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INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT

UNITED ARAB REPUBLIC

APPRAISAL OF THE SUEZ CANAL

DEVELOPMENT PROJECT

December 8, 1959

Department of Technical Operations

CURRENCY EQUIVALENTS

1 Egyptian Pound	-	2.87 U. S. Dollars
1 U. S. Dollar	-	.3482 Egyptian Pound
£E 100,000	-	U.S.\$ 287,156
U.S.\$ 100,000	-	£E 34,824

Suez Canal Authority's Fiscal Year
July 1 to June 30.

The volume of cargo traffic is stated
in metric tons.

Table of Contents

	<u>Page</u>
Summary	i
I. Introduction	1
II. General	1
III. The Present Canal	2
IV. The System of Operation	3
V. Organization and Management	4
VI. Past and Present Traffic	4
VII. Future Traffic Prospects	6
VIII. The Project	8
IX. Benefits Resulting from the Project	11
X. Earnings and Finances	12
XI. Future Financing	14
XII. Conclusions and Recommendations	16

Appendices:

1. List of Suez Canal Authority's Existing Floating Equipment
2. Convoy System and the Capacity of the Canal
3. Traffic Through the Canal 1949-58
4. Worldwide Industry Tanker Construction
5. Detailed List of Items Comprising the Project
6. **Technical** Basis of the Canal Improvements
7. Estimate of Cost of the Project
8. Estimate of Cost, 1962/63
9. Actual Income Accounts, 1956/57, 1957/58 and 1958/59.
10. Balance Sheet - June 30, 1959
11. Estimated Income Accounts, 1959/60 to 1962/63.
12. Estimated Income Accounts Assuming no Increase in Traffic, 1959/60 to 1964/65.

Maps:

1. Suez Canal and World Shipping Routes
2. Plan Showing the Project
3. Typical Canal Cross-Sections

APPRAISAL OF THE SUEZ CANAL DEVELOPMENT
PROJECT

Summary

i. The Bank has been asked to help finance a continuing development program of the Suez Canal Authority. The program was started in 1957 and extends through 1963. This report covers the appraisal of that part of the program for which expenditures were made on or after January 1, 1958, and which extends through 1961.

ii. The estimated cost of the Project is £E 37.6 million, including £E 19.7 million (US\$56.5 million) in foreign exchange. A loan has been requested to meet the foreign exchange cost.

iii. The Suez Canal Authority is a public organization and has the power to borrow. Its Board of Directors and Managing Director are appointed by the President of the United Arab Republic. It operates, maintains and develops the Suez Canal under an independent budget which must be approved by the President.

iv. Management of the Suez Canal is efficient. Operations and maintenance are well conducted.

v. Traffic has been increasing consistently in the postwar period, particularly with respect to northbound petroleum traffic originating in the Middle East. Petroleum traffic has risen from 20 percent of total traffic in 1935 to about 70 percent in 1958.

vi. Recent developments in petroleum production, especially in North Africa will probably retard the rapid rise of Suez Canal traffic, but to a degree as yet uncertain. Nevertheless, a definite trend toward larger tankers and the desirability of maintaining a high-level of operating efficiency requires the completion of the Development Project if the Suez Canal Authority is to keep abreast of changing conditions and maintain its traffic volume in the face of competitive traffic routes.

vii. The Project consists of widening and deepening various sections of the Canal by dredging and other civil works, in order to achieve a depth which will permit vessels having a maximum draft at rest of 37 feet to transit the Canal; improvements to Port Said Harbor to diminish congestion; construction of buildings including a research laboratory; and providing floating and other equipment in order to replace obsolescent equipment and to meet future requirements.

viii. Earnings of the Authority have been good and operating ratios have been very favorable. The Authority has invested large sums from earnings in plant and equipment. It has no working capital problems or long-term debt. The financial position is sound. Even if no increase in traffic or revenues were experienced after 1959/60, the Authority would

easily be able to meet the local currency costs of the Project and to service the proposed Bank loan.

ix. The Project is suitable for a Bank loan of about \$56.5 million equivalent which would cover its foreign exchange costs. An appropriate term would be 15 years including a grace period of two years. The Suez Canal Authority would be the borrower.

SUEZ CANAL DEVELOPMENT PROJECT

I. INTRODUCTION

1. The Suez Canal Authority has been engaged in a continuing development program extending to 1963. The Bank has been requested to assist in financing the first part of the plan extending to the end of 1961, which is hereinafter referred to as the Project.

2. The Project is largely for widening and deepening of the Canal, miscellaneous building construction and the acquisition of operating and maintenance equipment. The cost of the Project is estimated at £ 37.6 million, of which the foreign exchange amounts to £ 19.7 million. The Bank has been requested to lend £ 19.7 million - US\$ 56.5 million equivalent. The loan would be guaranteed by the Government of the United Arab Republic.

3. This report is based on an appraisal made by a Technical Operations Department mission which visited the Egyptian Region of the United Arab Republic during July and August 1959.

II. GENERAL (MAPS 1 AND 2)

4. The Suez Canal is one of the most important international waterways in the world. It shortens the sea voyage between Asia and Western Europe by about 5,000 sea miles and is the principal route by which oil produced in the Middle East is transported to its markets. During 1958, 35% of all ocean-going ships and 60% of all tankers, with a gross tonnage exceeding 4,000 tons, passed through the Canal at least once.

5. Small canals linking the Red Sea to branches of the Nile existed during the ancient Egyptian era, but it was not until the construction of the present Canal in 1859-1869 that a permanent means for the passage of sea-going vessels between the Red Sea and the Mediterranean was provided. The Canal was constructed and operated by Compagnie Universelle du Canal Maritime de Suez, shares in which were held internationally. When first completed it was 160 km long and had a depth of eight meters, permitting the passage of vessels having a draft of 7.5 meters (24.6 feet). Since then the size and number of transiting vessels increased substantially. The maximum dead weight tonnage rose from approximately 6,500 tons in 1870 to about 36,000 tons in 1955, and the daily average number of ships rose from 1.33 to 40. By 1955, the Canal had been widened, the depth increased to 14 meters and the maximum permissible vessel draft extended to 10.67 meters (35 feet). Although additional passing places had been provided the Canal remained a one-way waterway.

6. The Canal was developed and operated by the company until July 26, 1956, when it was taken over by the Egyptian Government and an autonomous body, the Suez Canal Authority, was set up to operate it.

III. THE PRESENT CANAL (MAPS 2 AND 3)

7. The Canal is a sea-level canal without locks. It is 162 km long, including dredged channels in Lake Timsah and Great Bitter Lake with lengths of four and 36 km, respectively. There are, in addition, dredged approach channels nine km long from the Mediterranean Sea and four km long from the Red Sea.

8. Port Said lies on the African side of the Canal at its northern end. Suez, with the adjoining Port Tewfik, lies on the same side at the southern end. Opposite Port Said is Port Fuad, where the Canal Authority has its principal repair facilities. The Authority's headquarters is at Ismailia (population 70,000), 80 km south of Port Said. Both Port Said - Port Fuad (population 250,000) and Suez-Port Tewfik (population 180,000) are ports with an appreciable traffic, mainly of a general and transshipment nature, and centers of commercial interests associated with the Canal.

9. There are passing places at Ballah and in the Bitter Lakes beginning at distances of approximately 51 km and 101 km from Port Said, respectively. Vessels can anchor at Port Said, in the Bitter Lakes and at Suez and there are a number of lay-by stations where ships can draw to the side of the canal to permit the passage of other vessels if required. At the commencement of the Project, the typical cross-sectional area below water level of the Canal cuts was 1,250 square meters. In the Canal cuts the typical depth was 14 meters, permitting the passage of a vessel of 10.67 meters (35 feet) draft, and the width at 11 meters depth approximately 60 meters. The depth in the lakes and canal approaches was somewhat less than in the cuts because of the lesser allowance required for the "squat" of the vessel, but permitted the passage of ships of the same draft. The sides, the slopes of which vary between 4.5 to 1 and 2.5 to 1, are revetted one meter below water level with various types of revetment. The most recently developed type comprises steel sheet piles surmounted by interlocking concrete blocks and this has now been adopted as a standard.

10. The soil through which the Canal runs varies in nature, but in general is favorable to Canal construction. At the northern end of the Canal (km 0 to Km 45), alluvium originally brought down by the Nile is found, in the central portion fine sand with some clay, and in the southern section (km 134 to km 162), hard strata, varying between soft sandstone and hard rock are met with. Maintenance and improvement of the Canal is normally carried out by floating dredging equipment, but large drag line excavators working on land have recently been used for removing hard material in the southern section.

11. The tidal range at Port Said is small. There is no appreciable tidal flow in the Port Said-Bitter Lakes section of the Canal, but in the southern section a maximum tidal current of between 3 and 5 km per hour results from the 1.2 to 2.1 meters tidal range at Suez.

12. A bituminous surfaced road controlled and maintained by the Authority and a standard gauge railway operated by the Egyptian State Railways, run parallel to the Canal on the African side, linking Port Said

with Suez. At Ismailia the railway is joined by a connecting line from Cairo, and on the Asiatic side railways link El Kantara to Gaza in Palestine and to Port Tewfik. At El Ferdan (65 km) a swing bridge carries the railway across the Canal; at Port Said, El Kantara, Ismailia and Port Tewfik there are road vehicle ferries and at El Kantara a rail ferry. Fresh water is brought from the Nile at Cairo to Ismailia by a canal known as the "sweet water canal", which by branches running north and south parallel to the Canal also supplies Port Said and Suez. The sweet water canal is maintained by the Irrigation Department of the Government.

13. The main workshops and repair facilities of the Authority are situated at Port Fuad, and there are auxiliary workshops at Port Said, Ismailia, and Port Tewfik where maintenance of the Authority's floating equipment (see Appendix 1) and repairs to transiting ships are carried out. The Authority operates water purification plants at Port Said, Ismailia and Port Tewfik and an electrical generating station at Port Fuad.

IV. THE SYSTEM OF OPERATION

14. Navigation in the Canal is under the direct control of the Authority, which employs all the pilots, and operates all the tugs, navigational aids, etc. involved. The traffic is organized in a carefully planned system of convoys requiring expert hour to hour supervision. The convoys traverse the Canal by night as well as day being guided at night by light buoys and structures as well as by the powerful searchlights which the vessels are required to carry.

15. There are at present three convoys daily, two southbound and one northbound. The southbound convoys assemble in Port Said Harbor and consist of all classes of ships, principally tankers in ballast and laden dry-cargo ships. The northbound convoy, mainly laden tankers and dry-cargo vessels, assembles in Suez Bay. It is in two parts, the first comprising the laden tankers, the second the other vessels. The northbound convoy passes the first southbound convoy in the Bitter Lakes, where the latter has anchored for the purpose, and passes the second southbound, similarly moored at the Ballah bypass. The stipulated speed through the Canal is 13 km per hour for laden tankers and 14 km per hour for dry-cargo vessels or tankers in ballast. The approximate transit time is $13\frac{1}{2}$ hours for a vessel in the northbound convoy, 17 - 18 hours for one southbound.

16. The Authority has found that the convoy system described above, further information regarding which is given in Appendix 2, secures the maximum possible transit capacity through the Canal as existing. It estimates that using this system, the present annual daily average transit capacity of the Canal is between 55 and 60 transits per day. By "annual daily average capacity" is meant the figure arrived at after deducting from the theoretical daily maximum capacity, allowances covering the irregular arrival of ships and delays because of accidents and bad weather. From the "annual daily average capacity" thus obtained, the total annual transit capacity of the Canal can be computed.

