

2) Important periodicals including magazines as listed below are to be read by anyone of the Unit, and circulated to other members by "Extract/Abstract".

Financial Times

Lloyd's List

Fairplay International Shipping Weekly

Petroleum Intelligence Weekly

Middle East Economic Survey

Norwegian Shipping News

H.P. Drewry: Shipping Statistics & Economics

Lloyd's Shipping Economist

Petroleum Economist

### 3.5 Cross-reference Table

Table serves for cross references between items to be surveyed and sources to be referred to.

As for a certain problem, therefore, names of relating sources and as for a certain source, items included therein can be found in the cross-reference table.

**Table 3-1 Information Sources**

**World Economy**  
**Trade and Seaborne Trade**  
**Energy and Other Resources**  
**Fleet, Shipbuilding and Maritime Transportation Cost**  
**Shipping Market**  
**Ports and Harbours**  
**Magazines**  
**Surveys and Forecasts**  
**Directories and Others**

**Table 3-2 Crossreference Table**

- (1) World Economy, Trade and Resources**
- (2) Fleet and Shipbuilding**
- (3) Transportation Cost**
- (4) Ports and Harbours**

**Table 3-1 Information Sources****World Economy**

No.	Class	Publisher	Title
101	A	United Nations	Statistical yearbook
102	A	United Nations	Monthly bulletin of statistics
103	A	OECD	OECD economic outlook
104	A	OECD	Main economic indicators
105	B	United Nations	Yearbook of national accounts statistics Individual country data
106	B	United Nations	Yearbook of national accounts statistics International tables
107	B	OECD	National accounts of OECD countries Main aggregates
108	B	OECD	National accounts of OECD countries
109	B	United Nations	Statistical yearbook for Asia and the Pacific
110	C	Statistical Office of the European Communities	Basic statistics of the community
111	A	World Bank	World development report
112	A	World Bank	Atlas

Frequency	Date of issue	Comments
Annual	End of next year	Indispensable data, GNP, annual growth rate, population income level, trade's amount etc. are contained, but hardly get contemporary figures.
Monthly	—	Comparatively contemporary figures are obtained compared with U.N. year book, but even this issue the reported data still have one or one and half year delay. Figures are very useful especially for developed countries.
Semi-annual	July and December	Periodic assessment of economic trends and prospects in OECD countries.
Monthly		Latest information of OECD member countries can be obtained. Indispensable data for grasping these countries' economic conditions.
Annual	Beginning of the year after next	Data on national account only, but its object countries are counted 130 and able to refer 15 years time series data.
Annual	Beginning of the year after next	Refer to the comment 105.
Annual	End of the year after next	National account of OECD member countries by various items Obtainable historical figures of in nominal, and in real term.
Annual	End of the year after next	Refer to the comment 107.
Annual	Middle of the year after next	Comprehensive data reported for Asia and Pacific region. Economic, trade, energy figures are obtained in detail of these area.
Annual	End of next year	Foundamental data of EC countries are contained. Laid mainly emphasis on economic figures.
Annual	End of the year	Can be obtained world development indicators (population, GNP per capita and average growth rate, industrial structure, energy production and consumption balance of payments, etc.)
Annual	End of the year	Population, GNP per capita at market prices, amount and average annual growth rates, etc. of each country are contained.

## Trade & Seaborne Trade

No.	Class	Publisher	Title
201	A	United Nations	Yearbook of international trade statistics
202	C	United Nations	World trade annual
203	C	O E C D	Trade by commodities-market summaries : Imports
204	C	O E C D	Trade by commodities-market summaries : Exports
205	C	O E C D	Trade by commodities-country summaries
206	A	O E C D	Statistics of foreign trade-monthly bulletin
207	A	The British Petroleum Co. Ltd.	BP statistical review of the world oil industry
208	C	National Coal Association	World coal trade
209	A	United Nations	Statistics of world trade in steel
210	A	F A O	Trade yearbook
211	A	The European Cement Association	World Statistical Review
212	B	J M R I	Annual statistical report of Japanese Ocean-going transport commodity by region

Frequency	Date of issue	Comments
Annual	Middle of the year after next	World trade data by countries and by commodities including commodity classification code by SITC
Annual	Middle of the year after next	World trade data by countries and by commodities, classified by SITC 5 unit are contained.
Annual	Beginning of the year after next	Matrix data on inter-OECD member countries, figures are shown in volume and price.
Annual	Middle of the year after next.	Refer to the comment 203.
Quarterly		Data on outer-region of OECD member countries, and classified by SITC 4 unit rule.
Monthly	—	Data on trade monthly figure among OECD member countries, containable origin and destination commodity flow tables.
Annual	Middle of next year	Widely-used fundamental data on oil. Figures are contained on oil and natural gas deposits, production, consumption, trade, refinery capacity, etc.
Annual	Beginning of next year	Data on production and trade of coal. Figures are indicated in volume and in price, and five years time series data are covered.
Annual	Next year	Data on exports of semi-finished and finished products by regions and countries of destination are included.
Annual	Beginning of the year after next	Regional index numbers of agricultural trade, trade in agricultural products and requisites, value of agricultural trade by countries are available.
Annual	End of next year	Data on production, consumption, export, import and consumption per capita of cement by countries and regions of the world are included.
Annual	End of next year	Volume of seaborne trade by Japanese flag ships and chartered vessels by commodity and by countries.

### Energy & Other Resources

No.	Class	Publisher	Title
301	B	United Nations	World energy supplies
302	B	O E C D	Energy statistics
303	A	O E C D	Oil statistics-supply and disposal
304	A	O E C D	Quarterly oil statistics
305	A	Energy Economics Research Ltd.	Oil & energy trends
306	B	Comite Professional Du Petrole	CPDP bulletin mensuel
307	A	International Iron & Steel Institute	World steel in figures
308	A	The Statistical Office of The European Communities	Quarterly iron and steel bulletin
309	B	F A O	State of food and agriculture
310	A	F A O	FAO production yearbook
311	B	F A O	FAO monthly bulletin of statistics
312	A	F A O	FAO fertilizer yearbook
313	A	F A O	Food outlook

Frequency	Date of issue	Comments
Irregular	—	Comprehensive data on production, consumption, trade of oil, oil products and natural gas are obtainable.
Irregular	—	Energy production, consumption and trade data of the EC member countries, and figures are covered.
Annual	End of next year	Data on oil products of EC member countries, amount of supply, disposal (incl. OD tables) are contained.
Quarterly	—	Consists of oil supply and trade. Indigenous production, imports and exports, consumption, stock level, etc. are contained as for oil supply, imports from/to each OECD country are tabled as for trade.
Monthly	—	Exploration, production, refining, demand & prices, trade, transportation, companies, other energy, economic indicators are contained in Part II. Useful monograph is attached in Part I.
Monthly	—	Consists of from parts. Part I, II, III are concerning France, in Part IV diary, topics of world and basic oil statistics of main countries are tabled.
Annual	—	Handy sized statistical booklet. World crude steel production and consumption by major countries, trade by area, steel consumption per capita etc. are contained.
Quarterly	—	Crude steel production, consumption in EC countries and trade volume are contained.
Annual	End of next year	White paper on the world agriculture. And contains world review, forestry and development, basic agricultural statistics are included in annex tables.
Annual	End of next year	Land, population, FAO index number of agricultural production, statistical summary, crops, livestock numbers and products, food supply, means of production, prices are contained. Statistical figures of production are often changeable. So, using newly one is necessary.
Monthly	—	Special features of food, agriculture, crops, external trade by specific commodities, food prices, etc. are available.
Annual	End of next year	Detailed data on fertilizers (nitrogenous, phosphate and potash), including data of exports and imports by countries are obtained.
Monthly	—	Latest information of world food situation, next year's forecast, etc. are contained.



### Fleet, Shipbuilding & Maritime Transportation Cost

No.	Class	Publisher	Title
401	A	Lloyd's Register of Shipping	Lloyd's Register of Shipping; Statistical tables
402	A	Lloyd's Register of Shipping	Lloyd's Register of Shipping; Annual summary of merchant ships completed in the world during 79
403	A	Lloyd's Register of Shipping	Lloyd's Register of Shipping; Merchant shipbuilding return for fourth quarter
404	A	Lloyd's Register of Shipping	Lloyd's Register of Shipping; Casualty return-Statistical summary of merchant ships totally lost, broken up, etc.
405	A	Lloyd's Register of Shipping	Lloyd's Register of Shipping; Casualty return-Merchant ships totally lost, broken up, etc.,
406	A	The Financial Times	World ships on order (Supplement to "Fairplay international shipping weekly")
407	C	IPC Industrial Press Ltd.	Ships on order and marine business review (Supplement to "The motor ship")
408	A	R.S. Platou A/S	The Platou report
409	A	Fearnley & Egers Chartering Co., Ltd.	World bulk fleet
410	A	John I. Jacobs & Company Ltd.	World tanker fleet review
411	A	John I. Jacobs & Company Ltd.	Assessment of tankers of 10,000 tons D/W & over laid-up or idle as at 30th 12, 1980
412	C	General Council of British shipping	World merchant shipping laid-up for lack of employment at —

Frequency	Date of issue	Comments
Annual	Middle of the year	The most fundamental existing ships' tonnage data, shown by possessed countries, by type, by size, by age, etc..
Annual	Middle of next year	Most widely used data on shipbuilding, total order book, commencement, launching, complete data are contained, and each figure is classified by ships type, size, countries, etc..
Quarterly	—	Quarterly data on shipbuilding, tonnage of total order book, under construction, complete by country are contained.
Annual	End of next year	Data on lost tonnage by cause and scrapped volume are also reported.
Quarterly	—	Ships lost caused by casualty and volume of scrapped are shown by flags.
Quarterly	—	Supplement quarterly edition of "Fair play" would total order book are contained of the every type of ship classified by builders countries.
Quarterly	—	Supplement quarterly issue of "The Motor Ship". Contained detail data on ships type, items, date of delivery by builders country.
Annual	Beginning of next year	Shipbuilding yearly reports, can be obtained on new shipbuilding contracts, second-hand market and ships price, especially in Norway business activities.
Semi-annual	March, August	One of representative fleet data are contained on tanker, combination carrier and bulk carriers of 10,000 tons dead weight and above.
Semi-annual	February, August	Yearly report on tanker fleet activities. Statistics of tanker tonnage by size, by flag, etc. are very valuable, issued twice a year.
Monthly	—	Report on comprehensive tanker laid-up tonnage, contains ships name, her flag, time of built, tons dead weight, place of laying-up, etc..
Monthly	—	Report on comprehensive laid-up tonnage of dry cargo ships, contains by her flag, age, size, etc.

