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UNCLASSIFIED
DEPARTMENT OF STATE
AGENCY FOR INTERNATIONAL DEVELOPMENT

PROJECT PAPER

EGYPT: HYDROGRAPHIC SURVEY

UNCLASSIFIED

AGENCY FOR INTERNATIONAL DEVELOPMENT

PROJECT PAPER FACESHEET

1. TRANSACTION CODE

A ADD
 C CHANGE
 D DELETE

PP

2. DOCUMENT CODE
3

3. COUNTRY ENTITY

EGYPT

4. DOCUMENT REVISION NUMBER

5. PROJECT NUMBER (7 digits)

[263-0071]

6. BUREAU/OFFICE

A. SYMBOL
NE

B. CODE
[03]

7. PROJECT TITLE (Maximum 40 characters)

[HYDROGRAPHIC SURVEY]

8. ESTIMATED FY OF PROJECT COMPLETION

FY [79]

9. ESTIMATED DATE OF OBLIGATION

A. INITIAL FY [77]

B. QUARTER [4]

C. FINAL FY [77]

(Enter 1, 2, 3 or 4)

10. ESTIMATED COSTS (\$000 OR EQUIVALENT \$) -

A. FUNDING SOURCE	FIRST FY			LIFE OF PROJECT		
	D. GRANT	C. LOAN	G. TOTAL	E. GRANT	F. LOAN	H. TOTAL
AID APPROPRIATED TOTAL	8000		8000			8000
GRANT	8000		8000			8000
LOAN						
OTHER						
U.S.						
HOST COUNTRY		954	954			954
OTHER DONORS						
TOTALS	8000	954	8954			8954

11. PROPOSED BUDGET APPROPRIATED FUNDS (\$000)

A. APPROPRIATION	B. PRIMARY PURPOSE CODE	PRIMARY TECH. CODE		E. 1ST FY 77		H. 2ND FY		K. 3RD FY	
		C. GRANT	D. LOAN	F. GRANT	G. LOAN	I. GRANT	J. LOAN	L. GRANT	M. LOAN
(1) SA	900	900		8000					
(2)									
(3)									
(4)									
TOTALS				8000					

A. APPROPRIATION	N. 4TH FY		O. 5TH FY		LIFE OF PROJECT		12. IN-DEPTH EVALUATION SCHEDULED				
	I. GRANT	J. LOAN	K. GRANT	L. LOAN	M. GRANT	N. LOAN					
(1) SA					8000		<table border="1"> <tr> <td>MM</td> <td>YY</td> </tr> <tr> <td></td> <td></td> </tr> </table>	MM	YY		
MM	YY										
(2)											
(3)											
(4)											
TOTALS					8000						

13. DATA CHANGE INDICATOR. WERE CHANGES MADE IN THE PID FACESHEET DATA BLOCKS 12, 13, 14, OR 15 OR IN PRP FACESHEET DATA, BLOCK 12? IF YES, ATTACH CHANGED PID FACESHEET.

1 NO No PIO or PRP
 2 YES

14. ORIGINATING OFFICE CLEARANCE

SIGNATURE

Sally Benblatt
 SALLY BENBLATT

TITLE DIRECTOR, OFFICE OF CAPITAL DEVELOPMENT

BUREAU FOR NEAR EAST

(NR/CD)

DATE SIGNED

MM DD YY
09 02 77

15. DATE DOCUMENT RECEIVED IN AID/W OR FOR AID/W DOCUMENTS, DATE OF DISTRIBUTION

MM DD YY
09 02 77

HYDROGRAPHIC SURVEY

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ABBREVIATIONS

ARE	Arab Republic of Egypt
COMOCEANOUNIT	Commander of Oceanographic Unit
CONUS	Contiguous United States
DMA	Defence Mapping Agency
DWT	Deadweight Tonnage
GOF	Government of Egypt
IBRD	International Bank for Reconstruction and Development (World Bank)
LNM	Linear Nautical Miles
NAVAID	Navigation Aid
NAVOCEANO	Naval Oceanographic Office
OCEANOUNIT	Oceanographic Unit
PASA	Participating Agency Service Agreement
SURVOP	Survey Operations
USAID	U.S. Agency for International Development
USCG	U.S. Coast Guard
USN	U.S. Navy
VLCC	Very Large Crude Carrier

EGYPT: HYDROGRAPHIC SURVEY

SUMMARY AND RECOMMENDATION

1. Grantee: The Government of the Arab Republic of Egypt.
2. Grant Amount: \$8.0 million.
3. Executing Agency: The Ministry of Transportation, Communications and
Maritime Affairs.
4. Description of Project: A hydrographic survey of the approaches
for the Suez Canal and the southern terminus of the SUMED pipeline. The
result of the survey will be nautical charts of these areas which will be
produced by the Defense Mapping Agency.
5. Project Purpose: to increase the efficiency of the Suez Canal by
making the approaches to the Canal and the southern terminus of the
SUMED pipeline safer for world navigation.
6. USAID/Cairo View: USAID/Cairo recommends that the proposed grant be
authorized.
7. Statutory Criteria: All statutory criteria have been satisfied;
see Annex D.
8. Recommendation: Authorization of a Grant in the amount of \$8.0
million in accordance with the terms and conditions set forth in the
draft Grant Authorization included as Annex B.
9. Project Committee:
Chairman: Thomas R. Tifft
Engineer: Philip S. Lewis
Economist: James A. Norris
Program off: George D. Laudato
Attorney : James Phippard.

I. INTRODUCTION

- 1.01 The Government of the Arab Republic of Egypt (GOE) is presently engaged in a billion dollar project to widen and deepen the Suez Canal thus accommodating future increases in traffic and usage by modern deeper draft vessels. The existing nautical charts covering the north (Port Said) and south (Suez) entrances to the canal are woefully out of date and inaccurate - some sections being based on century-old data. Safe and efficient navigation to and from the canal requires accurate charts and effective navigational aids.
- 1.02 After several exchanges between the U.S. Naval Attache in Cairo and the then Commander and Chief of the Egyptian Navy, a formal request was received from the Defense Ministry and the Ministry of Maritime Transportation for the United States Navy (USN) to undertake a coastal hydrographic survey of the approaches to the Suez Canal and the SUMED pipeline terminals; with costs to be borne by A.I.D. This was followed by a direct discussion between Presidents Carter and Sadat during the latter's visit to Washington, D.C. in early April 1977. In late May/early June a USN/USGG (U.S. Coast Guard) team of five personnel visited Cairo, Alexandria and Port Said to pursue the study. The reports of the USN/USGG team, recommending that this survey be performed, form the technical basis of this paper. The formal request of the GOE for an A.I.D. grant for this survey is attached as Annex A.
- 1.03 The U.S. Government has provided support to Egypt in re-opening and enlarging the Suez Canal and in rehabilitating the Canal area. U.S. financial commitments, expended or planned, total over \$600 million, as detailed in Annex E. Included in this assistance to the Canal area is the preparation of a master plan for development of port facilities at Port Said. One of the alternate sites being studied for location of a new port is on the Mediterranean Sea immediately westerly from Port Said. Hydrographic survey coverage of this possible port site will aid in determining its feasibility and will provide base chart coverage if the location is selected for future port development.

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II. BACKGROUND

A. Canal Development

- 2.01 The Suez Canal ranks as one of the world's most important man-made waterways, saving 5000 nautical miles on the western Europe-Far East routes, and, before being closed during the 1967-1973 hostilities, was Egypt's second largest foreign exchange earner--after cotton.
- 2.02 On October, 1973, international negotiations bought to a close the prolonged conflict during which the 160-kilometer long canal remained closed to normal ship traffic. Ten ships had been intentionally sunk to block the channel. Land areas adjacent to the Canal were fortified and mined, and the Canal itself was strewn with quantities of potentially-hazardous unexploded ordnance items. In April 1974, the U.S. first agreed to provide assistance in the clearance of the Suez Canal. Separate arrangements for assistance in clearing mines were also made between Egypt and the United Kingdom and France. The overall operation was coordinated by the Commander of U.S. Task Force 65. The Canal was formally re-opened on June 5, 1975.
- 2.03 Although the Canal traffic quickly approached pre-war levels, the percentage of oil tanker traffic declined significantly. This decline was caused by the limiting depths of the Canal. Tankers in world trade began increasing in the 1960's: In 1964, tankers over 50,000 dwt carried only 16% of total world traffic; by 1966, they carried more than 40%. The first tanker of over 100,000 dwt was built in 1965; by 1975, tankers over 125,000 dwt accounted for 42% of world tonnage. Most of the tankers built during Canal closure cannot use it when fully loaded.
- 2.04 Shortly after re-opening, the Suez Canal Authority initiated a project to deepen and widen the Canal to improve its operational efficiency. The first phase deepening will allow ships drawing up to 53 feet (16.1 meters) to use it. Such vessels, of up to 150,000 dwt laden and about 300,000 dwt in ballast, constitute about 90% of tanker tonnage currently in use of relevant routes. The SCA has plans for further deepening to 67 feet (20.4 meters) at some time after 1985, if oil traffic patterns require it. Widening of the Canal will be conducted simultaneously to an ultimate average width of over 1000 feet. A bypass canal; existing to the east of Port Said, will also be constructed, thus avoiding ship congestion in the port area. This \$1.0 billion expansion project is being syndicated by the World Bank, which plans to raise about \$676 million for estimated foreign exchange costs. Major contributors include the Japanese, several Arab funds, and the World Bank.

- 2.05 Canal area development plans also include rehabilitation and expansion of the Canal cities and their ports, establishment of free trade and industrial zones, and construction of tunnels under the Canal.

B. SUMED

- 2.06 In an attempt to attract additional petroleum revenues before (and probably after, for extremely large VLCC(s)) Canal expansion is completed, the SUMED (Suez and Mediterranean) pipeline concept has been developed. This is a 42 inch pipeline between Ain Sukhna in the northwest area of the Gulf of Suez and Sidi Kreir, 20 kilometers southwest of Alexandria. Offshore docking facilities for tankers are available and being enlarged at both terminals. The concept is that large oil tankers will proceed up the Gulf of Suez to Ain Sukhna, pump off sufficient oil to reduce their draft to allow transit of the Canal, transit the Canal and proceed to Sidi Kreir, take oil back on, and proceed to their destination. This will eliminate the need for the extremely long and costly transit around the Cape of Good Hope.