17. The Authority provides tugs to tow vessels which through breakdown of machinery or other reason might interrupt the convoy system. Signal stations sited at about 10 km intervals along the Canal keep contact with the transiting vessels to give them instructions regarding navigation, the whole operation being co-ordinated by the Authority's staff in a central control room at Ismailia, which is in constant touch with the vessels and signal stations by wireless telegraphy.

V. ORGANIZATION AND MANAGEMENT

18. The Suez Canal Authority was initially set up by Law No. 285 of July 26, 1956. In its present form the Authority was established by Decree Law No. 146 of July 13, 1957, the principal provisions of which were as follows.

19. The Authority is defined as a public organization, with independent juristic personality. Its Board of Directors and principal officers are appointed by the President of the Republic. Its budget is separate from the National Budget but is subject to approval by the President. It is responsible for the management, operation, and maintenance of the Canal including Port Said Harbor, and for the control of navigation therein. It is empowered to impose and collect tolls for passage through the Canal and charges for other services which it performs. It can own, appropriate, let or hire property necessary for its functions. The law concerning public organizations has been amended to give them specific powers to borrow.

20. At present the board of the Canal Authority comprises eight members presided over by a Chairman, who is also Managing Director. The members, appointed by the President of the Republic as explained above, serve for an indefinite period. They include civil servants, engineers, economists and lawyers, many of whom have held important positions in Egyptian business and public life.

21. Internally the Authority is organized in accordance with usual practice the principal executives being a Secretary General and a Chief Engineer. Under these function Administrative, Works, Transit (Operating) and Procurement Departments with their respective Heads. The total permanent personnel employed by the Authority, including its pilotage service, control services and operating and maintenance staff, numbers about 5,500.

22. The users of the Canal express satisfaction with the services which they receive from the Authority and with the manner in which shipping movements through the Canal are conducted. A minor exception has been the lack of control of shipping movements in Suez Bay, an area hitherto outside the jurisdiction of the Authority. To rectify the position a law was recently enacted giving the Authority powers of compulsory pilotage in the Bay so that it will now be possible to eliminate these difficulties.

VI. PAST AND PRESENT TRAFFIC

23. Traffic through the Canal has shown a consistently upward trend since its inception except for the interruptions caused by the two World

Wars. During the period 1910-58 the annual tonnage of goods rose from 22.5 millions to 139.4 millions and the number of transits from 4,533 to 17,842, as shown below. (For further details of traffic 1949-58, see Appendix 3).

Tonnage of Cargo Passing Through Canal
(Millions tons)

<u>Year</u>	<u>Tonnage of Dry Cargo</u>	<u>Tonnage of Liquid Cargo</u>	<u>Total Tonnage</u>
1910	22.1	0.4	22.5
1915	n.a.	n.a.	15.1
1920	16.0	1.0	17.0
1925	23.6	3.0	26.6
1930	24.0	4.5	28.5
1935	21.3	5.0	26.3
1940	n.a.	n.a.	n.a.
1945	n.a.	n.a.	n.a.
1950	25.0	47.6	72.6
1955	38.7	68.8	107.5
1958	42.6	96.8	139.4

Number of Vessels Transiting Canal

<u>Year</u>	<u>Total Annual Transits</u>			<u>Average Daily Transits</u>		
	<u>Dry Cargo/ Passenger Vessels</u>	<u>Tankers</u>	<u>Total</u>	<u>Dry Cargo/ Passenger Vessels</u>	<u>Tankers</u>	<u>Total</u>
1910	n.a.	n.a.	4,533	n.a.	n.a.	12.4
1915	n.a.	n.a.	3,708	n.a.	n.a.	10.2
1920	n.a.	n.a.	4,009	n.a.	n.a.	11.0
1925	n.a.	n.a.	5,337	n.a.	n.a.	14.6
1930	n.a.	n.a.	5,761	n.a.	n.a.	15.8
1935	n.a.	n.a.	5,992	n.a.	n.a.	16.4
1940	n.a.	n.a.	2,589	n.a.	n.a.	7.1
1945	n.a.	n.a.	4,206	n.a.	n.a.	11.5
1950	5,016	6,735	11,751	13.7	18.5	32.2
1955	6,789	7,877	14,666	18.6	21.6	40.2
1958	8,254	9,588	17,842	22.6	26.2	48.9

24. Throughout the history of the Canal southbound and northbound transits have been approximately equal in number. At the present time southbound vessels comprise principally petroleum tankers in ballast, passenger and cargo vessels. The cargo carried southbound consists mainly of manufactured goods. The petroleum carried southbound comprises refined products for local distribution, together with some cargoes from Eastern Europe. Northbound traffic is made up of laden oil tankers taking petroleum produced in the Middle East to Europe and America, passenger vessels, and cargo vessels carrying principally raw materials to similar destinations. Details of the southbound and northbound traffic in 1958 were:

<u>Southbound Traffic</u>	<u>Million Tons</u>	<u>Northbound Traffic</u>	<u>Million Tons</u>
Cement	1.4	Petroleum	94.4
Fertilizers	3.7	Ores	5.6
Railway materials	0.8	Textile fibres	1.8
Fabricated materials	5.3	Cereals	1.7
Wood pulp and paper	0.5	Oil seeds	1.6
Salt	0.4	Rubber	1.3
Cereals	3.9	Sugar	1.0
Petroleum	2.4	Fruits	0.7
Others	<u>6.5</u>	Others	<u>6.3</u>
Total	<u>24.9</u>	Total	<u>114.4</u>

25. Although much affected by the competition of air transport, passenger traffic through the Canal remains substantial. In 1958 the number of passengers recorded was 342,404, the number of vessels classified as passenger ships being 558. The latter would in almost all cases carry cargo as well as passengers.

26. The foregoing statistics show that while the annual volume of dry cargo passing the Canal remained comparatively steady between 1910 and the second World War at a figure of the order of 20 million tons, after the war it increased at a substantial rate, more than doubling in amount by 1958. Petroleum, negligible in amount in 1910 rose gradually between the two wars, but in 1935 still represented only about 20% of the total traffic. After the last war, however, as a result of increases in crude oil production in the Persian Gulf area, the volume of petroleum passing through the Canal increased at a phenomenal rate, and in 1958 amounted to nearly 100 million tons, or 70% of the total traffic.

27. Corresponding increases occurred in the number of annual transits but these were proportionately lesser in extent than the cargo tonnage increases, because during the period concerned the average size of the transiting vessels was becoming greater. In the case of dry cargo vessels, the increase in size was relatively small, the annual average Suez net tonnage of vessel, which was 3,640 tons in 1910, rising only to 5,830 tons in 1949 and falling slightly to 5,653 tons in 1958. The average dead weight tonnage of the transiting tankers, however, of the order of 10,000 tons before the 1939-1945 war, had risen to 13,648 tons in 1949 and to no less than 20,734 tons in 1958.

VII. FUTURE TRAFFIC PROSPECTS

28. Ever since the emergence of the Middle East as a prime factor in world oil production, the tanker movement of Persian Gulf oil has become an increasingly important element in Canal traffic. This growth in importance involves increases in both the size of vessels in use and the total tonnage of petroleum transported.

29. The Bank made an investigation of the petroleum-transportation industry's plans concerning the size of tankers and traffic prospects generally. It is clear that a trend towards larger vessels exists, which could adversely affect tanker traffic through the Canal unless improvements are effected. As shown in Appendix 4, as of January 1, 1959, there were under construction by the petroleum-transportation industry, 251 vessels, ranging from 30,000 to 40,000 tons d.w.; 206 vessels of 40,000 to 50,000 tons d.w.; 6 vessels of 50,000 to 60,000 tons d.w.; and 63 vessels over 60,000 tons d.w. A laden tanker which coming to the Canal from Middle East has a draft of 35 feet, would be of approximately 36,000 tons d.w.; and one having a draft of 37 feet would be about 46,000 tons d.w. The greater part of the 206 vessels of 40,000 to 50,000 tons d.w. now being built and some of the 251 vessels from 30,000 to 40,000 tons referred to above will fall in the 36,000 to 46,000 tons range. A number of vessels of this category are also already in service. Should the present draft limitation of 35 feet remain, all of these vessels, both in service and under construction, would, when fully loaded, be unable to use the Canal. Accordingly, the canal improvements included in the Project, which as described in the next section of this report have been designed to make possible the passage of vessels having 37 feet draft, should permit the recovery of the traffic already being lost through the diversion of vessels in the 36,000 to 46,000 tons range and the retention of traffic which in future will move in such vessels yet to be placed in service.

30. It would appear that the still larger tankers upwards of 46,000 tons will tend to be used primarily on routes other than the Persian Gulf-Western Europe route. Furthermore, the number of "giant" tankers is foreseen to remain relatively small.

31. Until recently there appeared to be no important factors which could materially affect further substantial increase of the volume of petroleum movement through the Canal. At present, however, there are distinct possibilities that for a time at least such factors will be present. The most significant of these is the discovery and initial development of prospectively important new oil-producing areas in the world, notably in Africa but also in the Western Hemisphere. These developments combined with import restrictions in the United States, are felt by many observers to foreshadow a material slowing down of Canal petroleum tonnage increases.

32. Dry cargo shipments through the Canal, although only 30% of the whole, nevertheless constitute a substantial volume of traffic, amounting to 42.6 million tons in 1958. The opinion is generally held that the increasing trend in this traffic during the postwar period, as described in paragraph 26, is likely to continue in respect of both volume and number of transits.

33. The Authority's own forecast of the level of traffic envisages an increase in petroleum traffic from about 97 million tons in 1958 to approximately 140 million tons in 1965 and an increase in the average total daily transits including dry cargo vessels from 49 in 1958 to 58 in 1965.

34. The complete program of improvements now planned by the Authority consists of the first phase extending to 1961, the project for which the Bank's financial participation is sought, and a subsequent two-year phase for the years 1962 and 1963. The first phase is required, even with the present volume of traffic, to operate and maintain the Canal effectively and to prevent the increasing diversion of that traffic from the Canal as the average size of tanker increases. The second phase, on the other hand, will be required only if the number of transiting vessels increases substantially. The Authority intends to observe traffic developments in the next year or so before deciding whether or when to undertake this second phase. As will be seen later in this report, the project would be financially sound even if no increase in traffic were experienced after 1959/60. Accordingly, the degree of future traffic increases is not an essential consideration in the project appraisal.

VIII. THE PROJECT

General

35. From the opening of the Canal in 1869 until 1955, the Suez Canal Company carried out seven Canal improvement programs. In the latter year the company began a further series of improvements known as the Eighth Program, which was in progress at the time of nationalization. The Authority continued work on this program after making a number of changes and also drew up an additional scheme known as the Nasser Program for further development to follow the Eighth Program.

36. The Project consists of elements necessary to complete the modified Eighth Program and a part of the Nasser Program, extending to the year 1961. It comprises the principal items shown below. Fuller details of the Project are given in Appendix 5 and Maps 2 and 3; the technical basis of the Canal improvements is described in Appendix 6.

The Project

37.(a) The widening of the single way Canal cuts at various locations for the purpose of eliminating navigational hazards and increasing the wet cross sectional area of the Canal.

(b) The deepening of the Canal and its approaches in various locations to permit the passage of vessels having a draft of 11.28 meters (37 feet), and in the case of certain parts of the cuts to increase the wet cross sectional area for the purpose described in paragraph 51 below.

(c) The deepening and improvement of Port Said Harbor and the provision of berths for cargo and passenger ships clear of the Canal channel and assembly area.

(d) The construction of a research laboratory and miscellaneous buildings required for the Authority's operations.