## Shipping Markets

No.	Class	Publisher	Title
501	A	UNCTAD	Review of maritime transport
502	A	OECD	Maritime transport
503	A	H.P. Drewry (Shipping Consultants) Ltd.	Shipping statistics and economics
504	A	H.P. Drewry (Shipping Consultants) Ltd.	World shipping statistics
505	A	Institute of Shipping Economics, Bremen	Shipping statistics (Statistik der schifffahrt)
506	A	Institute of Shipping Economics, Bremen	Shipping statistics yearbook
507	B	Energy Economics Research Ltd.	Tanker charter record
508	C	E.A. Gibson Shipbrokers Ltd.	Tanker market report
509	A	Fearnley & Egers Chartering Co., Ltd.	Review
510	A	Fearnley & Egers Chartering Co., Ltd.	World bulk trades
511	B	General Council of British Shipping Ltd.	Tramp trip charter index
512	B	General Council of British Shipping Ltd.	Tramp time charter index number

Frequency	Date of issue	Comments
Annual	Middle of next year	Prepared by the secretariat of UNCTAD, outlined and analysed developments in the world maritime transport in the past year.
Annual	Middle of next year	Study by the OECD Maritime transport committee, can be obtained shipping situation of the world.
Monthly		Data on shipping market i.e. supply tonnage of ships, laid-up tonnage, level of freight rate, etc..
Annual	Beginning of next year	Annual shipping data based upon monthly-issue of same publisher, compiled by month, quarterly and annual amount figures are available.
Monthly		Covered important statistical data on shipping and port. "Market Review", a prefatory note is valuable. In concrete, ships tonnage, freight index, shipbuilding tonnage are very convenient to use.
Semi-annual	Middle of the year	Comprehensive data on fleet, freight rate, shipbuilding, ports and harbour, and transit volume of canals, etc..
Monthly		Fixtures of crude & oil product are reported. Contract conditions, rates period, volume, trade routes are reported in details.
Weekly		Contains fundamental monthly data on existing tanker fleet by size, by country possessed, and laid-up, scrapped tonnage.
Annual	Beginning of next year	Annual report on shipping activities. Freight market analysis is very suggestive.
Annual	End of next year	Yearly world bulk trades are analyzed. Data on six major bulk cargoes, i.e. oil, iron ore, coal, bauxite & alumina, grain, phosphate rock (these of sea-borne trade are shown in matrix) are quite valuable.
Monthly		Trip charter index, every charter rate, no. of fixtures and average size of ship, by ship-size categories are available.
Quarterly		Time charter index and same as above.

**Ports & Harbours**

No.	Class	Publisher	Title
601	A	Benn Publications Ltd.	Ports of the world
602	A	George Philip & Son Ltd.	Port dues, charges and accommodation The shipowners', agents' & charterers' guide to ports and terminals
603	A	Shipping Guides Ltd.	Guide to port entry
604	A	Shipping Guides Ltd.	Guide to tanker ports
605	B	U.K. Government	Annual statement of the overseas trade of the United Kingdom
606	B	Ministère des Transports Direction Générale de la Marine Marchande	Résultats de l'exploitation des ports maritimes
607	B	Istituto Centrale di Statistica	Annuario statistico della navigazione marittima

Frequency	Date of issue	Comments
Annual	Beginning of the year	Actual condition of world port's report, informations on port facilities, port fee, etc.. are contained.
Annual	End of next year	Title items are available in detail.
Annual	Beginning of the year	Required documents, capability of berthing, etc. are available.
Loose-leaf in progress	--	Refer to the comment 603
Annual	The year after next	Data on trade of United Kingdom especially volume by ports are obtainable.
Annual	Next year	Data on trade of France especially volume by ports are obtainable.
Annual	Next year	Data on trade of Italy especially volume by ports are obtainable.

## Magazines

No.	Class	Publisher	Title
701	A	Financial Times Ltd.	Fairplay international shipping weekly
702	B	Seatrade Publications Ltd.	Seatrade
703	C	IPC Industrial Press Ltd.	Marine week
704	A	Selvig Publishing A/S	Norwegian shipping news
705	B	Journal de la Marine Marchande	Journal de la marine marchande
706	B	Schiffahrts-Verlag "Hansa" C. Schroedter & Co.	Hansa
707	C	VEB Verlag Technik	Seewirtschaft
708	A	Petroleum Economist Co.	Petroleum economist
709	B	The Petroleum Publishing Co.	Oil & gas journal
710	A	Middle East Petroleum and Economic Publications	Middle east economic survey
711	B	Tokyo News Service, Ltd.	Zosen
712	A	Petroleum & Energy Intelligence Weekly Inc.	Petroleum intelligence weekly

Frequency	Date of issue	Comments
Weekly	—	The famous and traditional shipping periodical issued in England in every week. There are contained various problems on maritime affairs, but among these reports, "market analysis report" both dry cargo, and tanker market are very useful. As for shipbuilding they supply us very useful data especially on total order book of the shipbuilders of the world in the title of "Ships on Order" which is issued 4 times in a year.
Monthly	—	It is widely used among maritime industry and institutes. It contains current topics on shipping, shipbuilding, energy problems. Some articles, carried the signature of the author, are also be much suggestive.
Weekly	—	British weekly shipping and shipbuilding magazine. It has a tendency toward the technical problems, so the news of new type or new category ships, i.e. engine equipment, new loadings & discharging method, etc. are obtained.
Semi-monthly	—	Published in Norway, but written in English biweekly magazine. A special article on various problems issued in an ordinary number. In addition to this, the Freight Index, so called "Norwegian Shipping News Index" is famous, and widely used.
Weekly	—	Written in French, weekly magazine. Latest news from it contains the problems of widely topics of shipping market, shipping policy, etc. but, carries little technical articles.
Semi-monthly	—	Representative German biweekly shipping magazine, written in Germany. Articles are contain on shipping, shipbuilding, port and harbour, and labour problems.
Monthly	—	Representative East-Germany shipping montly report. Articles written by specialist are very suggestive. The commentary of technical and inter-governmental rules are also valuable.
Monthly	—	Issued in England, monthly magazine, written in English. It makes a general comment on oil, gas and other energy problems and also it economical environment. An article analyzed by specialist are also very useful.
Weekly	—	Also widely used and comprehensive on oil problems. It is advantageous to know the size of oil consumption affairs.
Weekly	—	Issued in "Cyprus", and written in English. It is very convenient to grasp the suppliers circumstances, such as production, production policy, and development plans etc..
Monthly	—	News about demand for Japanese shipbuilders, which share half of the whole world, are helpful to forecast of the future trend in shipping.
Weekly	—	Issued in USA, general comment on petroleum and current informations are available. Sometimes can be read valuable articles on energy problems.



## Surveys & Forecasts

No.	Class	Publisher	Title
801	A	H.P. Drewry (Shipping Consultants) Ltd.	No. 71 The operation of dry bulk shipping: Present and prospective trading costs in the context of current and future market trends
802	A	H.P. Drewry	No. 72 Secondary oil transport modes
803	A	H.P. Drewry	No. 74 VLCC/ULCC employment, costs and revenues
804	A	H.P. Drewry	No. 76 Crude oil supply and tanker demand
805	A	H.P. Drewry	No. 78 <i>Independent tanker owners</i>
806	A	H.P. Drewry	No. 79 The prospects for seaborne iron ore trade and transportation
807	A	H.P. Drewry	No. 80 Trends in tanker operations and economics
808	A	H.P. Drewry	No. 84 The influence of obsolescence, scrapping and losses on the structure of the tanker fleet
809	A	H.P. Drewry	No. 85 The structure of bauxite/alumina trade and trends in ocean transportation
810	A	H.P. Drewry	No. 86 Tanker freight costs and crude oil prices
811	A	H.P. Drewry	No. 87 Status of deep-sea ro/ro services
812	A	H.P. Drewry	No. 88 60,000-175,000 DWT crude oil carriers: Employment and prospects
813	A	H.P. Drewry	No. 89 Changing ship type/size preferences in the the dry bulk market
814	A	H.P. Drewry	No. 90 The growth of the chemical carrier fleet
815	A	H.P. Drewry	No. 19 Trading prospects for dry bulk carriers: Tonnage balance in dry bulk trades through to the mid-1980's
816	A	H.P. Drewry	No. 20 <i>Prospects for the world shipbuilding industry;</i> A forecast of newbuilding requirements to the late 1980's
817	A	H.P. Drewry	No. 21 Tankers for the 1980's: Demand, supply and investment potential

Frequency	Date of issue	Comments
Series	Jan. 1979	
Series	May 1979	
Series	Jun 1979	
Series	Oct. 1979	
Series	Nov. 1979	
Series	Nov. 1979	
Series	Jan. 1980	
Series	Jul. 1980	
Series	Aug. 1980	
Series	Dec. 1980	
Series	1980	
Series	1980	
Series	1980	
Series	1980	
Series	1980	
Series	Mar. 1979	
Series	Aug. 1979	
Series	Mar. 1980	

Surveys & Forecasts (cont'd)

No.	Class	Publisher	Title
818	A	H.P. Drewry	No. 22 The growth of steam coal trade – A review and forecast of international trade in thermal coal and shipping requirements: 1980–1990
819	C	Tilney & Co.	World tanker prospects
820	C	Terminal Operators Ltd.	World oil demand and tanker markets
821	C	Stal-Laval	Marine market analysis, forecast; Fleet development and newbuilding requirements
822	A	W O C O L (World Coal Study)	Future coal prospects: Country and regional assessments
823	A	W O C O L (World Coal Study)	Coal-Bridge to the future
824	A	O E C D	Energy policies and programmes of IEA countries
825	A	O E C D	Report of the IEA Coal Industry Advisory Board

Frequency	Date of issue	Comments
Series	Jul. 1980	
Annual	End of the year	Forecast of tanker demand and supply for coming four years. Seems to be rather optimistic view, especially in demand side.
Annual	Middle of the year	Refer to the comment 819..
Annual	Beginning of the year 1980	Forecast for coming eight years, contains container ships, bulk carriers, tankers, LNG carriers. Seems to be optimistic. Contains description of the prospects for coal in detail of sixteen countries.
	1980	Reports a plausible solution for the world's most acute energy demand.
Annual	The next year	Evaluation and reviews of the energy policies and programmes of IEA member countries. Includes energy forecasts for 1985 and 1990.  The CIAB finds that the prompt and positive action is required to accelerate the shift from oil to coal. And offers the recommendations to each governmental industrial policies.

Directories & Others

No.	Class	Publisher	Title
901	A	National Magazine Co., Ltd.	Containerisation international yearbook
902	A	Croner Publications Ltd.	Croner's world directory of freight conferences
903	A	Benn Publications Ltd.	International shipping and shipbuilding directory
904	A	Whittingham, H.	Reed's tables of distances
905	B	The Financial Times Ltd.	Fairplay world shipping yearbook
906	A	Marine Week	Directory of shipowners, shipbuilders & marine engineers
907	A	Lloyd's Register of Shipping	Register of ships
908	A	H. Clarkson & Company Ltd.	The tanker register
909	A	Lloyd's Shipping Publications	Lloyd's maritime atlas including a comprehensive list of ports and shipping places of the world
910	A	Penn Well Publishing Co.	International petroleum encyclopedia

Frequency	Date of issue	Comments
Annual	End of next year	Various reports on container transport activities. It is widely covered not only container ships' tonnage but also facilities of container terminals and these volume of dealt with.
Loose-leaf in progress	—	Directory of tariffs, regulations, specific areas and members of shipping conferences.
Annual	The year	Directory of shipowners, shipbuilders.
—	—	—
Annual	Beginning of the year	Directory of shipowners, shipbuilders, etc. and shipping statistics are included.
Annual	The year	Same as 903, 905.
Annual	The year	Contains the names ships, dimension, builders, deadweight, etc. concerning every ship's details registered all over the world.
Annual	The year	Record of all tankers and combined carriers 6,000 DWT tons and above.
Irregular	—	—
Annual	The year	Recent tendency of oil and gas production in the world.