III. THE PROJECT

- 3.01 The purpose of this project to increase the efficiency of the Suez Canal by making the approaches to the Canal and the Southern terminus to the SUMED pipeline safer to world navigation. The economic importance of the Canal is described in Section VI of this paper. As Egypt expands the operation of the Canal, safe navigation of the areas covered under this project become increasingly more important to Egypt.
- 3.02 The project will gather hydrographic survey data required to permit the production of accurate nautical charts covering the approaches to the Suez Canal and the southern terminus of the SUMED pipeline. (The Northern terminus of the pipeline is accurately covered by existing charts.) The principle desired output -- new nautical charts - will be prepared by the Defense Mapping Agency approximately six months after receipt of consolidated survey data. This chart preparation will be accomplished, without cost to this project, as a service to all mariners.
- 3.03 A secondary output will be an evaluation of the adequacy of existing navigational aids (NAVAIDS) and recommendations on their improvements. This will be provided to the GOE for this overall effort to increase the safety and efficiency of the Canal.
- 3.04 Finally, the project will also provide training in modern hydrographic survey methods to Egyptians specialists and furnish a modest amount of equipment which will facilitate future mapping operations by Egyptian marine agencies. Such mapping activity will serve to maintain the accuracy of the new nautical charts as natural and/or man-made changes in underwater geography occur.
- 3.05 The principal assumption upon which this project is based is that better charts will allow safer and more efficient navigation of the increasing travelled area to be covered by this project. It is not the only aid to safer and more efficient navigation however in the Canal Zone Area. The GOE is undertaking and plans to undertake a series of steps, including additional fixed navigation aids, automated piloting systems, etc., to increase both the efficiency and safety of the operation of the Suez Canal.

IV. TECHNICAL ANALYSIS

A. Geodesy

- 4.01 The first step in hydrographic surveying is the establishment of accurate positions on the earth's surface where precision electronic navigation equipment (navaid sites) will be placed. During the course of hydrographic operations these navaid sites will emit electronic signals to the survey vessels, thereby enabling their precise positioning. The geodetic operations will precede the arrival of the ship, thereby permitting optimum use of ship and boat time. Annexes F and G depict the approximate location in Egypt where navaid site positioning will be required. The basic means of positioning the sites in Egypt will employ the use of the geoceiver. The geoceiver provides a position based on the "World Geodetic Datum - 1972" from data received from five polar-orbiting navigational satellites. Conventional survey equipment; e.g., transits, levels, electrotapes, etc., will be available and utilized as required.

B. Hydrography

- 4.02 Ship. The USNS HARKNESS will be the primary platform engaged in the Egyptian surveys. HARKNESS is a white-hulled, coastal hydrographic survey ship operated and maintained by the USN Military Sealift Command and manned by civilian crew. Naval Oceanographic Unit Five (OCEANUNIT 5), a military unit, is permanently embarked aboard HARKNESS for the purpose of conducting survey operations. The surveys are conducted by the ship and four hydrographic survey launches utilizing the precise electronic navigation system for the purpose of accurate horizontal fixing during the course of operations: As noted above, these systems require establishment of shore-based transmitter sites, generally transported and resupplied from the ship by helicopter carried on board, which are manned by supporting personnel billeted at the sites. These sites are shifted as required to accommodate changes in operating areas.
- 4.03 Survey: The conduct of hydrographic surveys by HARKNESS will include:
- (1) Placement of electronic navigation positioning equipment, personnel, and supporting items in the sites previously selected and surveyed by the geodetic team.
 - (2) Calibration and recalibration of the electronic navaid equipment will be required initially and during the course of survey operations.
 - (3) Tide gages will be installed and operations maintained intermittently by collection of recorded data. Observations of the rise and fall of the tide will be made for the purpose

- of correcting soundings to a common datum.
- (4) The actual hydrography or measurement of water depth by the ship and the survey launches will be conducted. The entire water area specified will be closely-sounded by running regular, evenly-spaced lines of sounding, and rigorous examination of the soundings will be made during the course of the survey to ensure that no irregularities in depth are overlooked and that, when such are found, the localities in which they occur are closely examined by taking additional soundings.
 - (5) The position of, and least depth over, every shoal, including submerged reefs, rocks, banks, wrecks and other obstructions to safe navigation, will be found and clearly recorded on the chart.
 - (6) The positions of breakers, tide-rips, eddies, weed, fishing stakes and similar objects of interest and importance to the navigator will be fixed and shown on the chart. The survey will also show in their correct positions all light-vessels, buoys, and other navigational marks, and the characteristics of these will be fully investigated.
 - (7) The nature of the sea bottom will be ascertained at frequent and regular intervals over the water area, especially in depths where vessels may anchor, and samples of the bottom should be secured for the advancement of our knowledge of the sea-bed.
 - (8) Measurements of tidal streams and subsurface currents will be made at various points of the survey in order that this information may be available to the mariner. Sufficient observations will be made to enable the results to be analyzed and processed for inclusion in the appropriate publications.
 - (9) In support of the foregoing efforts, the sidescan sonar will be employed in areas suspect of containing submerged hazards in surface navigation. Scanning operations will normally be conducted simultaneous to hydrographic surveys but are not restricted to that mode. Specific areas to be scanned will be indicated in the specifications and also ascertained during the course of survey in judgment by operating hydrographers. The requirements are estimated to exist over approximately 35% of the survey area.
 - (10) All information which may be of use in the compilation and correction of Sailing Directions will be collected during the course of the survey. This information will include a

general description of the coast and offlying islands and dangers, directions for entering and leaving harbors, full descriptions of lights and other aids to navigation, and details of the facilities offered to shipping by ports.

G. Post Survey Analysis

- 4.04 The post survey analysis of the data collected will be accomplished both in the field aboard ship and at the Oceanographic Office. It is an overall check and update, as required, of the data collected and prior to final release to Defense Mapping Agency (DMA), or others, for chart compilation and production. The product of the hydrographic survey is the "smooth sheet". (The "smooth sheet" portrays a part of the earth's surface on a flat sheet of paper, and indicates by means of soundings, contours, and spot heights the various irregularities in the surface below the sea. It also indicates the positions of all objects which will be useful to the mariner who must establish his position.) Attempt is normally made to conduct as much post survey analysis as is possible in the field prior to transmitting raw survey data and smooth sheets back to the Oceanographic Office.

D. End-Product

- 4.05 The revised/improved and new nautical charts are the tangible returns that are the result of this project's hydrographic surveys. These charts will be prepared and promulgated by the Defense Mapping Agency approximately six months after receipt of the smooth sheets. At the request or with the concurrence of the GOE, copies of the smooth sheets will be provided to other maritime nations for use in nautical chart production. Follow-on maintenance-update of the revised and new charts will be accomplished by DMA as canal approach development progresses and is concluded. Modifications that impact the safety of the mariner will be incorporated on the existing charts or new charts will be compiled and published.

E. Training Component

- 4.06 On-the-job training of two types will be extended to Egyptian personnel during the course of project activities.
- (1) The training of Egyptian personnel who are already familiar with hydrographic surveying but may not be familiar with equipment and procedure employed by the USN Oceanographic Office. This training would not be extensive but would integrate Egyptian personnel as contributing functional members of the project.
 - (2) Training for Egyptian personnel who have had no specific hydrographic background and require full orientation and training in survey procedures.

(There is no separate identifiable cost for this type of training as the survey vessel will be fully staffed and Egyptian personnel will be integrated into the activities.)

F. Hydrographic Equipment

- 4.07 The Ports and Lighthouses Administration is to be provided with a relatively small amount of equipment to upgrade Egyptian survey capabilities. Determination of exact equipment needs will be made during the survey by the American hydrographic team. Items expected to be included are: commercially-available echo sounders, side scan sonar sets, recorders, graphing paper, simplified radio nav aids, repair kits and spares. Equipment is to be obtained by the Ports and Lighthouses Administration and to be made available to organizations which perform surveys for the Administration. Future uses are expected to include surveying of Suez Bay, port channels, and port approaches.

G. Cost Estimate

- 4.08 Detailed Hydrographic Survey cost estimates, prepared by the Naval Oceanographic Office, were developed using Fiscal Year 1978 costing factors adjusted for area costs where necessary. Costs cover the entire US Navy contribution to these surveys with the exception of any costs resulting from survey operations extending beyond one year. Most costs can be pro-rated on a time basis although there is a "one-time cost" of conducting geodetic operations in the early part of the Survey period. All costs indicated below are for normal operations. Training costs have been estimated at \$186 thousand primarily for training of Egyptian nationals in the United States in hydrographic engineering. A consistency of 10 percent for both dollars and pounds has been provided.

TABLE 1

<u>ITEM</u>	<u>COST ESTIMATE</u>		<u>TOTAL</u>
	(US \$ 000)	(EXPRESSED) (IN US \$)	
	<u>FOREIGN EXCHANGE</u>	<u>EGYPTIAN POUNDS</u>	
(a) Ship Operations	3,614	716	4,330
Labor	(1,846)		-
Other ^{1/}	(1,768)		-
(b) Helicopter	203		203
Personnel	(90)		
Operations	(113)		
(c) Oceanographic Unit and Navaid's Support	1,198	5	1,203
(d) Naval Oceanographic Office	1,576	46	1,618
Salaries	(832)		
Travel	(150)		
Supplies	(192)		
Support	(19)		
Other	<u>(379)</u>		
Total Hydrographic Survey	6,587	767	7,354
Hydrographic Equipment	500	-	500
Training	186	100	286
Contingency	<u>727</u>	<u>87</u>	<u>814</u>
Project Cost	8,000 =====	854 ===	8,954 =====

^{1/} Includes fuel, subsistence, consumables, port expenses, equipage, maintenance and repair.

V. ENVIRONMENTAL ASSESSMENT

A. Primary

- 5.01 The actual performance of the hydrographic survey as herein described will, in itself, have no measurable effect on the environment. Survey ship and boat operations will be conducted in areas presently being heavily used by international maritime traffic either transiting the Suez Canal or calling at the Port of Alexandria or Canal ports. During all operations in the port areas and approaches, and while in port, shipboard activities which might have detrimental environmental effects, such as discharge of liquid and solid wastes, fuel oils, etc., will be conducted under the USN regulations governing such activities in coastal waters and ports. Under experienced leadership and with precise navigational control, the performance of the survey, even though in heavily travelled sea lanes, is not expected to increase the hazard of ship collision.
- 5.02 The principal survey activity, hydrography or measurement of water depth, will have no effect on marine or seabed life, being accomplished by sonar or echo-sounding equipment. Bottom sampling to determine the nature of the seabed, particularly in areas where vessels may anchor, will have no appreciable effect on the marine environment as a whole. All instrumentation, such as tide gauges, current meters, etc., will be removed upon completion of the survey.