(e) The construction of roads and bridges in the Port Tewfik and Port Said areas.

(f) Miscellaneous civil engineering and maritime construction, including the construction of basins and sheds for lighterage traffic in Port Said and Port Fuad.

(g) The purchase of dredging equipment, tugs, launches, barges, ferry boats, pilot vessels, floating and land cranes, and earth moving, electrical, air supply, water supply, fire fighting and telecommunications equipment to meet the Authority's future requirements and replace obsolescent equipment.

Present Progress

38. The Project had progressed virtually according to schedule at the time of the mission's appraisal. With reference to the principal items shown in Appendix 7, widening and deepening of various sections of the Canal by dredging and revetment construction was started in August 1958 and was scheduled to be completed by September 1960. Dry digging was started in February 1958 and was scheduled to be finished by September 1959. In July 1959, dredging was 36 percent, construction of new revetments 47 percent and demolition of existing revetments 41% complete.

39. Modification of the El Guisr curves was started in January 1959; expected to be completed by May 1960; contract work was 60% finished; and the direct administration work had just been started in July 1959. The widening of the Kantara section was just started in July 1959 and is scheduled for completion in July 1960.

40. Deepening of Port Said roadstead and Great Bitter Lakes was finished about October 1, 1959, by the U.S. Corps of Engineers' hopper dredger "Essayons". Deepening of the Suez roadstead has not been started.

41. Deepening and widening of other sections of the Canal to complete the modified Eighth Program had just been started and is scheduled for completion at the end of September 1960. Deepening of the Canal between km 132 and km 157.5 had not been started at the time of the mission's appraisal. Improvements to Port Said Harbor are expected to be started in July 1960. The widening operations at El Ferdan bridge will start in December 1959 and take about two years to complete. Widening the Canal from km 79 to km 97 has not yet been started, nor a schedule as yet announced. The construction of a research laboratory at Ismailia was started in April 1959 and scheduled for completion early in 1960. It was about 50% finished in July 1959. Other works and acquisition of equipment are progressing satisfactorily. Further details concerning approximate dates for commencement, completion, order and delivery are included in Appendix 5.

The Cost of the Project

42. The estimated cost of the Project is LE37,606,356 (US\$107,930,422 equivalent), of which LE 19,689,000 (US\$56,500,000 equivalent) will be in foreign currency, the following being the principal items (for details see Appendix 7):

	Foreign Currency		Local Currency		Total	
	£E	US\$ Equiv.	£E	£E	US\$ Equiv.	
	(millions)	(millions)	(millions)	(millions)	(millions)	(millions)
a) Canal Improvement Program	9.8	(28.1)	11.4	21.2	(60.8)	
b) Provision of buildings and miscellaneous facilities	.4	(1.2)	2.4	2.8	(8.2)	
c) Purchase of plant and equipment	8.7	(24.9)	3.1	11.8	(33.7)	
d) Contingencies	.8	(2.3)	1.0	1.8	(5.2)	
Total	19.7	(56.5)	17.9	37.6	(107.9)	

43. The phasing of expenditure on the Project by fiscal years is approximately as follows, in £E millions:

	Last 6 mos. 57/58		58/59		59/60		60/61		First 6 mos. 61/62		Total Project	
	F	L	F	L	F	L	F	L	F	L	F	L
	a) Canal Improvement Program	1.1	.4	2.2	3.0	4.3	4.9	2.0	2.4	.2	.7	9.8
b) Buildings & Miscellaneous facilities	*	.1	.1	.4	.2	1.1	.1	.7	*	.3	.4	2.4
c) Plant and Equipment	.8	.3	1.6	1.0	2.7	.7	2.6	.8	1.0	.3	8.7	3.1
Total	1.9	.8	3.9	4.3	7.2	6.6	4.7	3.9	1.2	1.3	18.9	16.9
Contingencies	-	-	-	-	.4	.6	.3	.3	.1	.1	==.8	==1.0
Grand Total	1.9	.8	3.9	4.3	7.7	7.2	5.0	4.2	1.2	1.4	19.7	17.9

Note: Totals do not always equal sum of factors because of rounding.

*Amounts less than £E 50,000 omitted
 F represents foreign exchange costs
 L represents local currency costs

44. The foregoing estimates include expenditures made by the Suez Canal Authority since January 1, 1958. Foreign exchange expenditures for the Project since that date to January 1, 1959, have been of the order of £E 3.5 million equivalent.

45. The estimates allow for contingencies and appear to be realistic, having been to a large extent based on actual prices already paid or quoted.

46. The wet dredging and excavation, representing about 35% of the cost of the Project, is being carried out by contract after international bidding except in the case of dredging in Port Said roads and the Bitter Lakes, which has been carried out by the U.S. Corps of Engineers' dredger "Essayons" on a charter basis, and certain dredging which can be done more economically using the Authority's own craft. Dry excavation and the re-vestment is being done by local contract, foreign contractors not being able to compete in prices for this class of work. The purchase of equipment will be generally on the basis of international tender.

47. The civil engineering design work connected with the project is being carried out by the Authority, which has its own staff of competent engineers. To a considerable extent the designs adopted for Canal improvement follow principles and practices which have grown up over the many years of the Canal's history and in the formulation of which many engineers of international reputation have played a part.

The 1962/63 Program

48. The Project as described above is a part of a continuing program extending through 1962 and 1963. While most of this additional program will follow completion of the Project, parts of it may be started before 1962.

49. The additional plans call for further widening, further deepening and extension of the existing by-passes or double sections of the Canal at Ballah, Great Bitter Lake, Kabret and Port Said; additional improvements at Port Said Harbor; the construction of a shipbuilding yard at Port Fuad; other miscellaneous building construction; and the acquisition of additional operating and maintenance equipment.

50. The cost of the 1962/63 program is now estimated to be about £E 31.1 million, of which £E 15.6 million equivalent would be in foreign exchange and £E 15.5 million in local currency. (See Appendix 8).

IX. BENEFITS RESULTING FROM THE PROJECT

51. As a result of widening and deepening works, vessels having a draft of 11.28 meters (37 feet) fully loaded, e.g., a tanker of about 46,000 tons d.w. will be able to transit the Canal as compared with the present limitation of 10.67 meters (35 feet), equivalent to tanker tonnage of 36,000 tons d.w.

The increase in wet cross sectional area achieved will facilitate navigation and attain an acceptable ratio of 1 to 5 between the wet cross section of the larger transiting vessels and the wet cross section of the canal cuts. Research has indicated that with a lesser ratio erosion of the banks and consequent maintenance costs are at an uneconomic level, steering of vessels is adversely affected and the "squat" of the larger transiting vessels is excessive.

52. Navigation will be facilitated generally and certain existing hazards will be eliminated. Delays to vessels awaiting convoy will be reduced; and generally the Canal Authority will be in a better position to retain its existing traffic in the face of competitive routes such as that around the Cape.

53. The improvement of Port Said Harbor will reduce delays to shipping awaiting entry to the Canal occasioned by the present inadequate area of the harbor and its use as a commercial port as well as an assembly area for Canal convoys. At the same time hazards to shipping will be lessened and the efficiency of Port Said as a commercial port will be increased.

54. The research laboratory is required for the carrying out of hydraulic and related research into Canal dredging, revetment maintenance and similar problems. It will also provide services for outside bodies subject to priority for work connected with the Canal. Details of the operational need for the various items of plant and equipment are given in Appendix 5. In general, the new items are needed to replace existing equipment which is nearing the end of its useful life, to provide additional equipment necessary to enable the Authority to maintain and operate the improved Canal efficiently and to provide users with the ancillary services which they require.

X. EARNINGS AND FINANCES

55. The earnings and finances of the Authority depend very largely on Canal tolls. Only relatively small amounts accrue from berthing and towage of vessels, the supply of water and electricity, ferry tolls and the rent of buildings and floating equipment.

56. Canal toll charges are related to the "Suez Canal net ton" which is calculated in accordance with specific rules pertaining to methods for vessel-space measurements. Payment of transit tolls by ships' agents at Port Said and Suez, in advance of ships entry into the Canal, is generally made by check in Egyptian pounds acquired by the sale of foreign exchange to the National Bank of Egypt.

57. Canal toll charges have not been increased since 1941, and, in fact, they were reduced in 1951 and again in 1954, to the current level, as shown below:

<u>Effective Date</u>	<u>Rate of Tolls per Suez Canal Net Ton</u>	
	<u>Laden Vessels</u>	<u>Vessels in Ballast</u>
	- EE -	
December 15, 1938	0.2803	0.14015
January 1, 1941	0.390	0.195
September 15, 1951	0.365	0.170
September 14, 1954	0.340	0.155

58. Earnings. The Suez Canal has consistently been operated at a profit, after allowance for depreciation based on the straight line method and original cost.

59. Annual depreciation charges provide ample allowances, being the maximum permitted by the Government Tax Department.

60. Net operating income after income taxes and depreciation has been as shown below:

<u>Year</u>	<u>Operating Revenues</u> (£ 000)	<u>Operating Expenses</u> (£ 000)	<u>Net Revenues</u> (£ 000)	<u>% Operating Ratio</u>
1956/57 (7 mos.)	14,261	9,322	4,939	65
1957/58	41,053	18,879	22,174	46
1958/59	45,303	18,884	26,419	42

Note: The foregoing table includes in operating expenses depreciation, income taxes and government royalty, as shown in Appendix 9. Net revenues are calculated accordingly.

61. Finances. The Authority's balance sheet as of June 30, 1959, is summarized below. For greater detail see Appendix 10.

Current Assets	(£ 000) 32,828	Current Liabilities	(£ 000) 20,563
Fixed Assets	14,662	Reserves:	
		Income Tax	5,300
		Depreciation and renewals	15,476
		Unappropriated Income	<u>6,151</u>
Total Assets	<u>47,490</u>	Total Liabilities	<u>47,490</u>

62. Fixed assets acquired at time of nationalization are carried at one pound Egyptian. Subsequent reinvestment of earnings in fixed assets has been at a high level, amounting to more than £ 14.6 million during the three-year period ending June 30, 1959.

63. The Authority has no long-term debt. Current assets bear a satisfactory relationship to current liabilities and its financial position is sound.

64. The amounts charged to depreciation, credited to the renewals fund and remaining to the Authority in the form of unappropriated income amounted to 27% of gross revenues in 1957/58 and to 23% in 1958/59, as summarized from Appendix 9 and shown below:

	<u>1957/58</u>	<u>1958/59</u>
Gross revenues	£ 41,053,000	£ 45,303,000
Depreciation	2,808,000	3,200,000
Renewals Fund	3,000,000	2,736,000
Unappropriated Income	<u>5,160,000</u>	<u>4,599,000</u>
	£ 10,968,000	£ 10,535,000
	26.7%	23.3%

XI. FUTURE FINANCING

65. A Bank loan (£56,500,000 equivalent) has been requested in order to meet the foreign exchange costs of the Project, estimated to cost, as shown in Appendix 7, £E 19,689,000 equivalent foreign exchange and £E 17,917,000 local currency. As stated earlier, the Suez Canal Authority is planning further improvements, most of the cost of which would be incurred in 1962 and 1963. In the course of the next two years the Authority will be able to observe traffic trends before making a final decision concerning its investment program. The cost of such improvements, which are not included in the Project, are currently estimated at about £E 15,650,000 equivalent foreign exchange and £E 15,465,000 local currency.

66. The Authority has prepared a forecast of income through 1962/63 based upon its own forecast of future traffic. The projection indicates the following earnings, in thousands of Egyptian pounds: (For details see Appendix 11).