Table 3-2 Cross Reference Table

(1)

		101	102	104	105	106	107	108	109	110	111	112	201	202	203	204	205	206
<b>World Economy &amp; Trade</b>																		
	The National Income or GNP (GDP) (by region) in real term																	
	The National Income or GNP (GDP) (by region) in normal term																	
	The National Income or GNP (GDP) (by country) in real term																	
	The National Income (by country) in normal term																	
	Index of the Mining and Manufacturing Production (by region)																	
	Index of the Mining and Manufacturing Production (by country)																	
Trade	World Wide Total																	
	by country																	
	by region																	
	by commodity																	
Production /																		
Consumption	Cement																	
	Fertilizer																	
<b>Energy &amp; Other Resources</b>																		
Oil	Crude Oil (production)																	
	Oil Products (consumption)																	
	Natural Gas (production & consumption)																	
	Energy (production & consumption)																	
Other Resources	Iron Ore (production)																	
	Coal (production & consumption)																	
	Food (production)																	
	Phosphate Rock (production)																	
	Potash (production)																	
<b>Seaborne Trade</b>																		
Oil	Crude Oil																	
	Oil Products																	
	LPG LNG																	
Dry Cargoes	Iron Ore																	
	Coal																	
	Grain																	
	Bauxite/Almina																	
	Phosphate																	
	Others																	





(2)

	101	102	104	105	106	107	108	109	110	111	112	201	202	203	204	205	206
Fleet, Shipbuilding & Maritime Transportation Cost																	
Total Tonnage of the World	○	○															
Tonnage by Country	○							○	○								
Tonnage by Type																	
Tanker																	
Bulk Carrier																	
Others																	
Ship by Size																	
Tanker																	
Bulk Carrier																	
Others																	
Ships by Age																	
Tanker	○							○									
Bulk Carrier	○							○									
Others																	
Volume of New Contract																	
by building countries																	
by type																	
Tanker																	
Bulk Carrier																	
Others																	
Total Order Book																	
by building countries																	
by type																	
Tanker																	
Bulk Carrier																	
Others																	
Commencement																	
by building countries																	
by type																	
Tanker																	
Bulk Carrier																	
Others																	
Under Construction																	
by building countries																	
by type																	
Tanker																	
Bulk Carrier																	
Others																	
by type																	
Launching																	
by building countries	○	○															
by type	○	○															
Tanker	○	○															
Bulk Carrier	○	○															
Others																	
by type																	



(3)

		101	102	104	105	106	107	108	109	110	111	112	201	202	203	204	205	206
Completion	by building countries								○									
	by type																	
	Tanker																	
	Bulk Carrier																	
	Others																	
	by type																	
Scrap	by type																	
	Tanker																	
	Bulk Carrier																	
	Others																	
Lost Tonnage	by type																	
	Tanker																	
	Bulk Carrier																	
	Others																	
Maritime Transportation Cost	New Contract Ship's Price																	
	Second-Hand Ship's Price																	
	Scrap Price																	
	Crew Wage																	
	Repair & Maintenance																	
	Insurance																	
	Fuel Oil																	
	Port Charges																	
Shipping Market	Freight Rate and Freight Index for Chartered Ship																	
	Tanker	○																
	Tramp Ship	○																
Volume of Fixture	Tanker																	
	Tramp Ship																	
Laid-up Tonnage	Tanker																	
	Tramp Ship																	



(4)

	101	102	104	105	106	107	108	109	110	111	112	201	202	203	204	205	206
<b>Ports &amp; Harbours</b>																	
Port Handling Volume																	
by country	○	○						○	○								
Oil	○																
Total Volume of the World	○																
by country																	
Dry Cargo																	
Total Volume of the World	○																
by country	○																
by charging and discharging port		○															
Port Facilities																	
Transit Volume of Canal																	
No. of ships, Ships Type																	
Suez Canal, Panama Canal																	
Cargo																	
Suez Canal, Panama Canal																	
Transport Distance																	



## 4. ANALYSIS AND EVALUATION OF DATA AND INFORMATIONS

### 4.1 The Canal and Its Economic Environments

- 1) Analyse canal traffic, its economic environments and their mutual correlations based on data and informations collected, pigeonhoted and filed.
- 2) Find out such correlations not only in "Principal Correlations between Various Kinds of Data and Information" (Fig. 4-1),  
"Examples of Correlations between Various Kinds of Data and Information" (Table 4-1), but also in various kinds of publications regarding economies and maritime affairs.
- 3) Refer to the reports as under-mentioned as for practical ways of analysis and evaluation and examples of economic correlation.  
JICA: Supplementary Text Book 1978  
JICA: Systems Analysis 1979  
JICA: Systems Analysis 1980  
JICA: Feasibility Study Report on 2nd Stage Development Project 1980
- 4) Increase knowledge of such economic correlations by collecting information from various publications in order to catch up with the changes of economic situations surrounding the Canal.  
And improve time to time the "Principal Correlations" and the "Examples of Correlations".

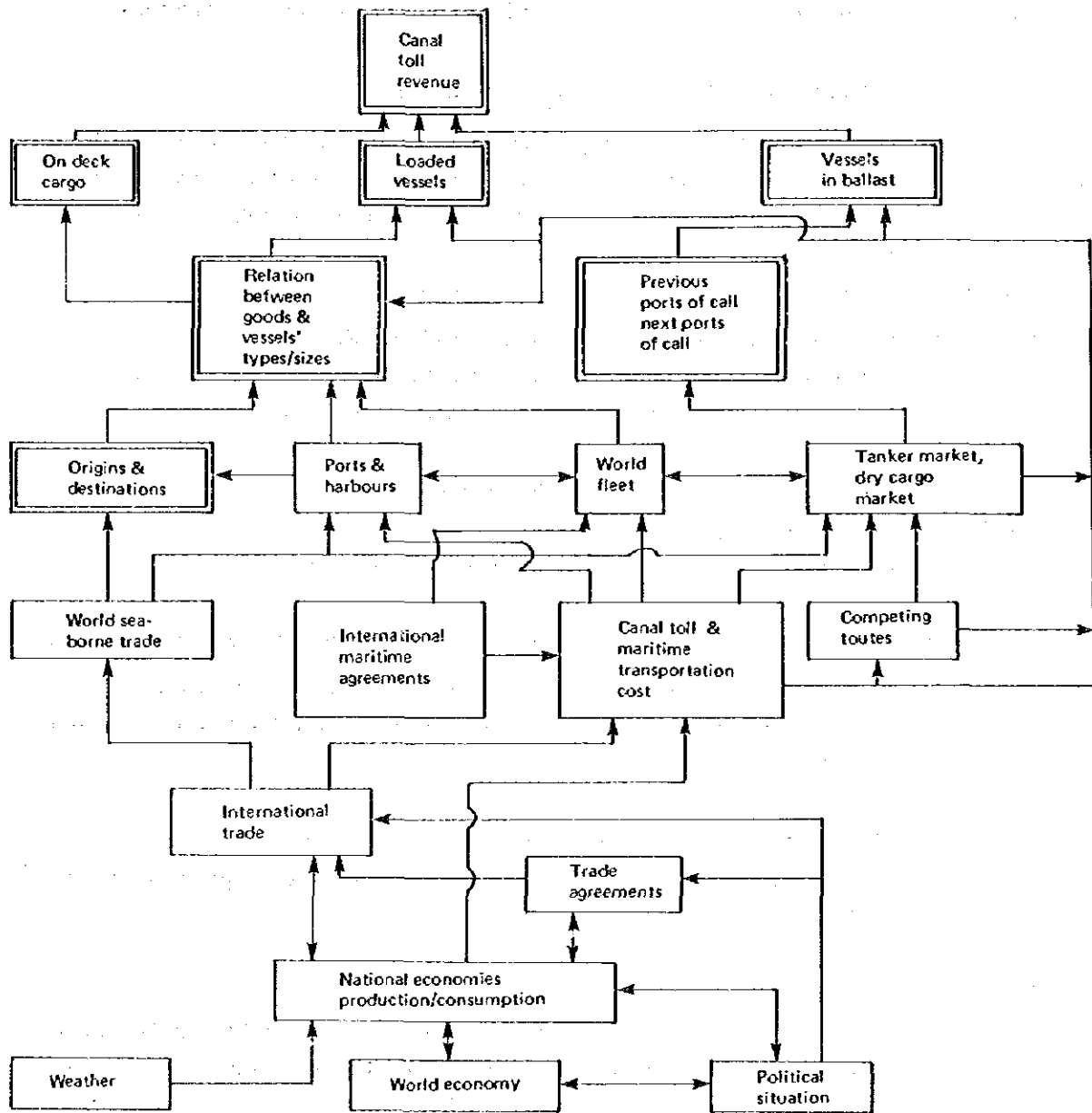


Fig. 4-1. Principal Correlations between Various Kinds of Data & Information



**Table 4-1 Examples of correlation between various kinds of data and informations**

Weather → Regional and world economy → Exports and imports.

Examples: Grain production of U.S.S.R. decreased due to unfavorable weather in 1979 and 1980. Oil consumption in winter in Europe was significantly influenced by weather condition, which resulted in fluctuations of tanker market.

Political situation ↔ Regional and world economy → Exports and imports.

Examples: U.S.A. Canada banned exports of grain to U.S.S.R.  
U.S.A., E.C and Japan suspended exports to Iran  
Exports and imports of Iraq and Iran decreased due to war.

International maritime agreements → Maritime transportation cost

Examples: IMCO tanker regulations are said to increase cost.  
Flag of convenience or ITF problems will also affect cost.

World seaborne trade ↔ Ports and harbors ↔ World fleet, large bulk carrier, container ship

Example: Large tanker, RORO, carcarrier, LASH and other specialized carriers have developed keeping pace with the development of world seaborne trade and ports and harbours.

World seaborne trade ↔ World fleet ↔ Tanker and dry cargo market

Example: Freight markets are based on the ballance of demand/supply of trade and fleet.

Tanker market, dry cargo market ↔ Canal traffic

Examples: Especially in case of south bound VLCC (N.W.Europe → Arabian Gulf) and north bound bulk carrier (Australia → N.W. Europe, iron ore and coal), market and traffic are influenced mutually.  
Types and sizes of transiting vessels and load factor will change according to the differential level of market by type/size as well as to the market level.

Canal toll ————— Maritime transportation cost → Market  
National economy ↗

Examples: Oil price reflects directly in fuel oil price and consequently in freight market.  
General increase in prices and wages does the same.

Maritime transportation cost ↔ Market ↔ Competing routes

Example: Competing routes such as sea route via Cape, Middle East pipelines, Trans Siberian Landbridge, and other land transportation compete with the Canal depending on their costs and markets.

