

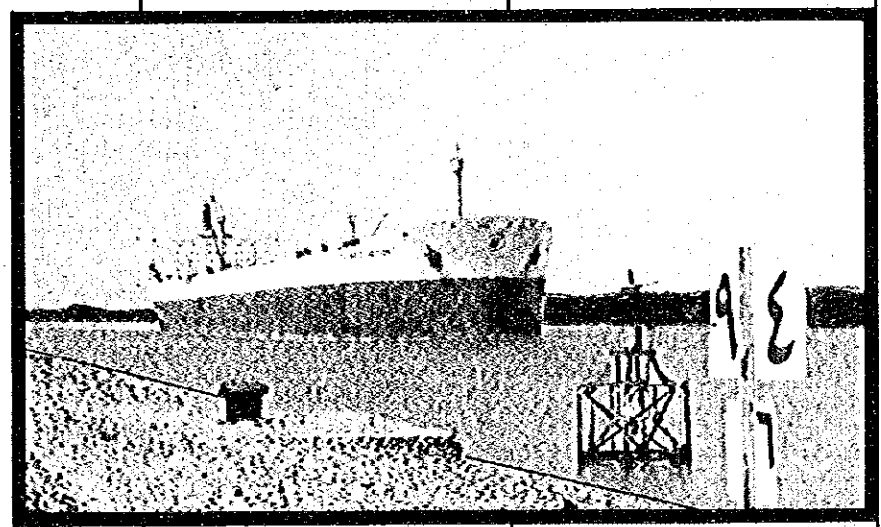
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ARAB REPUBLIC OF EGYPT
REPORT ON
THE TECHNICAL COOPERATION PROGRAM
TO
THE SUEZ CANAL AUTHORITY
(THE THIRD YEAR)

- MANUAL -

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MARCH 1981

JAPAN INTERNATIONAL COOPERATION AGENCY

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PREFACE

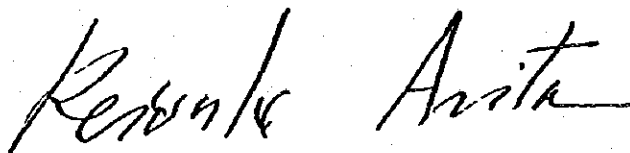
In response to a request of the Government of the Arab Republic of Egypt, the Japanese Government decided in 1978 to extend 3-year technical cooperation to the "Economic Unit" in the Planning and Research Department, the Suez Canal Authority and entrusted its implementation to the Japan International Cooperation Agency (JICA).

In the 3-year period of cooperation, JICA sent several teams to the Suez Canal Authority, including a team headed by Mr. Y. Sato which was dispatched from Aug. 30 to Dec. 29, 1980 and from Feb. 17 to Mar. 18, 1981 to conduct necessary survey and train the Economic Unit personnel. In addition, JICA trained seven members of the Economic Unit in Japan for a period of two months. The Sato team has prepared the present report, which deals with the standard techniques of job execution and information handling necessary for economic research and systems analysis.

I hope this report will serve for the development of the Suez Canal and for the promotion of friendly relations between our two countries.

I wish to express my deep appreciation to the officials concerned of the Government of Egypt and the Suez Canal Authority for their close cooperation extended to the team.

March, 1981



Keisuke Arita
President

Japan International Cooperation Agency

JOB MANUAL

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JOB MANUAL

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INTRODUCTION

In the course of the technical cooperation project extending over the two year, 1978 and 1979, concentrated efforts were devoted to the technological transfer of various kinds of methodology, the main frame of which related to marine transport economy and systems analysis, to the members of the Economic Unit.

The activities just mentioned served the purpose of helping the members cultivate fundamental technical knowledge and enlightening them, and thus significant results were accomplished.

The knowledge will prove extremely effective for the successful settlement of the various kinds of problems with which the Suez Canal will be face in the future and which the members of the Economic Unit will have to resolve.

The ultimate purpose of the technical cooperation extended in the three-year period, however, was to have the Economic Unit function effectively as an integral part of the organizational framework of the Suez Canal Authority. In order that this aim may be attained, it is necessary not only to improve and to enrich the individual members' fundamental knowledge but also to have the Economic Unit function in an organic way as an organizational system, thereby achieving fruitful results.

In other words, it is required of the Economic Unit to function in such a systematic way as to attain a synergistic effect in which one plus one will produce more than two in its effect.

Although the Economic Unit still represents a unit of organizational functions which has seen only a short period of time after its establishment, it will hereafter continue performing researches and analyses of the long-term, medium-term, and short-term problems facing the Suez Canal and making recommendations of measures for their settlement, with a good command of the most up-to-date soft technology.

Such solutions of problems should not be mere research reports but ought to find their full and organic utilization in the organizational framework of the Suez Canal Authority.

To approach this goal, it is necessary to develop the jobs of the Economic Unit into further modernized planning, administrative and research jobs. In the technical cooperation program offered in 1980, the transfer of technology was carried in 1980, the transfer of technology was carried out with the primary emphasis placed on such organizational activities as would be required of the Economic Unit for performing its jobs.

The present Manual has been compiled in the hope that it will be utilized fully as material for guidance to the Economic Unit for its start and performance of its jobs in specific form on the basis of modern management techniques in the framework of the present Suez Canal Authority.

I ORGANIZATION AND FUNCTIONS

I-1 Purpose and Significance

I-1-1 The Long Term Goals

It is our belief that the Economic Unit will play an indispensable and effective role in the SCA top management planning and decision making activities and processes, starting now as a staff organization for "research and planning." This role can be performed most effectively if the Unit remains within the organizational framework of the present Planning and Research Department (PRD).

The establishment and development of the Economic Unit directly serves the purpose of properly strengthening the organizational capabilities of the PRD.

Specifically, the organizational capabilities of the PRD which should be reinforced are its "planning functions." The planning functions or processes of the SCA management can be divided into the following three categories of activities:

- (1) Collection, storage and maintenance of data and information relating to planning problems
- (2) Processing analysis and evaluation of data, and information and the selection of policy alternatives
- (3) Formulation of strategic and management plans and their implementation and control procedures

In the future, the planning Research Department, if it is reinforced, should consist of four Sections; 1) Planning Section, 2) Economic Research Section, 3) Systems Analysis Section and 4) Information Section. The Planning and Information Sections are, in part, already existing in the PRD and the "Economic Unit" will possibly develop into the other two Sections.

In order to realize the long term goal of the Economic Unit, organizational reshuffling or reform may become necessary in the future to redefine what kind of roles should be played by the individual sections and departments with respect to the SCA management's planning functions. Re-examination and re-evaluation must be performed for this purpose on the following two items:

- (1) Functions and tasks that are now carried out by the Planning and Statistical Sections as their routine jobs.
- (2) Problems of how intradepartmental planning functions or activities (e.g., work, budget and project planning) should be coordinated with the planning functions of the PRD and the Economic Unit.

The establishment of the Economic Unit should be considered to be the first step in achieving the long-term objectives described in the previous paragraphs. The attainment of these goals is thought not only desirable but also feasible judging from the information available to us about the internal workings and the general capabilities of the Economic Unit's staff members. Nevertheless, it has not to be denied that these objectives will be attained only through gradual and step by step development of the organizational capabilities of the Economic Unit.

I-1-2 The Short-Term Objectives of the Economic Unit

As a first step, the Economic Unit should be divided into two "groups" (by at as sections): the Economic Research Group and the Systems Analysis Group. Their major functions are to

provide information analysis and research services to the submanagement. Their purpose is to assist the SCA management in making rational and optimal planning and discussions on matters concerning the SCA's Canal operations. During the initial few years, an incubation period, the Economic Unit should devote its full resources, efforts and time to the development its capabilities as a "research organization". The research functions and jobs of these two Groups are to be briefly explained as follows:

Economic Research Group

Its main jobs are collection, analysis and evaluation of data and information relating to the SCA's external problems, particularly the economic, financial and technological aspects of these problems. Through these activities the Economic Research Group tries to keep the SCA management abreast of current trends and developments in the SCA's environment affecting the Canal operations. Specific tasks of information analysis and research work of this group are spelled out below:

- i Data and information collection, storage, analysis and evaluation of trends of the Canal traffic, e.g., trends in world economy and trade, seaborne trade, commodity flow of major items (oil, oil products, bulk cargos, etc.), shipping costs and route-wise costs, fleet mix, technologies related to shipbuilding and canals, external trends affecting the determination of tariff, cost trends, etc.
- ii Economic and technological forecasts on the items mentioned above; this forecasting analysis should be carried out with the technical support of, or jointly with, the staff members of the systems Analysis Group.
- iii The collection, storage, analysis and evaluation data and information relating to the financial and cost trends or problems affecting the SCA's operations and management; e.g., financial policies and statutes of major countries and shipping companies and operators analysis of the SCA's internal cost structure such as the operating and maintenance costs of the Canal which are not routinely dealt with by the Financial Department, etc.
- iv Forecast and analysis of costs and financial trends or problems mentioned above; e.g., assessment of ship operators' response to the SCA's tariff policy, financial status analysis of ship operators, construction contractors and so on, trends projection of shipping costs and route costs, etc.

Systems Analysis Group

The Systems Analysis Group is charged with the responsibility to engage in quantitative analysis and forecasts of the SCA's external and internal problems which require sophisticated and specialized mathematical and statistical knowledge and skills. Its main task is to analyze and evaluate these problems in depth and to formulate alternative solutions for the SCA management. The specific research tasks or work are:

- (1) Systems analysis and forecast of the Canal transit volume and cost structure of shipping and route costs, etc.
- (2) Quantitative analysis and forecast of the effects of tariff determination and the SCA's revenues.

- (3) Quantitative analysis and forecast of the effects of tariff determination and the SCA's revenues.
- (3) Analysis and evaluation of feasibility studies which are made by outside consultants
- (4) Evaluation of various kinds of projects including the Canal expansion project
- (5) Technical support services which will be provided to other sections and departments in the fields of systems analysis techniques, computer programmes and software development, etc.
- (6) Establishment of information and data management system for the Economic Unit

1-2 Roles

The Economic Unit is expected to play a very important role acting as staff specialists and coordinators on the problems and/or study results on projects whose technical aspects will be examined by the various Departments involved, e.g., Financial, Engineering, and other related Departments. To attain this goal, the Economic Unit must be clearly defined as a staff organization to perform planning functions of the SCA and also as the staff specialist capable of performing the technical role in management planning. It is judged that it will take at least several years hereafter for the Economic Unit to be able to start fulfilling this type of management-supporting role within the SCA. As a result of the completion of the present technical cooperation program in the three-year period, the Economic Unit is considered to have reached a stage where they are capable at least of assessing and judging the technical contents and merits of a feasibility study conducted on a project by outside consultants. It is also judged that they have attained such technical proficiency as to be able to perform various types of computer simulation studies and technology forecasting on a trial basis.

It can be estimated that, even during the transition period of the Unit's maturing process in the future, it will be able to contribute to on-going feasibility studies by participating in some selected portions of feasibility studies on various projects and also will be able to undertake feasibility studies on small projects related to the SCA's internal activities. It may be said that this represents a fairly high level of technical proficiency which the Unit has been able to attain in such areas as economic research, systems analysis and management science in the course of these three years.

It is believed that the SCA is well experienced with feasibility studies of engineering and transit operation problems and has already acquired a sufficient degree of technical knowledge and skills. Therefore, it is felt that the Economic Unit will be able to receive valuable advice and suggestions from experts in other Departments on matters relating to engineering problems. It is expected that the Economic Unit's forecasting and analyzing capabilities will be able to render sufficient contributions in two main fields in the coming years. The first field is economic forecasting and analysis of world environmental problems, sea-borne trade and transport market trends, and Suez Canal transit volume etc, and the second is technological forecasting and analysis of various trends of shipping and transport technology (e.g., pipeline, landbridge, the Panama Canal, the Cape route, etc.) which will seriously affect the SCA's policy decisions on tariff structures, the development of the Canal capacity, etc.

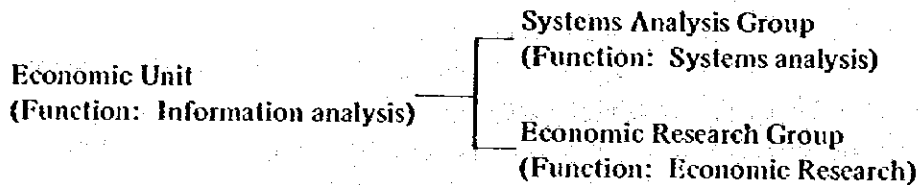
It may be properly stated that, as the result of the present cooperation program offered through the joint and concerted efforts of both the SCA and the JICA, the Economic Unit has been able to attain the capabilities first to understand, analyze and evaluate the feasibility studies

of important projects and second to execute by themselves at least some portions of feasibility studies at an appropriate level.

1-3 Organizational Structure and Its Evolution

1-3-1 Organizational Structure

The tentative function of the Economic Unit, "information analysis", has been divided into two sub-functions, i.e., "economic research" and "systems analysis". Accordingly, the Economic Unit is divided into two Groups corresponding to those sub-functions, as follows:



Based on the reasons for and process of dividing the information analysis function discussed in the previous section, the function of the two Groups has been defined as follows:

Economic Research Group

This Group has two prime functions; one is surveillance of external environments, and the other is monitoring of internal activities of the SCA. Its function can be itemized as follows:

- (1) To collect a scope of information on the external environments which are relevant to the defined task areas (see Figure 1-3-1). The types of information it deals with are events, movements, developments, changes, etc. in the fields of transport and related industries, economics, politics, social affairs and technology. Major sources of information are periodical publications of related trades, industries and professional specializations.
- (2) To analyze and evaluate the obtained information in order to estimate the eventual impact of the reported events and issues on the operation of the Suez Canal. Its primary tool for analyzing and evaluating information is qualitative reasoning and logic.
- (3) By selecting appropriate subjects from collected and analyzed information, to prepare reports to the management of the SCA at a determined regular interval.
- (4) For facilitating the understanding of the overall financial position of the SCA, SCA operations and departmental activities by the management of the SCA, to gather internal information and to prepare reports at a determined interval. The information treated is mainly financial and transit-related. The degree of analysis is not indepth. Financial and transit-related data compiled are also utilized by the Systems Analysis Group. The progress of individual projects is also monitored and reported.
- (5) To monitor primarily the development of maritime and energy-related technology and to make economic evaluation of the effect on SCA operation.
- (6) To conduct specific studies, occasionally assigned by the management, mainly concerning the problems or issues in the same category as described in (1) above.