B. Secondary

- 5.03 The accurate nautical charts resulting from the survey, together with one expected improvements in navigational aids following the recommendations offered, will result in improved navigation of vessels in the Suez Canal approaches, thus lessening the probability of ship groundings and collisions and collision with oil drilling platforms in the Gulf of Suez. As such collisions are inevitably accompanied by fuel and/or cargo oil spillages, with attendant damage to or destruction of marine or coastal flora and fauna, the availability and use of the new charts will afford a greater degree of environmental protection than presently obtains.
- 5.04 The information and data gathered during the course of the survey on tides, water depths, seabed materials, tidal streams and currents, shoal and reef locations, etc., will provide a valuable data base for use in addressing a number of environmental problems related to improving the Suez Canal approach channels, new port development, and Port Said sewage disposal methods. Augmented by additional investigations, the survey information will assist in solving problems of beach erosion, sediment transport, channel dredging and spoil disposal, and ocean disposal of water-borne wastes from the city of Port Said.

VI. FINANCIAL ANALYSIS

- 6.01 The Ports and Lighthouses Administration of the Ministry of Transportation, Communications and Maritime Transport is responsible for hydrographic surveys and for the placement and maintenance of navigational aids, said services and functions being performed in the public interest and not directly revenue-generating. Therefore, no financial assessment was made of the implementing agency.
- 6.02 The total cost of the project is estimated at \$8.0 million in foreign exchange and \$954,000 in Egyptian pounds. AID's grant will finance the FX costs; the Ports and Lighthouses Administration will finance the Egyptian pounds costs from its operating budget.

VII. ECONOMIC

- 7.01 There are two principal methods for valuating the economic benefits of this study. Both indicate substantial benefits can be expected to accrue.
- 7.02 One method is to consider this project as an integral part of the planned Suez Canal expansion project. This method should consider all benefits attributable to the expansion together with all expansion project costs plus the costs of the survey project and the anticipated costs of improved navigational aids. The total costs (dollar and pounds) of the survey is roughly \$9.0 million; navaid costs are approximated at \$1.0 million. As total expansion project costs are estimated as \$1,002.9 million, the added survey/navaid costs represent about one percent of this total and can be judged to have no appreciable effect on the economic analysis prepared by the IBRD relative to the expansion project.
- 7.03 The World Bank has estimated that the overall economic rate of return of the expansion project is 31 percent, based on global savings in transport costs. The economic rate of return to Egypt from increased revenues (at the present level of Canal tariffs) is 15 percent. Sensitivity tests indicate that a 25 percent project cost increase would lower the rate of return to Egypt to 12 percent, or a five-year delay in recovery of the tanker traffic would lower it to 13 percent. The combined cost increase and delay would reduce the return to Egypt to about 10 percent.
- 7.04 The global savings in shipping costs from the project are forecast at \$125 million in 1980 and over \$550 million in 1985, of which almost 85 percent will be in oil traffic. At present tariff levels, Egypt will recoup about half the benefits flowing from the project in 1980, and about 33 percent in 1985. The project will provide a major increase in Egypt's foreign exchange earnings, of which the Canal is Egypt's second biggest source. Even with no increase in tariffs, the total net incremental foreign exchange flow (that is, total incremental revenues less incremental foreign debt service payments) between 1976 and 1985 will be about \$650 million. By 1985, annual gross Canal revenues, with no tariff increases, would be about \$637 million, and could be much greater if a revised rate structure were put into effect.
- 7.05 Another method of evaluating economic return is to value the reduction in risk of a ship collision or grounding. Benefits would include savings from foregone costs of a collision, including saved costs of repairs to ships, lost cargo, medical care for injured crewmen, and if the ship were an oil tanker, costs of the spill. As an indication of the magnitude of such savings, we can

Take as an example a 280,000 dwt oil tanker; cost of the ship is approximately \$40 million and value of cargo at \$13 per barrel is approximately \$36.4 million. Even a smaller 50,000 dwt laden tanker is expensive: ship cost is approximately \$12.5 million and value of cargo is approximately \$6.5 million. Costs of an oil spill also run into the millions: costs of containing the spill must be added to costs of damage to the environment. It is clear that economic benefits could be substantial. It is not practical to try to calculate a precise valuation of such benefits because the probability of a collision cannot be determined with a firm degree of accuracy. However, it is obvious that the probability of a collision will increase as the approaches to the Canal become more congested. Total traffic is expected to increase by over 90 percent in tonnage between 1977 and 1985, and the total number of ships from about 17,000 to about 24,500, an increase of 44 percent.

VIII. SOCIAL ANALYSIS

- 8.01 It is not possible to analyze the social costs and benefits directly attributable to this project activity. The inputs and outputs are discreet and do not directly impact on the lives of a significant number of Egyptians. Accepting the assumption that the outputs of this project will lead to a more efficiently and safely operated Suez Canal, it is possible to look at the project purpose and analyze the overall Egyptian effort to increase efficiency and safety in the Canal Zone.
- 8.02 Egypt is critically short of badly needed foreign exchange to finance its overall economic development program. The Suez Canal represents one of the largest potential foreign exchange earnings which Egypt has. The prospects for increased earning of the Canal figures into Egypt's medium and long term financial planning as a source of foreign exchange to finance its economic development. As such, all the component pieces to the overall Suez Canal improvement and expansion program will indirectly impact on Egypt's ability to finance its development. It can, therefore, safely be assumed that the medium and long term benefits of this project will affect the rate of this development and will impact on the majority of people in Egypt.
- 8.03 Another, and perhaps more subtle concern, is the non-economic consideration of the increased safety which will result from the project. The GOE believes that there is a moral imperative which dictates that everything possible be done to protect lives and property involved with ships transitting the Canal. Its overall efforts to increase the safety in the Canal area have been motivated as much by this concern as it has by the obvious economic benefit which accrues to Egypt by a more safely operated Canal.
- 8.04 Role of Women. Analysis of the present proposed hydrographic survey project indicates that it will have neither a negative nor positive impact on women in Egypt.

IX. PROJECT IMPLEMENTATION

A. Implementing Agency

- 9.01 The Ministry of Transportation, Communications and Maritime Transport is the responsible Ministry of the Egyptian Government for this project. Within the Ministry, the Maritime Transport Sub-Ministry is concerned with Maritime Affairs, and its Ports and Lighthouses Administration's Departments of Marine and Lighthouses Affairs are responsible for, respectively, hydrographic surveys and navigational aids. (See Annex H for organization chart and functions.) The Ports and Lighthouses Administration, to carry out its responsibilities for hydrographic surveys, cooperates with the Egyptian Navy which has a larger hydrographic staff; some of these officers will join the survey effort. In the case of navigational aids, the Ports and Lighthouses Administration is responsible for placing, installing and maintaining navigational aids on the coasts and in ports.

B. Implementation Plan

- 9.02 Hydrographic Survey: The services of the U.S. Naval Oceanographic Office will be utilized under a Participating Agency Service Agreement (PASA) for performance of the hydrographic survey. See PIO/T, Annex J. While the U.S. Naval Oceanographic Office is not necessarily uniquely qualified to perform the services described in this project paper, i.e., some commercial firm could conceivably do the job as well, it does have a demonstrated and internationally recognized capability in this field and its nautical charting operations are accepted and admired both in Egypt and worldwide. For this reason plus the very positive experience the GOE has had with the USN during the Canal clearance, the GOE has specifically requested that the USN be the implementing agent. We believe that demonstrating effective and timely responsiveness on this project by use of the USN will enhance political relationships between the USG and GOE. The implementation of survey operations will be as follows:
- 9.03 Geodesy: A team of five surveyors will proceed to Egypt in September/October 1977. Their initial task will be to demonstrate the geociever function and conclude operational procedures to concerned Egyptian counterparts. The first geodetic surveys will be conducted in the Port Said area. Required surveys in the Gulf of Suez will be deferred until after arrival of the ship and be conducted during the period of hydrographic surveying off Port Said. Technical survey specifications will be prepared and provided to all concerned prior to departure of the team from the United States.

- 9.04 Hydrography: HARKNESS will depart the U.S. in early November 1977 embarked with OCEANUNIT 5, a Helicopter Detachment, and Navigation Aid Support Unit personnel and equipment. The ship will then proceed to Alexandria. It is envisioned that the port stay in Alexandria will be for about five days. Initial liaison will be established with Egyptian Hydrographic Office personnel counterparts and other interested parties in the project. The ship will then proceed to the Port Said area and commence coastal hydrographic survey operations. Normal operating periods will be 21 days on survey and 5 days in port for replenishment. Trips to and from the Port Said survey area and Alexandria will be through the North SUMED transit lane during which time exploratory survey procedures will be maintained on a routine basis. It is presently estimated that the Port Said area work will take approximately six months, after which time HARKNESS will proceed to the Gulf of Suez and commence operations. Surveys in the Gulf of Suez will also require about six months.
- 9.05 Post Survey Analysis: Post analysis of the Egyptian project hydrographic survey data will be conducted in accordance with standard procedures. Every effort will be made to make the data, smooth sheets, available from any one area, e.g., Port Said, no later than two months following the conclusion of operations. Copies of sheets in progress or those of particular interest will be made available as required by Egypt or A.I.D. The feasibility of having a post analysis office in Alexandria may be considered. Upon completion of the data processing, all necessary information will be provided to the Defense Mapping Agency which under existing USG procedures will produce Nautical Charts, making them available to world shipping agencies. This will take approximately 6 to 9 months.

C. Schedule

- 9.06 Survey implementation will be carried out in accordance with the detailed schedule set forth in Annex F. The milestone dates of that schedule are as follows:

Date

15 Sep. - 1 Nov. 77	Start of Activities
9 Dec. 77	Start Survey of Port Said Areas
12 May 78	Complete Survey of Port Said Areas
23 May 78	Start Survey of Gulf of Suez
Dec. 78	Complete Survey of Gulf of Suez
Feb. 79	Complete Data Processing and Provide to GOE and Defense Mapping Agency
Aug. - Nov.79	Nautical Charts Are Available

D. Survey Equipment Procurement

- 9.07 Hydrographic survey equipment, to be recommended by the Naval Oceanographic Office, will be purchased by the Ports and Lighthouses Administration in accordance with applicable A.I.D. procurement guidelines. Payments to U.S. suppliers will be made by Letters of Credit under Letter(s) of Commitment. Procurement of equipment is expected to begin in early 1978 and be completed by mid 1979.