## 4.2 Analysis of Goods Traffic

- 1) Analyses of goods traffic and vessel traffic are one of the most important jobs of Economic Unit because they are the fundamentals of all the analyses, evaluations and forecasts by the organization, therefore pour the utmost efforts to these analyses.
- 2) Make yearly analysis in two phases, namely;
  - (1) firstly when traffic data of the year are obtained, therefore in March or April of next year ----- Provisional or tentative report of the year based on estimated data obtainable at the time of analysis.
  - (2) secondary when data about world economy and seaborne trade of main commodities are obtained, therefore usually in the end of next year or a little later ----- Final or formal report of the year, based on data and informations as detailed as possible.

## 4.3 Analysis of Main Items of Goods

- 1) Main items of the goods through the Canal at present are classified as follows:
  - (1) Crude oil and oil products
  - (2) Iron ore
  - (3) Coal
  - (4) Grain
  - (5) Mineral fertilizer
  - (6) Fabricated metals
  - (7) Cement
  - (8) General cargo (other goods)
- 2) Make yearly statistics by each of the main items
  - (1) Canal traffic northbound or southbound
  - (2) Seaborne trade of the origin/destination relating to the Canal.
  - (3) World seaborne trade
- 3) Make yearly statistics by each of the main items
  - (1) Consumption, production, import, export of each main importing countries of the Canal traffic, and of O/D relating to the Canal.
  - (2) Production, operation rate, export, export rate, export price, export by importing countries, production/import of raw materials of each main exporting countries.
- 4) Make survey of
  - (1) Economic development and investment plans (for example; five year plan), international payments, exports accelerating policies, consumption/import control policies, import tax and trade agreements of each of main importing/exporting countries relating to the Canal.
  - (1) Agreements by international organizations such as GATT, IMF, UNCTAD, OECD, IEA, CIEC, EC, OPEC, etc. about the trades relating to the Canal.
  - (2) International economic and technical co-operations and consequential exports/imports.

- 5) Study based on the aforementioned statistics and other informations.
  - (1) Tendencies in recent several years of each trade or export/import.
  - (2) Causes of significant increase or decrease, if any, of the trades and exports/imports.

#### 4.4 Other Considerations

- 1) Give careful considerations to, about tendencies
  - (1) Business cycles in long term, medium term and short term. \*
  - (2) Political factors (such as Iran-Iraq war) and natural phenomena (for example, food production of U.S.S.R. decreased in 1979 and 1980 due to bad weather).
  - (3) Autonomous changes in line with development stages of specific goods or systems.  
for example: traffic volume of each of main commodities has repeated increases and decreases year by year.

\* see P.A. Samuelson: Economics (10th ed.)  
Part 2. 14 Business cycles and forecasting

- 2) About causes and effects
  - (1) Worldwide demand and supply balance of specific goods.
  - (2) Change in relative competitiveness of exporting countries  
(especially competition between Europe and Asia in Middle East and other Asian markets.)  
due to change in.
    - i) foreign exchange rates  
(when Yen was revalued, exports of Japan decreased and consequently exports of Europe to M. E. and other Asia increased)
    - ii) inflation rates
    - iii) productivity
  - (3) Activity or recession of world and regional economy  
(generally speaking activity in Europe accelerates northbound trade and recession southbound)
  - (4) Analyse in detail correlation between large vessel traffic and shipping markets in monthly figures by ship type and geographical locations of previous/next ports.
  - (5) Collect data of trades relating to the Canal (by commodity, origin/destination and ship size distribution) and compare with the Canal traffic.
  - (6) Collect data about the present and development scheme of ports and harbours relating to the Canal traffic and foresee the future trends for large sizes of vessel, containerization and inland transportation.
  - (7) Foresee future trends in shipping markets.

#### 4.5 Analysis of Vessel Traffic

- 1) Analyse, as same as analysis of goods traffic, tendency in traffic and its correlation with environments.  
Vessel traffic is basically decided by goods traffic, but in this analysis specific problems

relating to vessel are handled.

2) Steps of analyses are as follows:

- (1) Make yearly tables of vessel traffic by type, by size, by north bound/south bound by laden/in ballast, for the years of 1960, 1966, 1975 and hence forward.
- (2) Collect data about volume of each main commodity which is loaded on board each type of vessel, and especially as for crude oil, iron ore and coal on each size category of tanker, combination carrier or bulk carrier, and analyse correlation between vessels and goods.
- (3) Make tables of geographical distribution of previous ports of call and next parts of call of vessels in ballast (in this case no relation with goods) especially for large tankers combination-carriers and bulk carriers, and analyse which trade these vessels are engaged in.

#### 4.6 Analysis of Maritime Transportation Cost

1) Make analysis of maritime transportation cost from the following viewpoints:

- (1) Survey current costs of both the Canal route and competing routes such as route via Cape, landbridge, pipelines etc. and analyse the reasons of route choice.

JICA reports to be referred to :

Supplementary text 1978 (No. 1, 5.2)

Systems analysis 1979 (III 2.3, 3.3, 5.4-5.9, 6.1-6.5)

Systems analysis 1980 (III 3.1, 3.2, 6.1-6.7)

Feasibility study report on 2nd Stage Dev. 1980 (IV 4.3, S2.2)

- (2) Survey constituents and their future price prospects of these costs (for example fuel oil price, shipbuilding price, shipping markets, truckage, pipeline charges etc.) and foresee the tendencies of these costs in future.

JICA reports to be referred to :

Supplementary text 1978 (No. 1 5.1-5.10)

Systems analysis 1979 (III 5.11, 5.12)

Systems analysis 1980 (III 6.1-6.7)

Feasibility study report on 2nd Stage Dev. 1980 (IV 4.3, 5.2, S2.1)

- (3) Survey difference in cost of various types and sizes of vessel (for example : general cargo ship, containership, RORO etc. in general cargo transportation, VLCC, ULCC, medium- and small-sized tankers) and foresee change in distribution of type and size of vessel in future (both of Canal traffic and world fleet) taking trade practices and ports/harbours conditions into consideration.

Supplementary text 1978 (No. 1)

Systems analysis 1979 (III 5.9-5.12)

Systems analysis 1980 (III 5.1-5.3, 6.4-6.7)

Feasibility study report on 2nd Stage Dev. 1980 (IV 4.4, 5.2, S2.3)

- 2) Pay utmost attention to collect data of transportation cost from various information sources, because such data scarcely appear in publications, different from data about economy, trade and seaborne trade.

Try to collect them via special or private routes.

(1) Fuel oil price data

Lloyd's List  
Lloyd's Shipping Economist  
Petroleum Economist

(2) Port charges data

Lloyd's Shipping Economist  
Ports of the World

Remarks: Port charges in a port vary not only by type and size of a ship but also by each entry to the port and are therefore difficult to catch.

(3) Ship cost data

Lloyd's Shipping Economist  
H.P. Drewry : Economic Study No. 74, 88  
: Survey No. 21 etc.  
: ULCC Trading Opportunities

JICA reports to be referred to :  
Supplementary text 1978 (No.1 5.4-5.10)  
Systems analysis 1979 (III 5.11)  
Systems analysis 1980  
Feasibility study report on 2nd Stage Dev. 1980 (IV 4.3)

(4) Freight market data

Lloyd's List  
Fairplay International Shipping Weekly  
Norwegian Shipping News  
Shipping Statistics & Economics  
World Tanker Fleet Review etc.

(5) Second hand tonnage price data

Lloyd's List (Tuesday)  
Fairplay International Shipping Weekly  
H.P. Drewry : Shipping Statistics & Economics  
F. & E. : Review

Remarks : Second hand tonnage price is one of effective keys to foresee tendency in freight market in following several years.

(6) New building order and ship price data

H.P. Drewry : Shipping Statistics & Economics  
F. & E. : Review  
: World Bulk Fleet  
J.I. Jacobs : World Tanker Fleet Review

Fairplay International Shipping Weekly (World Ships on Order)

Remarks : New building order show the tendency in type and size distribution in future and ship price indicates future tendency in freight market.

**Table 4-2 Data and Information Relating to Canal Traffic**

**Northbound "Oil" Traffic**

**(1) Main origins/destinations of the Canal traffic**

Arabian Gulf → Italy and other W. & E. Europe, U.S.A.

**(2) Competing trade routes**

Arabian Gulf → Europe and U.S.A.

East Mediterranean Coast → Europe and U.S.A. via Cape route  
(through pipelines)

**(3) Other trade routes which will affect the Canal traffic**

North Africa, West Africa, North Sea, Mexico  
→ Europe & U.S.A.

**(4) Important factors which will affect the Canal traffic**

Energy consumption & import in Europe, U.S.A.

Oil production and export of North Africa, West Africa, North Sea, Mexico.

Energy conservation policy in Europe & U.S.A.

**(5) Data & reports to be reviewed**

B.P.: Statistical Review of the World Oil Industry

F. & E.: World Bulk Trade 1979

Lloyd's: World Bulk Trade 1979

Lloyd's Shipping Economist

Oil & Energy Trend

Petroleum Intelligence Weekly

Petroleum Economist

**(6) JICA reports to be referred to**

Supplementary text 1978 (No. 1. 3.1--3.7, 5.1, 5.2)

Systems analysis 1979 (III. 2.2, 2.3, 3.2, 3.3, 4.2, 5.1--5.12, 6.1--6.5)

Systems analysis 1980 (III. 2.2, 3.2, 4.2, 6.1--6.4)

Feasibility study report on 2nd Stage Dev. 1980 (IV. 3.3, 4.2--4.4, 5.2, XII. 3--5)

**Table 4-3 Data and Information Relating to Canal Traffic**

**Northbound "Iron Ore" Traffic**

**(1) Main origins/destinations of the Canal traffic**

India, Australia → Rumania, Italy and other W. & E. Europe

**(2) Competing trade routes**

Australia → Europe via Cape

**(3) Other trade routes which will affect the Canal traffic**

Brazil, Canada, Africa → Europe

**(4) Important factors which will affect the Canal traffic**

Steel production, consumption, export of Europe.

Dry cargo freight market for large bulk carriers.

**(5) Data & reports to be reviewed**

F. & E.: World Bulk Trade 1979

U.N.: Statistical Yearbook 1979

U.N.: World Trade in Steel 1979

ISI: World Steel in Figures 1979

**(6) JICA reports to be referred to**

Supplementary text 1978 (No. 1. 2.2)

Systems analysis 1979 (III. 2.4, 3.2, 5.2)

Systems analysis 1980 (III. 3.3, 4.3, 6.5)

Feasibility study report on 2nd Stage Dev. 1980 (IV. 3.4, 4.2, 4.3, 5.3)

**Table 4-4 Data and Information Relating to Canal Traffic**

**Northbound "Coal" Traffic**

**(1) Main origins/destinations of the Canal traffic**

Australia → Rumania, Greece and other W. & E. Europe

**(2) Competing trade routes**

Australia → Europe via Cape

**(3) Other trade routes which will affect the Canal traffic**

U.S.A., Canada, South Africa, Europe → Europe

**(4) Important factors which will affect the Canal traffic**

Energy consumption esp. conversion from oil to coal in Europe and U.S.A.

Steel production, consumption and export of Europe.

Dry cargo freight market for large bulk carriers.