Systems Analysis Group

The characteristic of this Group is the use of systems analysis techniques in dealing with problems and issues. Thus, it mainly utilizes numerical data and mathematical logic, in contrast with Economic Research Group. Its prime functions can be itemized as follows:

- (1) To review and evaluate the adequacy of the level and structure of current tariffs and to make recommendations for adjustments or alterations. This function involves a number of auxiliary tasks; basically this group must understand the present demand and supply situation for Suez Canal transit. Then, it must make a projection of future demand and supply; this requires varieties of work for data gathering, maintenance and utilization.
- (2) To analyze and evaluate the feasibility of specific projects. This function also has a vast infrastructure underneath it, and requires varieties of data to be systematically gathered, managed and processed. The types of projects can be divided into medium-term and long-term projects. Projects are also classified by the size of investment required. It will also be necessary to construct models to deal with the evaluation of projects with common characteristics.
- (3) To interpret the results of numerical analysis and evaluation in terms of the SCA's contexts and to prepare reports for the management of the SCA.

The functions described above are tentative objectives for the two Groups to achieve the coming years, through the development of their capabilities and experiences.

I-3-2 Evolution of Organizational Structure

The process of the evolution of those two functions is shown in Figure I-3-1: Stepwise Evolution of Organization.

1) Information Analysis Group

A characteristic feature to be observed in the process of the evolution of this organizational structure is the separation of a new information group from the existing two groups.

The Economic Research Group and the Systems Analysis Group should be capable of dealing with much information and data related to the environment of the Canal and the affairs within the Suez Canal Authority and also performing the collection, storage, analysis and evaluation of such information and data.

As of the present time, such information is not yet collected to any sufficient extent. Nor is it processed by any modern method. However, it is clearly observed that there is a limit to the processing of such information and data by manpower, in view of the volume of such information and data being dealt with by the two existing groups at the present time.

In this situation, it is necessary to establish, within a few coming years, special information systems and functions which process such information and data by a modern method. Therefore, it is required progressively to consolidate such systems and to train the staff by a step-by-step approach to be commenced now and continued into the future.

Sprouts of such an information system are found to have come into existence separately and without any interrelationship in the individual departments and units within the organizational framework of the SCA. The input of transit data as well as the automation of the microfilm finishing process in the Printing Department may be cited as examples.

For the future, such information-related systems should be coordinated and consolidated in such a way as to prevent them from overlapping or competing each other. In the meantime, it is necessary for the Economic Unit to build up its own information system and functions while taking the above-mentioned circumstances into consideration.

2) Consulting Group

It has been found that the other supporting organs in existence at present for the Canal and the Suez Canal Authority harbor many problems facing the improvement and reform of administrative operations. Thus, it is very important to carry out a project and to obtain findings for the purpose of settling such problems. Most of these problems can be resolved only by new techniques and new means.

It was discovered in the process of the technical cooperation offered in the three years that it would be necessary for the Economic Unit to have the function of bringing these problems to their settlement by new methodology: i.e. techno-economic techniques separately from the other groups and further that the establishment of this Consulting Group should make it possible to prevent the principal jobs from being disturbed.

Particularly in view of the fact that the various related departments have keen needs, it is considered certain that the fulfillment of those needs by the Economic Unit will further emphasize the necessity of the Unit.

While this function is not any part of the essential and intrinsic functions of the Economic Unit, it is considered to be extremely important for the Economic Unit to perform it in view of the observation that there is no department to perform such a function within the organizational framework of the SCA.

It is anticipated, moreover, that this function will be provided to each organizational unit in the future.

It should be recalled that the tentative assignment and evolution of these functions in the Economic Unit is not an isolated effort within a certain period, but it has a definite goal to attain as a long-term objective of the Unit. That is the normative function of research and planning which is discussed in Section 1. The organizational structure displayed in Figure I-3-2: Long-Term Objective of the Research and Planning Function of the SCA is a typical example of the normative research and planning function, which can be associated with the results of the evolution of the Economic Unit's tentative function. The largest distinction between the Economic Unit and the Planning Department in Figure I.5 is the fact that the latter is equipped with a management planning function. The management planning function brings in quite a difference. It necessitates regular contacts with line and staff departments in preparation and coordination of various management plans. Now that the Economic Unit does not have this function in the tentative organizational structure, it is not necessary for the Unit to have any regular contacts with other departments for the time being. Since the information developed or transformed by the Economic Unit is the basis of selecting the most relevant set of assumptions for management planning (which is currently undertaken by the Planning Section) should be functionally connected in the long-term objective. Another distinction is that the function of information acquisition and management become an independent section separated from the information analysis function of the Economic Unit, because the amount and diversity of information accumulated and handled becomes very large. Therefore, in this organizational structure, both the Economic Research Section and the Systems Analysis Section are

concentrated more on processing, analysis and development of information, leaving the function of information acquisition and management to the Information Section.

Thus, in order to consolidate the tentative functions of the Economic Unit in the normative function of the Planning Department, two kinds of effort should be made by the SCA. One is the development of functional capability of the tentative Economic Unit, and the other is the reinforcement of the functional capability of the present Planning Section in the Department.

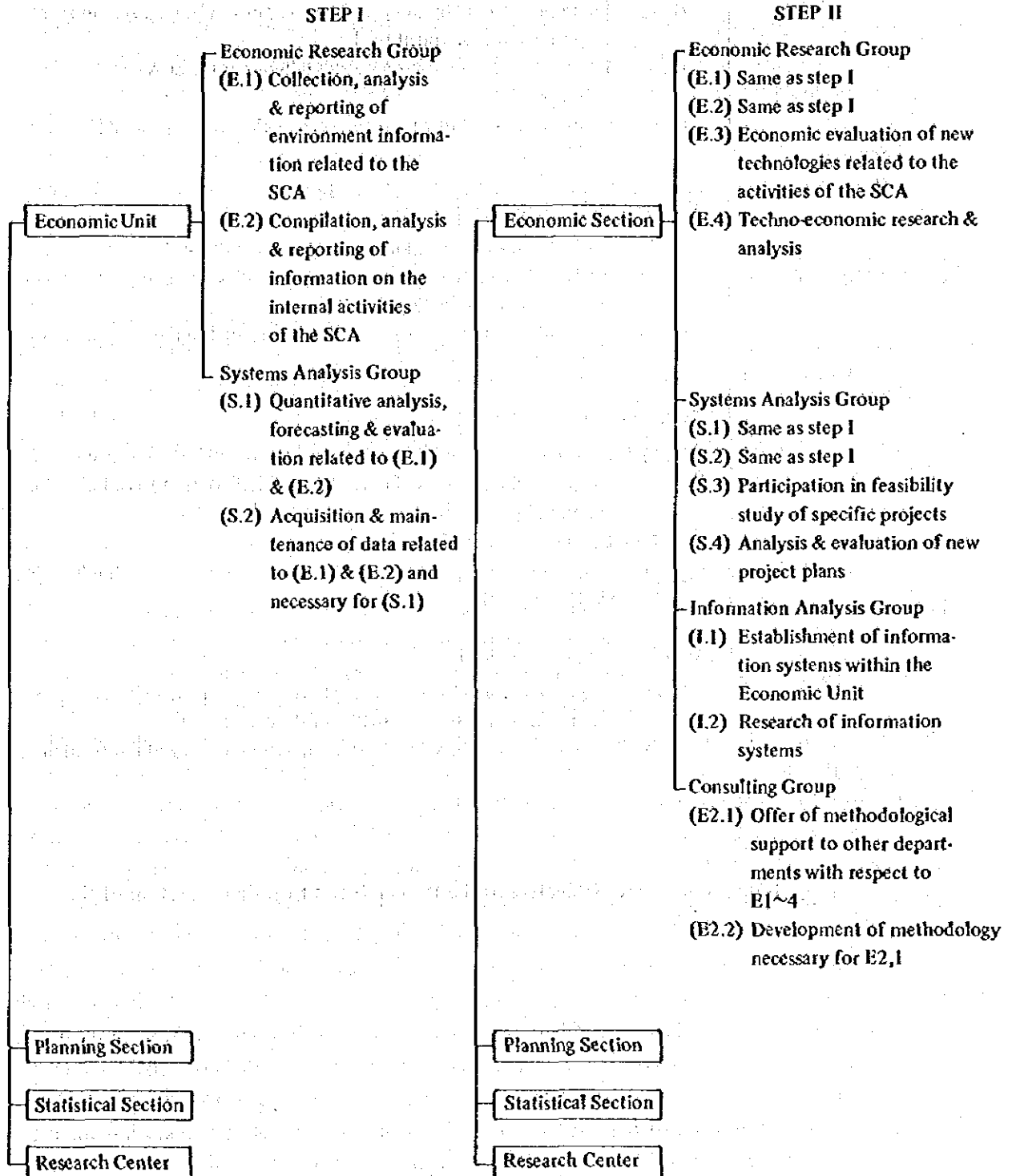


Fig. I-3-1 Stepwise Evolution of Organization

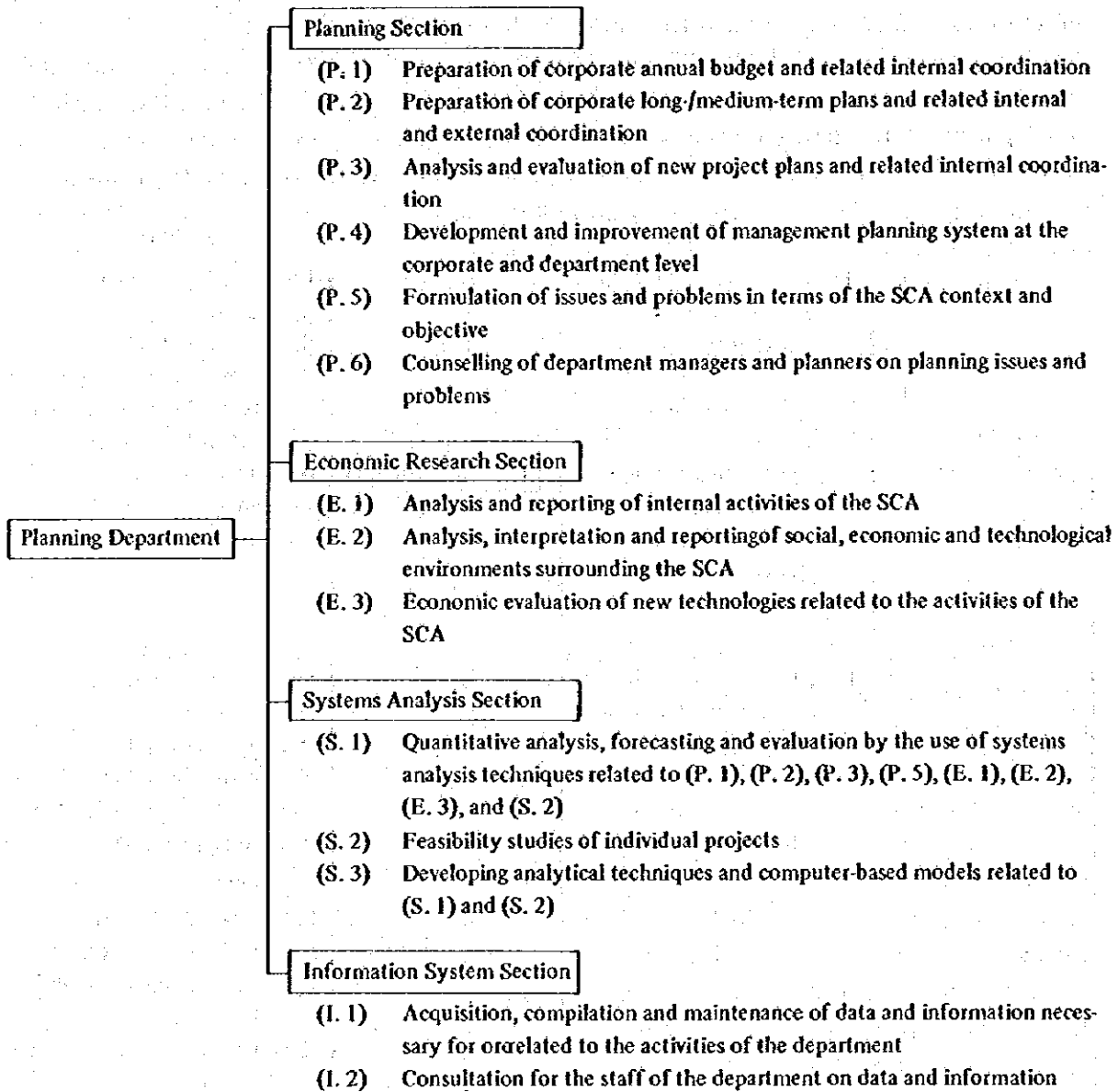


Fig. I-3-2 Long-Term Objective of the Research and Planning Function of the SCA

I-4 Functions

I-4-1 Functions

The objective in setting up the Economic Unit is to develop functional capabilities within the SCA to assist the SCA's top management in making sound decisions on matters directly connected to the sustained growth of the SCA. These decisions are to be made in such a way that the revenues of the SCA will be optimized from the viewpoint of short-term operation and long-term strategic objectives. The Unit which the SCA needs is the simplest and most efficient organizational unit which is capable of assisting the top management in planning economic policy and future development of the Canal through economic, financial and traffic planning, analysis and evaluation.

The functions that the SCA management expects the Economic Unit to achieve are generally referred to as corporate planning functions and can be broken down into the three following sub-functions:

- (1) Collecting and analyzing information about the enterprise activities and the environments for the enterprise, leading to strategy formulation and strategic decision-making (Information analysis sub-function).
- (2) Evaluating alternative courses of action against stated objectives and preparing integrated overall plans by incorporating the plans of individual departments (Management planning sub-function).
- (3) Assisting and participating in corporate and departmental management in formulating strategies and making strategic decisions (Strategy formulation sub-function).

Strategy formulation and management planning are carried out on the basis of assumptions concerning the internal and external conditions of the SCA in the future. These assumptions are made on the basis of the output of the "information analysis" sub-function. The activity of information analysis covers analysis, forecasting, evaluation and interpretation of internal activities and environmental conditions in the future by making use of qualitative and quantitative analytical tools. Therefore, "information analysis" can be considered to be the foundation of "management planning" and "strategy formulation".

The primary purpose of the "management planning" sub-function is to develop and annually update a frame of reference for making current decisions which are consistent with long-term management objectives and strategies. Annual plans specify a step in the evolution of the organization toward the long-term objectives which are particularized in long-term plans.

"Strategy formulation" is a very sophisticated role to be played. In corporate planning functions, it is not the function of strategy formulation itself, but it can be referred to as the function of "making proposals and participating in the process in which the top management formulate organizational objectives and strategies, and serving as an advisor/consultant to the chairman and other members of the board on various planning issues." This functional area requires both technical expertise and years of professional experience.

At the SCA, "strategy formulation" belongs almost entirely to the chairman and the board of directors, except for occasional inquiries on strategy-related matters from the chairman to departmental managers. The "management planning" function at the corporate level is located as a matter of procedure in the Planning Section of the Planning and Research Department, but actual plans, which are operational in nature and short- to medium-term in the coverage of time,

are prepared by the Planning Sub-committees organized for the individual areas and consolidated by the Planning Committee. No involvement of the Planning Section is indicated in departmental and project planning activities. At the corporate level, little "information analysis" has been systematically conducted to be utilized for strategy formulation and management planning.

