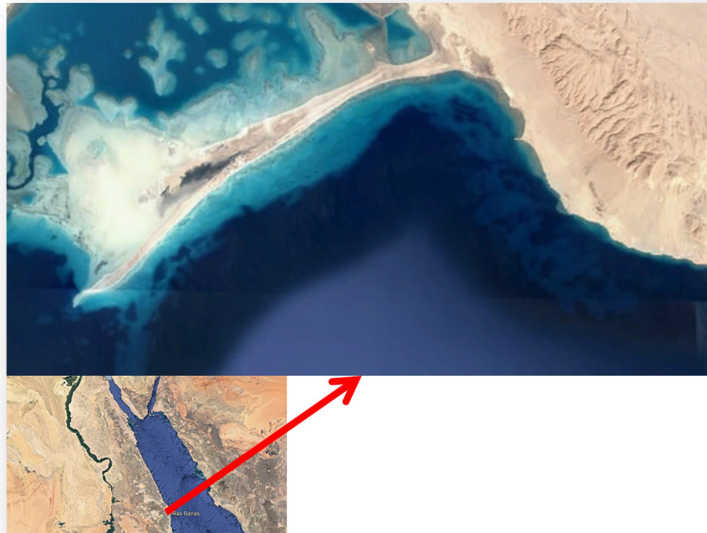


Figure 3, Ras Banas



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2.2 New technologies and /or equipment

ENHD has a complete set of modern and high-end surveying equipment/ technologies with continuous upgrading to fulfill the survey requirements and meet IHO related standards

2.2.1 New technologies

Recently ENHD has upgraded most of the software packages used in data gathering and processing also obtained a new package for ENC and paper chart compilation.

2.2.2 New Equipment

- Broadband - wideband high resolution shallow water multibeam echo sounder (0-500m shallow water).
- Digital Side Scan Sonar.
- ROV (Sea Rover) with medium/low depth capabilities.

2.2.3 New ships

Oceanographic ship with 3D seismic capabilities is under contracting.

2.2.4 Problems encountered

Egypt's got a dramatic long coastline on Mediterranean, Red Sea and around the Peninsula of Sinai in addition to its EEZs waters. Although Egypt started surveying and charting its territorial waters long ago, still a considerable portion of it needed to be resurveyed and charted according to the latest IHO standard.

3. New charts & updates:

3.1 ENCs

ENHD ENC catalogue has expanded; a consistent 25 reliable ENCs with different bands have been produced through the past 3 years.



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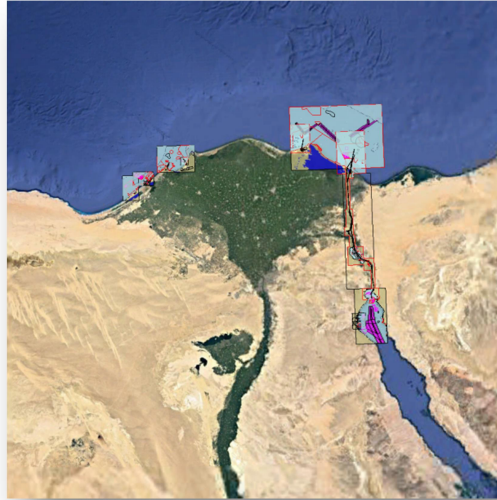


Figure 4, ENC distribution

Table 1, Usage bands

Band	Number of cells
Overview (1)	0
General (2)	1
Coastal (3)	1
Approach (4)	7
Harbor (5)	15
Berthing (6)	1
Total	25

3.2 ENC Distribution method

In order to share in common experience and reduce expenditure, and to ensure greatest possible standardization, consistency, reliability and availability of ENCs, and as a result of IHO encouragement for member state to distribute their ENCs through a RENC, ENHD has joined the Regional ENC Coordinating Centre (IC-ENC) as a response to the Worldwide Electronic Navigational Chart Database (WEND) principles of the IHO.

3.3 RNCs

ENHD doesn't produce RNCs.



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3.4 INT charts

ENHD proceeded to link The Egyptian national chart scheme to the International (INT) chart scheme of the region.