<u>Year</u>	<u>Operating Revenues</u>	<u>Operating Expenses</u>	<u>Net Revenues</u>	<u>Operating Ratio (%)</u>
1959/60	46,250	22,019	24,231	48
1960/61	49,625	23,567	26,058	47
1961/62	53,000	24,691	28,309	47
1962/63	56,250	26,153	30,097	46

Note: Operating Expenses include depreciation, income taxes and Government royalty, 5% of gross revenue.

67. The profitability of the Suez Canal Authority is such that even if no increase in traffic were experienced subsequent to 1959/60, the Authority would without difficulty be able to carry out the Project and service the requested Bank loan. Based upon the assumption of no increase in traffic after 1959/60, the income accounts would develop substantially as shown below. (For details see Appendix 12).

	Fiscal Years (£E 000,000)					
	1959	1960	1961	1962	1963	1964
Total operating revenues	46.2	46.2	46.2	46.2	46.2	46.2
Total operating expenses, including depreciation, taxes, and Government royalty	22.0	22.6	23.1	23.0	23.2	23.5
Net revenue after depreciation, taxes, and Government royalty	24.2	23.6	23.1	23.2	23.0	22.7

68. The extent to which the local currency and loan service costs would be covered by earnings plus depreciation assuming no increase in traffic or revenues after 1959/60, is shown in the following table:

	LE 000 or equivalent			
	<u>1959/60</u>	<u>1960/61</u>	<u>1961/62</u>	<u>1962/63</u>
1. Local currency cost of the project	7,200	4,237	1,380	
2. The 1962/63 program, foreign and local currency costs			15,000	16,116
3. IBRD interest	56	707	985	1,136
4. IBRD amortization	-	-	436	958
Total lines 1 to 4	<u>7,256</u>	<u>4,944</u>	<u>17,801</u>	<u>18,210</u>
5. Depreciation	3,700	4,200	4,700	5,000
6. Net income after depreciation, income taxes and government royalty	<u>24,231</u>	<u>23,671</u>	<u>23,106</u>	<u>23,208</u>
Total lines 5 and 6	<u>27,931</u>	<u>27,871</u>	<u>27,806</u>	<u>28,208</u>

69. For the construction period of the project, ample margins are provided. In 1961-62 a part of the costs for the 1962-63 program (LE 15 million) is also included. Most of the costs of this program would be incurred after the project is completed. They are included in the foregoing table in order to show that, even without taking into account any future outside financing, ample funds would be available for the purposes indicated.

XII. CONCLUSIONS AND RECOMMENDATIONS

70. Management of the Suez Canal is efficient and its operations are well conducted.

71. The Project is designed to permit the transit of vessels of about 46,000 tons d.w., with a draft of 37 feet, compared to the maximum now permitted, 36,000 tons d.w. and a draft of 35 feet. Navigational hazards and delays to shipping will be reduced. Equipment necessary for effective operation and maintenance of the Canal will be provided.

72. Traffic has been increasing consistently in the postwar period, particularly with respect to northbound transits and tonnage of petroleum from the Middle East.

73. Recent developments in petroleum production will affect Suez Canal future traffic to a degree as yet uncertain. Nevertheless, because of the trend toward larger tankers and the necessity to maintain a high level of operational efficiency, the Project is required if the Authority is to keep abreast of developments and retain its traffic volume. The Project is sound and arrangements for carrying it out are satisfactory.

74. The earnings of the Authority are good and its financial condition is satisfactory. Reinvestment of earnings in plant and equipment has been at a high level and there are no working capital problems. There is no long-term debt. Operations may be expected to continue to be profitable.

75. The present level of traffic and revenues will be sufficient for the Authority to carry out the Project and to service the proposed Bank loan.

76. The Project is suitable for a Bank loan of about \$56,500,000 equivalent which would cover its foreign exchange costs. An appropriate term would be 15 years with a two-year grace period. The Suez Canal Authority would be the borrower.

Appendix 1

SUEZ CANAL PROJECT

List of Suez Canal Authority's Existing Floating Equipment

<u>Item No.</u>	<u>Description</u>	<u>Number</u>	<u>Date Purchased</u>	<u>Remarks</u>
<u>Dredging Equipment</u>				
1.	Hopper (drag suction) dredger	1	1950	Dredger "Rameses"
2.	Cutter suction dredgers	3	1955-58	Dredgers "Tohotmos", "26th July" and "15th September"
3.	Bucket dredgers	5	1913-27	-
4.	Rock breaker	1	1950	-
5.	Pump ashore units	2	1914, 1925	-
6.	Self-propelled dumping hoppers	3	1906	-
7.	Dumping hoppers	25	1906-53	-
<u>Tugs</u>				
8.	Large tugs	4	1898-1954	Of these tugs only the "Amtar" was built since 1926.
9.	Medium tugs exceeding 1000 hp.	6	1949-58	-
10.	Medium tugs less than 1000 hp	6	1924-57	-
11.	Small tugs	19	1892-1955	-
<u>Floating Cranes and Sheerlegs</u>				
12.	80 tons capacity	1	1954	-
13.	40 tons "	2	1930	-
14.	8-10 tons "	8	1913-53	-
15.	3-6 tons "	8	1913-47	-

<u>Item No.</u>	<u>Description</u>	<u>Number</u>	<u>Date Purchased</u>	<u>Remarks</u>
<u>Barges</u>				
16.	Work barges	211	1884-1953	-
17.	Fuel barges	9	1908-50	-
18.	Water barges	7	1906-51	-
19.	Pile drivers	2	-	Barges included in item 16.
20.	Derrick cranes	3	1888-1908	-
<u>Launches</u>				
21.	Harbor launches	2	1902, 1913	-
22.	Pilot launches	21	1938-57	-
<u>Motor Boats</u>				
23.	Miscellaneous	33	1922-56	-
<u>Miscellaneous Craft</u>				
24.	Pilot boats	2	1912, 1951	-
25.	Salvage boats	2	1950	-

Note:

Of the above craft, a large proportion have been sunk and salvaged. In their salvaged condition their usefulness has in many cases been adversely affected, particularly where craft with electrical equipment are concerned. The considerable age of many of the craft is also noticeable.

The Convoy System and the Capacity
of the Canal

1. As described in paragraph 15 there are at present three convoys daily, two southbound and one northbound. The convoys assemble in Suez Bay and Port Said Harbor, and must have anchored and notified the Authority of their arrival $2\frac{1}{2}$ hours before convoy departure time in order to obtain permission to join the convoy. If a vessel arrives just after this time limit, it may thus lose 24 hours if northbound, or about half as long if southbound.
2. The northbound convoy leaves Suez in two sections, the first section consisting of tankers less than 14,000 tons spaced at 10 minute intervals, followed by tankers 14,000 tons and over at 16 minute intervals, and the second section of dry cargo and other vessels spaced at 9 minute intervals. The first section travels at 13 km p.h. and the second, which leaves about 40 minutes after the last vessel of the first section, at 14 km p.h., by this superiority of speed partly catching up the first section during the transit. The two southbound convoys travel at 14 km. p.h. with the vessels at 9 minute intervals.
3. The northbound convoy passes the first southbound convoy at anchor in the Great Bitter Lake, and passes the second tied up in the Ballah Bypass. Although the northbound convoy is intended to travel through the Canal without stopping, in practice it frequently anchors in the Bitter Lake, either because the last of the first southbound has not yet entered the Lake, or to re-arrange the convoy, it not always being possible to assemble in proper order at Suez.
4. The relative advantage of various convoy systems is a complex matter. Broadly speaking, reduction in the number of convoys increases the daily transit capacity of the Canal until the number of convoys is reduced to three, the present number. To reduce the number to two daily would offer no further advantage in this respect. An increase in the number of convoys daily would however decrease the average time lost waiting to join convoy at the end from which the increased number of convoys left.
5. Given the spacing, the speed of ships, and the position and length of the by-passes, the theoretical maximum daily transit capacity can be computed, i.e. the number of ships which can pass through the Canal providing that all vessels exactly keep station; that there are no delays due to accident or weather; and that the proportion of tankers exceeding 14,000 tons d.w. is not abnormal. To obtain a figure for daily capacity which can be used to compute the total annual capacity of the Canal it is necessary to use a reduction factor allowing for the variations tending to reduce capacity listed above and also for the fact that the number of vessels seeking transit daily is not steady but fluctuates between wide limits. The Suez Canal Company choose a value of 15% for this reduction, the Authority feel that this was on the conservative side.
6. Appendix 3 gives details of the daily transits recorded during 1958. As will be seen, the monthly daily average varied between 46.1 and

53.3, the annual daily average having been 48.9. Individual daily transits varied between a maximum of 84 and a minimum of 12. The Authority state high figures such as the former, apparently exceeding the theoretical maximum capacity of the Canal, arise under circumstances of the following kind. Although that number of vessels may have entered the Canal on the day concerned, they may not all have completely transited on that day, i.e., the three convoys may have over-run 24 hours; there may have been an unusually small number of loaded tankers exceeding 14,000 tons in the convoy, thus shortening it; when there is heavy congestion of shipping the Authority allows a slightly higher speed than normally stipulated, an increase which can only be permitted occasionally if undue damage to the banks is to be avoided.

TRAFFIC THROUGH THE CANAL, 1949-1958

KS/SnW

UNITED ARAB REPUBLIC
SUEZ CANAL AUTHORITY
Management

Northbound Goods Traffic in the Canal (1949 - 1958)
(Thousands tons)

Year	Petroleum Products	Ores & Metals	Textile Fibers (Raw)	Cereals	Oil Seeds	Rubber	Sugar	Fruits	Others	Total
1949	36,976	1,933	1,316	1,492	984	1,167	541	212	3,406	48,027
1950	47,526	2,212	1,489	2,061	1,444	356	428	282	4,670	60,468
1951	42,873	2,592	1,549	3,072	2,083	1,369	521	358	4,916	59,333
1952	45,933	3,731	1,409	1,824	1,531	1,384	548	398	4,689	61,447
1953	49,420	5,049	1,817	2,068	1,734	1,246	1,060	452	5,035	67,881
1954	56,978	4,552	1,629	2,189	1,765	1,217	1,046	553	4,582	74,511
1955	66,893	5,300	1,744	2,488	1,803	1,349	964	618	6,267	87,426
1956 (2)	65,777	(1)	(1)	(1)	(1)	(1)	(1)	(1)	17,099	82,876
1957 (3)	54,051	4,344	999	1,146	1,153	755	752	298	3,721	67,219
1958	94,401	5,602	1,766	1,681	1,594	1,257	1,012	706	6,411	114,430

- (1) Cannot be specified due to absence of the Captains' Declarations of July 1956.
- (2) Figures of 1956 are for the navigational period of the year (10 months)
- (3) Figures of 1957 are for the navigational period i.e. from 10th April till end of the year.

KS/SnW

UNITED ARAB REPUBLIC

SUEZ CANAL AUTHORITY

Management

Southbound Goods Traffic in the Canal (1949 - 1958)

(Thousands tons)

Year	Petro- leum	Cement	Ferti- lizers	Coal & Coke	Railway Mater- ials	Fabri- cated Metals & Machinery	Wood Pulp & Paper	Salt	Cereals & Deriva- tives	Others	Total
1949	166	1,326	673	161	329	2,642	452	1,136	1,668	4,475	13,028
1950	111	1,110	1,389	549	377	2,725	450	161	779	4,790	12,141
1951	1,931	1,207	1,085	328	308	2,788	510	835	2,215	6,213	17,420
1952	6,415	1,701	1,593	406	304	2,529	441	393	2,176	6,043	22,001
1953	7,231	1,587	2,065	72	268	3,052	608	406	1,468	5,761	22,518
1954	6,084	1,990	2,089	75	385	3,169	568	470	504	7,036	22,370
1955	1,905	2,683	2,454	116	467	3,759	611	497	489	7,101	20,082
1956 ⁽²⁾	1,755	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	16,352	18,107
1957 ⁽³⁾	847	1,285	1,935	61	426	3,514	367	182	1,046	4,441	14,104
1958	2,376	1,379	3,685	149	760	5,331	506	404	3,937	6,416	24,943

(1) Cannot be classified due to absence of the Captains' Declarations of July 1956.