Taking into account the present situation in the SCA stated above, together with the limited availability of qualified staff for the Economic Unit, it is, for practical reasons, recommendable that the course of developing the capabilities of the Economic Unit is to be divided into two phases. In the first phase, the functional goal of the Economic Unit should be set at an adequate level that is feasible to attain in a short to medium period of time; in the second phase, overall capability in integrating those three sub-functions can be developed as the long-term objective of the Economic Unit, successive to the first phase. In accordance with this approach, it is strongly recommended that, during the first three years, the efforts of the SCA in developing the capabilities of the Economic Unit should be focused on the implementation and nurture of the information analysis function. As for the objectives for a longer period of time, measures are to be taken to reinforce the management planning function; the strategy formulation function will be developed eventually through the process of accumulating knowledge and experiences in the other two sub-functional areas.

1-4-2 Functional Areas and Division of Functions

It has been recommended in the previous sections that, as regards the tentative function of the Economic Unit, efforts should be concentrated on the improvement of its information analysis function. This involves the comprehensive acquisition and mobilization of relevant data and information about the organization and its social, economic and technical environments, past, present and future. The information developed as such provides the top management with valuable bases on which probable impacts of environmental changes on the organization can be assessed and on which decisions can be made on the needed responses and actions as well as modifications to be incorporated into management plans.

Figure I-4-1: Unit's Functional Area and Its Components connected to Strategic Decision-Making illustrates how the information analysis function of the Economic Unit is connected to the strategic decision-making by the management. Each of the strategic decision subjects are enclosed by double rectangles in the center of the illustration. These are (1) tariff structure of the SCA, (2) transit capacity of the Canal, (3) operating strategy (short-term strategy) and (4) expansion strategy (long-term strategy). These four subjects are enclosed by a large dotted rectangle, which implies possible functional participation of the Economic Unit as one of its long-term functional objectives. Also in a dotted small rectangle is "management planning", which is another possible functional area of the Economic Units within its long-term objectives. However, neither of the functional areas in the dotted rectangles is included in the tentative objective of the Economic Unit's function. The individual components of the Economic Unit's function are enclosed by solid rectangles. All of those components are closely related to the strategic decision subjects, directly or indirectly. They are also interrelated to one another, directly or indirectly. As recognized from the illustration, these components of the Economic Unit's function make up a system to support the strategic decision-making of the top management. The system is to be operated in such a way that information obtained from internal

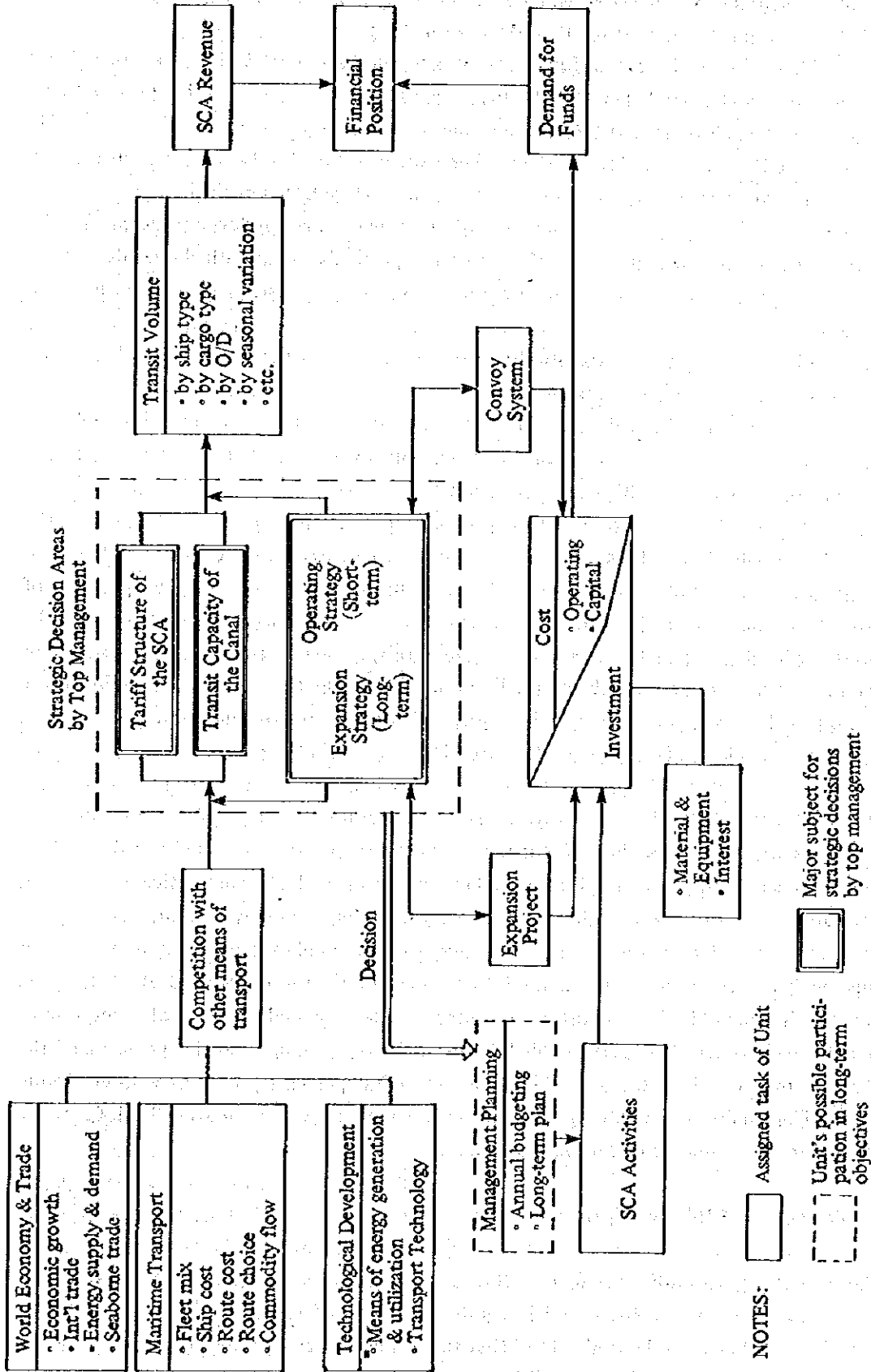


Fig. I-4-1 Unit's Functional Area and Its Components Connected to Strategic Decision-Making

and/or external sources is processed and converted into more beneficial or directly useful information for the top management for their decision-making.

As clearly seen from Figure I-4-1, the functional area of the Economic Unit is so broad that a certain method of functional division is desirable in order to achieve the Unit's functional effectiveness. As for the division, the following considerations have been specifically made in light of the capabilities of available staff members, organizational actions and performance, working procedures at present and in future as well as a future functional evolution.

- (1) The staff members allocated to the individual subfunctional areas can develop the capabilities required for performing the functions of each of the particular area, with the result that the individual sub-functions can be kept in proper balance in terms of capabilities and performance.
- (2) Functional distinctions among those sub-functions are clear, and the organizational structure resulting from the division is simple.
- (3) The relations among the individual sub-functions in respect of the performance of jobs are not complicated, and the individual sub-functions will not hamper but facilitate the future evolution of the Economic Unit's overall function.

The first criterion is concerned with the problem that no matter how a division of the function is desirable, the difficulty in adequate staffing to meet it causes unbalanced productivities among those sub-functions, if capabilities, experience and backgrounds of available staff members are limited. The second criterion is important in that it will make functional specialization and coordination among those sub-functions easier, resulting in achievement of higher productivity of the Economic Unit. The third criterion pertains to the integration of those sub-functions which are divided for the present and to their integration with other sections in the Planning and Research Department in the future.

It has been concluded that the division of the Economic Unit's function into two sub-functions will be most suitable for it to cover the functional areas in light of those three criteria explained in the previous paragraphs. One sub-function deals systematically with such problem areas as transit volume, the Canal capacity including a convoy system, tariff studies, cost analysis, project evaluation, etc., which requires the application and development of systems analysis techniques and methodology; the other sub-function deals with such problem areas as world trade, maritime transport, trade flow and patterns of commodities and goods, technological progress related to the SCA operation, financial position of the SCA, etc., which can be treated as individual and/or independent problems with economic analysis and/or qualitative reasoning. The former is named a "systems analysis" sub-function, and the latter an "economic research" sub-function.

1-5 Office Positions and Job Descriptions

The tasks and responsibilities set forth in this section are to be understood as the first step towards developing a comprehensive and integrated function of research and planning in the SCA. Accordingly, it must also be understood that the following descriptions are not definite and are subject to adjustments and changes in light of the evaluation of the performances of the Unit and its staff members.

Since the corporate research and planning function is relatively new in many organizations, it does not yet have any fixed orbit in the sphere of management practices, and marked similarity is observed in formal statements of the function among organizations. But, just as often, there seem to be considerable variations in actual practices according to the perception of the function by the incumbent top management as well as the manager of the research and planning function. The implication should be kept in mind that, regardless of the formality, the characteristics of the corporate research and planning function in practice could be affected to a considerable extent by the person who is the greatest beneficiary of the service.

1. Manager, Economic Unit

- (1) Maintains regular reporting and communication with the director of the Department about the activities, output and related matters of the Unit.**
- (2) Plans annual budget and needed personnel for performing regular reporting services; also plans to strengthen and expand the Unit's activities and seeks necessary budget and manpower allotments; takes responsibility in the execution of the allotted budget.**
- (3) Appraises the quality and usefulness of regular reporting services of the Unit, and plans and introduces new measures for the improvement of the services; at the same time propagates the significance and usefulness of the Unit's output among the departmental managers to secure their support.**
- (4) Inspects reports, both regular and occasional ones, prepared by his subordinates to ensure that those reports are adequately prepared to meet the requirement or the interest of the recipients, i.e. the management.**
- (5) Whenever necessary, coordinates the relationships between the Unit and other sections in the PRD or other departments so as to ensure their cooperation for the work of the Unit.**
- (6) Supervises the chiefs of the two Groups in scheduling and balancing the workload of each group and each staff member and in coordinating the interface of the work between the two groups, so as to provide on-time regular services of the Unit and to effectively respond to the occasional requests of the top management within the given manpower and budget limitations.**
- (7) Develops the capability of the Unit by systematic on- and off-the-job training of the staff and by broadening the experience of the staff through work assignments.**
- (8) Cultivates and maintains appropriate contacts with outside information sources to obtain specialized information and expert consultation, whenever necessary.**

2. Group Leaders

Systems Analysis Group Leader

- (1) Reports regularly the activities and output of his Group to the Unit's Manager.**
- (2) Executes the budget allotted to his Group in carrying out the allotted tasks.**
- (3) Directs, supervises and participates in the production of output dealing with or related to the task subjects in the task areas assigned to the Systems Analysis Group; and also directs, supervises and participates in the acquisition and management of data needed for performing those tasks.**
- (4) Cooperates with the chief of the Economic Research Group to promote the activities of the**

- (5) Circulates the output of his Group within the SCA with appropriate interpretations so that the recipients can better understand and appreciate their implications and significance and can make full use of them.
- (6) Keeps himself informed of technical development in systems analysis and management science fields and takes the initiative in adopting new methodological approaches and techniques for dealing with problems and issues.
- (7) Pays attention to the availability and sources of data pertinent to the management of the SCA and the development of the Suez Canal, so that the data base of the Unit is always being updated and improved.

Economic Research Group Leader

- (1) Reports regularly the activities and output of his Group to the Unit's Manager.
- (2) Executes the budget allotted to his Group in carrying out the allotted tasks.
- (3) Directs, supervises and participates in regular production of output dealing with or related to the task subjects in the task areas assigned to the Economic Research Group; and also directs, supervises and participates in the acquisition and management of information needed for performing these tasks.
- (4) Cooperates with the chief of the Systems Analysis Group to promote the activities of the two Groups for attaining better quality of output and higher productivity of the Unit as a whole.
- (5) Circulates the output of his Group within the SCA with appropriate interpretations so that the recipients can better understand and appreciate their implications and significance and make full use of them.
- (6) Keeps himself informed of social, economic and technological trends and developments in the world so as to initiate pertinent research and information services to the management by identifying and estimating the impact of such phenomena on the SCA.

3. Group Members

Transport Analyst, Systems Analysis Group

- (1) Assigned to the task area of "maritime transport and Canal traffic" under the supervision of the Group Chief, undertakes forecasts, analysis and evaluation regarding maritime transport and the Canal traffic by utilizing statistical and other analytical techniques and tools.
- (2) Major subjects to be covered by this job are trade flow, route costs, shipping costs, fleet mix, etc. for each of the concerned commodities and goods; also covered are the Canal transit operation including Canal traffic, Canal capacity and tariff study. The task requires not only the study of individual subject matters, but also the study of the interrelation and interaction among these subjects through the use of systems analysis approaches.
- (3) Another specific task area is concerned with the studies on the implications and/or impacts of other means of transport such as pipelines on the Suez Canal operation at present and in the future.
- (4) In close coordination with other staff, constructs and manages data base that is needed for performing the above-mentioned task; this includes identification of the sources of data, acquisition, compilation and maintenance of data, and construction of schemes to systemize

the data handling.

- (5) Regularly produces output in the fields of assigned task area to be incorporated in the reports which are circulated for review by the management of the SCA; also, prepares reports, upon the requests of the management, on the subject matters in or related to the assigned task area.

Financial Analyst, Systems Analysis Group

- (1) Assigned to the task area of "financial and cost analysis" under the supervision of the Group Chief, undertakes financial and cost analyses of the Canal operation and investment projects.
- (2) Major subjects to be covered are investment analysis, cost analysis and tariff review; the final objective of the task is to establish an analytical system which enables estimates of total revenue from various operations and investments against various costs associated with those operations and investments; with such a system evaluation of the tariff structure is carried out against various alternatives.
- (3) Undertakes cost study, covering step by step operational costs, maintenance costs, development costs and maintains a cost data base as a part of the total financial analysis system which can be utilized as a consistent cost information source for project evaluations.

Project Analyst, Systems Analysis Group

- (1) Assigned to the task area of "project evaluation" under the supervision of the Group Chief, participates in and carries out various types of project evaluations and feasibility studies.
- (2) In close coordination with other staff, develops and manages an information system that is needed for the evaluation of various types of projects.
- (3) Supports the staff in the development and application of systems concepts and methodology for analyzing, evaluating and forecasting problem matters in the task area covered by the Systems Analysis Group.
- (4) Regularly produces output in the fields of assigned tasks to be incorporated in the reports which are to be circulated for review by the management of the SCA; also, prepares reports, upon the requests of the management, on the subject matters in or related to the fields of assigned tasks.