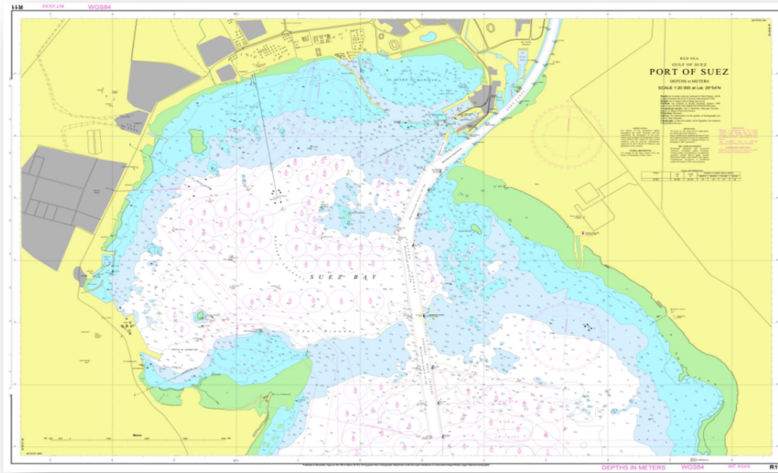


Figure 5, R11 chart

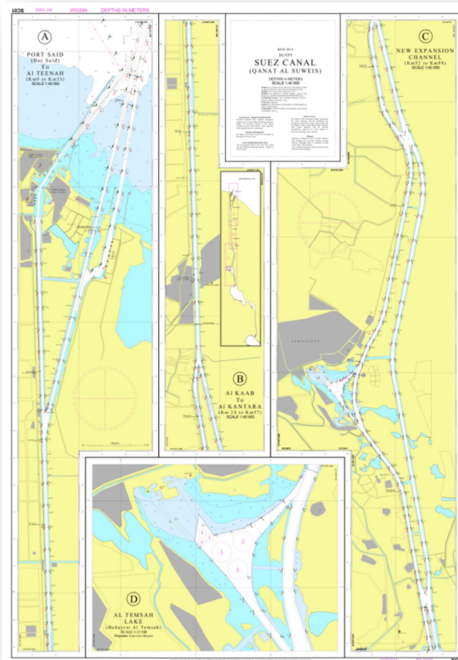


Figure 6, SC01chart



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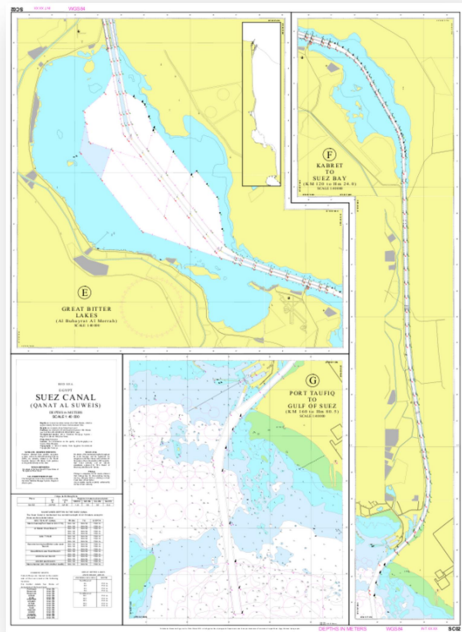


Figure 7, SC02 chart

3.5 National charts

Table 2 National paper charts catalogue

CHART NUMBER	CHART NAME	SCALE	PRODUCTION DATE
M10	EL ARISH PORT	1:2,500	1996
M11	ABU QIR - MAADIA	1:25,000	1999
M12	IDKU	1:50,000	2005
M13	IDKU (LNG)	1:20,000	2005
M14	ABU QIR PORT	1:15,000	2005
M15	MAADIA PORT	1:10,000	2006
M16	RASHID - EL ALAMIN	1:175,000	2007
M17	SUMID PORT	1:30,000	2007
M18	ALEXANDRIA PORT	1:10,000	2007
M19	DEKHIELA PORT	1:7,500	2007
M20	ALEXANDRIA - DEKHIELA	1:27,500	2008
M21	DUMIAT PORT	1:40,000	2008



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R1	RAS MUHAMED	1:20,000	1988
R2	NUWEBAA	1:7,500	1995
R3	NUWEBAA	1:2,500	1995
R4	SHARM ELSHEIKH	1:5,000	2000
R5	APPROACHES TO PORT GHALEB	1:12,500	2010
R6	PORT GHALEB	1:2,000	2010
R7	SHALATIN TO HALAIB	1:180,000	2010
R8	APPROACHES TO ABURAMAD	1:15,000	2012
R10	Abu Ramad	1:2,000	2013
R11	Southern approach to Suez Canal	1:20,000	2013
R12	Ain Elsokhna Port	1:25,000	2013
R13	Adabia to Ras Abueldarag	1:50,000	2013
R14	Gulf of Suez	1:150,000	2013
R15	Red Sea	1:1000,000	2014