(2) Figures of 1956 are for the navigational period of the year (10 months)

(3) Figures of 1957 are for the navigational period i.e. from the 10th of April till the end of the year.

KS/SnW

UNITED ARAB REPUBLIC

SUEZ CANAL AUTHORITY

Management

TRAFFIC IN THE CANAL 1949 - 1958

Year	NUMBER OF TRANSITS						Suez Canal net tonnage (Thousands of tons)		
	By kind of ships			By direction of transit			Tankers	Others	Total
	Tankers	Others	Total	Southbound	Northbound	Total			
1949	5,501	4,919	10,420	5,272	5,148	10,420	40,195	28,616	68,811
1950	6,735	5,016	11,751	5,950	5,801	11,751	52,092	29,704	81,796
1951	5,900	5,794	11,694	5,807	5,887	11,694	46,732	33,624	80,356
1952	6,235	5,933	12,168	6,111	6,057	12,168	51,822	34,315	86,137
1953	6,456	6,275	12,731	6,362	6,369	12,731	56,374	36,531	92,905
1954	6,890	6,325	13,215	6,629	6,586	13,215	65,012	37,482	102,494
1955	7,877	6,789	14,666	7,332	7,334	14,666	75,857	39,899	115,756
1956 (1)	7,382	5,909	13,291	6,699	6,592	13,291	74,348	32,658	107,006
1957 (2)	5,849	5,109	10,958	5,498	5,460	10,958	62,883	27,028	89,911
1958	9,588	8,254	17,842	8,999	8,843	17,842	107,816	46,663	154,479

N.B.-- (1) Figures of 1956 are for the navigational period of this year (10 months only).

(2) Figures of 1957 are for the navigational period of this year from 10th April till the end of the year.

It is to be noted that the period from 10th April to end of time is a period of recovery of traffic, the figure being below normal.

Transits Through the Canal During 1958

<u>Month</u>	<u>Southbound</u>			<u>Northbound</u>			<u>Total Transits</u>		<u>Monthly Daily Average Total Transits</u>
	<u>Daily Average</u>	<u>Max. Daily</u>	<u>Min. Daily</u>	<u>Daily Average</u>	<u>Max. Daily</u>	<u>Min. Daily</u>	<u>Max. Daily</u>	<u>Min. Daily</u>	
January	22.4	38	9	24.1	45	7	62	29	46.5
February	24.2	45	13	23.7	42	11	69	33	47.9
March	25.0	42	12	23.6	52	16	84	12	48.6
April	23.8	42	10	23.9	34	11	66	32	47.7
May	24.1	38	16	25.8	40	17	67	40	49.9
June	23.5	34	12	22.6	35	15	68	31	46.1
July	23.6	35	14	22.5	37	11	72	31	46.1
August	24.4	33	11	23.2	34	14	61	35	47.6
September	26.0	35	15	24.4	35	19	65	39	50.4
October	27.0	38	11	24.8	34	17	66	32	51.8
November	27.2	51	10	26.1	39	18	73	39	53.3
December	24.8	40	16	25.8	37	14	67	35	50.6

Annual Average Daily Total Transits: 48.9

WORLDWIDE INDUSTRY BANKER CONSTRUCTION BY SIZE GROUPS
AS AT JANUARY 1, 1959
(VESSELS 5,000 D.W.T. AND OVER)

COMPANY	Total		5,000/15,000		15,001/20,000		20,001/30,000		30,001/40,000		40,001/50,000		50,001/60,000		60,001/75,000	
	No.	DWT	No.	\$2	No.	\$2	No.	\$2	No.	\$2	No.	\$2	No.	\$2	No.	\$2
OIL COMPANIES																
Jersey	53	158.0	43	790	-	-	-	-	23	56.3	27	86.7	-	-	3	15.0
Standard-Vacuum	4	7.6	28	350	2	3.9	-	-	1	2.6	1	3.1	-	-	-	-
Sub-total	57	165.6	42	710	2	1.9	-	-	24	58.9	28	89.8	-	-	3	15.0
Allied/Whitbread	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Atlantic Refining	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
British Petroleum	57	141.1	36	840	14	14.5	5	6.4	-	-	-	-	-	-	-	-
Calder	13	37.3	43	690	-	-	1	1.2	-	-	4	18.5	-	-	2	8.6
Citizen Services	3	13.0	65	1,000	-	-	-	-	-	-	-	-	-	-	3	13.0
Continental Oil	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gulf	23	61.1	38	880	-	-	1	1.2	6	12.2	10	26.0	-	-	3	13.0
Hess	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Paragon	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Petrofina	3	6.5	32	270	-	-	1	1.3	-	-	1	3.0	-	-	-	-
Purex Oil	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Richfield	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Standard Refining	2	3.3	24	500	-	-	2	3.3	-	-	-	-	-	-	-	-
Shell	45	101.4	33	760	-	-	15	18.0	-	-	21	48.7	-	-	4	12.2
Standard-Mobil	15	42.1	41	660	-	-	2	2.5	-	-	4	11	35.4	-	5	22.5
Standard Oil-California	10	34.7	51	900	-	-	-	-	-	-	-	-	-	-	7	13.0
Standard Oil (Indiana)	3	10.0	47	750	-	-	-	-	-	-	-	-	-	-	3	10.0
Texas Co.	11	28.4	39	660	-	-	2	2.6	-	-	2	5.2	-	-	7	21.6
Tidewater	15	39.3	59	1,100	-	-	-	-	-	-	-	-	-	-	6	18.4
Union Oil	2	8.5	60	1,000	-	-	-	-	-	-	-	-	-	-	2	8.5
Other Oil Companies	12	28.6	31	600	1	1.1	1	1.1	1	1.4	3	6.4	1	1.7	6	18.7
TOTAL OIL COMPANIES	271	743.9	40	600	17	17.4	28	34.3	11	21.1	77	184.0	100	315.7	2	8.5
INDEPENDENT COMPANIES																
Andreadis	6	18.8	44	1,000	-	-	-	-	-	-	-	-	-	-	6	18.8
Barber Oil	3	9.9	47	530	-	-	-	-	-	-	-	-	-	3	9.9	-
Carson	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Geulandrie	10	27.5	40	990	-	-	-	-	5	12.7	5	14.8	-	-	-	-
Hendy, Joshua	3	4.8	23	970	-	-	-	-	-	-	1	2.2	-	-	-	-
Kulakondis	4	13.1	45	370	-	-	-	-	-	-	-	-	-	4	13.1	-
Kurs	5	10.9	31	780	-	-	-	-	3	7.3	-	-	-	-	-	-
James	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Livorno	3	21.0	104	520	-	-	-	-	2	3.3	1	2.7	-	-	3	21.0
National Bulk	7	26.5	55	790	-	-	-	-	-	-	-	-	-	-	4	20.5
Niarchos	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nicolson	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Noskro	14	53.7	56	640	-	-	-	-	1	1.7	3	8.0	-	-	2	6.4
Oceania	2	4.9	36	650	-	-	-	-	-	-	1	2.2	-	-	1	2.7
Pergeotis	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Wang	1459	973.3	31	770	4	3.4	133	169.5	70	117.8	151	353.3	85	258.7	4	14.2
Other Independent Companies	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL INDEPENDENT COMPANIES	1516	1162.4	31	700	4	3.4	135	172.1	75	126.4	165	388.4	106	324.4	4	14.2
GOVERNMENT COMMERCIAL	23	30.8	20	2,000	11	6.4	2	2.6	1	1.7	9	20.1	-	-	-	-
TOTAL WORLD COMMERCIAL	1810	1935.1	35	600	32	27.2	165	209.0	87	149.2	251	592.5	206	640.1	6	22.7

Source: Standard Oil Company (N.J.)
Transportation Coordination Dept.

SUEZ CANAL PROJECT

Detailed List of Items Comprising the Project

Item No.	Description of Item.	Purpose for which required.	Approximate commencement date or date of order.	Approximate completion date or date of delivery.	Method of execution or procurement.	Remarks
1.	<u>Canal Improvement Program Widening and Deepening of Various Sections of Canal</u> comprises dry digging, demolition and construction of revetment and dredging	Elimination of navigational hazards, increase in wet cross section	In hand	July 1960	Dry digging by local contract, dredging by contract	Dredging by consortium
2.	<u>Modification of curves in El Guisr Region</u> comprises dry digging, construction of revetment and dredging	Elimination of navigational hazards, increase in wet cross section	In hand	May 1960	Dry digging and revetment local contract, dredging departmentally	-
3.	<u>Widening and Deepening of Section at El Kantara</u> comprises demolition of existing structures and revetment, dry digging, construction of new revetment and dredging	Elimination of navigational hazards, increase in wet cross section and deepening to permit transit of 37 feet draft vessels	In hand	July 1960	Demolition and dry digging local contractor, dredging departmentally	-
4.	<u>Widening and Deepening in Port Said Roads and Great Bitter Lake and Suez Roads</u> extension of dredged areas and deepening in Port Said Harbor, channel and roads and deepening of anchorages and channel in the Great Bitter Lake and Suez Roads	To permit transit of 37 feet draft vessels and reduce congestion at Port Said	In hand	October 1959	Dredging by USCE dredger "Essayons" on charter	-
5.	<u>Widening and Deepening of Other Sections of the Canal</u> comprises dredging only	Elimination of navigational hazards, increase in wet cross section and deepening to permit transit of 37 feet draft vessels	In hand	September 1960	Departmentally	Item includes work in Suez Roadstead
6.	<u>Deepening of Canal from Km. 132 to Km. 157 and widening between Km.145 and Km. 155.</u> deepening and widening the Canal by drag line excavator	Increasing wet cross section and deepening to permit transit of 37 feet draft ships	August 1959	October 1960	Contract	Contract awarded to a Belgium-Dutch consortium
7.	<u>Improvements to Port Said Harbor</u> removal of existing islands and replacement by making areas elsewhere doubling the channel in the harbor, removal of end of existing internal breakwater, provision of navigational aids and provision of deep sea quays to berth passenger and cargo ships loading or handling cargo at Port Said	To diminish congestion in the harbor so as to reduce waiting time of vessels entering the Canal and to improve the efficiency of the port of Port Said	July 1960	End of 1961	Contract	International bids