E. Terminal Dates

- 9.08 The terminal date for requesting the opening of Letters of Commitment or similar obligating documents (TDL) will be December 31, 1978. The terminal date for disbursements (TDD) will be December 31, 1979.

F. Project Reporting, Monitoring and Evaluation

1. Reporting

- 9.09 The progress of and accomplishments resulting from the survey will be monitored and measured in reports issued by the Commander of OCEANUNIT 5 and the Naval Oceanographic Office. COMOCEANUNIT 5 will issue brief weekly message situation reports, a comprehensive report every summer period (approximately every 26 days), a final report at the end of the Mediterranean Sea/Port Said phase and a final report on conclusion of the Gulf of Suez phase. Naval Oceanographic Office will issue monthly reports addressing the OCEANUNIT 5 reports and the status of final data completion and release, and also compile and provide the final project report. Aside from operational procedures, problems and details, these reports will address the following information which will permit survey progress evaluation:
- 9.10 a. Linear Nautical Miles: The quantitative means of measuring survey progress is through identification of linear nautical miles (LNM) surveyed. Hydrographic surveys are estimated by: approximately the LNM required to satisfy requirements in any one area; assessing the amount of ship versus survey launch area; and dividing by anticipated ship and launch LNM per month.
- 9.11 b. Smooth Sheets: Survey "smooth sheets" are the final product or results of a hydrographic survey. Smooth sheets are not an item that may easily be quantified. Sheet size, scale and orientation vary in accordance with operational considerations and dictates. Indices of smooth sheets will be provided and related progress addressed in reports. Smooth sheets are items that are turned over to the Defense Mapping

Agency for use in construction of the published nautical chart. It is anticipated that mylar photographic copies of smooth sheets will be the items provided Egypt reflecting the results of survey operations.

2. Monitoring

- 9.12 Monitoring of the project will be the responsibility of USAID/Cairo; assistance will be available from U.S. Naval Attache stationed in Egypt. Frequent joint inspections with representatives of the Ministry of Marine Transport will be made of survey operations and all reporting will be reviewed.

3. Evaluation

- 9.13 USAID does not plan a final evaluation of the purpose level impact of this project. The assumption that more accurate nautical charts will lead to more efficient and safer operation of the Canal is based on significant world-wide nautical experience.
- 9.14 Other than the monitoring of outputs described in paragraphs 9.04 through 9.12, USAID may briefly survey the capacity of the GOE to undertake hydrographic survey work six months to one year after completion of this project. If a brief survey of this type is undertaken, USAID would finance such a survey with funds already available for such activities.

X. RECOMMENDATION, CONDITIONS AND COVENANTS

A. Recommendation

10.01 Subject to the conditions and covenants listed below, we recommend that A.I.D. authorize a Grant to the Government of Egypt in the amount of \$8.0 million to finance a hydrographic survey of the approaches to the Suez Canal and the southern terminus of the SUMED pipeline.

B. Conditions Precedent to Disbursement

10.02 Prior to the first disbursement or the issuance of any funding documentation (PASA, Letter of Commitment) under the Grant, the GOE shall furnish to A.I.D. in form and substance satisfactory to A.I.D.:

- a) The names of the persons who will act as the representatives of the GOE, together with evidence of their authority and the specimen signatures of each; and
- b) Such other information and documents as A.I.D. may reasonably request.

C. Covenants

10.03 The GOE will be required to covenant:

a) Execution of the Project

- i) to cause the project to be carried out in conformance with the plans, schedules and other arrangements, and with modifications therein approved by A.I.D, pursuant to the agreement.
- ii) to carry out its obligations under the project with due diligence and efficiency, and in conformity with sound financial and administrative practices.
- iii) to submit for A.I.D. approval prior to implementation, issuance or execution, all plans, specifications, schedules, bid documents, documents concerning solicitation of proposals relating to eligible items, contracts, and all modifications to these documents.
- iv) That hydrographic survey work will be performed on a continual basis for the purpose of upgrading nautical charts of Egyptian coastal waterways and ports.

b) Funds and Other Resources to be Provided

- i) to make available on a timely basis all Egyptian currency and any foreign currency in addition to the Grant, for the punctual and effective carrying out of the project.
- ii) to establish an imprest fund for those Egyptian pound costs which are directly related to survey and ship operations of the USN ships, but not to the costs associated with GOE crewmen, surveyors and trainee salaries. The capitalization of the fund will be mutually agreed to by the GOE and USG and will be at a bank in Alexandria under the control of the United States Consul General, for the purchase of Egyptian services and commodities needed for project implementation.

c) Continuing Consultation

- i) to cooperate with A.I.D. to assure that the purpose of the Grant will be accomplished.

d) Navigational Charts

- i) to assist in disseminating the navigational charts resulting from the survey to users of the Suez Canal.

e) Training

- i) to prepare a plan for the training of Egyptian nationals in hydrographic engineering, including marine environment, applied oceanography and oceanographic data processing.

Mr. Donald S. Brown
Aid Director
U.S.A. Embassy
Cairo.

Cairo, 4 Sept. 1977

Dear Mr. Brown,

The Government of the Arab Republic of Egypt has undertaken Phase I of its new Suez Canal Expansion Program. The expansion will permit the passage of modern ships with drafts up to 53 feet. This will, of course, require greater navigational precision.

We wish to upgrade the existing navigational/^{charts} of the Northern and Southern approaches to the Canal, as well as those of the Southern Terminus of the SUMED Pipeline. Doing so will require techniques and equipment not available in Egypt, and imply foreign exchange expenditures of at least \$8 million.

For this purpose we request \$8 million in grant assistance from ~~the~~ AID. The Government of the Arab Republic of Egypt will provide the local resources to carry out this project. These are estimated at LE 537,000. We request the assistance of the U.S. Navy in performing the hydrographic survey and, as a result of training received, we expect to conduct smaller surveys for which survey and equipment will be needed by the Ports and Lighthouses Administration of the Sub-ministry of Maritime Transport.

We will appreciate your cooperation in giving this request favourable consideration.

With kindest regards,

Sincerely yours,

G. El-Nazer

GAMAL EL-NAZER
Deputy Chairman

For Investment Authority
In Charge of Economic Cooperation

DRAFT
GC/NE:GBisson:ew
9/8/77

ANNEX B

PROJECT AUTHORIZATION
AND REQUEST FOR ALLOTMENT OF FUNDS

PART II

Name of Country: Arab Republic of Egypt Name of Project: Hydrogeographic Survey

Number of Project: 263-0071

Pursuant to Part ~~II~~, Chapter 4, Section 532 of the Foreign Assistance Act of 1961, as amended, I hereby authorize a Grant to the Arab Republic of Egypt ("Cooperating Country") of not to exceed Eight Million United States Dollars (\$8,000,000) to assist in financing the foreign exchange costs of goods and services required for the project as described in the following paragraph.

The project consists of providing goods and services required for a hydrogeographic survey of the approaches to the Suez Canal and the southern terminus of the Suez Mediterranean pipeline and for training of Cooperative Country personnel in the use of hydrogeographic equipment and in conducting hydrogeographic surveys and of furnishing hydrogeographic survey equipment to the Ministry of Transportation, Communications and Marine Transport.

I hereby authorize the initiation of negotiations and execution of the Project Agreement by the officers to whom such authority has been delegated in accordance with A.I.D. regulations and Delegations of Authority subject to the following essential terms and covenants and major conditions; together with such other terms and conditions as A.I.D. may deem appropriate:

a. Source and Origin of Goods and Services.

Except as A.I.D. may otherwise agree in writing, goods and

services financed under the Grant shall have their source and origin in the United States.

b. Conditions Precedent to Disbursement.

Prior to the first disbursement or the issuance of any funding documentation under the Grant, the Grantee shall furnish to A.I.D. in form and substance satisfactory to A.I.D.:

- a) The names of the persons who will act as the representatives of the Grantee, together with evidence of their authority and the specimen signature of each; and
- b) Such other information and documents as A.I.D. may reasonably request.

c. Covenants

The Grantee shall covenant:

- a) Execution of the Project
 - i) to cause the project to be carried out in conformance with the plans, schedules and other arrangements, and with modifications therein approved by A.I.D., pursuant to the agreement.
 - ii) to carry out its obligations under the project with due diligence and efficiency, and in conformity with sound financial and administrative practices.
 - iii) to submit for A.I.D. approval prior to implementation, issuance or execution, all plans, specifications, schedules, bid documents, documents concerning solicitation of proposals relating to eligible items, contracts, and all modifications to these documents.

iv) to assure that hydrogeographic survey work will be performed on a continuing basis for the purpose of upgrading nautical charts of Egyptian costal waters and ports.

B) Funds and Other Resources to be Provided

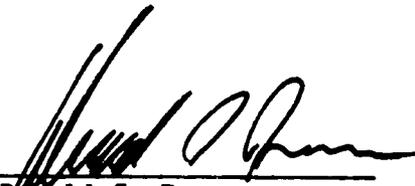
to make available on a timely basis all Egyptian currency and any foreign currency in addition to the Grant, for the punctual and effective carrying out of the project.

—
Joseph C. Wheeler
Bureau for Near East

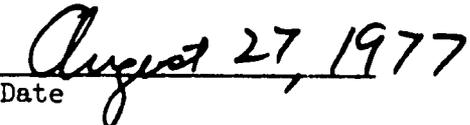
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Date

CERTIFICATION PURSUANT TO
SECTION 611 (e) OF THE
FOREIGN ASSISTANCE ACT OF 1961, AS AMENDED

I, Donald S. Brown, the Principal Officer for the Agency For International Development in Egypt, having taken into account, among other things, the maintenance and utilization of projects in Egypt previously financed or assisted by the United States do hereby certify that in my judgment Egypt has both the financial capability and human resources capability effectively to maintain and utilize the material resulting from the Hydrographic Survey.



Donald S. Brown
Director



Date

6C(2) - PROJECT CHECKLIST

Listed below are, first, statutory criteria applicable generally to projects with FAA funds, and then project criteria applicable to individual fund sources: Development Assistance (with a subcategory for criteria applicable only to loans); and Security Supporting Assistance funds.