**(5) Data & reports to be reviewed**

F. & E.: World Bulk Trade 1979

WOCOL: Future Coal Prospects

Dr. H. Michael: Bulk Shipping in 1980s

OECD: Steam Coal Prospects to 2000

**(6) JICA reports to be referred to**

Supplementary text 1978 (No. 1. 2.2)

Systems analysis 1979 (III. 2.4, 3.2, 5.2)

Systems analysis 1980 (III. 3.3, 4.4, 6.6)

Feasibility study report on 2nd Stage Dev. 1980 (IV. 3.4, 4.2, 4.3, 5.3)



**Table 4-5 Data and Information Relating to Canal Traffic**

**Northbound "Fabricated Metals" Traffic**

- (1) Main origins/destinations of the Canal Traffic**  
Japan, Australia and other Asia -> W. & E. Europe, North Africa
- (2) Competing trade routes**  
—
- (3) Other trade routes which will affect the Canal traffic**  
Trades inside W. & E. Europe
- (4) Important factors which will affect the Canal traffic**  
Japan/E.C. Trade Agreement of Steel Products.  
W. Europe exports to U.S.A.  
Demand/Supply balance in W. Europe.
- (5) Data & reports to be reviewed**  
U.N.: Statistics of World Trade in Steel 1979  
I.I.S.I.: World Steel in Figures 1979
- (6) JICA reports to be referred to**  
Systems analysis 1980 (III. 4.7)  
Feasibility study report on 2nd Stage Dev. 1980 (IV. 3.4)

**Table 4-6 Data and Information Relating to Canal Traffic**

**Northbound "Other Goods" Traffic**

- (1) Main origins/destinations of the Canal traffic  
Japan, Southeast Asia and other Asia → W. & E. Europe
- (2) Competing trade routes  
Trans Siberian Land Bridge
- (3) Other trade routes which will affect the Canal traffic  
—
- (4) Important factors which will affect the Canal traffic  
—
- (5) Data & reports to be reviewed  
UNCTAD: Review of Maritime Transport 1979  
OECD: Maritime Transport 1979
- (6) JICA reports to be referred to  
Supplementary text 1978 (No. 1. 4.1--4.4)  
Systems analysis 1979 (III. 2.5, 3.2, 3.3)  
Systems analysis 1980 (III. 2.1--2.5, 5.1--5.3)  
Feasibility study report on 2nd State Dev. 1980 (IV. 2.1--2.7, 3.4, 4.5, 5.3, S.2.3)

**Table 4-7 Data and Information Relating to Canal Traffic**

**Southbound "Oil" Traffic**

**(1) Main origins/destinations of the Canal traffic**

U.S.S.R., Greece, Italy, other W. & E. Europe  
→ India, Saudi Arabia and other Asia

**(2) Competing trade routes**

—

**(3) Other trade routes which will affect the Canal traffic**

—

**(4) Important factors which will affect the Canal traffic**

U.S.S.R./India Trade Agreement.  
Refinery plant construction in Saudi Arabia and other Arabian Gulf countries.

**(5) Data & reports to be reviewed**

F. & E.: World Bulk Trade 1979  
U.N.: World Trade Annual 1978

**(6) JICA reports to be referred to**

Supplementary text 1978 (No. 1. 3.2)  
Systems analysis 1979 (III. 2.2, 3.2)  
Systems analysis 1980 (III. 4.2)  
Feasibility study report on 2nd Stage Dev. 1980 (IV. 3.2)

**Table 4-8 Data and Information Relating to Canal Traffic**

**Southbound "Cereals" Traffic**

**(1) Main origins/destinations of the Canal traffic**

U.S.A., E. Europe → India, Iran, Saudi Arabia, Pakistan and other Asia

**(2) Competing trade routes**

**(3) Other trade routes which will affect the Canal traffic**

U.S.A., Canada, Australia, Argentina → Asia

**(4) Important factors which will affect the Canal traffic**

Exporters/Importers relation matrix of the world.

**(5) Data & reports to be reviewed**

F. & E.: World Bulk Trade 1979

U.N.: World Trade Annual 1978

FAO: Trade year book 1978

**(6) JICA reports to be referred to**

Supplementary text 1978 (No. 1. 2.2)

Systems analysis 1979 (III. 3.2)

Systems analysis 1980 (III. 4.5)

Feasibility study report on 2nd Stage Dev. 1980 (IV. 3.4)

**Table 4-9 Data and Information Relating to Canal Traffic**

**Southbound "Mineral Fertilizer" Traffic**

**(1) Main origins/destinations of the Canal traffic**

Phosphate: Morocco, U.S.A. → India, Pakistan and other Asia

Potash: W. & E. Germany, U.S.S.R. → India, Pakistan and other Asia

Nitrogenous fert.: Rumania, Belgium and othr W. & E. Europe → India, Pakistan, China and other Asia

**(2) Competing trade routes**

**(3) Other trade routes which will affect the Canal traffic**

Phosphate: Jordan, U.S.A. (via Panama) → Asia

Potash: Canada → Asia

Nitrogenous fert.: Japan & other Asia → Asia

**(4) Important factors which will affect the Canal traffic**

Agricultural planning of Asian countries.

Consumption, production, imports of fertilizer in Asian countries especially production of phosphate rock and nitrogenous fert.

Morocco's refinery plan to  $P_2O_5$ .

**(5) Data & reports to be reviewed**

U.N.: Statistical Yearbook 1979

FAO: Fertilizer Yearbook 1979

FAO: Conference c79/24, Agriculture Towards 2000

**(6) JICA reports to be referred to**

Supplementary text 1978 (No. 1, 2.2)

Systems analysis 1979 (III. 3.2)

Systems analysis 1980 (III. 4.6)

Feasibility study report on 2nd Stage Dev. 1980 (IV. 3.4)

**Table 4-10 Data and Information Relating to Canal Traffic**

**Southbound "Fabricated Metals" Traffic**

**(1) Main origins/destinations of the Canal traffic**

Belgium, Italy, W. Germany and other W. & E. Europe  
→ China, Iran, Saudi Arabia and other Asia

**(2) Competing trade routes**

by land to Iran

**(3) Other trade routes which will affect the Canal traffic**

Japan → Arabian Gulf, China and other Asia

**(4) Important factors which will affect the Canal traffic**

Steel consumption, production, exports and imports of W. & E. Europe, Arabian Gulf,  
China, Japan and other Asia.  
World supply/demand balance of steel products.

**(5) Data & reports to be reviewed**

U.N.: Statistical Yearbook 1979

U.N.: Statistics of World Trade in Steel 1979

**(6) JICA reports to be referred to**

Systems analysis 1980 (III. 4.7)

Feasibility study report on 2nd Stage Dev. 1980 (IV. 3.4)

**Table 4-11 Data and Information Relating to Canal Traffic**

**Southbound "Cement" Traffic**

**(1) Main origins/destinations of the Canal traffic**

Spain, Greece, Rumania and W. & E. Europe

→ Saudi Arabia, Iran, U.A.E., Kuwait and other Asia

**(2) Competing trade routes**

**(3) Other trade routes which will affect the Canal traffic**

Japan and other Asia → Arabian Gulf and other Asia

**(4) Important factors which will affect the Canal traffic**

Cement consumption, production, exports and imports of W. & E. Europe, Arabian Gulf and other Asia.

World demand/supply balance of cement.

Construction program of Arabian Gulf countries.

**(5) Data & reports to be reviewed**

CEMBUREAU: *World Statistical Review 1979*

U.N.: *Statistical Yearbook 1979*

Japan Cement Association: *Cement Review 1979*

**(6) JICA reports to be referred to**

Systems analysis 1980 (III. 4.8)

Feasibility study report on 2nd Stage Dev. 1980 (IV. 3.4)

**Table 4-12 Data and Information Relating to Canal Traffic**

**Southbound "Other Goods" Traffic**

**(1) Main origins/destinations of the Canal traffic**

W. & E. Europe → Saudi Arabia, Arabian Gulf and other Asia

**(2) Competing trade routes**

Trans Siberian Land Bridge

Trans Arabian Land Transport (details unknown)

**(3) Other trade routes which will affect the Canal traffic**

Japan, Korea, Taiwan, HK, Singapore and other Asia

→ Arabian Gulf and other Asia

**(4) Important factors which will affect the Canal traffic**

Economic Development plans of Arabian Gulf countries.

Economies of Asian countries especially foreign balance of foreign payment.

**(5) Data & reports to be reviewed**

UNCTAD: Maritime Transport 1979

OECD: Maritime Transport 1979

**(6) JICA reports to be referred to**

Supplementary text 1978 (No. 1. 4.1-4.4)

Systems analysis 1979 (III. 2.5, 3.2, 3.3)

Systems analysis 1980 (III. 2.1-2.5, 5.1-5.3)

Feasibility study report on 2nd Stage Dev. 1980 (IV. 2.1-2.7, 3.4, 4.5, 5.3, S.2.3)



**Table 4-13 Data and Information Relating to Canal Traffic**

**Sounthbound "VLCC" Traffic**

- (1) **Main origins/destinations of the Canal traffic**  
Mediterranean Sea, Northwest Europe, Caribbean Sea, U.S.A.  
→ Arabian Gulf
- (2) **Competing trade routes**  
Same as above via Cape
- (3) **Other trade routes which will affect the Canal traffic**  
See Northbound "Oil" Traffic
- (4) **Important factors which will affect the Canal traffic**  
Tanker market (mainly spot market)
- (5) **Data & reports to be reviewed**  
Lloyd's of London: Vessel movements data (special application)  
F. & E.: World Bulk Trade 1979  
Loloyd's Shipping Economist
- (6) **JICA reports to be referred to**  
Supplementary text 1978 (No. 1. 3.1-3.7, 5.1, 5.2)  
Systems analysis 1979 (III. 2.2, 2.3, 5.3-5.12)  
Systems analysis 1980 (III. 4.2, 6.2-6.4)  
Feasibility study report on 2nd Stage Dev. 1980 (IV. 3.3, 4.2-4.4, 5.2,  
XII. 3-5, S.2.1, 2.2)

**Table 4-14 Data and Information Relating to Canal Traffic**

**Southbound "Large Bulk Carrier", Traffic**

- (1) Main origins/destinations of the Canal traffic**  
Mediterranean Sea, Northwest Europe → Australia
- (2) Competing trade routes**  
Same as above via Cape
- (3) Other trade routes which will affect the Canal traffic**  
See Northbound "Iron Ore", "Coal" Traffic
- (4) Important factors which will affect the Canal traffic**  
Iron ore and coal trades Australia/Europe.  
Dry cargo market for large bulk carriers.
- (5) Data & reports to be reviewed**  
Lloyd's of London: Vessel movements data (special application)  
F. & E.: World Bulk Trade 1979  
Lloyd's Shipping Economist
- (6) JICA reports to be referred to**  
Systems analysis 1980 (III. 6.5, 6.6)  
Feasibility study report on 2nd Stage Dev. 1980 (IV 4.4)

## 5. INFORMATION SYSTEM FOR CANAL TRAFFIC FORECASTING MODEL

### 5.1 General

Information system related to the canal traffic forecasting models owned by the Economic Unit will be described hereinafter. At present, the Economic Unit owns the long-term tanker traffic forecasting model and the long-term non-tanker traffic forecasting model, but the input data, parameters and other data for the models will be required for making analyses by using these models. Though these data are included in the information system for the economic research described in Chapter 4, it is required to provide separate information system in consideration of the importance and special characters of the model analysis.