3.6 Other charts, e.g. for pleasure craft

ENHD has produced a pleasure chart for Port Ghaleb resort, Red Sea, in 2010

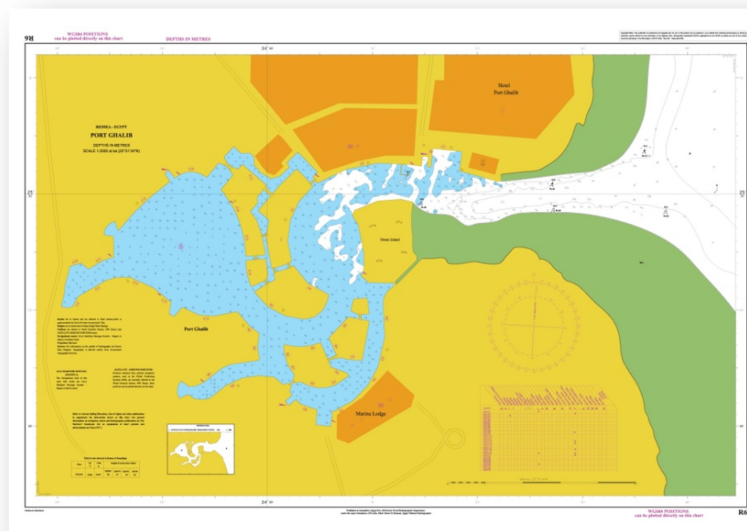


Figure 8, Port Ghaleb chart



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4. New publications & updates:

ENHD has done a great effort in compiling and producing the Guide to Egyptian Ports. It is in the production phase and will be released in the near future.

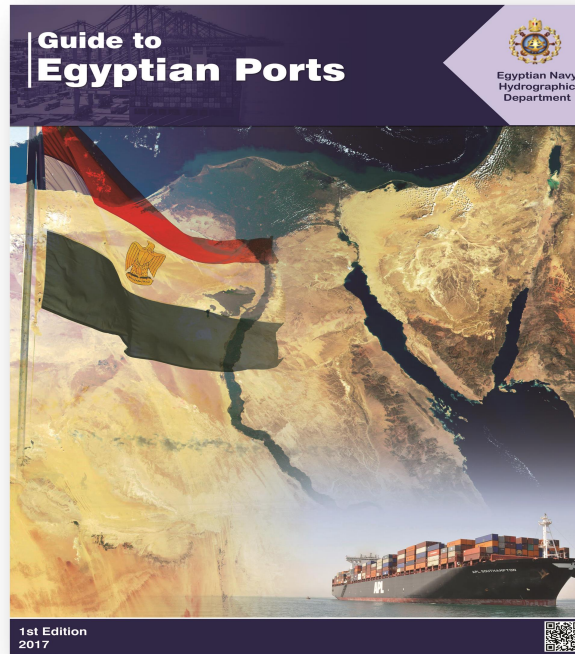


Figure 9, Guide to Egyptian Ports

5. MSI

5.1 Existing infrastructure for transmission

In compliance with Regulation 4 &9 of Chapter V of the International Convention on the Safety of Life at Sea (SOLAS), Egypt ensure timely dissemination of MSI by robust national Maritime Safety Information infrastructure through active 3 NAVTEX stations located at (Alexandria, Kosseir, and Ismailia) are transmitting MSI warnings in English on 518 KHz



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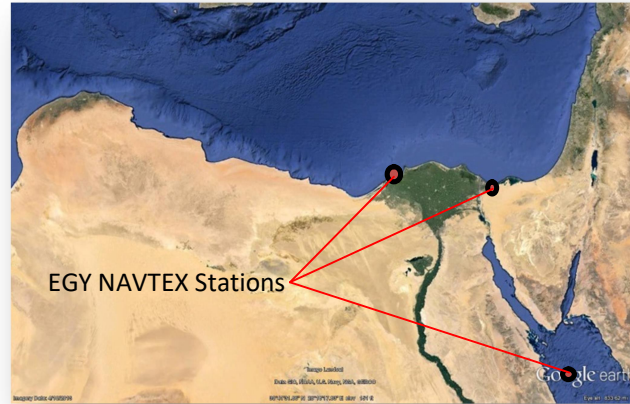


Figure10, Egyptian NAVTEX stations

ENHD has coordinated with Egyptian Maritime safety Authority (EMSA) to forward MSI directly to NAVAREA IX coordinator via E-Mail: hydro@enhd.gov.eg to ensure effective timely promulgation of MSI.