CROSS REFERENCES: IS COUNTRY CHECKLIST UP TO DATE? IDENTIFY. HAS STANDARD ITEM CHECKLIST BEEN REVIEWED FOR THIS PROJECT?

A. GENERAL CRITERIA FOR PROJECT.1. App. Unnumbered; FAA Sec. 653(b)

(a) Describe how Committees on Appropriations of Senate and House have been or will be notified concerning the project;
(b) Is assistance within (Operational Year budget) country or international organization allocation reported to Congress (or not more than \$1 million over that figure plus 10%)?

(a) Advice of Program Change will be submitted to the appropriate committees of Congress at least 15 days in advance of obligation of funds for this project. (b) The amount is within the level of funds appropriated for Egypt for FY 1977.

2. FAA Sec. 611(a)(1). Prior to obligation in excess of \$100,000, will there be (a) engineering, financial, and other plans necessary to carry out the assistance and (b) a reasonably firm estimate of the cost to the U.S. of the assistance?

Yes.

3. FAA Sec. 611(a)(2). If further legislative action is required within recipient country, what is basis for reasonable expectation that such action will be completed in time to permit orderly accomplishment of purpose of the assistance?

No further legislative action is required other than ratifying the signed grant agreement.

4. FAA Sec. 611(b); App. Sec. 101. If for water or water-related land resource construction, has project met the standards and criteria as per Memorandum of the President dated Sept. 5, 1973 (replaces Memorandum of May 15, 1962; see Fed. Register, Vol 38, No. 174, Part III, Sept. 10, 1973)?

Not applicable.

5. FAA Sec. 611(e). If project is capital assistance (e.g., construction), and all U.S. assistance for it will exceed \$1 million, has Mission Director certified the country's capability effectively to maintain and utilize the project?

Yes. See Annex C.

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6. FAA Sec. 209, 619. Is project susceptible of execution as part of regional or multilateral project? If so why? If not so executed? Information and conclusion whether assistance will encourage regional development programs. If assistance is for newly independent country, is it furnished through multilateral organizations or plans to the maximum extent appropriate?

The project is not susceptible of execution as part of a regional or multilateral project. Egypt is not a newly independent country.

7. FA Sec. 601(a); (and Sec. 201(f) re direct investments). Information and conclusion whether project will encourage the country to: (a) increase international trade; (b) foster private initiative and competition; (c) develop and use credit unions, and savings institutions; (d) discourage monopolistic practices; (e) improve efficiency of industry, agriculture, and commerce; and (f) strengthen institutions.

The hydrogeographic survey and charts of the Suez Canal area resulting from this project will improve the flow of international trade through the Canal. The project will not have a direct effect on the other areas mentioned.

8. FA Sec. 601(b). Information and conclusion whether project will encourage U.S. private trade and investment, and encourage private U.S. participation in assistance programs (including availability to trade channels and services of U.S. private enterprise).

Commodity procurement will be from U.S. suppliers.

9. FA Sec. 601(c); (and Sec. 601(d)). Describe steps taken to assure that, to the maximum extent possible, the country is converting local currencies to meet the cost of contractual and other services, and foreign currencies needed by the U.S. are utilized to meet the cost of contractual and other services.

The Grant Agreement will so provide.

10. FA Sec. 601(d). Does the U.S. on execution of currency and, if so, what arrangements have been made for its release?

Yes. Release by the GOE is not a problem at present.

B. FOURTH CATEGORY FOR PROJECT

Not applicable.

1. Development Assistance Programs Criteria X

a. Sec. 102(c); (and Sec. 101) 28
 extent to which activity (a) will involve the poor in development by providing access to economy and local credit; increasing labor productivity; spreading investments out from cities to small towns and rural areas; help develop cooperatives; and provide technical assistance to assist rural and urban poor to meet their needs toward better living and democratic private and governmental institutions?

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b. FAA Sec. 103, 103A, 104, 105, 106, 107. Is assistance being made available: [Include only applicable paragraph -- e.g., a, b, etc. -- which corresponds to source of funds used. If more than one fund source is used for project, include relevant paragraph for each fund source.]

- (1) [103] for agriculture, rural development or nutrition; if so, extent to which activity is specifically designed to increase productivity and income of rural poor; [103A] if for agricultural research, is full account taken of needs of small farmers;
- (2) [104] for population planning or health; if so, extent to which activity extends low-cost, integrated delivery systems to provide health and family planning services, especially to rural areas and poor;
- (3) [105] for education, public administration, or human resources development; if so, extent to which activity strengthens nonformal education, makes formal education more relevant, especially for rural families and urban poor, or strengthens management capability of institutions enabling the poor to participate in development;
- (4) [106] for technical assistance, energy, research, reconstruction, and selected development problems; if so, extent activity is:
 - (a) technical cooperation and development, especially with U.S. private and voluntary, or regional and international development, organizations;
 - (b) to help alleviate energy problem;
 - (c) research into, and evaluation of, economic development processes and techniques;
 - (d) reconstruction after natural or manmade disaster;
 - (e) for special development problem, and to enable proper utilization of earlier U.S. infrastructure, etc., assistance;
 - (f) for programs of urban development, especially small labor-intensive enterprises, marketing systems, and financial or other institutions to help urban poor participate in economic and social development.

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(5) [107] by grants for coordinated private effort to develop and disseminate intermediate technologies appropriate for developing countries.

c. FAA Sec. 110(a); Sec. 208(e). Is the recipient country willing to contribute funds to the project, and in what manner has or will it provide assurances that it will provide at least 25% of the costs of the program, project, or activity with respect to which the assistance is to be furnished (or has the latter cost-sharing requirement been waived for a "relatively least-developed" country)?

d. FAA Sec. 110(b). Will grant capital assistance be disbursed for project over more than 3 years? If so, has justification satisfactory to Congress been made, and efforts for other financing?

e. FAA Sec. 207; Sec. 113. Extent to which assistance reflects appropriate emphasis on; (1) encouraging development of democratic, economic, political, and social institutions; (2) self-help in meeting the country's food needs; (3) improving availability of trained worker-power in the country; (4) programs designed to meet the country's health needs; (5) other important areas of economic, political, and social development, including industry; free labor unions, cooperatives, and Voluntary Agencies; transportation and communication; planning and public administration; urban development, and modernization of existing laws; or (6) integrating women into the recipient country's national economy.

f. FAA Sec. 281(b). Describe extent to which program recognizes the particular needs, desires, and capacities of the people of the country; utilizes the country's intellectual resources to encourage institutional development; and supports civic education and training in skills required for effective participation in governmental and political processes essential to self-government.

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g. FAA Sec. 201(b)(2)-(4) and -(8); Sec. 201(e); Sec. 211(a)(1)-(3) and -(8). Does the activity give reasonable promise of contributing to the development: of economic resources, or to the increase of productive capacities and self-sustaining economic growth; or of educational or other institutions directed toward social progress? Is it related to and consistent with other development activities, and will it contribute to realizable long-range objectives? And does project paper provide information and conclusion on an activity's economic and technical soundness?

h. FAA Sec. 201(b)(6); Sec. 211(a)(5), (6). Information and conclusion on possible effects of the assistance on U.S. economy, with special reference to areas of substantial labor surplus, and extent to which U.S. commodities and assistance are furnished in a manner consistent with improving or safeguarding the U.S. balance-of-payments position.

2. Development Assistance Project Criteria (Loans only)

Not Applicable

a. FAA Sec. 201(b)(1). Information and conclusion on availability of financing from other free-world sources, including private sources within U.S.

b. FAA Sec. 201(b)(2); 201(d). Information and conclusion on (1) capacity of the country to repay the loan, including reasonableness of repayment prospects, and (2) reasonableness and legality (under laws of country and U.S.) of lending and relending terms of the loan.

c. FAA Sec. 201(e). If loan is not made pursuant to a multilateral plan, and the amount of the loan exceeds \$100,000, has country submitted to AID an application for such funds together with assurances to indicate that funds will be used in an economically and technically sound manner?

d. FAA Sec. 201(f). Does project paper describe how project will promote the country's economic development taking into account the country's human and material resources requirements and relationship between ultimate objectives of the project and overall economic development?

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e. FAA Sec. 202(a). Total amount of money under loan which is going directly to private enterprise, is going to intermediate credit institutions or other borrowers for use by private enterprise, is being used to finance imports from private sources, or is otherwise being used to finance procurements from private sources?

f. FAA Sec. 620(d). If assistance is for any productive enterprise which will compete in the U.S. with U.S. enterprise, is there an agreement by the recipient country to prevent export to the U.S. of more than 20% of the enterprise's annual production during the life of the loan?

4. Additional Criteria Solely for Security Support
Supporting Assistance

FAA Sec. 531. How will this assistance support promote economic or political stability?

4. Additional Criteria for Alliance for Progress

[Note: Alliance for Progress projects should add the following two items to a project checklist.]

a. FAA Sec. 251(b)(1), -(3). Does assistance take into account principles of the Act of Bogota and the Charter of Montevideo del Este; and to what extent will the activity contribute to the economic or political integration of Latin America?

b. FAA Sec. 251(b)(8); 251(h). For loans, has there been taken into account the effort made by recipient nation to repatriate capital invested in other countries by their own citizens? Is loan consistent with the findings and recommendations of the Inter-American Committee for the Alliance for Progress (now "CEPCIES," the Permanent Executive Committee of the OAS) in its annual review of national development activities?

This assistance will promote economic stability by assisting the GOE to increase the revenue generating capacity of the Suez Canal.

Not applicable.