### 5.2 Information System for Tanker Forecasting Model

Data required for operating the tanker traffic forecasting models currently owned by the Economic Unit are indicated in the table shown below. The items 1 to 9 in the table are the input data, item 10 is the parameter determined by the analysis process, and items 11 to 13 are the actual traffic data used for the verification of the models. Though the future values for items 1 to 9 are generally forecasted and established by other method, at least the data for these items from the past to the present must be accumulated. For various data required for calculating parameters such as "a" and "b", refer to the System Report I<sub>1</sub>.

Table 5-1 Data Items Necessary for Tanker Forecasting

Inputs	1. Oil trade flow	by OD
	2. Fleet structure	by OD
	3. Shipping cost parm.	a. b. by ship size
	4. Sea distance	by OD, by route (via S, via C)
	5. Numbers of voyages	by OD, by route (S/S, C/S, C/C)
	6. Canal toll (\$/SNT) Canal toll (\$/TON)	by ship size, by loading condition by ship size
	7. Shipping market parm.	
	8. Load factor	
	9. Canal physical dim.	
Parameters	10. Route choice model parameter	
For verification	11. Transit volume	by ship size, (by route, by OD)
	12. Number of ships	by ship size, by direction
	13. Revenue from the Canal (Tanker)	by loading condition

### 5.3 Information System for Non-Tanker Forecasting Models

Data required for operating the non-tanker forecasting models to be used by the Economic Unit will be described hereinafter. Among these data shown in the following table, though the data of items 1 to 10 have to be forecasted basing upon the current data and other informative materials, they are in many cases assumed from the data accumulated up to the present and other related data. Therefore, new data have to be accumulated each year for these items. Though the items 11 to 20 are not required as inputs for the forecasting models, these items have to be accumulated also in each year since they are needed also for the verification of the results and preparation of the input data stated before.

Table 5-2 Data Items Necessary for Non-Tanker Forecasting

1	$GR^{(t)}$ : growth rate of GWP in the t-th year
2	$e_i^{(t)}$ : elastic figure between GWP and world seaborne trade of cargo (type i) in the t-th year
3	$g_i^{(t)}$ : growth rate of world seaborne trade of cargo (type i) in the t-th year
4	$Q_i$ : present world seaborne trade of cargo (type i)
5	$\alpha_{il}^{(t)}$ : share of transit volume of cargo (type i) through the Suez Canal in the world seaborne trade in the t-th year <i>i</i> : type of cargo <i>l</i> : <i>l</i> = 1 ..... Northbound <i>l</i> = 2 ..... Southbound
6	$p_{ij}^1$ : ship type distribution of cargo type i
7	$f_j^1$ : conversion factor from cargo tons to SNT
8	$q_{jk}$ : ship size distribution by type j
9	$U_{jk}$ : canal due rate by type j and size k (\$/SNT)
10	$V_{jk}$ : canal due rate of type j and size k (\$/SNT)
11	$T_{ie}$ : cargo transit volume through the Suez Canal (in metric tons)
12	$X_j^1$ : cargo volume carried by ship type j (in metric tons)
13	$Y_j^1$ : ship volume by type j (in SNT)
14	$Z_{jk}^1$ : laden ship volume by type j and size k (in SNT)
15	$r_{jk}$ : representative ship size (SNT) by type j and size k
16	$N_{jk}^1$ : laden ship number by type j and size k through the Suez Canal
17	$M_{jk}^1$ : ship number by type j and size k through the Suez Canal in ballast
18	$B_{jk}^1$ : ship volume by type j and size k through the Suez Canal in ballast (in SNT)
19	$N^1$ : laden ship number of non-tankers through the Suez Canal
20	$M^1$ : ship number of non-tankers through the Suez Canal in ballast

Table 5-3 World Seabome Trade (Major Dry Bulk)

Year	Iron Ore	Grain	Coal	Bauxite	Phosphate	Total	Dry Total
1960	101	46	46	17	18	228	570
1961	98	57	48	17	19	239	600
1962	102	53	53	18	20	246	630
1963	107	59	64	17	22	269	670
1964	134	71	60	19	24	308	790
1965	152	70	59	21	25	327	810
1966	153	92	61	23	27	356	860
1967	164	83	67	25	28	367	890
1968	188	78	73	26	32	397	9666
1969	214	71	83	30	32	430	1034
1970	247	89	101	34	33	504	1165
1971	250	91	94	35	35	505	1173
1972	247	108	96	35	38	524	1247
1973	298	139	104	38	43	622	1403
1974	329	130	119	42	48	668	1476
1975	292	137	127	41	38	635	1438
1976	294	146	126	42	37	646	1555

Table 5-4a Suez Canal Goods Traffic (Northbound)

(by kiloton)

Year	Cereals	Ores and Metals	Other Dry	Total
1960	2,673	8,257	14,281	25,211
1961	3,247	7,994	14,082	25,323
1962	3,035	6,938	16,578	26,551
1963	2,303	6,317	20,543	26,463
1964	2,601	6,745	18,456	27,802
1965	2,665	7,116	18,574	28,355
1966	1,787	6,490	19,173	27,450
* 1975	1,090	2,280	9,801	13,171
1976	2,712	14,209	25,244	42,165
1977	1,592	12,703	27,457	41,752

\* Traffic interrupted due to military conflict

Table 5-4b Suez Canal Traffic (Southbound)

(by kiloton)

Year	Cement	Fertilizers	Coal & Coke	Fabricated Metals	Cereals & Derivatives	Other Dry	Total
1960	1,131	4,002	458	5,644	4,686	10,307	26,228
1961	1,017	4,279	373	4,423	3,979	12,427	26,495
1962	1,311	3,663	313	3,828	4,758	11,791	25,664
1963	1,383	4,647	447	4,324	5,996	12,243	29,040
1964	1,760	3,897	237	5,096	8,190	13,202	32,382
1965	1,215	5,168	265	4,727	8,042	14,676	34,093
1966	1,407	6,748	605	5,015	9,738	15,259	38,772
* 1975	836	2,821	75	1,743	2,198	9,503	17,178
1976	4,631	5,492	238	3,744	5,143	22,416	41,664
1977	6,035	6,198	331	3,893	4,188	31,350	51,995

\* Traffic interrupted due to military conflict

Table S-5 Breakdown of Ship and Cargo Types (Fig 1)

(by Percent)

Ship type Cargo type	Bulk Carrier	Combined Carrier	General Cargo Ship	Container Ship	Lash	RO/RO	Other	Total
Iron Ore	90.0		10.0					100.0
Cerals	48.3		51.4			0.3		100.0
Fabricated Metal	88.2		9.5	2.3				100.0
Cement	64.8		35.2					100.0
Fertilizer	62.2		37.8					100.0
Coal	90.0		10.0					100.0
Other	18.5		61.8	13.3	2.0	1.8	0.1	100.0

Table S-6 Breakdown of Ship by SNT

(by 1,000,000 SNT)

Ship Type Route	Bulk Carrier	Combined Carrier	General Cargo Ship	Container Ship	Lash	RO/RO	Car Carrier	Other	Total
Northbound	18.87		39.4	15.3	1.04	5.63	2.19	1.74	88.9
Southbound	24.78		24.1	12.2	0.74	3.55	6.03	1.33	81.4



Table 5-7 Size Distribution of Ship Type j (q<sub>jk</sub>) (by Percent)

Size (1,000 SNT) Type	0-5	5-10	10-15	15-20	20-25	25-30	30-40	40-50	50-60	60-70	70-80	>80
Bulk Carrier	0.8	8.7	24.8	24.5	10.9	6.4	9.2	2.5	5.4	3.9	2.1	0.8
Combined Carrier	0.2	1.2	3.6	3.1	2.9	4.8	27.3	10.1	10.7	19.5	12.5	11.1
General Cargo Ship	12.1	72.2	13.8	1.5	0.2		0.1	0.1				
Container Ship	2.9	6.2	8.5	11.5	15.9	5.7	5.7	38.1	5.5			
Lash			1.9				95.3				2.8	
RO/RO	7.7	44.8	25.8	4.7	4.0	6.1	6.9					
Car Carrier	0.2	1.7	4.0	10.7	2.7	20.2	36.9	19.5	1.1			
Others	36.6	45.5	10.4	0.6	0.8	2.4	1.5	2.2				

Table 5-8 Averaged Ship Size for Ship Type j and Size k (r<sub>jk</sub>) (by 1,000 SNT)

Size (1,000 SNT) Type	0-5	5-10	10-15	15-20	20-25	25-30	30-40	40-50	50-60	60-70	70-80	>80
Bulk Carrier	2.7	8.6	12.5	17.5	22.5	27.5	35.0	45.0	55.0	65.0	75.0	100.0
Combined Carrier	3.0	8.0	12.5	17.5	22.5	27.5	35.0	45.0	55.0	65.0	75.0	100.0
General Cargo Ship	2.4	7.7	12.5	17.5	22.5	27.5	35.0	45.0	55.0	65.0	75.0	100.0
Container Ship	3.1	7.4	12.5	17.5	22.5	27.5	35.0	45.0	55.0	65.0	75.0	100.0
Lash	3.3	6.7	12.5	17.5	22.5	27.5	35.0	45.0	55.0	65.0	75.0	100.0
RO/RO	2.8	8.9	12.5	17.5	22.5	27.5	35.0	45.0	55.0	65.0	75.0	100.0
Car Carrier	2.6	7.7	12.5	17.5	22.5	27.5	35.0	45.0	55.0	65.0	75.0	100.0
Others	3.0	8.0	12.5	17.5	22.5	27.5	35.0	45.0	55.0	65.0	75.0	100.0

## 6. FILE AND UPDATE OF DATA AND INFORMATION

### 6.1 Procurement and file of information sources

- 1) Here information sources is meant by periodicals including newspapers and magazines, and other publications regarding statistics and informations such as reports on specific thema.
- 2) Establish rules of handling these publications in the Economic Unit in consultation with SCA library which is in charge of this work in the SCA.  
Now at present the publications for the use of the Economic Unit are in the temporary custody of the Unit through the SCA Library.
- 3) Appoint staff(s) in charge of the procurement and care for the information sources.
- 4) Tasks of the staff(s) are as follows:
  - (1) Record the date of receipt of publications as well as their names etc. in the record book.
  - (2) Locate the publications at the allocated space. The space should indicate the name of the publication by labels.
  - (3) Deliver publications to staff who use them.
  - (4) Check time to time usual date of receipt of periodicals. Ask publishers for early despatch of publications which are late in receipt.
  - (5) Make a staff record in a note book when he brings publications out of the room, so that the publications may not go astray.
  - (6) Prevent publications from being broken or lost by binding magazines or the like into book type, or repair slightly broken publications.
- 5) Store space of publications should be decided in consideration of convenience of staff, but in public area and not in private desks or lockers.
- 6) Make copies of publications which are used very often only if they are free from copy right ©.
- 7) Return publications to the SCA Library which are scarcely used after lapse of certain period.

Decide standard period of custody in the Economic Unit of each publication in accordance with frequency of use and the following table.

Type	Period
Newspaper	1 month
Weekly	1 to 3 years
Monthly	1 to 3 years
Yearly	1 to 5 years
Others	1 to 3 years

- 8) Use code number used in the SCA Library  
(Dewey Decimal Classification – D.C. or D.D.C.)

