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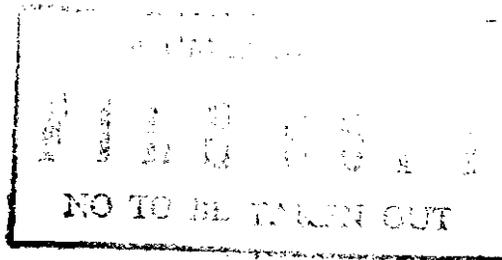


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DISSEMINATION OF INFORMATION ON
CHANGING CONDITIONS AFFECTING THE SAFETY OF NAVIGATION

Presented by the Government of the United States of America

^{1/} This document is submitted by the USA Government.

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By

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For many years, the U.S. Naval Oceanographic Office has published nautical charts and publications for the foreign waters of the world to ensure the safety of life and ships at sea and to assist in the safe movement of cargoes to the ports and terminals of the world. The maritime industries of the United States and many other countries not having such service have thus been supported.

This task has, however, grown in complexity, scope, and intensity as more nations engage in hydrographic surveying, as new electronic navigation systems evolve and require special charts and publications, as world port development expands at an increasing rate, and as ships are designed with greater size and speed demanding more accurate products.

It is not surprising that hydrographic offices must devote a considerable proportion of their effort in collecting and processing nautical information to keep abreast of changing conditions and to maintain these essential nautical products. The acquisition, rapid dissemination, and exchange of data about the changes taking place throughout the world are vital for the safe navigation of ships of all nations. The quality of nautical products is directly dependent on the effectiveness of this program.

The mariner entering port must be furnished with sufficient information to safely navigate his ship. The variables which influence the actual navigation of ships through inland waters to their loading and discharging berths depend on the size and state of development of each port area. Not all harbors of the world, for example, have the same effective systems of navigational aids to delineate channels and to mark dangers, efficient pilot service, organization for periodical harbor surveys, or advanced harbor traffic control systems. Information furnished the mariner should reflect actual conditions and be produced in an internationally standardized format. Establishment of navigational aid systems should be similarly standardized to simplify identification and use by the mariner.

Nautical information is generally correct at the time of publication. Since the forces of nature and the works of man cause constant change, certain of the information is obsolete even before the finished product is distributed and in use.

Therefore, a system of continuous correction is required to assure the reliability of nautical information and the essential factors affecting safe navigation. The method of dissemination is determined by the urgency of the corrective material. The failure of a major harbor light, the blocking of a channel by a wreck, or the discovery of a dangerous reef or shoal are broadcast as an emergency message via radio.

Information that is less urgent but of importance to navigation is published in weekly Notices to Mariners. This periodical is distributed free to all users of U.S. Naval Oceanographic Office products and provides concise, detailed directions for the proper maintenance of charts and publications. As corrections accumulate and as significant new survey or construction reports are received in sufficient quantity, a new corrected edition of the affected product is published. Descriptive data which cannot be conveniently shown on nautical charts are published in Light Lists, Tide Tables, Radio Aids and Weather Aids publications, and Sailing Directions. In addition to Notices to Mariners, corrective changes are issued periodically to maintain these publications.

The performance of this vital task in a timely and efficient manner requires reportorial assistance from both governmental and private port authorities. While a considerable amount of such information is required from a wide variety of official, semi-official, and private sources located throughout the world, there is a critical lack of needed information concerning the approaches and marine terminal facilities in newly-independent and developing countries.

As a maritime nation, the United States engages in important reciprocal trading activities with the nations of Africa. Table I shows the number of reported port calls made in Africa in 1964 by merchant ships of over 1,000 gross tons, United States and other, loading and unloading cargo for or from the United States. The need of ensuring the safe and

expeditious movement of these ships and cargoes is evident.

To determine the effectiveness of our nautical information collection program as related to the continent of Africa, the Notices to Mariners published by the U.S. Naval Oceanographic Office in 1965 were examined for source of information, subject matter, and geographic area affected. Tables II, III, and IV summarize this review.

It is of interest to note that of 7,606 Notice to Mariners paragraphs issued in 1965 only 216 or less than three percent affected charts and publications for the coasts and harbors of Africa, the second largest continent. Also, of 216 items, only 23 percent were from sources originating directly from African authorities; the balance were received indirectly from sources such as European hydrographic offices or reports from U.S. ships calling at African ports or from their company representatives.