SUEZ CANAL PROJECT
Detailed List of Items Comprising the Project

<u>Item No.</u>	<u>Description of Item</u>	<u>Purpose for which required</u>	<u>Approximate commencement date or date of order</u>	<u>Approximate completion date or date of delivery</u>	<u>Method of execution or procurement</u>	<u>Remarks</u>
8.	<u>Widening of El Ferdan Bridge Section</u> Demolition of existing bridge pier protection and construction of new steel sheet pile protecting wall.	Increase in cross section of Canal and reduction of navigational hazard presented by bridge piers.	December 1959	December 1961	Contract	International bids
9.	<u>Widening of Canal from Km. 79 to Km. 97</u> Widening of Canal by dry digging, demolition and construction of revetments, and dredging.	Increase in wet cross section of Canal	End of 1960	End of 1961	Contract	International bids
10.	<u>Construction of Research Laboratory</u> Laboratory building with Canal experimental tank, wave tank, materials testing laboratory, soil mechanics laboratory, etc. at Ismailia.	Research into hydraulic problems associated with Canal, materials and soil mechanics testing in connection with construction program.	In hand	End of 1960	Local contract	-
11.	<u>Miscellaneous Building Construction</u> Comprises various buildings including a school at Ismailia for the children of the Authority's personnel, an extension of the Authority's offices at Ismailia, etc.		Early 1960	End 1961	Contract	Local bids
12.	<u>Miscellaneous Civil and Marine Construction</u> Comprises (a) berths at which the Authority's dredgers, tugs, etc. may moor at various points along the Canal, and (b) improvements to the Port Fuad and Cherif Basins at Port Said, including the provision of transit sheds.	(a) To meet the operational needs of the Authority. (b) To relieve congestion at Port Said by providing facilities for loading and unloading lighters clear of the harbor, thus diminishing the delays to vessels awaiting entry to the Canal.	In hand	1961	Contract	Mainly local bids
13.	<u>Construction of Road and Bridge at Raswa</u> Comprises the construction of a 4 Km. road and a swing bridge over the Mensaleh junction canal at Port Said.	Improvement to a highway for which the Authority is responsible, use of which is essential to the operation of the Canal.	Early 1960	Early 1961	Contract	Local bids
14.	<u>Construction of Road and Bridge between Ferry Point and Port Tewfik.</u> Comprises the construction of an 8 Km. road and a bridge between El Koubri and Port Tewfik.	" " "	" " "	" " "	" " "	" " "
15.	<u>Floating Dock for Port Said</u> 25,000 tons lifting capacity floating dock.	To meet the needs of shipping transiting the Canal and in the area generally, there being no large floating or graving dock available in the eastern Mediterranean or Red Sea.	Order placed	October 1960	-	Repair work on ships using the dock will be carried out by private firms, not by the Authority.

SUEZ CANAL PROJECT

Detailed List of Items Comprising the Project

<u>Item No.</u>	<u>Description of Item</u>	<u>Purpose for which required</u>	<u>Approximate commencement date or date of order</u>	<u>Approximate completion date or date of delivery</u>	<u>Method of execution or procurement</u>	<u>Remarks</u>
16.	Dipper dredger and rock breaker (combined)	For removal of isolated patches of rock encountered in new or maintenance dredging.	Order placed	July 1960 (in Holland)	Contract	-
17.	<u>Launches and Barges for Dredger Service.</u> 24 launches, 1 echo sounding launch, 2 diving launches, 15 rowing boats, 10 barges, 1 house barge	For use in connection with the operation of the Authority's dredgers	In hand	1960	Partly by contract; partly in Authority's workshop	-
18.	3 Tugs for dredger service	Attendance on Authority's bucket and cutter suction dredgers.	1959	-	Contract	-
19.	1 Cutter suction dredger	Maintenance and occasional new dredging in Canal cuts	1960	End of 1961	Contract	Required to supplement the work of the three existing cutter suction dredgers in carrying out maintenance in the Canal cuts, estimated at 6,000,000 c.m. in site per year.
20.	100/150 tons floating crane	For use principally in connection with repair work on Authority's craft at Port Fuad workshops.	Order placed	March 1960	Contract (Germany)	-
21.	Three 8 ton cranes	To be mounted on barges for use in handling dredger pipelines, etc.	Order placed	June 1960	Local fabrication contract.	-
22.	One 25 ton floating crane	For handling service buoys in the roadsteads.	Order placed	July 1961	Contract (Germany)	-
23.	Two 8 ton cranes	To be mounted on barges for use in handling dredger pipelines, etc.	1961	-	Contract	-
24.	Two 200 ton ferry boats	To replace existing craft at Kantara and El Koubri	1960	-	Will probably be built in Authority's workshops.	-
25.	One 500 passenger ferry boat	To replace existing craft at Port Said.	End 1959	End 1960	Will probably be built in Authority's workshops.	-

SUEZ CANAL PROJECT

Detailed List of Items Comprising the Project

<u>Item No.</u>	<u>Description of Item</u>	<u>Purpose for which required</u>	<u>Approximate commencement date or date of order</u>	<u>Approximate completion date or date of delivery</u>	<u>Method of execution or procurement</u>	<u>Remarks</u>
26.	Two 6400 h.p. tugs	To attend on vessels in Canal, viz. when aground or in other difficulties.	Order placed	1/April 1960 1/Dec. 1960	Contract (Holland)	The Authority has only one modern tug of this capacity, the probable useful life of which has been reduced by its having been sunk and salvaged. The additional tugs covered by this and the following item are considered necessary to reduce the liability of blockage of the Canal to a minimum. They will be stationed at strategic points in the Canal.
27.	Two pilot vessels	To house pilots awaiting ships at Port Said and Suez	1/September 1959 and 1/1961.	- -	Contract	One vessel is required for use in connection with the pilotage service at Suez now to be established by the Authority as described in the report, the other to replace an old vessel in use at Port Said.
28.	Eight service launches	For use by the Works Department in connection with carrying out of revetment work, etc., part in replacement of old craft.	In hand	August 1960	Being built in Authority's Workshops.	-
29.	Three navigational-aid service launches	To service navigational aids, handling light buoy batteries, etc.	August 1959	December 1960	Local Fabrication contract	-
30.	Two pilot launches	For use by pilots at Suez	July 1959	December 1960	Being built in Authority's workshops.	Required in connection with new Suez Bay pilotage service referred to above.
31.	Two harbor tugs	For use in handling shipping in Port Said, replacing existing old craft.	1959	1961	Contract	Will be not less than 1500 h.p.
32.	Launches and service floats	For use at signal stations along the Canal so that transit personnel can investigate accidents.	1960	-	-	-

SUEZ CANAL PROJECT

Detailed List of Items Comprising the Project

<u>Item No.</u>	<u>Description of Item</u>	<u>Purpose for which required</u>	<u>Approximate commencement date or date of order</u>	<u>Approximate completion date or date of delivery</u>	<u>Method of execution or procurement</u>	<u>Remarks</u>
33.	Increased workshop capacity (machine tools)	Mainly for use in Port Fuad workshops, to increase workshop capacity, and to provide new tools necessary because of the acquisition of diesel and electric equipment.	Part orders placed	End of 1961	Contract	-
34.	Increased capacity of land transport (cars, trucks and motorcycles)	Required for transport of pilots and other personnel in replacement for old vehicles.	Part orders placed.	End of 1961	Local Contract	-
35.	Increased capacity of naval transport	-	-	-	-	-
36.	Increased capacity of land cranes (mobile cranes, rail cranes, gantry cranes, fork lift trucks)	For use in Authority's workshops, partly replacing existing old or inadequate equipment.	Part orders placed, remainder by end 1959.	-	Contract	-
37.	Earth moving and site equipment (bull dozers, tractors, dredger pipe lines)	For use in connection with work of Authority's cutter suction dredgers	Part orders placed.	-	Local Contract	Bull dozers and tractors are used to clear site for and move dredger pipe lines.
38.	Electrical equipment (motors, transformers, generating sets, etc.)	For use mainly in Authority's workshops for purposes of electrification and replacement of existing old equipment.	Part orders placed.	-	Local Contract	-
39.	Water supply projects (cast iron pipes, meters)	For extensions and replacements of Authority's water supply installations at Port Said and Port Twefik.	Part orders placed.	-	Local Contract	-
40.	Fire fighting equipment (pumping sets)	To be mounted on tugs, etc. for use in the event of tanker fires.	Part orders placed.	-	Local Contract	The Authority has at present no equipment for this purpose or floating craft.
41.	Signal and marking equipment (buoys, lights, batteries, moorings for buoys)	For marking the proposed Canal extensions and replacing existing gas lights.	Part orders placed.	-	Buoys in Authority's workshops, remainder by contract.	-
42.	Printing and tabulating machines	Authority's accounting and statistical departments, etc.	Part orders placed, remainder later.	-	Contract	-

SUEZ CANAL PROJECT
Detailed List of Items Comprising the Project

<u>Item No.</u>	<u>Description of Item</u>	<u>Purpose for which required</u>	<u>Approximate commencement date or date of order</u>	<u>Approximate completion date or date of delivery</u>	<u>Method of execution or procurement</u>	<u>Remarks</u>
43.	Metering and testing equipment	For use in Authority's workshops	Part orders placed, remainder later	-	Local Contract	Mainly electrical testing equipment.
44.	Calculating machines and typewriters	For office use	Part orders placed.	-	Contract	-
45.	Telecommunications equipment (A comprehensive telecommunications system including land lines and VHF telephone communication between the movements' center and the pilots on all transiting vessels, and with all the Authority's tugs, launches, pilot vessels and dredgers, extension of radar systems, and tele-pointer links between Port Said, Ismailia, Suez and Cairo.)	Will assist operations by speeding up communications with the transiting vessels, assist dredging and maritime activities by improving communications with craft and sites lessen hazards of transit in fog and dust conditions and afford economies respect of transmission of statistics and documentation.	Part orders placed, remainder before end 1959.	-	Local Contract	Present communication between movements' center and pilots on transiting vessels is by the ships' W/T or by magaphone or visual signals from signal stations only.
46.	Extension of Port Fuad Power station (2 additional generating sets about 800kw. each).	Required to meet increasing local wiring from greater activity of Authority's workshops, installation of proposed floating dock, etc.	1/end 1959 1/1960	-	Contract	-
47.	Extension of Port Fuad workshops Compressed air and water booster pumps	Required to meet increasing demand arising from increasing activity of Authority's workshops, etc.	Before end 1960	-	Contract	-

- Note: (a) Where provision is shown to be by "local contract" under items 21-47, this means purchase through an overseas manufacturer's local agent unless otherwise stated.
- (b) Where provision is shown to be by "contract" under items 21-47, bids will be invited from overseas firms or in some cases both overseas and local firms.

Technical Basis of the Canal Improvements

1. The engineering design of the Canal Improvements is in general based on the results of hydraulic research but carried before nationalization by the research organization "Neyrpec" in its laboratories at Grenoble. This research indicated that the minimum acceptable ratio between the wet cross section of the larger transiting craft and the wet cross section of the Canal cuts to be 1:5. With a lesser ratio, erosion of the banks and consequent maintenance costs would be at an uneconomic level, the steering of vessels would be adversely affected and the "squat" would become excessive.

2. Under the present project, the Canal Authority engineers have two principal aims:

- a) To achieve a depth such that vessels having a maximum draft at rest of 11.28 meters (37 feet) can transit the Canal.
- b) To achieve in the cuts a ratio wet cross section vessel/wet cross section Canal of not less than 1:5.

3. The present minimum depths in the Canal (July 1959) are as follows:

Canal Cuts 12.5 meters (41.0 feet), i.e., 6 feet under a 35 feet ship.

Lakes 12.30 meters (40.34 feet), i.e., 5.34 feet under a 35 feet ship.

Theoretically the project planned minimum depths are:

Canal Cuts 14.38 meters (47.17 feet), i.e., 10.17 feet under a 37 feet ship.

Lakes 13.13 meters (43.07 feet) i.e., 6.07 feet under a 37 feet ship.