## 6.2 Distribution File and Retrieval of Extract/Abstract

- 1) Make index in sequence of the number of Ex/Ab produced.
- 2) Classify Ex/Ab into the following three groups.
  - A: To be distributed to other departments/sections of the SCA, and to be filed
  - B: Only to be filed but not to be distributed. (Detailed statistics or the like)
  - C: To be distributed, but not to be filed. (Topic news or the like)
- 3) Copy Ex/Ab of A and C groups and distribute.
- 4) Enter file code in Ex/Ab of group A and B and classify and file according to the file code.

## 6.3 File code of Extract/abstract

- 1) Use file code of "I Information" of "Filing System". The file code covers data and informations regarding the Canal and its environment based on practical method and consists of 3-digit.
- 2) Use at the first stage first two digits (for example I-1 World Economy) and shift to 3-digit when number of Ex/Ab to be filed in a file code increases to a certain level.
- 3) Use 4-digit when a lot of informations about a specialized problem are gathered.
- 4) Use codes more than one when a Ex/Ab is related to plural items.  
In that case choose main code and sub-code(s) and file.

## 6.4 File code of Items other than Information

- 1) File code of items other than "Information" is as follows:
  - O: Organization & Function
  - P: Planning
  - C: Control
  - R: Research
- 2) File documents other than ones relating to informations according to the above-mentioned codes.

## 6.5 "Clue word" and Retrieval System

- 1) Use clue word to retrieve data and informations ranging in various items or areas, although usual retrieval is based on file code.
- 2) Enter clue words which listed in Ex/Ab in retrieval cards, as well as subject and address of file of Ex/Ab. File the cards alphabetically by the clue words.
- 3) Retrieve clue words which are considered to be related to the subject of the retrieval and find out source informations in Ex/Ab.
- 4) Use computer, in future, for the file and retrieval of clue words.
- 5) Decide, however, the time of inducing computer to this type of retrieval system by clue word in consideration of number of informations and clue words and frequency of retrieval.

Table 6-1 Filing code

- O ORGANIZATION AND FUNCTION
  - O-1 ORGANIZATION CHART
  - O-2 JOB DESCRIPTION
- P PLANNING
  - P-1 GENERAL
  - P-2 SHORT TERM PLANNING
  - P-3 MEDIUM TERM PLANNING
  - P-4 LONG TERM PLANNING
- C CONTROL
  - C-1 GENERAL
    - C-1-1 DIRECTIVE
    - C-1-2 REPORT
    - C-1-3 LETTER OF APPLICATION
    - C-1-4 APPROVAL
    - C-1-5 RECORD
    - C-1-6 RECORD OF MEETING
    - C-1-7 FOLLOW UP
    - C-1-8 NOTIFICATION
    - C-1-9 CONFIDENTIAL TREATMENT
  - C-2 JOB
    - C-2-1 SETTLEMENT OF THE JOB
    - C-2-2 SCHEDULE OF THE JOB
    - C-2-3 WEEKLY JOB REPORT
  - C-3 PERSONNEL
    - C-3-1 PERSONAL RECORD
    - C-3-2 APPRAISAL
    - C-3-3 TRAINING
  - C-4 BUDGET, COST & INVENTORY
    - C-4-1 BUDGET
    - C-4-2 HOURLY COST
    - C-4-3 INVENTORY
- R RESEARCH
  - R-1 BULLETIN
    - R-1-1 ABSTRACT
    - R-1-2 EXTRACT
    - R-1-3 EVALUATION & SELECTION OF EXTRACT/ABSTRACT
  - R-2 SHORT ANALYSIS
    - R-2-1 CANAL TRAFFIC & ENVIRONMENTS
    - R-2-2 TOLL ANALYSIS

- R-2-3 ASSESSMENT OF THE 1ST STAGE DEVELOPMENT PROJECT
- R-2-4 FEASIBILITY STUDY OF THE 2ND STAGE DEVELOPMENT PROJECT
- R-2-5 ASSESSMENT OF THE 2ND STAGE DEVELOPMENT PROJECT
- R-3 ANNUAL REPORT
  - R-3-1 ANNUAL REPORT OF JOB
  - R-3-2 ANNUAL REPORT OF THE PRODUCTS (RESEARCH OUTPUT)

## I INFORMATION SYSTEM

- I-1 WORLD ECONOMY
  - I-1-1 WORLD ECONOMY
  - I-1-2 REGIONAL ECONOMY (MIDDLE EAST)
  - I-1-3 REGIONAL ECONOMY (OTHER ASIA & OCEANIA)
  - I-1-4 REGIONAL ECONOMY (WEST EUROPE)
  - I-1-5 REGIONAL ECONOMY (EAST EUROPE)
  - I-1-6 REGIONAL ECONOMY (NORTH AFRICA)
  - I-1-7 REGIONAL ECONOMY (OTHER AFRICA)
  - I-1-8 REGIONAL ECONOMY (NORTH & SOUTH AMERICA)
  - I-1-9 OIL CONSUMPTION
  - I-1-10 OIL PRODUCTION
  - I-1-11 OIL PRICE
  - I-1-12 COAL
  - I-1-13 OTHER ENERGY
  - I-1-14 OTHER RESOURCES
- I-2 INTERNATIONAL SEABORNE TRADE
  - I-2-1 WORLD TRADE
  - I-2-2 OIL TRADE
  - I-2-3 DRYCARGO TRADE
  - I-2-4 IRON ORE TRADE
  - I-2-5 COAL TRADE
  - I-2-6 GRAIN TRADE
  - I-2-7 PHOSPHATE TRADE
  - I-2-8 OTHER DRY BULK CARGO TRADE
  - I-2-9 GENERAL CARGO TRADE
- I-3 WORLD FLEET
  - I-3-1 WORLD FLEET
  - I-3-2 TANKER FLEET
  - I-3-3 COMBINATION CARRIER FLEET
  - I-3-4 BULKCARRIER FLEET
  - I-3-5 GENERAL CARGO SHIP FLEET
  - I-3-6 CONTAINERSHIP FLEET
  - I-3-7 OTHER SHIP FLEET
  - I-3-8 NEW BUILDING ON ORDER
  - I-3-9 LAID-UP TONNAGE
  - I-3-10 NEW BUILDING DELIVERY

- I-3-11 SCRAP/LOSS
- I-4 VESSEL TRAFFIC
  - I-4-1 VESSEL TRAFFIC
  - I-4-2 TOLL REVENUE
  - I-4-3 TANKER TRAFFIC
  - I-4-4 COMBINATION CARRIER TRAFFIC
  - I-4-5 BULKCARRIER TRAFFIC
  - I-4-6 GENERAL CARGO SHIP TRAFFIC
  - I-4-7 CONTAINER SHIP TRAFFIC
  - I-4-8 OTHER SHIP TRAFFIC
- I-5 GOODS TRAFFIC
  - I-5-1 GOODS TRAFFIC
  - I-5-2 SOUTHBOUND GOODS TRAFFIC
  - I-5-3 SOUTHBOUND OIL TRAFFIC
  - I-5-4 SOUTHBOUND DRY CARGO TRAFFIC
  - I-5-5 NORTHBOUND GOODS TRAFFIC
  - I-5-6 NORTHBOUND OIL TRAFFIC
  - I-5-7 NORTHBOUND DRY CARGO TRAFFIC
- I-6 MARITIME TRANSPORTATION COST
  - I-6-1 CAPITAL COST
  - I-6-2 SHIP COST
  - I-6-3 VOYAGE COST
  - I-6-4 TANKER COST
  - I-6-5 COMBINATION CARRIER & BULKCARRIER COST
  - I-6-6 G.C.S., CONTAINER, & OTHER SHIP COST
  - I-6-7 LBDD & TON
  - I-6-8 SPEED
  - I-6-9 DISTANCE & ROUTE
  - I-6-10 WORLDSCALE TARIFF
  - I-6-11 IMCO & FOC
  - I-6-12 OTHERS
- I-7 SHIPPING MARKET
  - I-7-1 SHIPPING MARKET
  - I-7-2 TANKER MARKET
  - I-7-3 DRY CARGO MARKET
  - I-7-4 SECOND HAND TONNAGE MARKET
  - I-7-5 SCRAP MARKET
  - I-7-6 OTHERS
- I-8 CANAL TOLL
  - I-8-1 TARIFFS
  - I-8-2 ASSESSMENT (PRE)
  - I-8-3 EVALUATION (POST)
  - I-8-4 REACTION
  - I-8-5 OTHERS

**1-9 OTHERS**

**1-9-1 PIPELINE**

**1-9-2 PORT & HARBOUR**

**1-9-3 SHIPBUILDING**

**1-9-4 INLAND TRANSPORTATION**

**1-9-5 TRANSPORTATION TECHNOLOGY**

**1-9-6 OTHERS**

## **7. INFORMATION SERVICES**

### **7.1 Objectives of Information Services**

- 1) Information service is meant here by
  - (1) To other departments of the SCA;  
Introduction of data and informations regarding the Canal's environments and their relation to the Canal, and expression of the Unit's opinions about them.
  - (2) To the outside of the SCA;  
Expression of the SCA's view about the facts relating to the Canal, in addition to the introduction of traffic data which has been done in Suez Canal Report.
- 2) Information service to the inside of the SCA aims for contribution to the SCA's appropriate and prompt actions against the change of its circumstances by making the SCA's understanding of circumstances deeper.  
The SCA's understanding of and support to the Unit's opinion can be strengthened thereby.
- 3) Information service to the outside of the SCA aims for promotion of understanding of the Canal and the SCA's policies regarding operation, development and toll of the Canal by Egyptian government, people and companies, foreign governments, companies especially users of the Canal and for obtaining their supports and promoting traffic of the Canal.

### **7.2 Information service to other departments of the SCA**

- 1) Distribution of Extract/Abstract  
Make comments or explanations about informations regarding the Canal's environments and their effects to the Canal as well as circulation of the information themselves.  
Pay attention to enhance readers' understanding by making suitable titles of informations or by attaching comments in native language when necessary.
- 2) Distribution of Bulletin and Report.  
More careful attention is needed for Bulletin and Report because their volume and area of contents is usually bigger than Ex/Ab.
  - (1) Adopt theme and way of explanation which will attract readers' interest.
  - (2) Display clear conclusion.
  - (3) Express effect to the Canal.
- 3) Distribution of Data Handbook  
Distribute data handbook once a year which contains basic data relating to the economic environments of the Canal. See: JICA: SYSTEMS ANALYSIS March 1979 Part VIII.
- 4) Reply to enquiry  
Comply with enquiries from other departments especially those which meet the objectives, unless the Unit's own works are interfered.  
The service will sometimes be awarded by precious findings.



### **7.3 Information Service to the outside of the SCA**

#### **1) Publication of reports by the Economic Unit**

Give considerations in view of objectives of this service to publication of reports by the Unit which are basically documents inside of the SCA.

Some port authorities in the world publish their activities reports periodically which are welcomed by parties concerned.

Suez Canal Report is now appreciated because of its valuable data and informations. If the SCA's comments, views or analyses are added thereto the value would be much more.

#### **2) Reply to enquiry**

Reply to enquiry, for example, about detailed traffic data, which are not covered by the Suez Canal Report will be useful to make the Canal known to the World.