While the statistics are not important in themselves, a more effective and inclusive system for the exchange of nautical information is desirable. This might be accomplished by the establishment of hydrographic offices in countries not having such service and by participation in international organizations such as the International Hydrographic Bureau.

During the 19th century, many maritime nations established hydrographic offices to conduct surveys and produce nautical charts and publications for the safe navigation of their navies and merchant fleets, but

a considerable lack of uniformity existed in the products of individual offices. Since the establishment of the International Hydrographic Bureau in 1921, hydrographic standards of the 40 member nations have become more uniform, a prompt system of mutual exchange of hydrographic information has been instituted, and opportunity for periodic consultations and discussions by world hydrographic experts afforded. Many differences in surveying techniques, procedures, form and symbolization, and methods of publishing data have been resolved. Information on all new developments in surveying and in chart construction and production is reported to all States-Members and is made available to all other maritime nations.

Many countries produce nautical charts and publications only for their own coasts and harbors. The U.S. Naval Oceanographic Office has several bilateral nautical chart reproduction agreements with several of these countries who are States-Members of the International Hydrographic Bureau. The agreements provide for reciprocal facsimile reproduction of each other's charts with minor modifications for sale purposes. In addition to economical production benefits, the program expeditiously provides the mariner with the best available charts.

In countries where the establishment of specialized hydrographic services are not economically feasible, the various maritime and port authorities can contribute substantially to general maritime safety by promptly forwarding dredging and survey reports, engineering drawings, and all pertinent nautical information to any country providing worldwide coverage

of nautical charts and publications. Great Britain, Germany, France, Japan, the Soviet Union, and the United States of America publish such products on a worldwide basis and engage in mutual nautical information exchange programs. Prompt dissemination to the world maritime community can thus be assured.

To emphasize the need for more rapid exchange and dissemination of current nautical information about the coasts and harbors of Africa, the following examples were arbitrarily selected from U.S. Naval Oceanographic Office products. While every effort is made to obtain amplifying details of such items, corrective data are often unavailable from areas where organized maritime or hydrographic services are non-existent.

"The approach channel was being dredged (1961) to permit vessels of 31-foot draft to enter."

"Depths of 6 feet less than charted were reported (1962) in the fairway."

"A 3½-fathom shoal was reported (1959) to lie in the channel about 1,200 yards east of -----Point."

"The light and whistle buoy marking -----Reef was reported missing in 1965."

"It was reported (1961) that a T-head pier was under construction at Point -----, and when completed, would accommodate a tanker 750 feet long and of 28-foot draft."

As the limitation of allowable ship draft to a harbor has considerable

influence on shipping and port economy, ship operators must allow margins of safety for optimum ship draft for each specific port. The currency and completeness of available hydrographic information are obvious factors in such determinations. It is, therefore, most advantageous for port authorities to ensure that accurate up-to-date hydrographic details concerning their ports and approaches receive prompt dissemination to the world maritime community.

TABLE I

AFRICA

UNITED ARAB REPUBLIC	<u>*1964</u>
Alexandria	460
Port Said	179
Suez	59
All Other U.A.R. Ports	6
LIBYA	
Banghazi	65
Tarabulus (Tripoli)	207
All Other Libya Ports	86
TUNISIA	
Banzert (Bizerte)	
Safaqis (Sfax)	38
Susah (Sousse)	13
Tunis	129
ALGERIA	
Alger (Algiers)	128
Oran	21
All Other Algeria Ports	44
SPANISH NORTH AFRICA	
Ceuta	5
MOROCCO	
Agadir	1
Casablanca	195
Safi	7
Tanger	57
All Other Morocco Ports	23
MAURITANIA	
Port Etienne	15

* Number of merchant ships of over 1,000 gross tons, United States flag and other, loading or unloading cargo for or from the United States. Data furnished by U.S. Maritime Administration.