The clearances of 10.17 feet and 6.07 feet are arrived at as follows:

	<u>Canal Cuts</u> Feet	<u>Lakes</u> Feet
Allowance for "steerage way"	2.95	2.95
" " "squat"	2.30	1.64
" " silting (average)	<u>4.92</u>	<u>1.48</u>
Total	<u>10.17</u>	<u>6.07</u>

The allowance for "steerage way" is the minimum clearance beneath the ship necessary for the ship to be able satisfactorily to answer the helm. The allowance for silting in the cuts is varied somewhat to allow for the difference in siltation rate experienced in certain localities.

4. In order to achieve the wet cross sectional ratio of 1:5 in the cuts, a cross sectional area of 1,800 sq. meters, including the allowance for silting is aimed at, although this will not always be attained in the present project. Assuming a ship drawing 37 feet and with a beam of 100 feet, e.g. a laden tanker of about 46,000 tons d.w. coming from the Persian Gulf, this represents a ratio of 1:5.5. The desired cross section is obtained either by widening or by deepening beyond the minimum depth required for transit, or by a combination of widening and deepening, as may be found most economical by a study of the exact site conditions. Because of this procedure, and because of the variation in siltation allowance referred to above, actual project dredging depths vary as follows:

Canal Cuts 14.5 m. (47.56 feet) to 16.0 meters
(52.48 feet).

Lakes 13.0 m. (42.64 feet) to 13.5 meters
(44.28 feet).

Estimate of Cost of the Project
(LE equivalent)

	<u>Foreign</u> <u>Exchange</u>	<u>Local</u> <u>Currency</u>	<u>Total</u>
<u>I. Canal improvement program including widening and deepening, and improvements to Port Said Harbor</u>			
1. Widening and deepening of various sections of the Canal	4,989,000	4,044,000	9,033,000
2. Modifications of curves in El Guisr Region	82,000	976,000	1,058,000
3. Widening of section at el Kantara	67,000	732,390	799,390
4. Deepening of Port Said roads, Great Bitter Lakes and Suez Roads	750,000	259,000	1,009,000
5. Widening and deepening other sections of the Canal	518,000	840,000	1,358,000
6. Deepening canal from Km. 132 to Km. 157.5	470,000	756,000	1,226,000
7. Improvements to Port Said Harbor	1,125,000	2,071,000	3,196,000
8. Widening of El Ferdan bridge section	645,000	547,000	1,192,000
9. Widening of canal from Km. 79 to Km. 97	1,164,000	1,187,000	2,351,000
	9,810,000	11,412,390	21,222,390
<u>II. Provision of buildings and miscellaneous facilities</u>			
10. Installation of research laboratory	232,250	178,000	410,250
11. Miscellaneous buildings	20,000	943,000	963,000
12. Miscellaneous engineering and marine construction	150,000	943,000	1,093,000
13. Construction of road and bridge at RASWA	-	189,630	189,630
14. Construction of road and bridge at Port Tewfik	-	184,000	184,000
	402,250	2,437,630	2,839,880
<u>III. Purchase of construction, operating and maintenance equipment</u>			
15. Floating dock for Port Said	1,355,000	252,000	1,607,000
16. Dipper dredge and rock breaker	266,241	-	266,241
17. Launches and barges for dredger service	156,804	358,000	514,804
c.f.	1,778,045	610,000	2,388,045

	<u>Foreign</u> <u>Exchange</u>	<u>Local</u> <u>Currency</u>	<u>Total</u>
b.f.	1,778,045	610,000	2,388,045
18. Three tugs for dredger service	120,000	-	120,000
19. One cutter suction dredger	1,200,000	-	1,200,000
20. Floating crane, 100/150 ton	391,670	-	391,670
21. Three 8-ton floating cranes	96,594	130,000	226,594
22. One 25-ton floating crane	118,466	-	118,466
23. Two 8-ton cranes	120,000	-	120,000
24. Two 200-ton ferry boats	100,000	78,000	178,000
25. One 500-passenger ferry boat	100,000	196,895	296,895
26. Two 6400-horsepower canal tugs	1,355,233	190,000	1,545,233
27. Two pilot vessels	600,000	-	600,000
28. Eight service vessels	60,000	78,000	138,000
29. Three service vessels for naviga- tional aids	36,750	50,000	86,750
30. Two pilot launches for Suez Roads	150,000	-	150,000
31. Two harbor tugs	400,000	-	400,000
32. Launches and service floats	125,000	316,000	441,000
33. Increased workshop capacity (machine tools)	184,653	57,000	241,653
34. Increased capacity of naval transport	159,270	222,000	381,270
35. Increased capacity of land cranes	176,845	51,000	227,845
36. Earth moving and site equipment	345,839	198,000	543,839
37. Electrical equipment	148,377	58,000	206,377
38. Water supply projects	87,980	330,000	417,980
39. Fire fighting equipment	35,218	66,000	101,218
40. Signal and marking equipment	142,150	130,000	272,150
41. Printing and accountancy equipment	53,446	146,000	199,446
42. Metering and testing equipment	4,230	53,000	57,230
43. Calculating and typing machines	23,030	33,000	56,030
44. Telecommunications equipment	409,478	1,000	410,478
45. Extension of Port Fuad power station	120,000	55,000	175,000
46. Extension of Port Fuad compressed air plant	30,000	16,000	46,000
	8,672,274	3,064,895	11,737,169
• Contingencies	804,657	1,002,260	1,806,917
Total cost of the Project (I, II, III and IV)	19,689,181	17,917,175	37,606,356
Equivalent in US Dollars approxi- mately	56,500,000	51,422,000	107,922,000

Statement Showing Estimated Cost of the Ship-
building Yard and the 1962/63 Phase of the
Over-all Five-Year Program

	<u>Foreign</u>	<u>Local</u>	<u>Total</u>
	- - - - -	<u>LE 000</u> - - - - -	- - - - -
1. Shipbuilding Yard	778.3	1,470.6	2,248.9
2. Canal Improvements 1962/63 including widening and extending by-passes at Ballah, Great Bitter Lake and Isbret; extending of double canal at Port Said and other improvements at Port Said Harbor	7,661.0	9,722.9	17,383.9
3. Buildings and Miscellaneous facilities	104.0	1,105.1	1,209.1
4. Operating and Maintenance equipment	6,070.5	3,166.5	9,237.0
5. Contingencies	1,036.8	-	1,036.8
Total	15,650.6	15,465.1	31,115.7

Statement showing income accounts 1956/57,
1957/58 and 1958/59
(£ 000)

	<u>1956/57</u>	<u>1957/58</u>	<u>1958/59</u>
<u>Operating Revenues</u>			
Transit tolls	13,792	40,069	44,364
Miscellaneous operating revenues	411	806	842
Revenues relating to previous years	17	123	98
Common estate: land rentals	41	54	-
Total Operating Revenues	14,261	41,053	45,303
<u>Operating Expenses</u>			
Administrative and General expenses	775	1,226	1,233
Canal and Port Said working expenses	1,455	2,105	1,899
Canal and Port Said maintenance	886	769	676
Maintenance of equipment	681	1,206	1,555
Public service activities	1,119	1,462	1,210
Directors and experts remuneration	2	30	31
Civil defense expenses	9	*	*
Bad debts		2	2
Common estate: land rental expense	85	84	-
Expenses relating to previous years	115	134	238
Depreciation	1,732	2,808	3,200
Income taxes	1,750	5,000	4,500
Government royalty (5% of gross revenues)	713	2,053	2,265
Pension expenses	-	2,000	2,075
Total Operating Expenses	9,322	18,879	18,884
<u>Net Revenue from Operations</u>	4,939	22,174	26,419
<u>Miscellaneous Deductions from Income</u>			
Losses and damages: 1956 crisis	2,547	14	-
Suspense Account - Balance Sheet 6/30/58	-	-	4,084
Total Income after Depreciation	2,392	22,160	22,335
Disposition of total income			
Reserve for renewals	2,000	3,000	2,736
Government share of profits	4,000	14,000	15,000
Unappropriated income or deficit	(3,608)	5,160	4,599

Totals do not always equal sum of factors because of rounding.

() represents red figure.

* Amounts of less than £E 500 not shown.

ASSETS				LIABILITIES					
<u>Current Assets</u>				<u>Current Liabilities</u>					
	LE	m/ms	LE	m/ms		LE	m/ms	LE	m/ms
Cash & Investments					Creditors & Credit accounts under settlement			20,563,408	231
Banks & Safes	21,352,601	905			Reserves & Provisions				
Investments	494,000	-	21,846,601	905	Provision for income tax	5,300,000	-		
Debtors & Debit Accounts under settlement			3,631,407	528	Provision depreciation and renewals	15,476,383	-	20,776,383	-
Stores			7,349,964	851	Net Revenues				
<u>Fixed Assets (under estimation)</u>					Net Profits	4,598,675	784		
Canal)					Profits reported from previous years	1,552,271	966	6,150,947	750
Land of Concession)			1	-	Capital (under estimation)			1	-
Land & Buildings)									
Equipment)									
<u>Improvement Works</u>									
Canal			8,434,344	577					
Land and Buildings			98,535	679					
Equipment									
Heavy Equipment	411,601	579							
Floating Equipment	3,236,614	549							
Lightning & Mooring									
Buoys & Beacons etc.	153,788	978							
Small Tools	13,095	891							
Furniture	63,764	668							
Counting & Typing mach.									
Precision Instruments	44,935	822							
Water Plants: Port Said-Ismaïlia-Suez	117,200	087	4,041,001	574					
Buildings in Progress			1,736,257	961					
Equipment in Progress			352,624	906					
			47,490,739	981				47,490,739	981

Statement showing Estimate Income Accounts
1959/60 to 1962/63, Inclusive
(£E 000)