Maritime Economist, Economic Research Group

- (1) Assigned to the task area of "maritime economics" under the supervision of the Group Chief, reviews and studies various kinds of publications to analyze, evaluate and interpret the state-of-the-art, developments and changes primarily in world economy, international trades, maritime transports, and factors and events affecting those fields of activities.
- (2) In close coordination with other staff, constructs and manages an information system that is needed for performing the above-mentioned tasks; this includes identification of the sources of information, acquisition, compilation and maintenance of it, and construction of schemes to systemize the information handling.
- (3) Regularly produces output in the fields of assigned tasks to be incorporated into the reports which are to be circulated for review by the management of the SCA; also, prepares reports, upon the requests of the management, on the subject matters in or related to the fields of assigned tasks.

Trade Analyst – Energy, Economic Research Group

- (1) Assigned to the task area of "energy" under the supervision of Group Chief, reviews and studies various kinds of publications to analyze, evaluate and interpret the state-of-the-art, developments and changes in the international trade and transportation of petroleum and related industries.
- (2) In close coordination with other staff, constructs and manages an information system that is needed for performing the above-mentioned tasks; this includes identification of the sources of information, acquisition, compilation and maintenance of it, and construction of schemes to systemize the information handling.
- (3) Regularly produces output in the fields of assigned tasks to be incorporated into the reports which are to be circulated for review by the management of the SCA; also, prepares reports, upon the requests of the management, on the subject matters in or related to the fields of assigned tasks.

Trade Analyst – General, Economic Research Group

- (1) Assigned to the task area of "Commodities and Goods" under the supervision of the Group Chief, reviews and studies various publications to analyze, evaluate and interpret the state-of-the-art, developments and changes in the international trade and transportation of major commodities and goods such as grains, metal ores, coal, fertilizers, wood, steel products, etc.
- (2) In close coordination with other staff, constructs and manages an information system that is needed for performing the above-mentioned tasks; this includes identification of the sources of information, acquisition, compilation and maintenance of it, and construction of schemes to systemize the information handling.
- (3) Regularly produces output in the fields of assigned tasks to be incorporated in the reports which are to be circulated for review by the management of the SCA; also, prepares reports, upon the requests of the management, on the subject matters in or related to the fields of assigned tasks.

Techno-economist, Economic Research Group

- (1) Under the supervision of the Group Chief, monitors the state-of-the-art and development of technology closely related to the activities of the SCA and analyses, evaluates, forecasts, and interprets the effects on the operation of the Canal; the fields of technology include transportation, shipbuilding, energy, etc.
- (2) In close coordination with other staff, constructs and manages an information system that is needed for performing the above-mentioned tasks; this includes identification of the sources of information, acquisition, compilation and maintenance of it, and construction of schemes to systemize the information handling.
- (3) Regularly produces output in the fields of assigned tasks to be incorporated in the reports which are to be circulated for review by the management of the SCA; also, prepares reports, upon the requests of the management, on the subject matters in or related to the fields of assigned tasks.

Operations Analyst, Economic Research Group

- (1) Assigned to the task area of "financial and operational study" under the supervision of the Group Chief, compiles, reviews and studies the operational and financial matters and records of the SCA, covering revenues, expenditures, budgets, Canal traffic, cargo movements, etc. The final objective of the assigned task is a technical bridge and coordination between the Economic Unit and other sections in the PRD and other departments.
- (2) In close coordination with other staff, constructs and manages an information system that is needed for performing the above-mentioned tasks; this includes identification of the sources of information, acquisition, compilation and maintenance of it, and construction of schemes to systemize the information handling.
- (3) Regularly produces output in the field of assigned tasks to be incorporated in the reports which are to be circulated for review by the management of the SCA; also, prepares reports, upon the requests of the management, on the subject matters in or related to the fields of assigned tasks.

Information Systems Analyst, Economic Research Group

- (1) Identifies, collects, stores and maintains external and internal data relevant to the transit of vessels in the Suez Canal.
- (2) Conducts researches on an information system by which it will be possible to make retrievals of necessary information and data on the basis of requests made by the two Groups.
- (3) Complete the compilation of a thesaurus concerning the Suez Canal
- (4) Exercises administration over the current filing system.
- (5) Conducts researches on external and internal sources of available data bases.

Information Systems Analyst, Systems Analysis Group

- (1) Conducts researches on information systems which make use of computers.
- (2) Makes preparations for a shift from the filing system currently in use to a computer system.
- (3) Conducts researches on the utilization of external and internal data bases by means of computer systems.

I-6 Allocation of Personnel

The allocation of the personnel in the Economic Unit as of September 1980 as determined by the Planning Department of the Suez Canal Authority is illustrated in Figure I-6-1.

Furthermore, it will be noted that the Senior Research staff and the Coordinator are placed in staff-like positions, which represents an allocation decided for adoption for the purpose of ensuring facilitated performance of jobs in the context of the current state of affairs with the Economic Unit in respect of its members' positions and ranks.

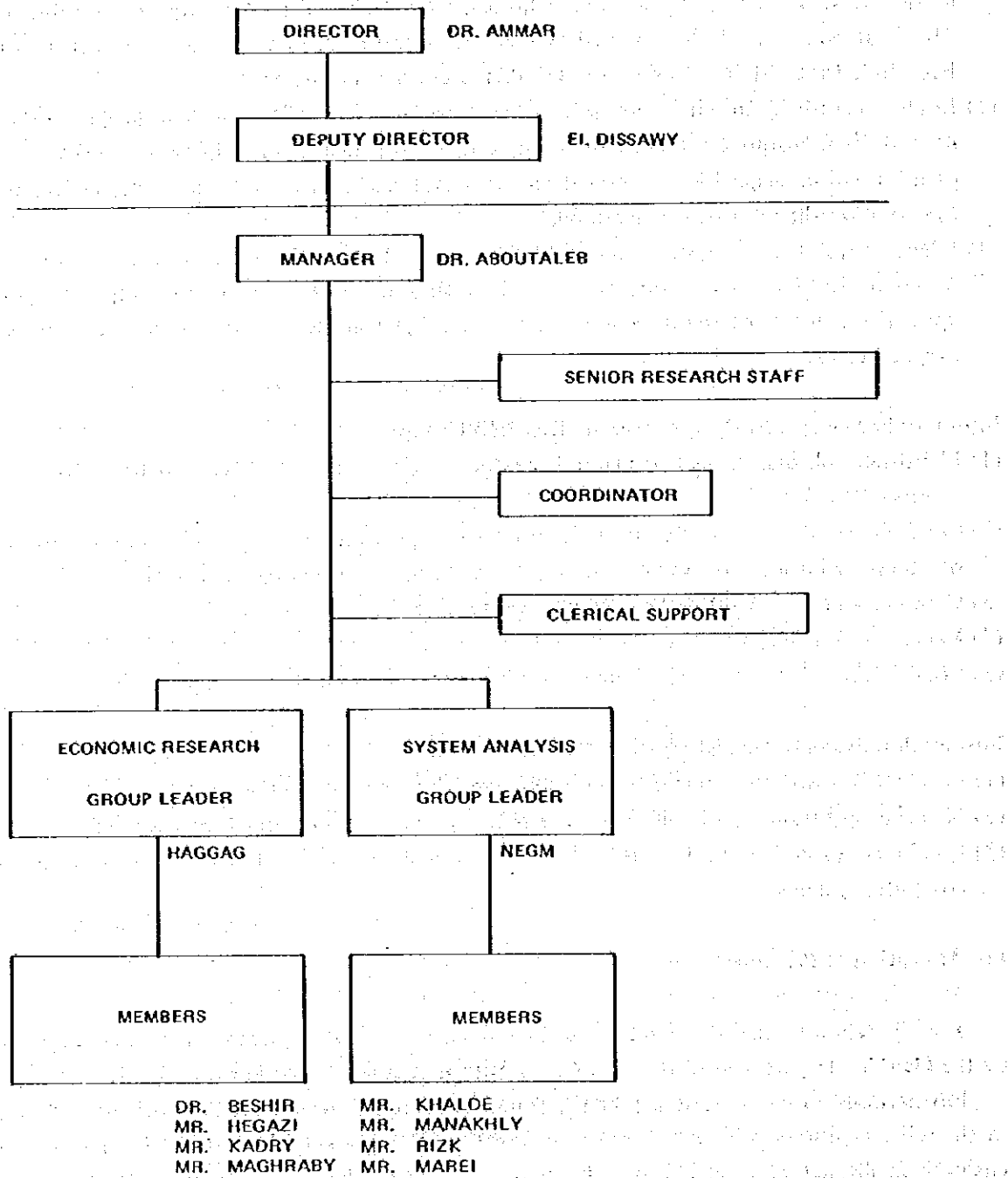


Fig. I-6-1 Allocation Chart

I-7 Jobs and Job Allocation

The Economic Unit consists of two Groups operating under the Unit Manager's supervision. Each of these Groups is managed by its Group Leader.

Consequently, the jobs performed by the Economic Unit can be divided roughly into the three categories mentioned in the following:

1. Planning job
2. Administration job
3. Research job

In the present discussion, the individual pieces or items of work of which a job is composed are referred to as "tasks".

Further, a unified set of work undertaken for a particular purpose is called "project" while the individual pieces of work performed for the execution of daily jobs are called "daily work".

I-7-1 Planning Job

By "planning job" is here meant the formulation of short-term, medium-term and long-term plans for the Economic Unit. In other words, the planning job consists in making plans for the jobs to be done by the Economic Unit as well as plans for the bulletin (extract/abstract), research reports, and abbyak reoirism abdm as becessart fir achieving these plans, the planning job also includes the formulation of research plans and plans for the organizational set-up, personnel, budgets, equipment introduction, education and training activities, etc.

I-7-2 Administration Job

This category of job consists in exercising administrative control over the progress and quality of jobs, and ensuring the smooth achievement of plans, and also controlling the organization, personnel affairs, equipment, budgets, and costs.

The allocation of the planning, administration, and research jobs to the Manager, the Group Leaders, and the Members is as presented in Table I-7-1.

Table I-7-1 Jobs and Job Allocation

	Economic Unit Manager	Group Leaders	Members
Planning job	<ol style="list-style-type: none"> 1. Research plan 2. Budget plan 3. Manning plan 4. Equipment & facilities plan 5. Education and training plan 6. Other plans of the Economic Unit on the long-term, medium-term and short-term bases 	<ol style="list-style-type: none"> 1. Research plan 2. Budget plan 3. Manning plan 4. Equipment & facilities plan 5. Education and training plan for the group 	<p>Plan for research output</p>
Administration job	<p><u>Economic Unit</u></p> <ol style="list-style-type: none"> 1. Administration over the status of progress in the production of research output 2. Quality control of research output 3. Report on research output to the top management and preparation and diffusion of research output to the other departments in the SCA. 4. Management of the two Groups through regular meetings 5. Control over procedures by the use of the prescribed format 6. Approval 7. Administration over the execution of budgets 8. Personnel affairs and personnel evaluation 9. Administration over equipment and fixtures 10. Administration of information, data, and materials 11. Participation in committees and conferences within the SCA 	<p><u>Group</u></p> <ol style="list-style-type: none"> 1. Administration over the status of progress in the production of research output 2. Quality control of research output 3. Report on research output to the Manager 4. Management of the group through regular group meetings 5. Administration over the execution of budgets 6. Control over procedures by the use of prescribed format 7. Approval 8. Personnel affairs and personnel evaluation 9. Administration over equipment and fixtures 10. Administration of information, data, and materials 11. Participation in committees and conferences within the SCA 	<ol style="list-style-type: none"> 1. Administration over the progress in the production of research output 2. Report on research output to the Group Leader 3. Report and adjustment at regular group meetings 4. Control of costs 5. Use of formats 6. Procedure for approval 7. Administration over equipment and fixtures 8. Administration of information, data, and materials
Research job	<ol style="list-style-type: none"> 1. Supervision and coordination for annual reports 1-1 Job report 1-2 Research report 2. General cooperation for research job and work 3. Researches on external and internal organs 	<ol style="list-style-type: none"> 1. Evaluation and analysis of extracts/abstracts 2. Editing of the Bulletin 3. Evaluation and analysis of short analysis reports 4. Supervision and coordination of the compilation work for annual reports on the group basis 4-1 Job report 4-2 Research report 	<ol style="list-style-type: none"> 1. Compilation of extracts/abstracts 2. Compilation of the Bulletin 3. Operation of the filing systems for information and data 4. Collection and analysis of information and data for work for the production of short analysis reports 5. Compilation of Reports and Reporting <p>Participation in committees and conferences held inside or outside of the department</p>
Other job	<ol style="list-style-type: none"> 1. Education and training 2. Coordination and liaison with other departments and organizational units 3. Liaison and coordination with external organs and collection of information from them 4. Inspection, observation, and visit 	<ol style="list-style-type: none"> 1. Education and training 2. Coordination and liaison with other organizational units 3. Liaison and coordination with external organs and collection of information from them 4. Inspection, observation, and visit 	<ol style="list-style-type: none"> 1. Training in methodology 2. Liaison and coordination 3. Observation and visit

I-7-3 Research Job

1) Research

The Economic Unit's functional area is composed of a large number of components. When those components are grouped into units of work under certain criteria, the unit of work is called a "task". A task is a basic unit of work assigned to an organizational unit like the Systems Analysis Group and the Economic Research Group in the Economic Unit. The criteria used for the grouping vary according to the function or functional objectives of the organizational unit. In the case of the Systems Analysis Group and the Economic Research Group, the former's function is to deal with these components as the elements of a system and through quantitative interrelations of one to another; in contrast, the functional approach of the Economic Research Group is not systems-oriented, but oriented toward treating those components as individual problems. Thus, the most decisive criterion for making up the tasks of these two Groups is the approach and methodology used to deal with these components.

The components of the functional area are, thus, grouped into eight tasks (or task areas), five being assigned to the Economic Research Group, and three belonging to the Systems Analysis Group, as follows:

Economic Research Group

- Maritime Economics
- Energy
- Commodities and Goods
- Techno-economics
- Financial and Operational Study

Systems Analysis Group

- Maritime Transport and Canal Traffic
- Financial and Cost Analysis
- Project Evaluation

Each of these task areas has its own task subjects to deal with, and some of the major task subjects falling in each task area are shown together with the planned work/output in the two Groups in Table I-7-2: Task Areas and Major Subjects of the Two Groups.

Some of the task areas are overlapping between the two groups, because the functional division is not based upon the subject or discipline, but based upon the approach or methodology used to deal with the problems and issues in the functional area by the two groups. This characteristic is clearly demonstrated by the difference between the two task areas in Table I-7-2; one is "Maritime Economics" under the Economic Research Group, and the other is "Maritime Transport and Canal Traffic" under the Systems Analysis Group. Each of these task areas deals with trade flow, trade patterns, ship costs, route costs, fleet mix, etc.. However, the approach of the Systems Analysis Group is to treat those task subjects as the components of a system eventually affecting the Canal traffic and the revenue of the SCA. Therefore, it applies systems analysis techniques to these components. In contrast, the approach of Economic Research Group is to treat these task subjects as individual or fragmentary subjects, and the mutual interrelations among these subjects are investigated not through the process of complex quantitative analysis, but through the qualitative reasoning and economic logic with limited numerical tools.