ANNEX E

AID Assistance to Suez Canal & Canal Area

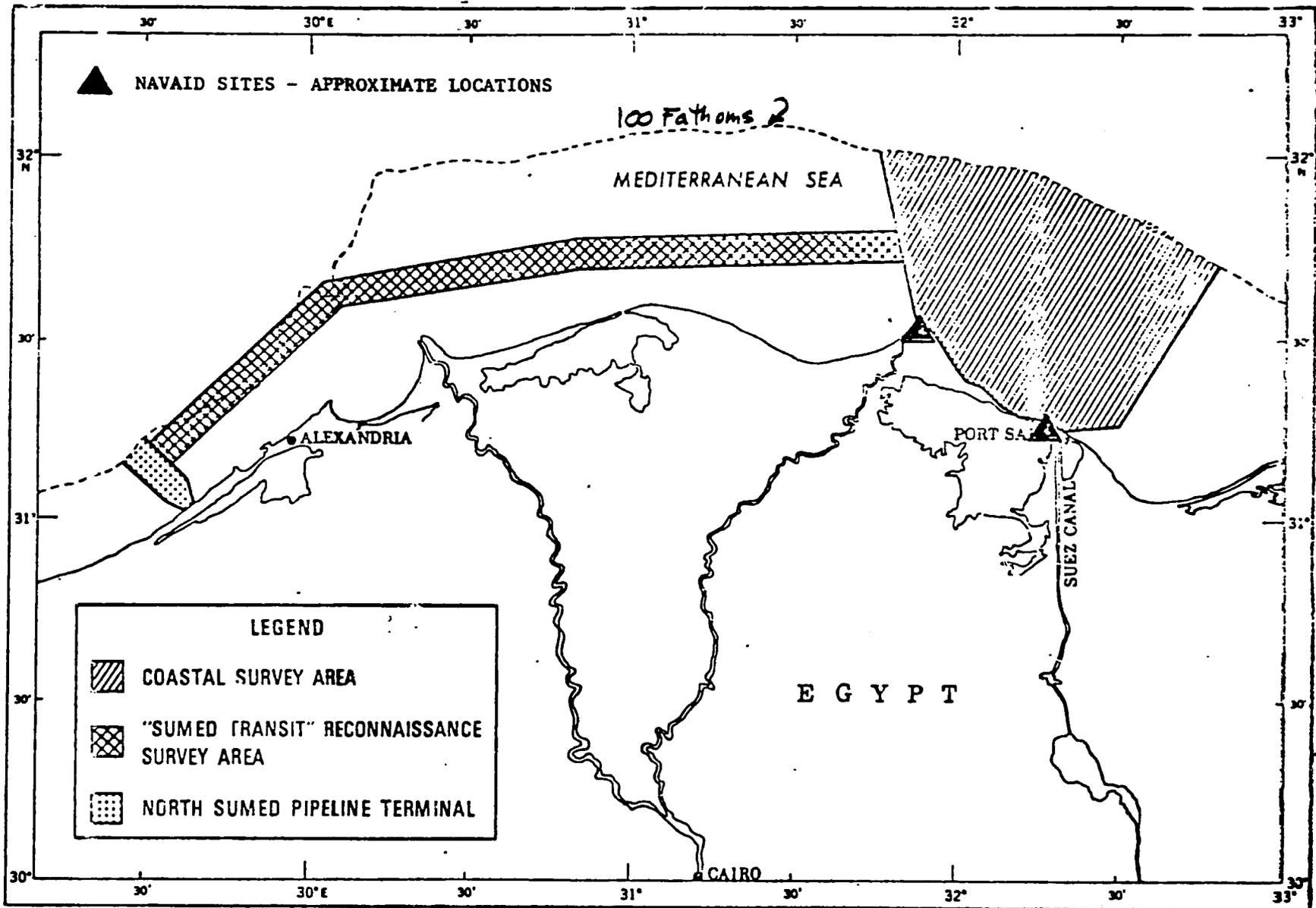
(\$ Millions)

A.	<u>U.S. Service Operations</u>		\$27.6
	Canal Clearance	(\$27.6)	
B.	<u>Commodity Import Loans</u>		53.4
	No. 263-K-027	(1.2)	
	No. 263-K-029	(1.3)	
	No. 263-K-036	(0.9)	
	No. 263-K-038	(25.0)	
	FY 78 Loan*	(25.0)	
C.	<u>Feasibility & Planning Studies</u>		10.6
	Port Said Port Study	(1.6)	
	Suez Port Study	(2.3)	
	Canal Cities Water/Sewer Studies	(6.7)	
D.	<u>Capital Projects</u>		513.0
	No. 263-0001		
	Electrical Distribution Equipment	(30.0)	
	No. 263-0007 Road Building Equipment	(14.0)	
	No. 263-0009 Ismailia Steam Power Plant	(99.0)	
	No. 263-0009 Amendment	(42.0)	

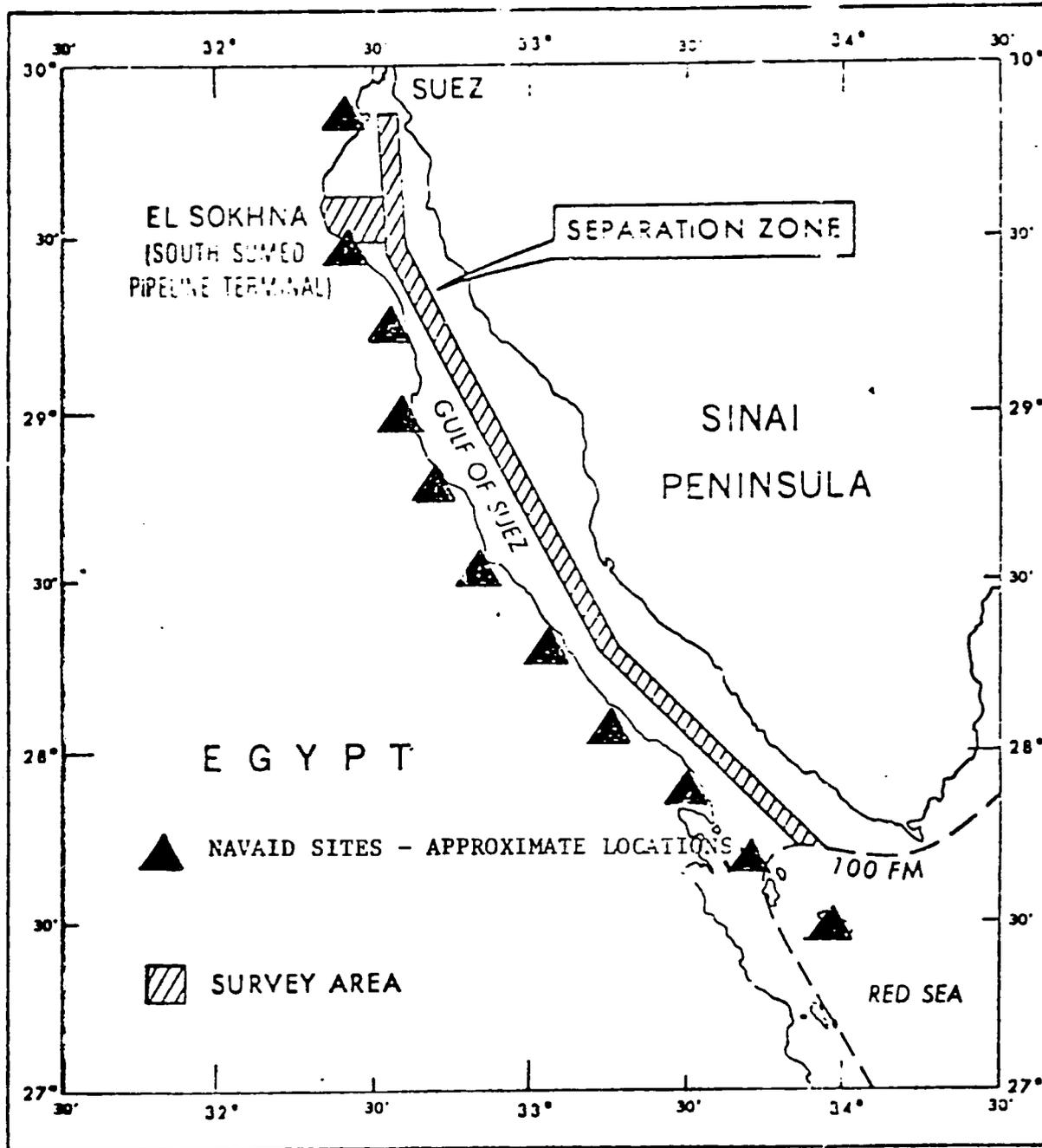
No. 263-0012 Suez Cement Plant	(90.0)
Canal Port Expansions *	(65.0)
Canal Cities Water & Sewer Systems *	(60.0)
Port Said Salt Plant *	(13.0)
Suez Steam Power Plant *	(100.0)
<u>Total</u>	<u>\$604.6</u>