<i>KHz:</i>	<i>Call</i>	<i>Station Name:</i>	<i>Range nm:</i>	<i>Transmission Times-All UTC:</i>						<i>Area</i>
518.0	SU H	Alexandria	350	0210	0610	1010	1410	1810	2210	3
518.0	SU K	Kosseir	350	0330	0730	1130	1530	1930	2330	9
518.0	SU Z	Ismailia	400	0350	0750	1150	1550	1950	2350	9

5.2 Disseminated MSI

EMSA has broadcasted 283 MSI since March 2017 in Red Sea area.

6. C-55

C-55 has been provided to the IHO.

7. Capacity Building

Since last NIOHC 17 Egypt has not received any hydrographic or cartographic training

7.1 Needed training (2018-2019):

- Cat A Hydrography Programme (USM).
- MSI (training on establishment of MSI structure and basic MSI procedures).
- Advanced ENC Production.
- Multibeam Sonar Training Course.
- Technical aspects of maritime boundaries, baselines.



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7.2 HYDROGRAPHIC SURVEY CATEGORY B COURSE

Full Hydrographic Survey curriculum, including all basic and essential competencies of the Hydrographic Surveyor as defined by the FIG/IHO/ICA International Advisory Board on Standards of Competence for Hydrographic Surveyors for a Category B Course, has been submitted to the IHO. The course has been officially recognized on March 2017. Good cooperation between ENHD and AASTMT is in the progress to start the program soon.

ENHD will offer a HYDROGRAPHIC SURVEY CATEGORY B COURSE for MBSHC and NIOHC members under the umbrella of the Capacity Building project.

8. Oceanographic activities

In 2008 a joint project between ENHD and Ministry of Water Resources and Irrigation has established to install a network of tide gauges (pressure sensor) along the Egyptian coast, in both Mediterranean and Red Sea. The objective of this project is to measure the sea surface and sea rise. Recently in 2018 a new phase of this project has started by adding microwave tide gauge to increase the accuracy and availability of the measured data.



Figure 11, Tide gauge network



Figure 12, Microwave tide gauge recently installed along Egyptian coast



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9. Other activities

Satellite remote sensing plays an important role for marine safety, assessing, monitoring and managing shallow water area. In 2016 and 2017 ENHD studied deriving bathymetry from different satellite imagery (Landsat-8 and WorldView-2) to map shallow water in a GIS environment over three study sites using empirical methods (Principal Component Analysis, Artificial Neural Network, Multiple linear regression, Third Order Polynomial, Lyzenga, Sumpf,.....).

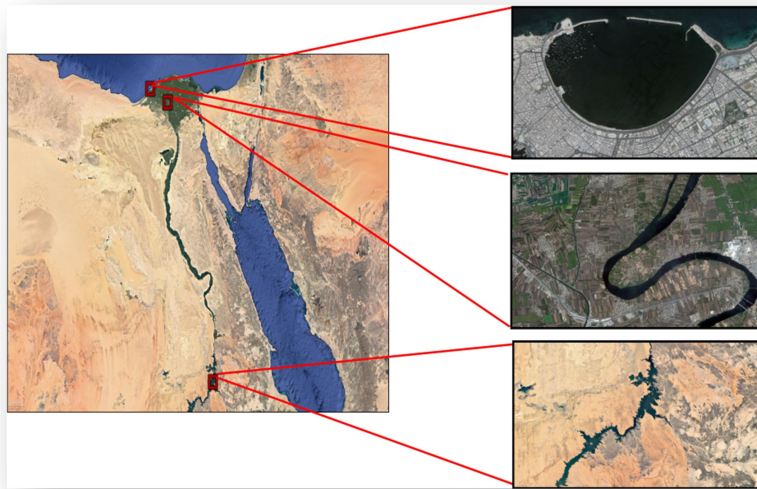


Figure13, SDB trail areas.

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