Table I-7-2 Task Area and Subject of the Two Groups

TASK AREA	TASK SUBJECT	WORK/OUTPUT	Form of Output				
ECONOMIC RESEARCH GROUP	Maritime Economics	<ul style="list-style-type: none"> o World economy & trade o Seaborne trade o Maritime transport 	<ul style="list-style-type: none"> o Extract o Abstract o Studies of independent problems/events o Specific assignments from the management o Preparation of data handbooks 	<ol style="list-style-type: none"> 1. Bulletin 2. Short analysis report 			
	Energy	<ul style="list-style-type: none"> o Trade flow & pattern o Origin/Destination o Ship cost/Route cost 					
	Commodities and Goods	<ul style="list-style-type: none"> o Trade flow and pattern o Origin/Destination o Ship cost/Route cost 					
	Techno-economics	<ul style="list-style-type: none"> o Technological forecasting o Transport technology o Technological feasibility 					
	Financial and Operational Study	<ul style="list-style-type: none"> o Revenue/Expenditure/Cost o Budgetary/Accounting review o Operation/Project review 					
	SYSTEMS ANALYSIS GROUP	Maritime Transport and Canal Traffic			<ul style="list-style-type: none"> o Trade flow o Shipping cost o Route cost o Fleet mix o Canal traffic/capacity o Tariff review 	<ul style="list-style-type: none"> o Short-term forecast o Long-term forecast o Support of E.R.C. o Analysis/evaluation of feasibility studies o Participation in feasibility studies o Software development o Development of information systems o Preparation of data handbooks 	<ol style="list-style-type: none"> 3. Report 4. Annual report
		Financial and Cost Analysis			<ul style="list-style-type: none"> o Investment analysis o Cost analysis o Tariff review 		
Project Evaluation		<ul style="list-style-type: none"> o Feasibility studies of operational projects/investment o Evaluation of feasibility studies of expansion projects o Participation in feasibility studies of expansion projects 					

2) Working Procedures and Output

In the early phase of the Economic Unit's activities, there are basically three kinds of work flow in and between the two groups. The work of the two Groups can be considered as the processing of existing information and data and as developing new information and data in the form of the Economic Unit's output for use by the management. The first and second kinds of work flow involve little or no interaction between the two Groups; they work independently on those task areas from the acquisition and processing of information and data to the development of new information and data. In the third kind of work flow, the Systems Analysis Group assists the Economic Research Group; when the Economic Research Group finds out that the more systems-oriented approaches are desirable or required in a specific area, it asks the Systems Analysis Group to process and analyze the relevant data and to provide it with the results for qualitative interpretations. In such working mechanism, the Economic Research Group sets forth objectives, assumptions, hypotheses, constraints, alternatives, etc., and the Systems Analysis Group applies analytical techniques such as statistical analysis and forecasting. These three kinds of work flow and information in the early stage of the Economic Unit are shown under the "tentative" objectives in Figure I-7-1: Flow of Information and Work in the Economic Unit under Tentative and Long-Term Objectives.

When the two Groups work independently as shown in Figure I-7-1, the first step in the work is acquisition and compilation of data and information for both Groups. Due to its functional characteristics, the Systems Analysis Group places the major emphasis on numerical data, and the Economic Research Group on explanatory and observational information. Major sources of data and information are: 1) International organizations and agencies such as the United Nations, OECD, IMF, OPEC, UNCTAD, etc., 2) branches of national governments, 3) economic and trade publications, 4) private companies of the concerned business sectors such as shipping, transport, natural resources, shipbuilding, banking, etc., and 5) specialized consultants and research firms. Some are publicly available on a regular or irregular basis; some are proprietorially available or in limited circulation.

The Systems Analysis Group works on the task area of the maritime transport and Canal traffic, for example, as follows. The final objective of this task is the evaluation of tariff structures for the optimization of the SCA revenue with respect to the current and future traffic of the Canal and the current and future allocations of traffic to the alternative routes. Therefore, for each of the concerned commodities and goods, data and statistics related to trade flows, fleet mix, shipping costs, etc. are collected, and the traffic allocation to the alternative routes and the traffic of the Canal are to be analyzed and forecasted against the current and/or alternative levels and structures of the tariff. The staff on the task deal mostly with numerical data, forecasting methods and mathematical models.

In the Economic Research Group, on the other hand, the staff on the tasks of maritime economics, energy, and commodities and goods also deal with the same subjects and components such as trade flow, ship type, fleet mix, shipping costs, etc. However, they are concerned with analyzing individual phenomena or events from the viewpoint of their backgrounds, causes, effects, interrelations, interactions, expectations, anticipations and so forth. From the collected information, they identify events and changes which are of importance to the SCA, follow their developments and trends, and project their outcomes and impacts. They do not rely heavily on systematic processing of numerical data but integrate and synthesize information from various

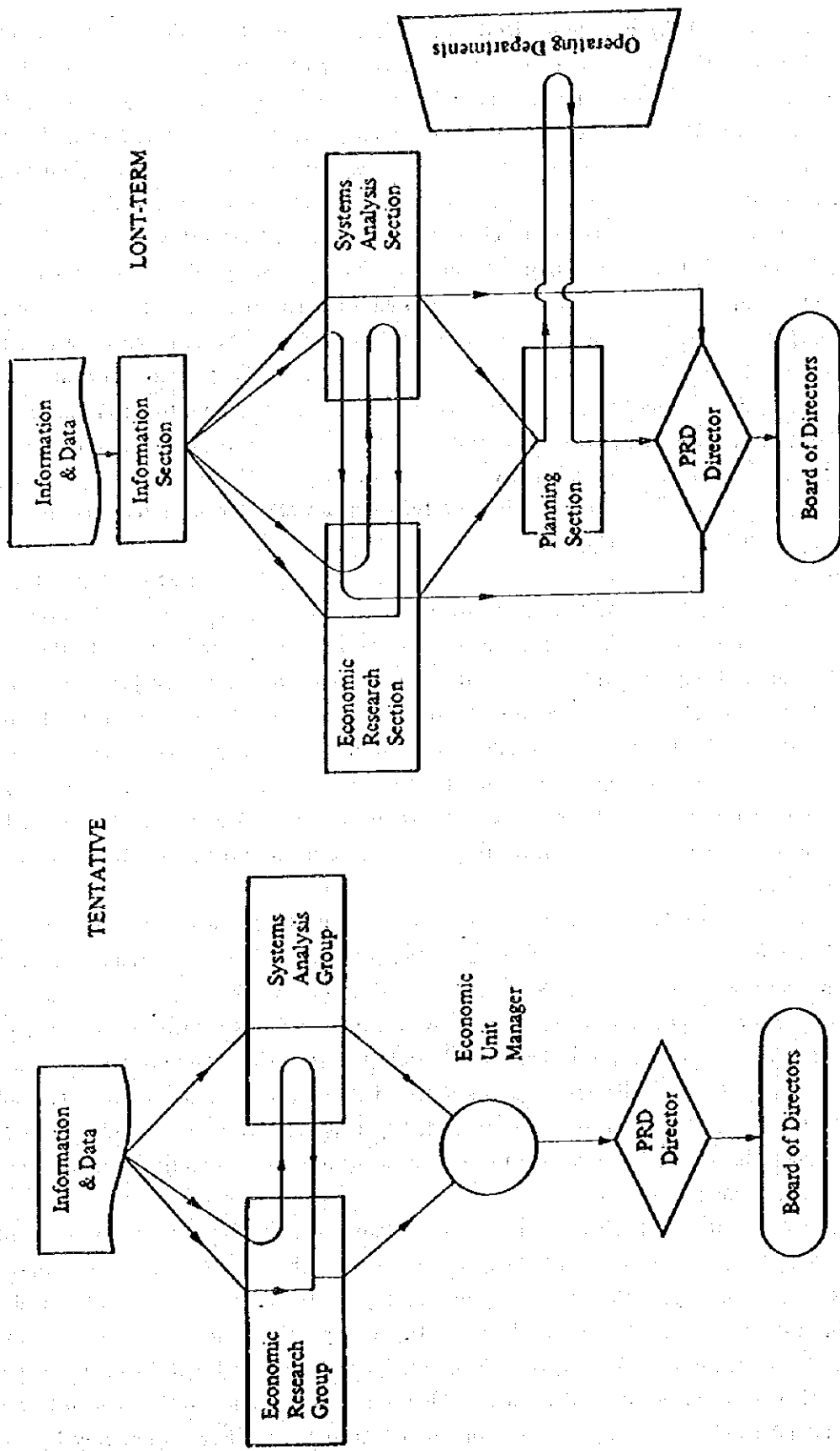


Fig. I-7-1 Flow of Information and Work Under Tentative and Long-term Objectives

sources, interpret the results of quantitative manipulations of numerical data, and construct scenarios.

Even during the process of working on an individual subject matter in the Economic Analysis Group, some problems require systematic analysis of numerical data in support of the group's reasoning or judgment. In such cases, the Systems Analysis Group provides its assistance in collecting data, applying adequate techniques to process them, and producing the results. The results are fed back to the Economic Research Group to be consolidated into its work. This is the technical consulting function of the Economic Unit, which will be desirably expanded in the future to service to other departments, as both of these groups become more capable.

Output is generally prepared in report form for review by the management, but the staff also produces manuals and handbooks for its own use. There are two kinds of reports; one is produced regularly in certain formats which are internally circulated for review, and another is prepared in response to specific assignments which occasionally come from the management.

Table I-7-3: **Planned Production of Output by Economic Unit and Particular Items of Output** shows types of output produced by the two Groups in the early phase. Sources of information for the Economic Research Group are primarily various kinds of publications. The staff regularly reviews journals and periodicals which are judged informative and useful with respect to the activities of the SCA. Out of many articles in those publications the staff sorts out some articles that are evaluated as significantly important to the SCA and prepares extracts or abstracted summaries of those articles. When the capabilities of the staff are increased, comparisons and integration of different articles dealing with the same subject matter and/or simple analysis by using available data are made and brief comments or notes are provided by the staff. This kind of work is, in principle, common to all of the task areas of the Economic Research Group.

As for the Systems Analysis Group, its output is mainly forecasts of transit volumes and transit revenue by various classifications, because the projections of those variables are the basis of tariff study and project evaluation which are the ultimate objectives of the Group. A limited scope of project evaluation study is undertaken by referring to the previous studies, and the results are incorporated into the report. In order for the Group to produce this kind of output, it needs to have supporting data which must be acquired and prepared by the staff of the Group. This task is a very crucial part of forecasting work in that it critically affects the forecast results. However, data collection and preparation is very time-consuming and laborious work before the staff becomes familiarized.

Table I-7-3 Planned Production of Output by Economic Unit and Particular Items of Output

Theme Category	Output	1. Bulletin	2. Short Report	3. Annual Report	4. Information File
1. Transit Volume Forecast		-	(1) Current Status Analysis (2) Long-Term Forecast (3) Revenue and Expenditure Analysis	(1) Current Status Analysis (2) Short-Term Forecast (Retrospect and Prospect)	(1) Collection of information for producing the results described at the left (2) Pigeonholding and administering the output described at the left
2. Tariff Analysis		-	(1) Planning the level of the tariff for transit (2) Analysis of Influence and Effect of Tariff Rate	Retrospect and Prospect	(1) Collection of information for producing the results described at the left (2) Pigeonholding and administering the output described at the left
3. Analysis and Evaluation of Canal Plans		-	(1) Evaluation of the First Stage Expansion Project (2) (Partial) Feasibility Studies of the Second Stage Expansion Project (3) Analysis and Evaluation of Feasibility Studies Done by Outside Consultants	Retrospect and Prospect	(1) Collection of information for producing the results described at the left (2) Pigeonholding and administering the output described at the left
4. Collection of Environmental Information Concerning Suez Canal Plans	(1) External Environment (2) Environment of Suez Canal		-	Retrospect and Prospect	(1) Collection of information for producing the results described at the left (2) Pigeonholding and administering the output described at the left
5. Others			(1) Evaluation of particular project development Regional Development Pipelines Accident Analysis (2) Solution and Clearing of Problems in Other Departments	Retrospect and Prospect	(1) Collection of information for producing the results described at the left (2) Pigeonholding and administering the output described at the left

II JOB PLANNING

II-1 Policy

By the term, "policy", is here meant the management objectives and policies which are established in conceptual form for the Suez Canal Authority and instructed by the Chairman and the Board of Directors, i.e. the managing organ of the SCA.

The Economic Unit should consider such a policy as a requirement of a concrete research and should accordingly have it reflected on a research which is to be carried out as its job.

II-1-1 Management Objectives

The following cases may be cited as examples of management objectives:

- 1) To increase the revenues of the Suez Canal in a stable manner on a long-term basis, thereby rendering contributions to the national economy of Egypt
- 2) To secure safe and speedy transit through the Suez Canal, thereby rendering contributions to the marine transport of the world
- 3) To make contributions to the conservation of energy resources and the regional trade through the offer of Canal services at adequate tariff rate
- 4) To forecast the progress to be attained in technology related to ships and in ship-operating technology and to carry out projects for appropriate investments in the Canal for its widening, deepening, or doubling, or the construction of a bypass so that the transit capacity of the Canal may be enlarged
- 5) To plan for the development of the regions in the neighborhood of the Suez Canal and an increase of employment opportunities in the regions for the purpose of fostering the growth of the regional community

Under these and other objectives, short-term management policies are formulated and presented.

II-1-2 Management Policy

The following cases may be cited as examples of management policies:

- 1) The tariff for the Canal shall be revised as from January 1981.
- 2) The tariff structure will be planned in such a way as to offer a more favorable tariff rate to large-size tankers (VLCC) of the specified category in order to realize the expected increase in the transit volume of tankers after the completion of the first-phase expansion project in December.
- 3) A committee to examine definite plans is to be organized within the organizational framework of the SCA.
- 4) The formulation of alternatives should be done by the Economic Unit.

Management objectives and management policies are presented in the form of the information transmitted as directives issued by and communicated through the managerial set-up of the office.

Such objectives, policies and orders are objectives and motives for the making of plans.

II-2 Needs

It is necessary for the development of the Suez Canal to conduct researches in advance to identify the requirements which the environment makes of the existing Canal, canal facilities and services and then to make positive responses to such responses on the short-term, medium term and long-term basis.

In order to attain this goal, it is necessary to maintain constant relations with the various nations, organs, and business organizations which are concerned with the transit of vessels through the Suez Canal, clearly to identify the requirements which they have of the Suez Canal, and to incorporate such requirements in the plans to be formed in the future.