* Proposed Projects FY 78-79

EGYPT HYDROGRAPHIC SURVEY AREAS

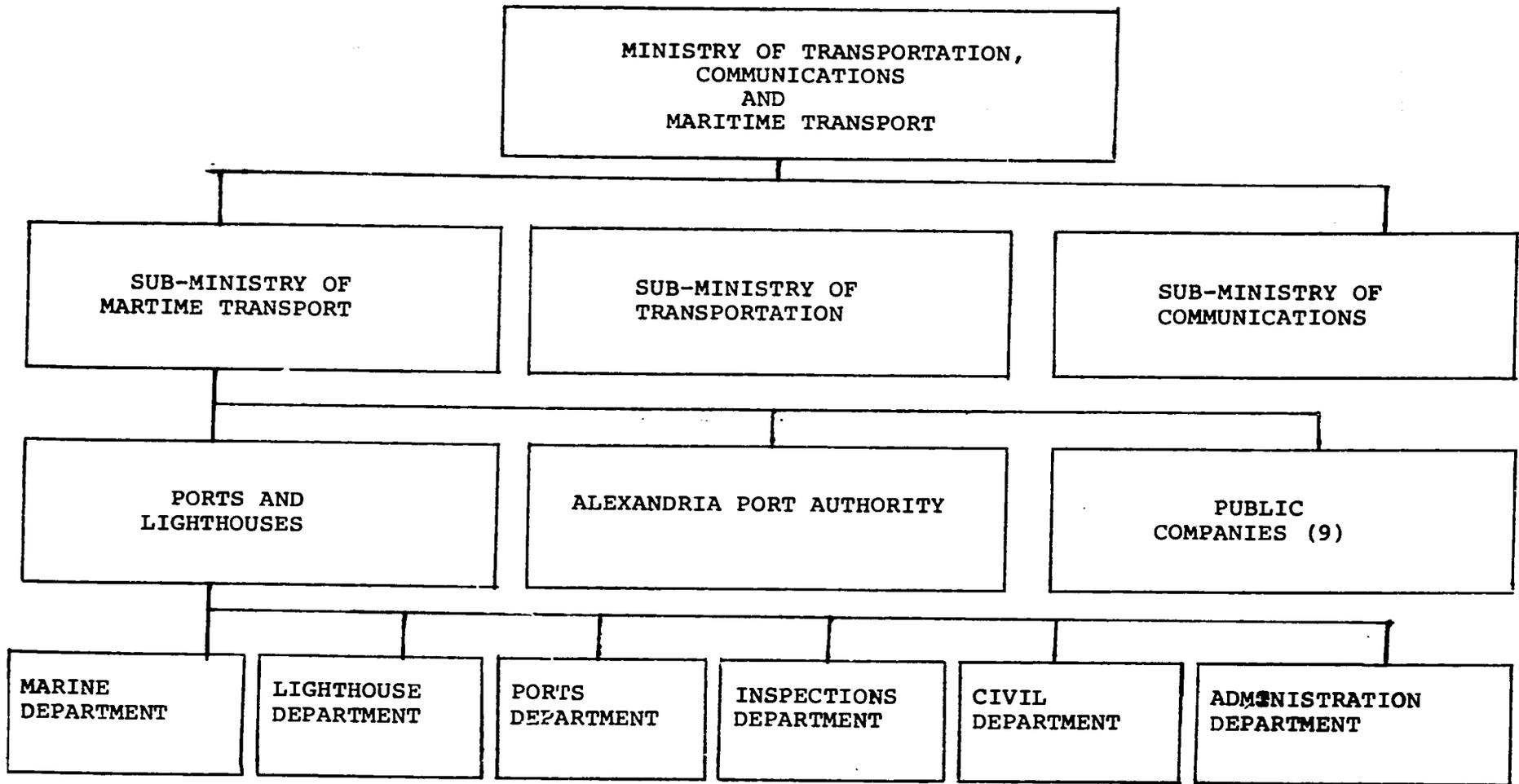


GULF OF SUEZ AREA



ANNEX 0

ANNEX 0



Ports and Lighthouses Administration Functions

- (1) Marine Department: Hydrographic surveys, pollution control, salvage, accidents, personnel licenses, etc.
- (2) Lighthouses Department: Navigational aids including location, erection and maintenance of lighthouses, etc.
- (3) Ports Department: All ports except Alexandria.
(Note: administration of Port Said, historically under the Suez Canal Authority, will be separated so that administration of the land area will be by the Ports Department and water area by the SCA if pending legislation is passed.)
- (4) Inspections Department: Ship registration and inspection, seamen's passports, enforcement of regulations regarding load lines, shipping laws, etc.
- (5) Civil Department: Port construction, evaluation of port needs, trade distribution, etc.
- (6) Administration Department: Administrative, personnel and financial staff operations for line departments.

SECRET

HYDROGRAPHIC SURVEY STUDY SCHEDULE

The following planning schedule is predicated on HARKNESS completing the yard period and departing CONUS on 10 November 1977:

<u>DATE</u>	<u>EVENT</u>
15 Sep-1 Nov 77	Geodetic team proceeds to Egypt to select and position NAVOID sites in Port Said area
10 Nov 77	HARKNESS ETD CONUS
25/26 Nov 77	Refuel port call R
3-8 Dec 77	Alexandria, Egypt initial liaison visit
9-18 Dec 77	SURVOPS - Port Said
20 Dec 77-2 Jan 78	Pireaus, Greece Holidays/Provisioning
2-3 Jan 78	SURVOPS - Port Said
24-29 Jan 78	Inport Alexandria
30 Jan-19 Feb 78	SURVOPS - Port Said
20-25 Feb 78	Inport - Location to be determined
26 Feb-19 Mar 78	SURVOPS - Port Said
20-25 Mar 78	Inport - Location to be determined
26 Mar-15 Apr 78	SURVOPS - Port Said
16-21 Apr 78	Inport - Location to be determined
Apr 78	Deploy Geodetic survey team to Gulf of Suez
22 Apr-12 May 78	SURVOPS - Port Said
13-18 May 78	Inport - Location to be determined
19 May 78	Proceed to Gulf of Suez
23 May 78-Dec 78	Gulf of Suez SURVOPS - Intervals
Dec 78	Conclude Gulf of Suez SURVOPS and return CONUS
Feb 79	All data processed and provided GOE and DMA

AID 1350-1X (7-71)	DEPARTMENT OF STATE AGENCY FOR INTERNATIONAL DEVELOPMENT	1. Cooperating Country <u>Egypt</u>	Page 1 of 5 Pages
		2. PIO/T No.	3. <input type="checkbox"/> Original or Amendment No. _____
PIO/T	PROJECT IMPLEMENTATION ORDER TECHNICAL SERVICES	4. Project Activity No. and Title Project No. 263-0071 Hydrographic Survey	

DISTRIBUTION	5. Appropriation Symbol		6.A. Allotment Symbol and Charge		6.B. Funds Allotted to: <input type="checkbox"/> A.I.D./W <input type="checkbox"/> Mission	
	7. Obligation Status <input type="checkbox"/> Administrative Reservation <input type="checkbox"/> Implementing Document				8. Funding Period (Mo., Day, Yr.) From <u>9/1/77</u> to <u>11/1/79</u>	
	9.A. Services to Start (Mo., Day, Yr.) Between <u>9/1/77</u> and <u>11/30/77</u>				9.B. Completion date of Services (Mo., Day, Yr.) <u>11/1/79</u>	
	10.A. Type of Action <input type="checkbox"/> A.I.D. Contract <input type="checkbox"/> Cooperating Country Contract <input type="checkbox"/> Participating Agency Service Agreement <input type="checkbox"/> Other					
	10.B. Authorized Agent					
	Estimated Financing		(1)	(2)	(3)	(4)
\$1.00: <u>0.7 LE</u>		Previous Total	Increase	Decrease	Total to Date	
11. Maximum A.I.D. Financing	A. Dollars		7,500,000		7,500,000	
	B. U.S.-Owned Local Currency					
12. Cooperating Country Contributions	A. Counterpart					
	B. Other		954,000		954,000	

Mission References	14. Instructions to Authorized Agent Negotiate a PASA with the U.S. Navy to carry out the services outlined in Block 19 of this PIO/T.
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15. Clearances - Show Office Symbol, Signature and Date for all Necessary Clearances.	
A. The specifications in the scope of work are technically adequate	B. Funds for the services requested are available
C. The scope of work lies within the purview of the initiating and approved Agency Programs	D.
E.	F.

16. For the cooperating country: The terms and conditions set forth herein are hereby agreed to Signature and date: _____ Title: _____	17. For the Agency for International Development Signature: _____ Title: _____	18. Date of Signature
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PIOT

Project Activity No. and Title

Project No. 263-0071, Hydrographic Survey

SCOPE OF WORK

19. Scope of Technical Services

A. Objective for which the Technical Services are to be Used

B. Description: See attached scope of work, Annex 1.

C. Technicians

(1) (a) Number

(b) Specialized Field

(c) Grade and/or Salary

(d) Duration
of Assignment
(Man-Months)

See Attachment Annex 2

(2) Duty Post and Duration of Technicians' Services

Egypt

(3) Language requirements

None

(4) Access to Classified Information

None

(5) Dependents

Will

Will Not

Be Permitted to Accompany Technician

D. Financing of Technical Services

(1) By AID - \$ 7,500,000

(2) By Cooperating Country - 954,000

PIO/T

Project/Activity No. and Title

Project No. 263-0071

Equipment and Supplies (Related to the services described in Block 19 and to be procured outside the Cooperating Country by the supplier of these services)

(1) Quantity (2) Description

(3) Estimated Cost

(4) Special Instructions

None

B. Financing of Equipment and Supplies

(1) By AID \$

(2) By Cooperating Country -

21. Special Provisions

- A. This PIO/T is subject to AID (contracting) (PASA implementation) regulations.
- B. Except as specifically authorized by AID, or when local hire is authorized under the terms of a contract with a U.S. Supplier, services authorized under this PIO/T must be obtained from U.S. sources.
- C. Except as specifically authorized by AID/W, the purchase of commodities authorized under this PIO/T will be limited to the U.S. under Geographic Code 000.
- D. Other (specify):

AID 1380-1X (B-70)	Cooperating Country Egypt	PIO/T No.	Page 4 of 5 Pages (1-1)
PIO/T	Project Activity No. and Title Project No. 263-0071, Hydrographic Survey		

22. Reports by Contractor or Participating Agency (Indicate type, content and format of reports required, including language to be used if other than English, frequency or timing of reports, and any special requirements)

Monthly Navoceano Report
 Final report at end of med./Port Said phase
 Final project report

23. Background Information (Additional information useful to Authorized Agent and Prospective Contractors or Participating Agency; if necessary cross reference Block 14.C(4) above.)

24. Relationship of Contractor or Participating Agency to Cooperating Country and to AID

A. Relationships and Responsibilities

B. Cooperating Country Liaison Official

Under Sec. Samak Maritime Transport, Min. Trans. Comm.,
 and Maritime Trans,

C. AID Liaison Officials

Tom Tifft, USAID/Cairo
 Philip Lewis, USAID/Cairo

AID 1350-1X (9-73)	Cooperating Country Egypt	PIO/T No.	Page 5 of 5 Pages
PIO/T	Project/Activity No. and Title Project No. 263-0071, Hydrographic Survey		

LOGISTIC SUPPORT

26 Provisions for Logistic Support	IN KIND SUPPLIED BY		FROM LOCAL CURRENCY SUPPLIED BY		TO BE PROVIDED OR ARRANGED BY SUPPLIER
	AID	COOPERATING COUNTRY	AID	COOPERATING COUNTRY	
<i>A. Specific Items (Insert "X" in applicable column at right. If entry needs qualification, insert asterisk and explain below in C. "Comments")</i>					
(1) Office Space				X	X
(2) Office Equipment				X	X
(3) Housing and Utilities				X	X
(4) Furniture		NA			
(5) Household Equipment (Stoves, Refrig., etc.)		NA			
(6) Transportation In Cooperating Country	X			X	
(7) Transportation To and From Country					X
(8) Interpreter Services/Secretarial				X	
(9) Medical Facilities					X
(10) Vehicles (official)	X			X	
(11) Travel Arrangements/Tickets		NA			
<i>Other (specify)</i>					
(12)					
(13)					
(14)					
(15)					

B. Additional Facilities Available From Other Sources

APO

PX

COMMISSARY

OTHER (specify, e.g., duty free entry, tax exemption)

NA

C. Comments

The scope of work to be accomplished or operational plan will be divided into geodesy, hydrography, and post survey analysis. The outline of the areas to be surveyed are delineated by attachments 1 and 2.