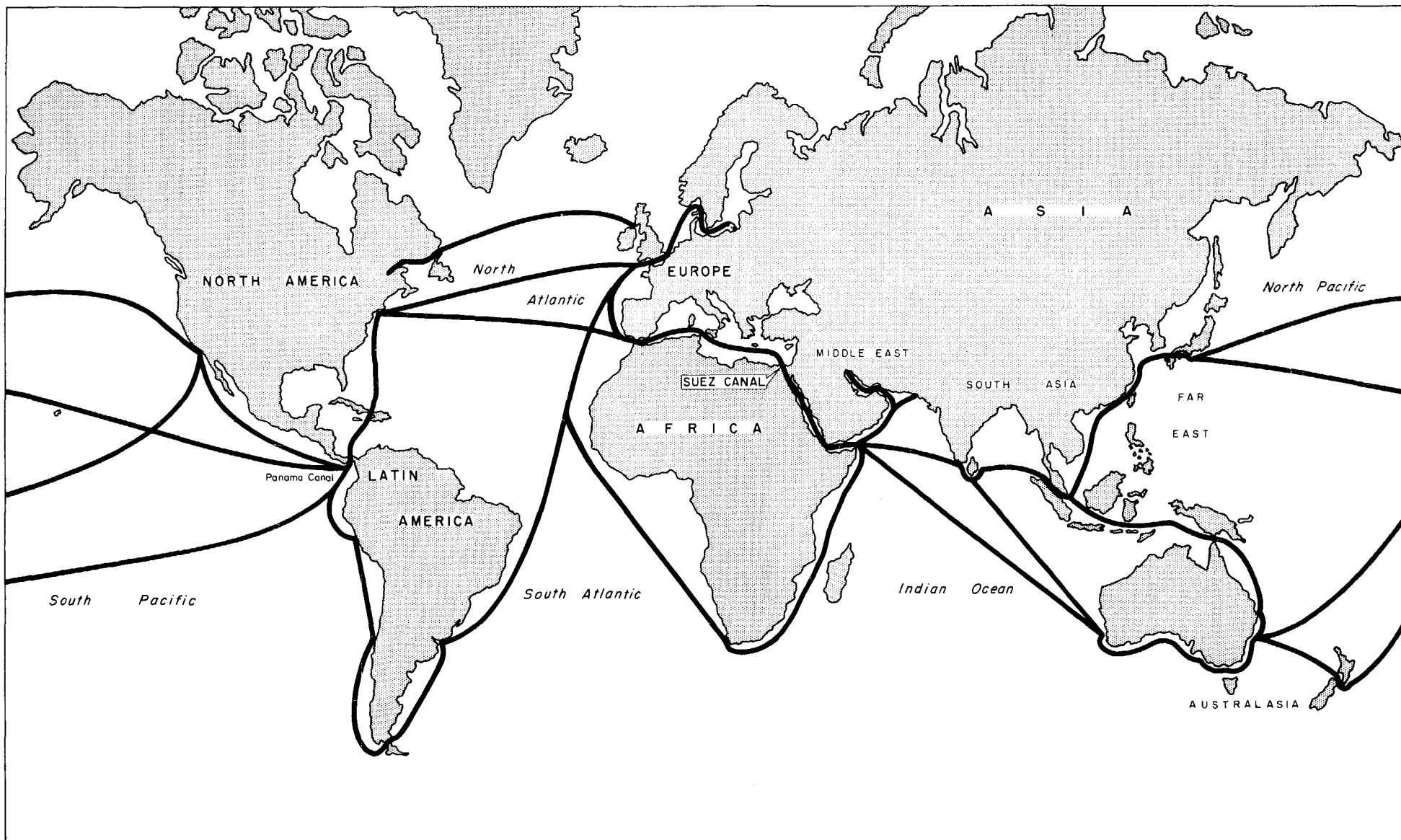
	<u>1959/60</u>	<u>1960/61</u>	<u>1961/62</u>	<u>1962/63</u>
<u>Total Operating Revenues</u>	46,250	49,625	53,000	56,250
<u>Operating Expenses</u>				
Administrative working maintenance and public service activities	8,500	9,125	9,875	10,625
Directors and experts remuneration	55	60	65	65
Bad debts	1	1	1	1
Expenses relating to previous years	200	200	150	150
Depreciation	3,700	4,200	4,700	5,000
Income taxes	5,250	5,500	5,750	6,000
Government royalty, 5% of gross revenues	2,313	2,481	2,650	2,812
Pension expense	2,000	2,000	1,500	1,500
Total Operating Expenses	22,019	23,567	24,691	26,153
<u>Net Revenues from Operations</u>	24,231	26,058	28,309	30,097
<u>Miscellaneous Deductions from Income</u>	-	-	-	-
<u>Total Income after Depreciation</u>	24,231	26,058	28,309	30,097
Provision for Renewals	2,500	2,500	2,000	2,000
Income after Reserves and Provisions	21,731	23,558	26,309	28,097

Statement showing Income Accounts, Estimated
for 1959/60 to 1964/65 based on Assumption of
No Increase in Traffic after 1959/60

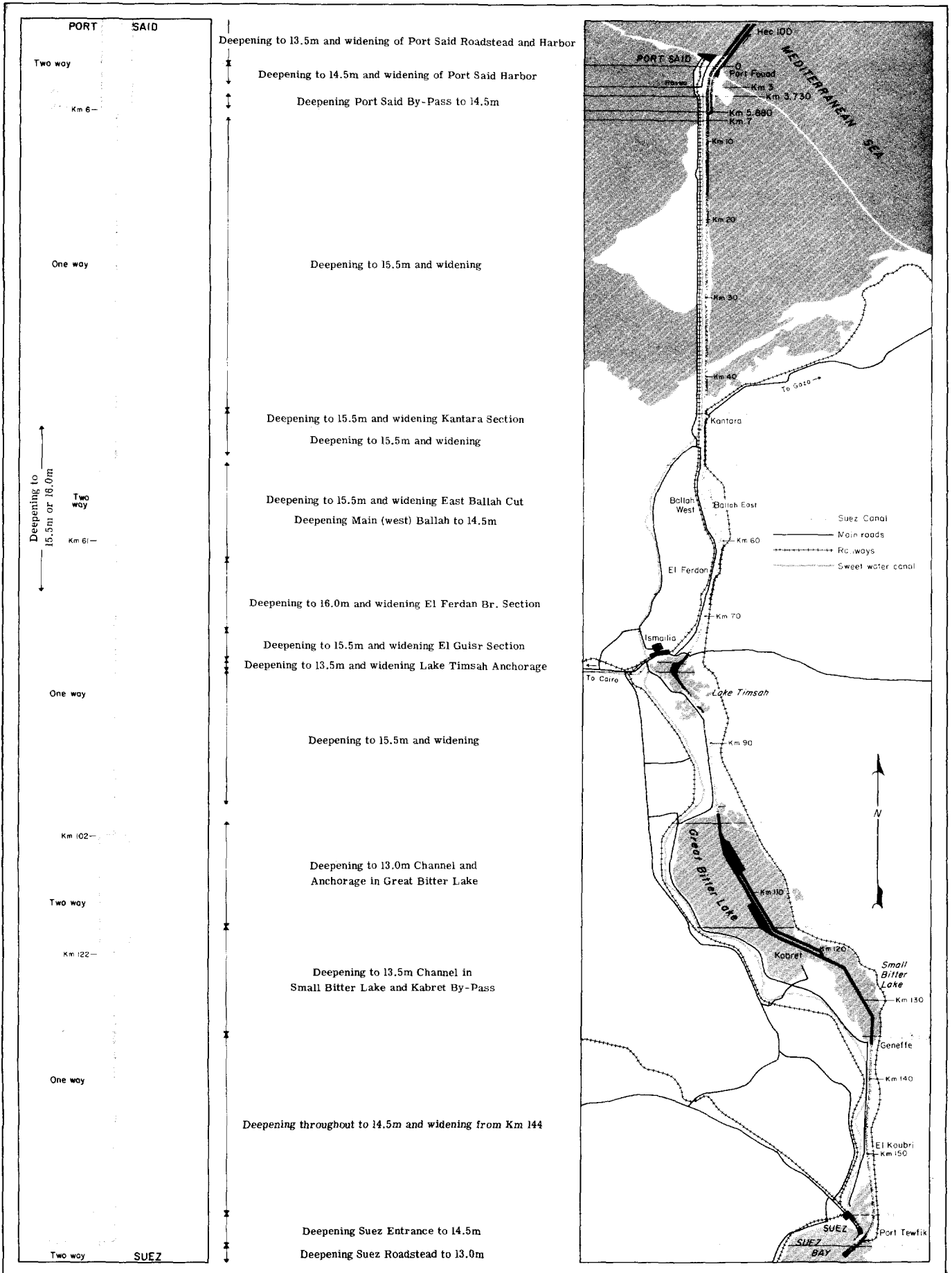
	<u>1959/60</u>	<u>1960/61</u>	<u>1961/62</u>	<u>1962/63</u>	<u>1963/64</u>	<u>1964/65</u>
<u>Operating Revenues</u>	46,250	46,250	46,250	46,250	46,250	46,250
<u>Operating Expenses</u>						
Administrative, working, maintenance and public service activities	8,500	8,670	8,843	9,020	9,200	9,384
Directors and experts remuneration	55	60	65	65	65	65
Bad debts	1	1	1	1	1	1
Expenses relating to previous years	200	200	200	200	200	200
Depreciation	3,700	4,200	4,700	5,000	5,100	5,200
Income taxes	5,250	5,135	5,022	4,943	4,896	4,849
Government royalty, 5% of gross revenues	2,313	2,313	2,313	2,313	2,313	2,313
Pension expenses	2,000	2,000	2,000	1,500	1,500	1,500
<u>Total Operating Expenses</u>	22,019	22,579	23,144	23,042	23,275	23,512
Net Revenue from Operations	24,231	23,671	23,106	23,208	22,975	22,738
Miscellaneous Deductions	-	-	-	-	-	-
Total Income after Depreciation	24,231	23,671	23,106	23,208	22,975	22,738
Reserve for renewals	2,500	2,500	2,000	2,000	2,000	2,000
Income after reserve for renewals	21,731	21,171	21,106	21,208	20,975	20,738

Note: Administrative, working, maintenance and public service activity expenses are increased by 2% per year to reflect probable rises in prices of materials and supplies and in-grade salary increases; income taxes are estimated at 16.67% of net revenue from operations before taxes which is the relation estimated for 1959/60 by the Canal Authority; and all other expenses and provisions are those shown the Authority's estimates to 1962/63 extended to 1964/65. An exception is depreciation expense for 1963/64 - 1964/65 which is increased moderately in the latter two years.

SUEZ CANAL PROJECT WORLD SHIPPING ROUTES



SUEZ CANAL PROJECT CANAL IMPROVEMENTS 1959-61

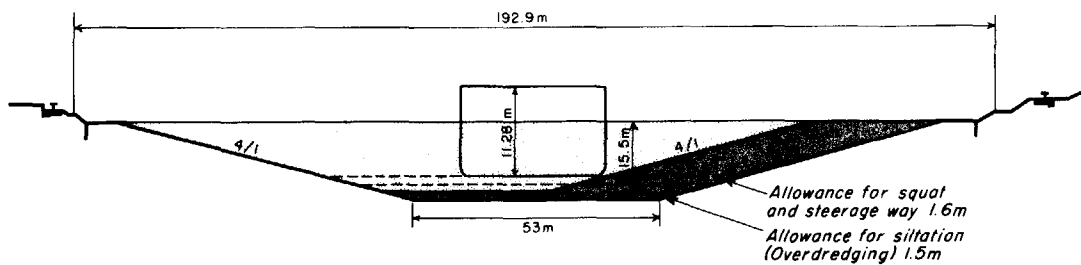


SUEZ CANAL TYPICAL CROSS-SECTIONS

Existing Cross-sections



Cross-sections after completion of project

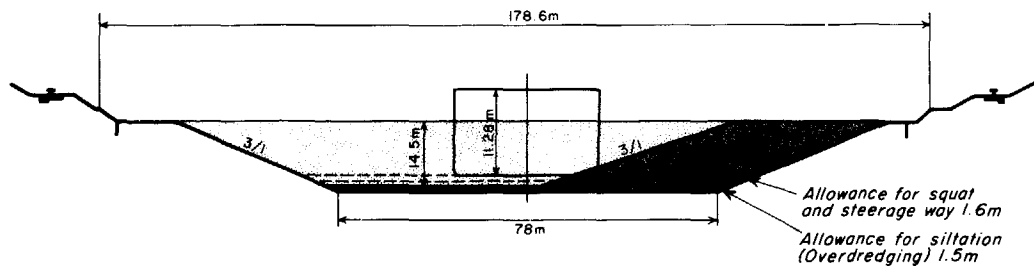


**WET CROSS-SECTION
INCLUDING ALLOWANCE FOR SILTATION - 1782m²
BETWEEN KM 25 and 50**

PROJECT MINIMUM DEPTHS

	In Canal Cuts		In Lakes and Roads	
	meters	feet	meters	feet
Maximum draft of transiting vessel at rest	11.28	37.00	11.28	37.00
Allowance for squat	.70	2.30	.50	1.64
Allowance for steering way	.90	2.95	.90	2.95
	12.88	42.25	12.68	41.59
Allowance for siltation	1.50	4.92	.45	1.48
	14.38	47.17	13.13	43.07

Wet Cross-section Aimed At 1800m²



**WET CROSS-SECTION
INCLUDING ALLOWANCE FOR SILTATION - 1686m²
BETWEEN KM 132 and 157**