Such requirements are collectively called "the needs for the Suez Canal". Needs can be found not only in such a passive way as merely catching information concerning the opposite party, but also by conducting a positive research on the needs by a questionnaire survey approach, the needs so discovered being integrated into plans by an appropriate method and at an adequate time. This is called "needs survey".

In addition, it will be effective for making the organizational activities of the Economic Unit useful to make inquiries into the various kinds of problems which are present within the Suez Canal Authority and to propose the application of the modern systems analysis techniques possessed by the Economic Unit to the solution of those problem

II-3 Job Plans

II-3-1 Premises to Job Plans

The points given in the following are to be taken into consideration as premises in formulating job plans.

- 1) To clearly determine what requirements are made of the Economic Unit through identification of policies and needs.
- 2) To examine the required matters in review to judge whether they are important or not in light of the long-term objectives pertaining to the Suez Canal and also in relationship to the role of the Economic Unit.
- 3) To think out by what means the requirements should be incorporated in research plans.
- 4) To examine the schedule for research plans to determine by what time a given requirement should be fulfilled.
- 5) To examine by what systematic arrangements (the budge, facilities, equipment, methodology, outside contracts, educational and training programs, etc.) the Economic Unit should proceed to respond positively to the particular requirement.

II-3-2 Periods for Planning

In the case of the Suez Canal, which calls for engineering work on an enormous scale with the requirement of a long period of time for completion, it is considered appropriate to set the target year for long-range plans at the completion of the second-phase canal expansion project which is now being examined in specifics.

Moreover, it will take several years to complete the examination of the changes to take place in the canal revenues, which represent the effect of the first-phase expansion project, which has

been brought to its completion. This means that it is necessary to treat plans made in this regard on the medium-term basis.

One year in the minimum will be required for the evaluation of short-term managerial activities - for example, a revision of the tariff for transit.

Procedure for Formulation of Job Plans

Procedure for Formulation of Job Plans

- 1) The particulars of a job are planned on the annual basis.
- 2) A schedule is made out for the actual execution of the particular job.
- 3) Plans are formulated for the organizational set-up, functions, personnel, facilities, software, and budget which will fulfill the conditions required for accomplishing the job.

Particulars of Jobs for Individual Groups

The particular items of the planned jobs for the individual groups within the Economic Unit are as described in the following:

Job Theme Category	Economic Research Group	Systems Analysis Group
1. Transit volume Forecast	Production of analysis and prospects of external environment necessary for short-term/long-term forecasting	Development and operation of forecasting systems (Calculation of forecast volume)
2. Tariff Analysis	Assessment of the current status and future prospects of external environment (transportation cost, etc.) relating to the setting of the tariff	Analysis (sensitivity analysis) of the influence which the tariff set at a given level will exert on the transit volume, revenues, etc.
3. Collection of Information Relating to Canal Plans	Preparation of extracts/abstracts primarily of external information (economy, trade, energy, bottoms, etc.)	Preparation of extracts/abstracts mainly of internal information (Number of vessels for transit, revenues, etc.)
4. Evaluation of the Suez Canal Project	Development and operation of economic evaluation system	Development and operation of economic evaluation system

Conceptual Design of Job Plans

For formulating detailed plans with regard to organization, functions, jobs, products of jobs, personnel, training, budget, facilities, systems, contracts, and so forth, it is necessary to work out concepts (conception) for factors, such as the expectations and anticipated changes, which should be incorporated in the plans on the annual basis.

This step is needed because the factors mentioned above maintains balance and harmony in the entire job plan, one factor working in complementation with another. As it were, this may be considered to be proportional division of a job plan.

Actual examples of the conceptual design of job plans for the Economic Unit from 1980 towards 1985 are presented in the following Table.

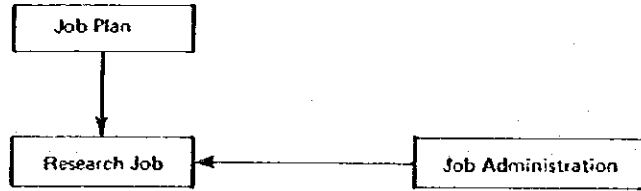
Examples of Conceptual Design of Job

Elements of Plan	1980	1981	1982	1983	1984	1985
Suez Canal	Completion of First-Phase Expansion Project	<ol style="list-style-type: none"> 1. Assessment of First-Phase Expansion Project 2. Start of Research for Second-Phase Project 3. Toll Revision 	<ol style="list-style-type: none"> 1. Research for Second-Phase Expansion Project 2. Toll Revision (Start of Some Part of Second-phase Project) 	<ol style="list-style-type: none"> 1. Research for Second-Phase Project 2. Toll Revision (Execution of Some Part of Second-phase Project) 	Same as in 1983	Same as in 1984
Planning & Research Department (PRD)	Development of functional systems of the Economic Unit within PRD.	Start of regular job operations by the Economic Unit within PRD.				
Economic Unit 1) Organization	Assumption of Office by the Manager	Start of job operations by The Economic Research Group (ERG) and The Systems Analysis Group (SAG)		<ol style="list-style-type: none"> 1. Establishment of Information System Group (ISG) 2. Establishment of Consulting Group (CG) 		
2) Functions and Scope of Job	Consolidation of Organizational set-up and jobs	<ol style="list-style-type: none"> 1. Start of operation of the organization and jobs 2. Planned administration of jobs 3. Execution of research jobs 	Job: Continued practice of planning, administration and research	Organization and jobs relating to the above-mentioned groups	Job: Continued practice of planning, administration, and research	Same as in 1984
3) Products of Jobs (Output)	Planning the products (output)	<ol style="list-style-type: none"> 1. Bulletin 2. Research Report <ol style="list-style-type: none"> 2-1 Toll Assessment 2-2 Assessment of First-Phase Expansion Project 3. Annual Report 	<ol style="list-style-type: none"> 1. Bulletin 2. Research report <ol style="list-style-type: none"> 2-1, 2-2 Same as at the left 2-3 Research on Second-phase Project 2-4 Toll Revision 3. Annual Report 	<ol style="list-style-type: none"> 1, 2, and 3: Same as in 1982 2-5 Report related to Information systems 2-6 Reports on researches relating to engineering and economy 	Same as in 1983	Same as in 1984

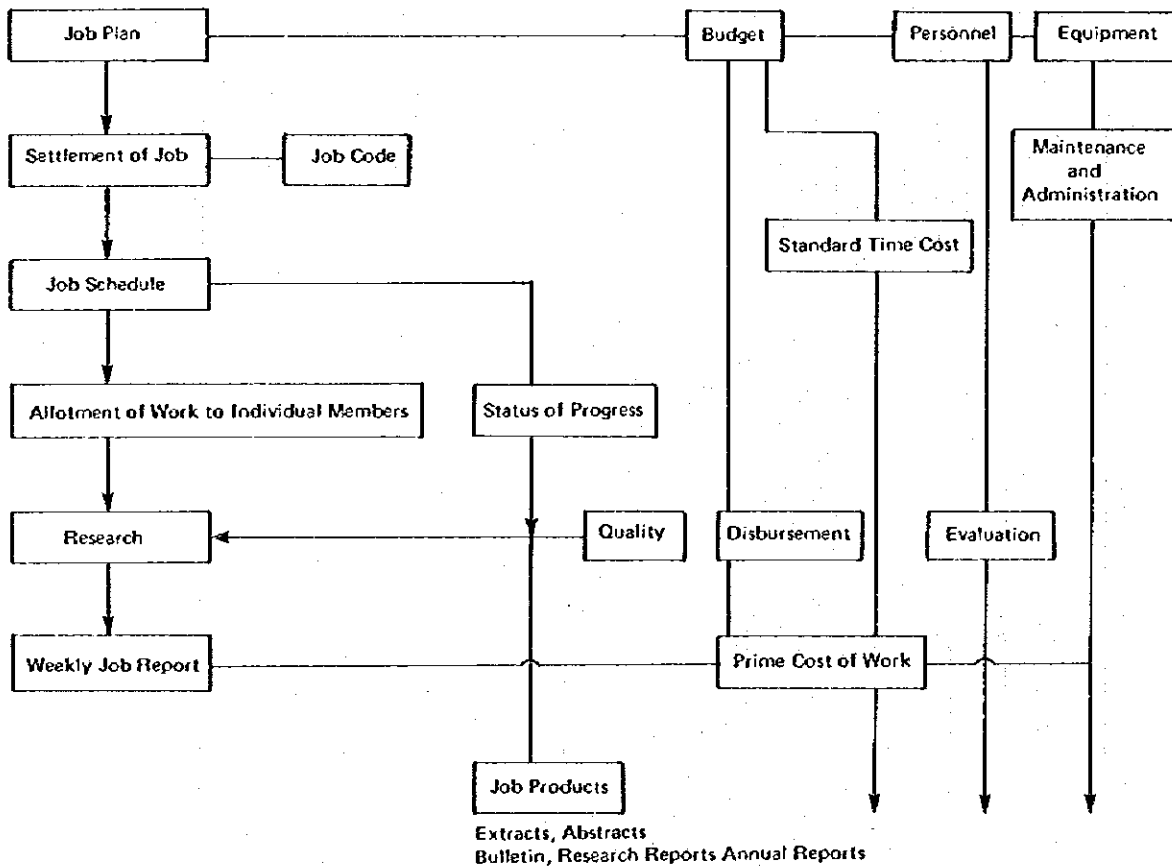
Group	1980	1981	1982	1983	1984	1985	
Staffing Plan	ERG	Five persons	Three economists to be employed	Eight persons	Three persons to be transferred	Yet undecided	Yet undecided
	SAG	Five persons	One engineer to be employed	Six persons	One person to be transferred	Yet undecided	Yet undecided
	ISG	-	-	-	Two persons to form a group	Yet undecided	Yet undecided
	CG	-	-	-	Two persons to form a group	Yet undecided	Yet undecided
Training Plan	ERG	Training under the three-year technical co-operation program	Advance Course	Same as in 1981	Same as in 1982	Same as in 1983	Same as in 1984
	SAG	-	Advance Course	Same as in 1981	Same as in 1982	Same as in 1983	Same as in 1984
	ISG	-	Information System	Same as in 1981	Same as in 1982	Same as in 1983	Same as in 1984
	CG	-	Engineering Economy	Same as in 1981	Same as in 1982	Same as in 1983	Same as in 1984
Equipment Plan	ERG	Micro Computer	-	-	-	-	-
	SAG	Micro Computer	-	Mini-computer	-	-	(Terminal)
	ISG	-	-	-	Micro Reader	-	-
	CG	-	-	-	-	-	-
System Plan	ERG	Filing System	-	-	-	-	-
	SAG	-	-	-	-	-	-
	ISG	-	-	-	Information System	-	-
	CG	-	-	-	-	-	-
Contract Plan	ERG	-	Utilization of data to be provided by Transit Dept. And Accounting Dept.	Entrusting outside Consultants with the production of feasibility study models, etc.	Same as in 1982	-	-
	SAE	-					
	ISG	-	-	-	On-line Data Base	-	-
	CG	-	-	-	-	-	-

II-3-3 Planning of Job Flow

The flow of jobs in the Economic Unit can be understood by referring to the simple schematic diagram presented in the following:



The job system can be divided further as illustrated in the following:



II-3-4 Settlement of Job

The jobs can be roughly divided into the four categories mentioned in the following:

1. Planning
2. Administration
3. Research
4. Others

Furthermore, each of these four categories is composed of the work and projects performed by the individual members.

In order that the Economic Unit may properly exercise overall administrative control over the work, it is necessary to clearly identify the individual pieces of work.

The procedures described in the following are recommended for use as methods of the administrative control just mentioned:

1) Procedure for Job Settlement

At the time when an individual piece of work is specifically determined, it is to be officially set-up as a job. Formats are used as the means of this procedure for such job settlement.

1. Each job is given its code number in accordance with a certain set of rules (Please refer to a separate description of the manner how the code number for a job is to be established).
2. The theme of the particular job is clearly determined.
3. The execution period for the job is determined.
4. The budget for the job is estimated (Refer to a separate description of cost control).
5. In case it is necessary to engage other persons in the performance of the job, the names of such persons are specified and the number of days and the number of hours to be required for the job are estimated.
6. Attached documents related to the particular work job annexed for reference.
7. The person to take principal charge of the job, or the leader in the case of a project, is selected.

2) Establishment of Code Number for Job

A six-digit code number system is used for jobs and the first two digits of the code number stand for the year while the succeeding two digits are used as a unique numerical code to identify the particular member. For example, the code number for Mr. Haggag can be established as 01. The last two digits function as a code number for the job. The numbers from 01 through 99 can be readily comprehended and used with reference to the attached material on the establishment of job numbers.

ECONOMIC UNIT

SETTLEMENT OF THE JOB

DATE / /	SJ. NO.
APPROVED BY: DIRECTOR DEPUTY DIRECTOR MANAGER GROUP LEADER RESPONSIBLE PERSON OUTSIDE OF THE UNIT	SIGNATURE: _____ _____ _____ _____ _____
<p><u>SETTLEMENT OF THE JOB</u></p>	
1. JOB NO. NO.	
2. TITLE OF THE JOB:	
3. DURATION OF THE JOB: FROM TO	
5. TOTAL BUDGET OF THE JOB:	
5. BUDGET ALLOCATION TO UNIT MEMBERS:	
NAME	DAYS HOURS
(Empty space for budget allocation table)	
6. DOCUMENTS ATTACHED (PROPOSAL, ETC.,) :	
7. PROJECT LEADER: (Person in charge)	
NAME	SIGNATURE _____

ESTABLISHMENT OF THE JOB

JOB NUMBER

USE 6 Digits in the following way:

Job No.	00	00	00	Meaning	Display	Example
	00			Year	80	1980
		00		Identification	01	Haggag
			00	Job No.	06	Travel
From		01		Identification for ERG members		
To		20				
From		21		Identification for SAG members		
To		40				
From			01	Job number for common use		
To			30			
From			31	Research job number for common use		
To			40			
From			51	Research job number for individual use		
To			99			

1. See the instructions for numbering for common use.
2. Each individual research job should have an individual job number.
3. Use only one job number exclusively for one research job in EU.

For example, one job done by different members:

job No. 80 04 56

Haggag's job of toll analysis in 1980.

Job No. 80 03 56

Dr. Beshir's job of toll analysis in 1980.

4. For the same job but in a different period, use a different job number.
5. Apply to analysis of a job and its cost, and refer to the weekly job report and your standard hourly cost.

JOB NUMBER FOR COMMON USE AND FOR INDIVIDUAL USE.