In this case fees can naturally be charged against preparing cost such as computer cost.

## 8. FUTURE INFORMATION SYSTEM IN SCA

### 8.1 Aims of Future Information Systems

- 1) Future information systems aim developments in contents and efficiency of
  - (1) Collection of traffic data
  - (2) Collection of data regarding environments
  - (3) Establishments of the SCA data base
  - (4) Full utilization of the data base.

namely

- (1) More detailed traffic data
  - (2) Earlier collection of environment data
  - (3) Collection of environment data from source data base besides from publications (2)
    - (3) collection from commercial data bases.
  - (4) Retrieval of "Extract/Abstract" and completion of SCA thesaurus
  - (5) More efficient data processing
- 2) In this manual only outlined design of future information systems is proposed. Further detailed studies are necessary for establishing the systems.

### 8.2 Additions to the Canal Traffic Data

The Canal traffic data are collected by the form of "Master's Declaration" and processed by computer. The following additions or improvement will be necessary for more advanced analysis of the traffic.

- 1) Master file of transited or transit-expected vessels' particulars.

The following particulars of transited vessels or of the vessels which are expected to transit in future will be necessary for traffic analysis and forecast.

- (1) Type
- (2) Gross Tonnage
- (3) Net Tonnage
- (4) Suez Canal Net Tonnage
- (5) Deadweight (Summer)
- (6) Cargo Capacity
- (7) Length (Loa, Lpp)
- (8) Breadth
- (9) Depth
- (10) Summer & Tropical Draft
- (11) Type of Engine
- (12) Maximum Continuous Output
- (13) Speed
- (14) Flag
- (15) Builder
- (16) Owners' Name

(17) Managers' Name

2) Names of ports of call of vessels transited in ballast.

As for loaded vessels related ports of call are known by loading/unloading ports of the cargoes on board, but as for vessels in ballast or with very small volume of cargo too names of ports of call before and after the transit are necessary.

3) Correlation between vessels and cargoes

Data of types and volume of cargoes on board each of transiting vessels are indispensable for analysis of tendency in their types and sizes.

4) Types of cargoes and origin/destination

Needless to say, the more detailed the types are the better, but a type of cargo aboard a vessel often includes several combinations of ports of origin/destination.

Detailed data including names of ports of loading/unloading are necessary.

5) Classification codes

Classification code of traffic data of transited goods should be either of the following:  
S.I.T.C. Revised (Standard International Trade Classification, Revised -- adopted by United Nations, OECD etc.)

B.T.N. (Brussel's Tariff Nomenclature -- adopted by custom houses of many countries) These codes are convenient for comparison of traffic data with world trade data, and also for ships' masters' preparing "Masters Declaration".

Both codes are convertible to another by conversion table.

8.3. Utilization of Commercial Data Bases

1) Many data bases are now open for use by customers in U.S.A., Europe, Japan etc. In U.S.A. about 450 data bases, which cover data and informations of various fields, are covered by about 70 on-line network systems. Users of these data bases can access the data and informations from their offices when necessary through telecommunication lines or telephone lines.

2) Among these on line network systems some cover Europe, Japan, Australia and a part of Asia through communication satellite "Intelsat" (International Telecommunications Satellite Consortium) or through under sea cable, such as:

Mark III ----- General Electric  
Dialogue ----- Lockheed Information Systems

Access from Egypt by international telex is possible and in future direct access through on line network will be realized.

Large volume of data or statistics may well be served by computer printout or magnetic tape.

By using magnetic tape source data or specially arranged data which are impossible to be obtained from usual publications can be used for detailed analysis.

Special applications for certain types of table or statistics are possible at reasonable expenses.

## 8.4 Some Useful Data Bases

### 1) MARDATA (Maritime Data Network)

PRODUCER	Maritime Data Network, Ltd., of Marine Management Systems, Inc.
ONLINE SERVICE	General Electric
CONDITIONS	Subscriptions to Mardata, from \$1000 to \$4000 per year, depending upon libraries to be accessed.
CONTENT	<p>A marine industry information system that presently includes three files (or libraries):</p> <p>Ship Library, Supplied by Lloyd's Register of Shipping, it includes such information as ship name, owner, type or snip, dead weight tons, size and capacity parameters, speed, and year built.</p> <p>Charter Fixture Library, Data from industry sources that include vessel name, cargo, charterer, period, load area, discharge area, rates, dates, and other leasing/contract information.</p> <p>Tanker Casualty Library, Casualty history on all liquid gas carriers and tankers/carriers over 6000 Dead Weight Tons (DWT).</p>
COVERAGE	International. Tanker Casualty data, 1964 to date; others, 1968 to date.
UPDATING	Varies according to file, from daily to every 60 days.

#### Outlines of main files

##### Ship movements file

Contains the known voyage histories since January 1, 1976 of more than 31,000 merchant vessels in commercial service, 22,000 of which appear in Lloyd's Shipping Index. Some 4,000 ports throughout the world are held on file and movement details are received from more than 1,000 Lloyd's agents and correspondents 24 hours a day, seven days a week. Information is led into a Digital Equipment PDP11-70 computer which supports 27 visual display units for instant update.

Main items on file: Ship name and LR identity number ... ship type ... owners/managers ... flag ... year built ... tonnages ... cumulative history of recorded movements since January 1, 1976 ... details of current voyage and latest report.

##### Register Book file

Contains detailed particulars of all known sea-going merchant ships of 100 grt or above throughout the world ... some 70,000 vessels ... and includes all ships presently classed with Lloyd's Register.

This file is the source from which the Register Book, its supplements and New Entries are compiled. It is updated by a comprehensive data gathering system and involves shipowners and Lloyd's Register's 250 offices around the world. More than 2,000 validity checks are built into the update computer programs which are held within the Society's IBM 370/158 computer.

Included among the principal items: LR identity number ... Ship's current and former names ... date of build ... ship type ... shipowner/manager ... dimensions ... flag ... propulsion ... tonnages ... speed ... enginepower ... shipbuilder/yard number/enginebuilder ... cargo carrying/handling facilities.

#### **New Construction file**

Contains details about ships known to be on order or under construction. Numerous publications are monitored to extract relevant data; this supplements the information regularly received from Lloyd's Register's offices worldwide. An entry remains active on this file until the vessel's completion, when it is transferred to the Register Book file.

The main items on the New construction file: LR identity number ... Ship's name ... flag ... shipbuilder/yard number/enginebuilder ... propulsion ... shipowner ... dates of launch and completion ... tonnages ... delivery schedule ... dimensions ... enginepower ... ship type ... speed.

#### **Shipowners file**

This file contains the names and addresses of shipowners and managers and is linked to the Register Book file by the owners' codes. The street, town and country are in code to facilitate analysis through these fields.

#### **Technical records file**

Contains records of all ships classed with Lloyd's Register built since 1960. Specifically the file consists of basic technical data on each ship, together with details of defects and damages suffered by the various components. Continually updated from surveyors' reports it includes causes where known, and recommended repairs. Some of the data is confidential, but investigations in general terms concerning in-service behavior of ships and machinery can be carried out. File contains confidential material and output is usually in analytical form.

The main items on the file fall into the following broad categories: Register Book type of data ... LR identity number ... cargo considerations ... technical aspects of hull and machinery ... main and auxiliary engines and steam turbines ... engine reduction gearing ... electrical equipment ... generators ... main and auxiliary boilers ... control equipment.

#### **Manual files**

The combined manual files contain a vast array of shipping information, both contemporary and historic.

Some of the principal subjects: Shipbuilders ... engine and boiler makers ... dry and wet docks ... shipbreakers ... ship laid up ... ships delivered ... ships' movements ... ship casualties ... yachts ... strikes/labour disputes/port conditions.

Services include:

(1) The provision of selected extracts from extensive records of casualty information and

statistics.

- (2) Monitoring approximately 4,000 shipping movements received daily to provide prompt notification of the whereabouts of specific ships.
- (3) Inquiry on behalf of clients re loading/discharging of cargo, port conditions, reason for vessel(s) delay.
- (4) Reports of ships bound to specified ports.

#### How to use "Ship movements file"

- (1) Arabian Gulf, East Mediterranean Sea  
→ Europe, U.S.A., Canada, Caribbean Sea Oil trade
- (2) Australia → Europe Iron Ore and Coal trade

Statistics by type, size, loading/discharging area, and route (via Suez or Cape) of these trades are only and very useful data for analysis of potential traffic.

## 2) OECD International

**ONLINE SERVICE** Computer Sciences Corporation, Data Resources, Inc., and Interactive Data Corporation (as a Chase Econometric database)

**CONDITIONS** Subscription to DRI and the database required for access through DRI; subscription to Chase Econometric Associates, Inc. required for access (through interactive Data Corporation).

**CONTENT** Contains sets of data from the collection of international statistics provided by OECD in its published *Main Economic indicators*, *Quarterly National Accounts Bulletin*, *National Accounts of OECD Countries*, *indicators of Industrial Activity*, and *Statistics of Foreign Trade: Series A*. The sets of data (and names given to them) may vary approximately 15,000 time series available on major economic indicators for 25 individual countries and 4 aggregate totals.

**Main Economic Indicators (MEI)**. Contains about 9000 time series of monthly, quarterly, and/or annual data for 25 countries and selected totals for North America, the European Community, OECD, Europe, and OECD-Total. Includes National Income and Product Accounts: production: stock, deliveries, and trade: labor and wages; construction; internal and foreign trade; interest rates; producer and consumer prices; and balance of payments. Industrial production statistics – defined by International Standard Industrial Classification (ISIC) codes – are also available for 20 countries and 4 totals. Corresponds to data in *Main Economic Indicators*, *Indicators of Industrial Activity*, and *Labor Force Statistics*.

**Quarterly National Income Accounts.** Contains aggregate data on the main national accounts for 11 OECD member countries. Includes gross national product; personal consumption expenditures; government consumption expenditures; gross capital formation; gross fixed capital formation; change in stocks, exports and imports; operating surplus; saving income; indirect taxes; and price deflators. Totals approximately 1,300 time series in both current and constant prices. Corresponds to data released in the *Quarterly National Accounts Bulletin*.

**Annual National Income Accounts.** Contains about 12,000 annual time series for 25 member countries and 3 aggregate totals. Covers main national income account aggregates; domestic product and expenditure in current and constant prices; and gross domestic product by kind of economic activity. Corresponds to data in *National Accounts of OECD Countries*.

**Statistics of Foreign Trade: Series A.** Contains approximately 19,000 monthly time series on OECD member countries' trade by origin and destination, and by major commodity categories for the analysis of trade flows. These data cover 105 countries and regions with which the OECD countries are associated in trade. Data are organized by Standard International Trade Classification (SITC) codes. Corresponds to the data published by OECD in *Statistics of Foreign Trade Series A*.

#### COVERAGE

Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Japan, Luxembourg, The Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, Turkey, United Kingdom, United States, and Yugoslavia Most data are from 1960 to date: some series from 1950 to date.

#### UPDATING

Continuous, as tapes are received from OECD.

Among these data base "Statistics of Foreign Trade by Commodities" is useful to obtain origin/destinations of international trade by commodities but now only in price (US dollar).









JICA