TABLE I (Continued)

SENEGAL	
Dakar	79
GAMBIA	
Bathurst	12
PORTUGESE GUINEA	
All Portugese Guinea Ports	7
GUINEA	
Conakry	67
SIERRA LEONE	
Freetown	105
Pepel	1
LIBERIA	
Buchanan	81
LIBERIA	
Cape Palmas	1
Monrovia	190
All Other Liberia Ports	1
IVORY COAST	
Abidjan	171
All Other Ivory Coast Ports	7
GHANA	
Takoradi	186
Tema	160
TOGO	
Lome	39

TABLE I (Continued)

DAHOMY

Cotonou 33

NIGERIA

Apapa 79
 Burutu 29
 Lagos 160
 Port Harcourt 159

CAMEROON

Douala 111
 Kribi 2
 Victoria 43

EQUATORIAL GUINEA (SPANISH GUINEA)

Santa Isabel 5
 All Rio Muni Ports 9
 Sao Tome 12

GABON

Libreville 33
 Port Gentil 52

CONGO

Pointe Noire 94

DEMOCRATIC REPUBLIC OF THE CONGO

Boma 33
 Matadi 120

ANGOLA

Lobito 90
 Luanda 114
 All Other Angola Ports 5

TABLE I (Continued)

SOUTHWEST AFRICA	
Walvisbaai	61
All other Southwest Africa Ports	13
SOUTH AFRICA	
Cape Town	211
Durban	256
East London	160
Port Elizabeth	180
All Other South Africa Ports	2
MOZAMBIQUE	
Beira	183
Lourenco Marques	231
All Other Mozambique Ports	12
MALAGASY REPUBLIC (MADAGASCAR)	
Tamatave	17
All Other Madagascar Ports	13
TANZANIA	
Dar Es Salaam	152
Tanga	113
Zanzibar	28
All Other Tanzania Ports	11
KENYA	
Mombasa	170
SOMALI REPUBLIC	
Mogadiscio	1
FRENCH SOMALILAND	
Djibouti	245
ETHIOPIA	
Assab	71
Massaua	144

TABLE I (Continued)

SUDAN

Port Sudan

104

TABLE II

SUMMARY OF NOTICE TO MARINERS INFORMATION BY SOURCES

EUROPEAN SOURCES

Notice to Mariners, London	28
Notice to Mariners, Paris	50
Notice to Mariners, Lisbon	15
Notice to Mariners, Cadiz	7
Notice to Mariners, Hamburg	6
Notice to Mariners, Genoa	1
Notice to Mariners, Stavanger	1
British Admiralty Charts	12
French Charts	4
Spanish Charts	2
	<hr/> 126 - 58%

AFRICAN SOURCES

Notice to Mariners, Simonstown	13
Notice to Mariners, Lagos	21
Notice to Mariners, Alexandria	2
Notice to Mariners, Dakar	1
Nigerian Charts	5
South African Light Lists	7
	<hr/> 49 - 23%

U.S. SOURCES

Ship Reports	17
NAVBROCEANO	7
NAVOCEANO	11
Misc. Reports	6
	<hr/> 41 - 19%

TABLE III

SUMMARY OF NOTICE TO MARINERS INFORMATION BY SUBJECT

1. NAVIGATIONAL AIDS (Lights, buoys, beacons, radio beacons)	88
2. HARBOR WORKS (piers, quays, oil terminals, breakwaters, pipelines, facilities)	25
3. DANGERS TO NAVIGATION (shoals, wrecks, rocks, reefs, foul areas, drilling rigs)	32
4. HYDROGRAPHY (depths, channels, dredging, bathymetry)	44
5. LANDMARKS (radio towers, radar conspicuous objects, sig. stations)	19
6. ANCHORAGES (prohibited areas, moorings, etc.)	<u>8</u>
	216

TABLE IV

NUMBER OF U.S. NOTICE TO MARINERS - 1965 - AFFECTING SAFETY OF NAVIGATION
IN AFRICA BY COUNTRY

UNITED ARAB REPUBLIC	16
LIBYA	12
TUNISIA	12
ALGERIA	3
MOROCCO	16
SPANISH SAHARA	5
MAURITANIA	4
SENEGAL	9
GAMBIA	2
PORTUGESE GUINEA	8
GUINEA	1
SIERRA LEONE	2
LIBERIA	6
IVORY COAST	9
TOGO	1
DAHOMEY	1
NIGERIA	31
CAMEROON	0
RIO MUNI	0
GABON	3
CONGO (BRAZZAVILLE)	6
REPUBLIC OF CONGO	0
ANGOLA	6
SOUTHWEST AFRICA	4
SOUTH AFRICA	19
MOZAMBIQUE	1
TANZANIA	5
MALAGASY REPUBLIC	3
KENYA	2
SOMALI REPUBLIC	4
FRENCH SOMALILAND	1
SUDAN	3
ETHIOPIA	1
MISCELLANEOUS	8
	<hr/>
	216