01-30	Code Numbers 31-99
01 Regular conference	31 Extract/abstract
02 Other conference	32 A report should bear
03 Receiving visit	33 its individual code
04 Meeting	34 number as specified
05 Visit	35 below.
06 Travel	36
07 Training	37
08 Urgent leave from office	38
09	39
10	40
11 Planning and scheduling	
12 Administration and management	
14 Control	
14 Budgeting and costing	41-99 Individual subject of job
15 Personnel administration and appraisal	
16 Report	41 "
17 Inquiry	"
18	"
19	"
20	"
21 Self-study	"
22 Correspondence and clerical work	"
23 Filing	"
24 Arrangement and adjustment	"
25	"
26	"
27	"
28	"
29	"
30 Private activity	99 "
	"

Note: For the process of a job involving 02, 03, 04, 05, 06, 16, 17, 22 and 23, it is not necessary to count the hour separately for the independent job items. Just state the total number of hours spent each day, each week, and each month.

II-3-5 Job Schedule

Jobs are performed on the basis of job plans. However, in case two or more tasks are carried out side by side, it is necessary to make a schedule for the job in advance with respect to the progress of the individual members jobs.

In many cases, tasks consist in work to be carried out jointly with other members or by a group. Therefore, it is necessary to attain such coordination as will facilitate the performance of the jobs by the individual members. Also, it is an important piece of work to adjust the job schedules in a case where one job is to be carried out through organic coordination of tasks with different contents.

The format for job schedule will serve the purpose of furnishing more useful information for clearly establishing work schedules for the individual members and assisting them to perform the work in group or as a task force. The job schedule should be addressed to the members, the group leader, and the Manager concerned and should be distributed with a description of schedules covering a period of one month or more in consideration of the duration of the particular job.

ECONOMIC UNIT

JOB SCHEDULE

DATE / /		SHL - -	
TO _____		DIRECTOR _____ DEPUTY DIRECTOR _____ MANAGER	
FROM _____		ERG _____ SAG _____	
SCHEDULE		FROM / / / TO / /	
DAY	MONTH	JOB	DESCRIPTION

II-4 Planning for Products of Job

Research jobs should be done for the making of the following products of job in order to establish regular practices of jobs in the Economic Unit:

1. Extracts/Abstracts
2. Bulletin
3. Research report
4. Annual report

The first step in job planning is to plan the subject matters, scope and schedule for these four products of job.

1. Bulletin

Prompt analysis and evaluation of environmental information having important bearings on the transit in the Suez Canal and communication of the results of such analysis and information.

2. Short Analysis Report

- 1) Assessment of the first-phase expansion project
- 2) Assessment of the toll revision and examination of the next toll revision

3. Feasibility study (in part) on the second-phase expansion project

4. Annual report Report on the jobs of the Economic Unit

II-4-1 Planning for Extracts and Abstracts

1. Method of Job Allocation

All the members, as well as the Group Leader, should be assigned to the jobs based on the raw information materials in accordance with a separate table for job allocation to the individual members.

2. Method of planning for extracts and abstracts

2-1 Plan for periodic collection and preservation of raw information materials

2-2 Plans for acquisition, reading, analysis and evaluation of such materials

2-3 Plans for compilation of extracts/abstracts

2-4 Plans for handling and accumulation of clue words representing the contents of extracts/abstracts

3. Production plan

It is to be set up as a standard that approximately one form is produced in two days.

4. Evaluation plan

The relevance, urgency, importance, problem-magnitude, and necessity of recording and preservation for the transit of the Suez Canal should be evaluated by a grade-marking method.

5. Plans for Reporting and Distribution

The extracts/abstracts are promptly distributed in the Group and between the Groups and reported to the Manager, the Deputy Director, and the Director through the Group Leader.

ECONOMIC UNIT

POINTS

EXTRACT/ABSTRACT SHEET

DATE / /	EX/AB NO.
ORIGINAL DOCUMENT TITLE DATE OF ISSUE PAGE VOL NO	
EXTRACTED/ABSTRACTED BY TITLE OF THE SUBJECT	
EXTRACT/ABSTRACT	
CLUE WORD	
COMMENT	

II-4-2 Planning of Bulletin

As extracts/abstracts are accumulated, being filed by the areas in accordance with a filing system established separately, it is possible to determine the flow, concentration and trends of information in a given area.

When analyses and evaluations of such information are accumulated in sufficient volume, a bulletin is compiled to describe the trends observed in different areas.

1. Planning for Allocation of Work

Each group decides on the allocation of work to its individual members, and a job-allocation plan is completed through adjustments between the two Groups.

2. Planning of the Contents

Within the framework of a predetermined period, subject matters important to the environment of the Suez Canal are selected. The selection is made at a manager meeting.

3. Production Plan

The Bulletin is to be produced once in three months.

4. Reporting plan and Distribution Plan

The Bulletin is distributed internally in the two Groups and also between the two Groups. The leaders of the two Groups jointly present a report on the Bulletin to the Manager, and the issue of the Bulletin is reported to the Deputy Director and the Director through the Manager. The Director makes a plan for distribution of the Bulletin within the SCA and promptly distributes it.

**Example of Plan for Contents
of First Issue of Bulletin**

CONTENTS OF BULLETIN

- | | |
|-------------------------------------------------------------------------------------|------------------|
| 1. Cover | Photo and Title |
| 2. Comment | By Mr. Mashhour |
| 3. Preface | By Dr. Ammar |
| 4. Introduction | By Mr. Dissawy |
| 5. Table to Contents | |
| 6. Introduction of Economic
unit and its Activities | By Dr. Aboutaleb |
| a) Objective | |
| b) Organization | |
| c) Function | |
| d) Long-Term Plan | |
| 7. Presentation of Research
Groups, Members and Their Capabilities | |
| 7.1. Economic Research Group (ERG) by Mr. Haggag | |
| a) Role of ERG | |
| b) Function of ERG | |
| c) Services of ERG | |
| d) Members and Their Capabilities with Photos | |
| 7.2 Presentation of Previous Important Studies by Messrs. Kadry and Maghraby | |
| 7.3. Systems Analysis Group (SAG) by Mr. Ngem | |
| a) Role of SAG | |
| b) Function of SAG | |
| c) Services of SAG | |
| d) Members and Their Capabilities with Photos | |
| 7.4 Presentation of Previous Important Studies by Messrs. Manakhly, Rizk, and Marei | |
| 7.5 Initiation for the information System (IS) by Mr. Hagazi | |
| a) Role of IS | |
| b) Function of IS | |
| c) Services of IS | |
| 7.6 Initiation for the Engineering Economy by Mr. Beshir | |
| Dito a) – d) | |
| 8. Forthcoming Schedule
and Outputs of Economic Unit | By Dr. Aboutaleb |
| a) Job Schedule | |
| b) Forthcoming Output | |

9. Introduction of Bulletin

By Dr. Beshir

- a) Aim of Issue
- b) Scope of Bulletin
- c) Information Sources for Bulletin
- d) Evaluation Procedure
- e) Schedule of Issue

10. Bulletin

By Dr. Beshir

- 1) Trend and Direction of Contents
- 2) Arranged by Field and in Chronological Order

11. Reference

12. Your Request and Comment if Necessary

To the Manager of Economic Unit
<p>Comments:</p>
<p>Department</p> <hr/>
<p>Section</p> <hr/>
<p>Title</p> <hr/>
<p>Name</p> <hr/>
<p>Signature</p> <hr/>

H-4-3 Planning for Research Reports

Research reports represent the most important products of the Economic Unit as they contain the significant results of its research jobs.

1. Planning of Subject Matters for Researches

Except for those researches to be conducted on specified subject matters under instructions issued by superiors, the Economic Unit carries out researches, analyses and evaluations on the subject matters which are specifically provided in the "Job Plan by Group".

On the occasion of planning work, it is important to ensure that research work load is distributed adequately in relation to the research capabilities of each of the Groups.

2. Planning of the Scope, Methodology, Schedule and Allocation of Research Work

The Group Leader plans the scope, methodology, schedule and allocation of research work at a regular meeting with the members of his group.

3. Production Plan

Depending on the scale of a research project, it will be difficult to limit the production period for its results.

However, it is established as a general norm that one report should be produced in a four-month period.

4. Reporting and Distribution

A report is presented promptly for review by the members in the Group and also at a manager meeting, and, after the report is analyzed and evaluated within the Economic Unit, it is to be presented in a duly revised form to the superiors.

Now that research reports have essential bearings on the important decisions to be made by the Suze Canal Authority, scrupulous planning and preparation are required particularly for the handling of the research reports and with respect to reporting form, report documentation and reporting system, etc.

Planning for Annual Report

The Annual Report is the report which describes the jobs performed by the Economic Unit in a given one-year period.

As for the contents of the Annual Report, it is necessary to present clear description of the role which the Economic Unit played in the context of the planning activities of the SCA and the significant results accomplished by Unit While playing that role. accomplished by Unit While playing that role.

1. Planning of Contents

1-1 Progress and Results of Entire Jobs

1-2 Results of Research Jobs

2. Production Plan

The responsibility for the issue of the Annual Report rests with the Manager and the Group

Leaders. Accordingly, the allocation of work for the compilation of the report should be such that the Manager takes charge of the general part of the report while each Group Leader is in charge of the part related to the area of activities performed by the particular Group.

3. Reporting and Distribution

The Manager presents a draft of the Annual Report to the Director and, after it is revised as appropriate, distribute the report to the recipient organizational units.

II-5 Staffing Plan

The technical cooperation extended for the three years achieved technology transfer to the eleven members listed in Figure II-5-1.

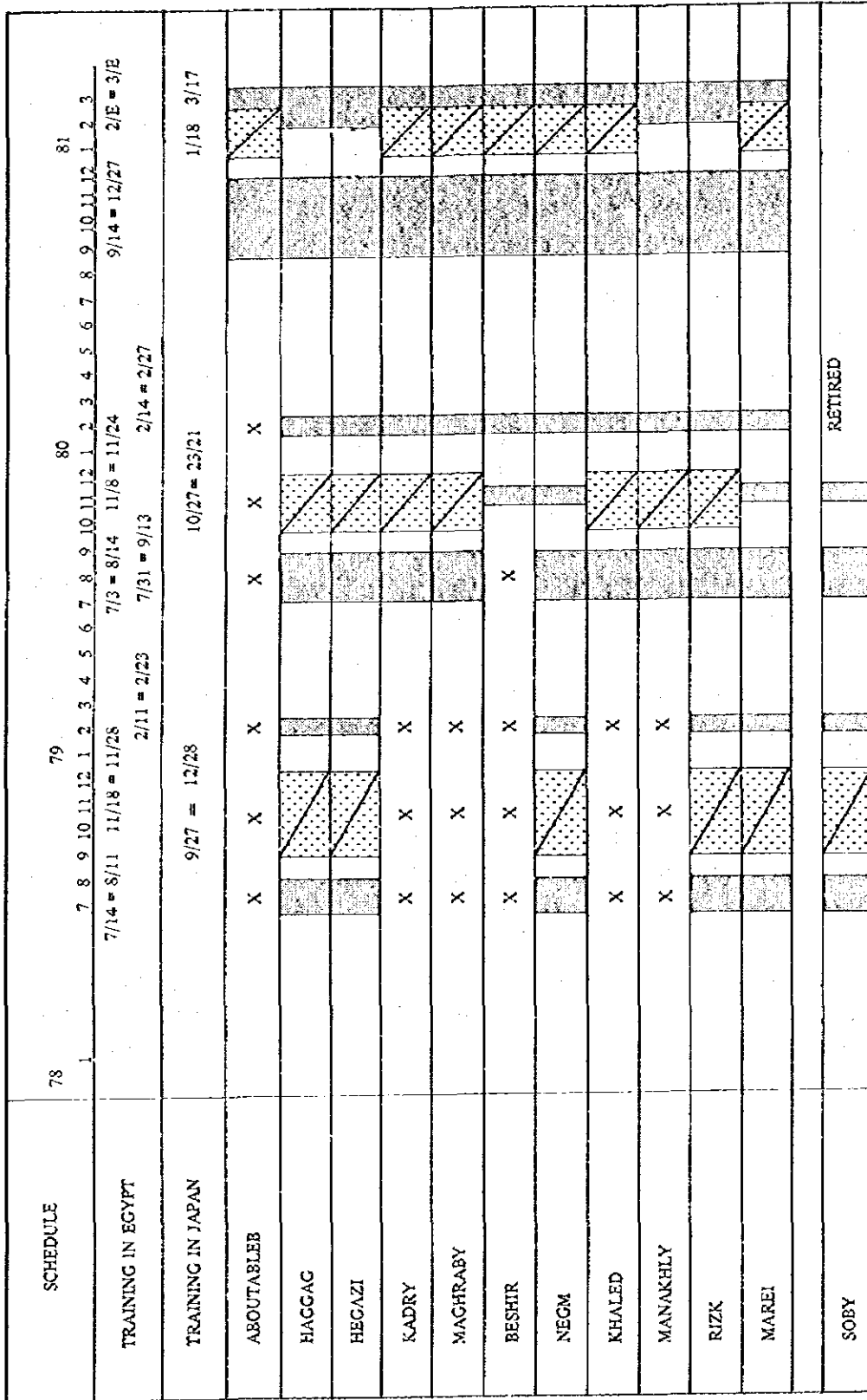
The recruitment of personnel recommended by the Japanese Survey Team for the period up to March 1980 was put into practice as planned. However, the recruitment of the four persons in the period from April 1980 to March 1981 has not yet been actualized. In this situation, the four members listed in Table II-5-1 should be employed in and after April 1981.

When the current status of the staff composition of the Economic Research Group is examined in comparison with the initial plan for personnel recruitment, it is certain that the number of economists is evidently insufficient for the Group. It is, therefore, to be noted that the recruitment of additional economists is an urgent task to be accomplished.

Furthermore, it is necessary also to employ additional engineers for their assignment to the Systems Analysis Group. It is desirable to effect a second-phase organizational change after the newly employed members absorb the substance of the Japanese technical cooperation program up to the level of its mastery by the existing members through internal training programs to be offered by the Economic Unit itself.

One core member is to be transferred to the position of managing staff as Senior Staff Research, for the purpose of organizing an Consulting Group, and the member so appointed should be assigned to tasks to be performed in preparation for the formation of the Consulting Group.

The Consulting Group is to be organized with members to be selected out of the list of the new members who will be in the process of their training in the Economic Research Groups and the Systems Analysis Group, and those members are to performs the jobs of the new Group.



: TRAINING IN JAPAN.
 : TRAINING IN EGYPT.

Fig. II-5-1 Technology Transfer to the Eleven Members.

Table II-5-1 Recruiting Staff Members

+ new member/total
- transfer /total

Group \ Year	1981	1982	1983	1984 and after
ECONOMIC RESEARCH GROUP	+3/8	-2/6	-1/5	+n/5+n
SYSTEM ANALYSIS GROUP	+1/6	0/6	-1/5	+m/5+m
SENIOR STAFF	0/6	+2/2	-2/0	x
INFORMATION ANALYSIS GROUP	0/0	0/0	0/2	+2/2
CONSULTING GROUP	0/0	0/0	2/2	+0/2
TOTAL	* +4/14	** +0/14	*** +0/14	**** +n+m/14+n+m

- * Four new comers should be assigned separately to the two groups and trained within the group.
- ** Two senior research staffs take off from ERG and receive training in INFORMATION SYSTEM and ENGINEERING ECONOMY.
- *** Two new groups will be establish, and ERG and SAG will provide one new staff each.
- **** In this transition period, ERG, SAG, ISG and CG will recruit new staffs in appropriate numbers and at appropriate timing.