A. Geodesy.

1. Scope. The first step in hydrographic surveying is the establishment of accurate positions on the earth's surface where precision electronic navigation equipment, NAVAID sites, will be placed. During the course of hydrographic operations these NAVAID sites will emit electronic signals to the survey vessels, thereby enabling their precise positioning. Under an ideal situation... the geodetic operations will always precede the arrival of the ship, thereby permitting optimum use of ship and boat time. Attachments 1. and 2. depict the approximate location in Egypt where "NAVAID site" positioning will be required. The basic means of positioning the sites in Egypt will employ the use of the georeceiver. The georeceiver provides a position based on the "World Geodetic Datum - 1972" from data received from five polar orbiting navigational satellites. Conventional survey equipment, eg. transits, levels, electro tapes, etc., will be available and utilized as required.

2. Plan. A team of 5 surveyors will proceed to Egypt in September 1977, and after being briefed by the office of the Defense Attache in Cairo will proceed to Alexandria where they will have initial meetings with the Egyptian Naval personnel, demonstrate the georeceiver function and conclude operational procedures. The first geodetic surveys will be conducted with Egyptians in the Port Said area. Required surveys in the Gulf of Suez will probably be deferred until after arrival of the ship and be conducted during the period of hydrographic surveying off Port Said. Technical survey specifications will be prepared and provided to all concerned prior to departure of the team from COK.

1. Scope.

a. Ship. The USNS HARKNESS (T-ACS-32) will be the primary platform engaged in the Egyptian surveys. HARKNESS is a white hulled, coastal hydrographic survey ship operated and maintained by the USN Military Sealift Command and manned by civilian (Civil Service) crew. Naval Oceanographic Unit Five (OCEANOGRAPHIC UNIT 5) a military unit, is permanently embarked aboard HARKNESS for the purpose of conducting survey operations. The surveys are conducted by the ship and four hydrographic survey launches utilizing the precise electronic navigation system for the purpose of accurate horizontal fixing during the course of operations. As noted above, these systems require establishment of shore based transmitter sites, generally transported and resupplied from the ship by a helicopter carried on board, which are manned by supporting personnel billeted at the sites. These sites are shifted as required to accommodate changes in operating areas. Statistics and characteristics of the ship/boats, personnel and survey equipments are addressed in Section V of this document.

b. Survey. The conduct of hydrographic surveys by HARKNESS will include:

(1) Placement of electronic navigation positioning equipment, personnel, and supporting items in the sites previously selected and surveyed by the geodetic team.

(2) Calibration and recalibration of the electronic NAVAID equipment will be required initially and during the course of survey operations. Calibration is a standard survey procedure in which physical fine tuning of the electronic NAVAID equipment is conducted to bring the electronic position into exact agreement with the actual position. This is done by comparison, adjustment, and recomparison.

(3) Tide gages will be installed and operations maintained intermittently by collection of recorded data. Observations of the rise and fall of the tide will be made for the purpose of correcting soundings to a common datum and, if possible, they should be extended over a sufficiently long and unbroken period to enable them to be analyzed for the determination of tidal constants.

(4) The actual hydrography or measurement of water depth by the ship and the survey launches will be conducted. The entire water area specified will be closely sounded by running regular, evenly spaced lines of sounding, and rigorous examination of the soundings will be made during the course of the survey to ensure that no irregularities in depth are overlooked and that, when such are found, the localities in which they occur are closely examined by taking additional soundings.

(5) The position of, and least depth over, every shoal, including submerged reefs, rocks, banks, wrecks and other obstructions to safe navigation, will be found and clearly recorded on the chart.

(6) The positions of breakers, tide-rips, eddies, weed, fishing stakes and similar objects of interest and importance to the navigator will be fixed and shown on the chart. The survey will also show in their correct positions all light-vessels, buoys, and other navigational marks, and the characteristics of these will be fully investigated.

(7) The nature of the sea bottom will be ascertained at frequent and regular intervals over the water area, especially in depths where vessels may anchor, and samples of the bottom should be secured for the advancement of our knowledge of the sea-bed.

(8) Measurements of tidal streams and subsurface currents will be made at various points of the survey in order that this information may be available to the mariner. Sufficient observations should be made to enable the results to be analyzed and processed for inclusion in the appropriate publications.

(9) In support of the foregoing efforts the sidescan sonar will be employed in areas suspected of containing submerged hazards to surface navigation. Scanning operations will normally be conducted simultaneous to hydrographic surveys but are not restricted to that mode. Specific areas to be scanned will be indicated in the specifications and also ascertained during the course of survey in judgement by operating hydrographers. The requirement is estimated to exist over approximately 35% of the survey area.

(10) All information which may be of use in the compilation and correction of Sailing Directions will be collected during the course of the survey. This information will include a general description of the coast and off-lying islands and dangers, directions for entering and leaving harbours, full descriptions of lights and other aids to navigation, and details of the facilities offered to shipping by ports.

2. Plans. HARKNESS will depart CONUS upon completion of yard overhaul in early November 1977 embarked with OCEANUNIT FIVE, a Helicopter Detachment, and Navigation Aid Support Unit personnel and equipment. This ship will then proceed to Alexandria, Egypt with only one stop enroute at Rota, Spain for fuel. It is envisioned that the port stay in Alexandria will be for about five days. Initial liaison will be established with Egyptian Hydrographic Office personnel counterparts and all interested parties in the project. An open house will be held to acquaint everyone with the ship, plans and capabilities. Complete candidence is anticipated to forego any apprehensions regarding the mission and intent of HARKNESS and the overall project. The ship will then proceed to the Port Said area and commence coastal hydrographic survey operations. Normal operating periods will be twenty-one days on survey and five days in port for replenishment. It is envisioned that Pireaus, Greece and Alexandria, Egypt will be the primary ports of call with occasional trips to other ports within reasonable steaming range. Trips to and from the Port Said survey area and Alexandria will

be through the North SUMED transit lane during which time exploratory survey¹⁻¹ procedures will be maintained on a routine basis. It is presently estimated that the Port Said area work will take approximately six months, after which time HARKNESS will proceed to the Gulf of Suez and commence operations. Surveys in the Gulf of Suez should be concluded in six months also, at which time HARKNESS will return to CONUS.

C. Post Survey Analysis.

1. Scope. The post survey analysis of the data collected is accomplished both in the field aboard ship and at the Oceanographic Office. It is an overall check and update, as required, of the data collected and prior to final release to DMA, or others, for chart compilation and production. The product of the hydrographic survey is the "smooth sheet". (The "smooth sheet" portrays a part of the earth's surface on a flat sheet of paper, and indicates by a means of soundings, contours, and spot heights the various irregularities in the surface below the sea. It also indicates the positions of all objects which will be useful to the mariner who must establish his position.) Attempt is normally made to conduct as much post survey analysis as possible in the field prior to transmitting raw survey data and smooth sheets back to the Oceanographic Office.

2. Plan. Post analysis of the Egyptian project hydrographic survey data will be conducted in accordance with standard procedures and every effort will be made to make all the data, smooth sheets, available from any one area, e.g., Port Said, no later than two months following the conclusion of operations. Copies of sheets in progress or those of particular interest will be made available as required by Egypt or AID. The feasibility of having a post analysis office in Alexandria may be considered. It could enhance interface with the Egyptians as well as facilitate training but could present other problems relative to the availability of office and housing space.

B. Personnel. United States personnel participating in this project are divided into: USN civilian geodetic survey team, USN military and civilian personnel permanently or temporarily assigned to Oceanographic Unit Five operating off HARKNESS; and the USN Military Sealift Command permanently assigned civilian merchant marine personnel who operate the HARKNESS in support of the Oceanographic Unit surveys. Where personnel quantities may vary the maximum number is generally used.

1. Geodetic Team. (5)

1 - Geodesist (Senior)

3 - Civil Engineers/Physical Science Technicians

2. Oceanographic Unit Five (OCEANUNIT 5) (97)

a. Permanently Assigned (58)

1 - Lieutenant Commander, USN
(Commanding Officer of the OCEANUNIT and Oceanographic Specialist)

1 - Lieutenant, USN (OCEANUNIT Executive Officer)

3 - Ensigns (Boat Officers)

1 - Chief Warrant Officer
(Electronics Maintenance Officer)

52 - USN enlisted with the following ratings:

Boatswain Mate

Quartermaster

Data Systems Technician (ADP)

Electronics Technician

Engineman

Hospital Corpsman

Lithographer

Photographer

Misc. Administrative and seaman support rates

b. Temporarily Assigned. (39)

(1) Helicopter Detachment (3)

2 - LCDR/LT, USN (Pilots)

12 - USN Enlisted

(2) NAVOCEANO Civilians (10)

5 to 10 - Civil Engineers, Geodesists, Oceanographers,
Physical Science Technicians, Electronic
Engineers/Technicians (number of each is
dependent on operational requirements)

(3) Navigation Aid Support Unit (NAVAIDSUPUNIT). (15)

15 - USN enlisted, Boatswain Mates, Elect. Tech., Enginemen,
Misc.

3. Military Sealift Command (MSC) (69)

a. Deck Department (19)

1 - Master (Ship's Captain)

1 - Chief Mate

3 - First, Second & Third Officer

1 - Radio Officer

13 - Seamen

b. Engine Department (17)

1 - Chief Engineer

4 - Engineering Officers (One 1st & 2nd Assistant Engineers, and
two 3rd Assistant Engineers)

12 - Oilers/Wipers

c. Steward Department (30)

1 - Chief Steward

29 - Cooks, Stewards & Utilitymen

d. Purser Department (3)

1 - Purser

2 - Assistant Pursers

TOTAL US PARTICIPATING PERSONNEL

	<u>CIVILIAN</u>	<u>MILITARY</u>	<u>TOTALS</u>
1. <u>Geodetic Team</u>	5	-	5
2. <u>OCEANOUNITS</u>	10	87	97
a. Permanently Assigned	-	(53)	
b. Temporarily Assigned	(10)	(32)	
(1) Helicopter Det.	-	(17)	
(2) NAVOCEANO Civilians	(10)	-	
(3) NAVAIDSUPUNIT	-	(15)	
3. <u>MSC</u>	69	-	69
a. Deck Dept.	(19)	-	
b. Engine Dept.	(17)		
c. Steward Dept.	(30)		
d. Purser Dept.	(3)		
	<hr/>		
	CIVILIAN 84	MILITARY 87	171 TOTAL PERSONNEL