II-6 Budget

II-6-1 Budgeting Procedure

The budgets based on the business plan are compiled and decided by following the procedure described below:

1. Conducting surveys of the job plans and the budgets for the previous year as well as the job achievements and the actual expenses
2. Examining problematic points by the expense items
3. Allocating, by the expense items, the budgets necessary for the execution of the job plans for the current year.
4. Taking account of the breakdown of the budgets by the expense items as well as fluctuations of the commodity prices.
5. Submitting the proposed budgets to the department in charge of budgeting and making adjustments as necessary.

Example: According to the estimated actual expenses for 1980, the average increase ratio is 2.89% as compared with the previous year.

Year-to-Year Increase Ratio (%)

Year	1979/1978	1980/1979
Revenue	44.17 %	30.61 %
Cost	22.48	16.86
Operating Cost	5.84	8.53
Maintenance	5.85	8.56
Amortization Cost	28.33	23.67
Administration Cost	2.10	2.89
Other Costs	—	8.72

II-6-2 Budgets for the Economic Unit

The budgets necessary for the Economic Unit for its execution of its job plans are compiled by the expense items listed in the following:

1) Fixed Expenses

The fixed expenses are surveyed and budgeted.

F-1 Wages

F-2 Various kinds of bonuses

F-3 Various wage-related expenses (including the expenses for social and medical service)

F-4 Expense allocated for the use of space

F-5 Light and fuel expenses, water charges, and other related expenses incidental to the space

F-6 Expendable articles for office use

F-7 Training expenses

F-8 Expenses for office machines and incidental expenses

F-9 Depreciation expenses

F-10 Other fixed expenses

2) Overhead Expenses

The overhead expenses are surveyed and budgeted.

O-1 Allocation of the expenses for the PRD Director to the Economic Unit.

O-2 Allocation of the expenses for the PRD Deputy Director to the Economic Unit

O-3 The portion allocated to the Economic Unit out of the portion of the SCA overhead charges which is allocated to the PRD.

O-4 Expenses for the Section Managers

O-5 The portion of the overhead charges for secretaries and office boys which is allocated to the Economic Unit.

O-6 The portion allocated to the Economic Unit out of the portion of the other expenses allocated to the PRD.

O-7 Other overhead expenses

However, the expenses mentioned above should exclude the expenses and allocated expenses for the Research Center, the Planning Section and the Statistics Section.

3) Direct Job Expenses

The direct expenses are budgeted on the basis of the jobs as estimated in advance.

Thus, the budgets for the direct expenses will essentially be of tentative nature.

D-1 Miscellaneous wages

D-2 Entertainment expense

D-3 Conference expense

D-4 Computer calculation expense

D-5 Printing expense

D-6 Expense for information materials

D-7 Communication and correspondence expense

D-8 Transportation expense

D-9 Travel expense

D-10 Overseas travel expense

D-11 Expenses for outside services

D-12 Payable Remunerations

Note: Direct expense items may be put together into a single expense item to be treated as if it were a fixed expense item, though it is actually a direct expense item, provided that such items involve those expenses which are small in amount and show minor fluctuations in amount on the annual basis.

4) Calculation of Hours Worked for the Year

2-1 Saturday through Wednesday

The number of days x 6 hours

2-2 Thursday

The number of days x 4.5 hours

2-3 Paid leave of absence

2-4 Emergency

5) Matters Requiring Attention in Respect of Expense Items and Budgeted Amounts

3-1 Personnel changes working as causes of increase in expenses

3-2 Increase of the computer calculation charges

3-3 Occurrence of overseas travels

3-4 Large-scale increase in the allocated amount of the overhead charges due to investments in equipment or the procurement of machines, etc.

In connection with compiling the annual budgets, it is necessary to forecast those circumstances which will require increases in expenditure and to assess these expense items as accurately as possible.

II-7 Equipment and Software Plans

II-7-1 Role of the Economic Unit and Necessity of Mini-Computers

The role of the Economic Unit consists of the four items mentioned in the following:

(1) Computer Analysis and Short-Term Forecasting

(2) Tariff Study

(3) Navigation Control Study

(4) Long-Term Forecasting and Feasibility Study

Of these four, the important area of daily work is limited to (1). In regard to this item (1), the related topics are given in the following:

- (a) Canal traffic volume
- (b) World trade
- (c) Throughputs of pipeline
- (d) Seaborne trade flows
- (e) World fleets
- (f) Ship-size distribution on each route
- (g) Elements and constitution of ship costs
- (h) Route costs

With respect to the topics (1) through (h) given above, The Economic Unit performs (i) collection of information and (ii) processing of information. At this stage (ii), mini-computers will be needed.

II-7-2 Necessity of Mini-Computers

The objectives, current status analysis and short-term forecasting, for which mini-computers will be needed, are the offer of information to the Director, and the jobs are performed for the following purposes:

- (1) Recognition of the current state of affairs
- (2) Short-term forecasting
- (3) Identification of necessary actions

A report, which is to be submitted to the Director for enabling him to recognize the above-mentioned points clearly enough, should satisfy the following requisite conditions:

- (1) All the descriptions should be based on numerical data.
- (2) The contents of the report should be presented in a concise expression with the aids of charts and tables.
- (3) The information in the report should be the most up-to-date information.

In order to fulfill these three requisite conditions at all times, it is necessary to perform prompt collection and processing of information. Such promptitude can be attained if the following two conditions are fulfilled:

- (1) The processing of information is performed as part of the daily work.
- (2) The processing work is done by means of a routine process.

Therefore, it follows that the only possible approach is to feed the information materials published all over the world as input data into a computer system and to process the data in a programmed process. For this, again, a computer system is needed.

Besides, it is conceivable to introduce a data bank for the process of information collection, and yet it is considered that the timing is too premature for it.

II-7-3 Utility of Mini-Computers

The following two types of computer systems are conceivable as measures to be adopted for attaining the above-mentioned prompt processing of information:

(1) Large-capacity computer + TSS (Time-Sharing System)

(2) Mini-Computer

However, the proper timing of introduction yet remains uncertain for the system given in (1) above, in view of the current status of the systematizable exchanges among the different departments within the organizational framework of the SCA as well as the total amount of office work in the entire SCA organization.

It is therefore considered that the mini-computer mentioned in Item (2) above should rather be adopted for information processing and that the Economic Unit should play the role of a pioneer for development and progress towards the introduction of the computer system described in Item (1).

Yet, the mini-computer to be adopted by the Economic Unit should fulfill the conditions mentioned in the following:

(1) The mini-computer should permit the addition of peripheral equipments.

(2) It should be capable of providing graphic display and hard copies.

(3) It should be capable of processing graphic data such as Frater.

(4) It should be capable of accumulating various programs.

II-7-4 Types of Software for Introduction

1. Subroutine Programs

(1) Matrix Algebra a

(2) LP

(3) NLP

(4) Regression

(5) Statistical Analysis

(6) MLE

(7) Numerical Integral

(8) Econometrics

(9) SPSS packages

(10) Graphic processing

2. Topics (Programs which should be compiled)

(1) Frator Method

(2) Probit and Logit Analysis

(3)~(11) Programs given in Items (a) through (h) in & II-7-1

(12) CBA Analysis (cost-benefit analysis)

(13) Financial Analysis

There is a wide range of selection of mini-computers available in the market, however, the following type of mini-computer would be the most appropriate one to be adopted for the Economic Unit.

Specification of Mini-Computer

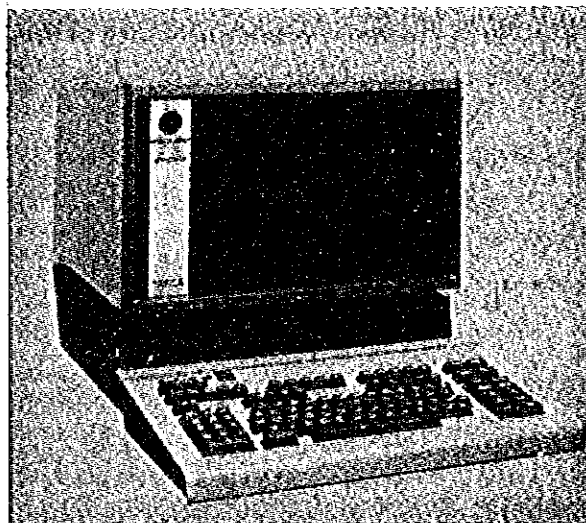
Weight: 23.2 kg (1-drive system)

26.1 kg (2-drive system)

Consumption Power: 115V/230V

104W AC

- (1) Keyboard part English characters, KANA characters, one touch keys, instruction keys, Ten keys, BASIC instruction keys, option keys are offered. Cushion type is used for the keys.
- (2) Display In MODEL EU, the display unit is used as an isolated chassis. 80 characters horizontally and 24 lines vertically are displayed in 12 inch screen. Green display tubes are used and 1 character is displayed by 5 x 7 dots.



- (3) Floppy disk device (External magnetic floppy disk memory)

A floppy disk device has a capacity of 350KB and the mini-computer can have up to four disks. The processor can concurrently use a program of up to 1.4MB as the external memory. 5 inch floppy disk media are used. Transferring of floppy disks and main memory data is carried out by PMA function.

- (4) Power Switches Power Switches of keylock type are used.

- (5) Computer status indicator lamps

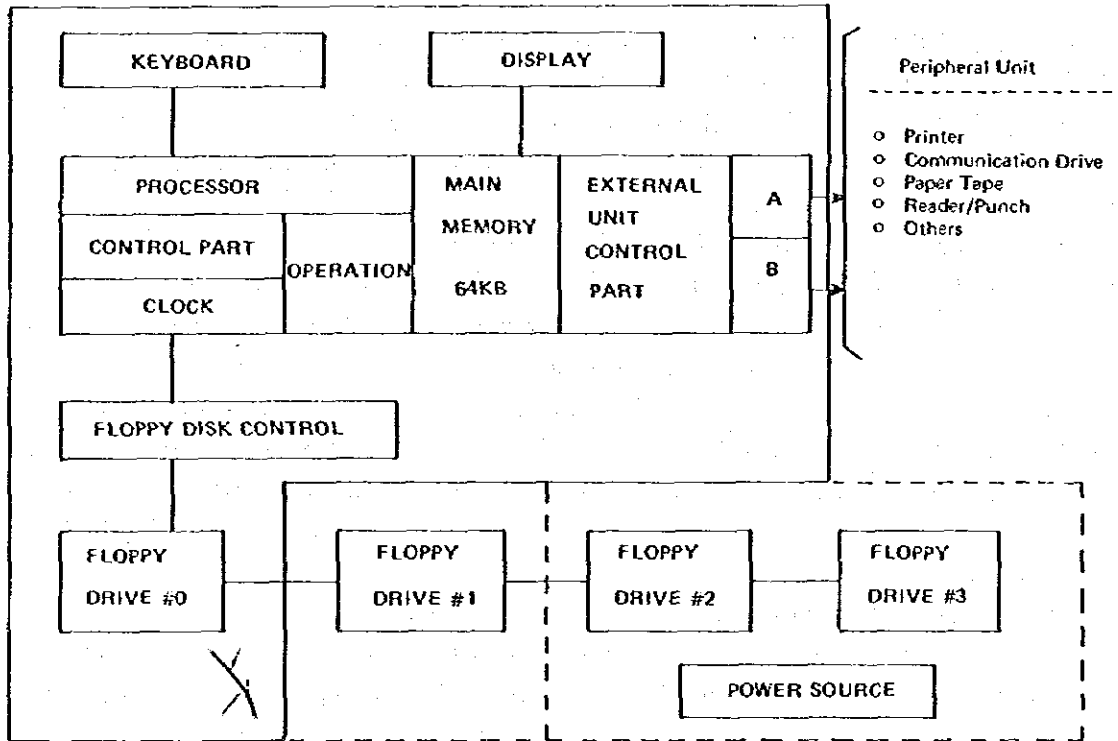
Status indicator lamps as well as power-on lamps are prepared.

- (6) Processor The Z-80 is used as the micro-processor.

Main memory 64KB memories are equipped here.

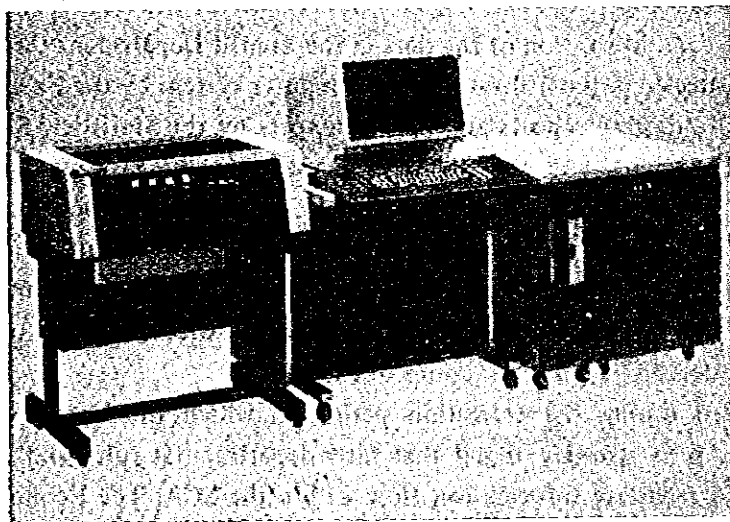
The following chart shows the system structure of mini-computer:

System Structure of Mini-Computer



Parts enclosed by _____ indicate standard model.

Parts enclosed by - - - - - indicate option expansion function.



II-8 Plans for Cooperation of Economic Unit with Other Organizational Units

It must be said that the self-motivation of the Economic Unit's staff members is not enough, and their work must also be supported and assisted by the SCA's cooperative efforts and understanding, in order that the Economic unit may become a workable and viable research unit. The following are some important conditions and requirements which are deemed crucial for establishment of the Economic Unit.

(1) Capabilities and Attitude of the Staff Members

In connection with the recruitment of staff members for the Economic Unit, the Suez Canal Authority should exert its utmost efforts to select and recruit the most qualified personnel from within and without the SCA's organization.

In view of the fact that the Economic Unit must undertake some portions of the feasibility studies of the projects, higher priority should be placed upon the training of techno-economists. For this purpose, it is strongly recommended that persons with an engineering background and several years' experience in the Suez Canal operations should be recruited to the staff positions of the Economic Unit.

(2) Introduction of Electronic Computer and Office Equipment

In light of the need to process statistical and quantitative data as quickly as possible, it is considered highly desirable that the Economic Unit will be equipped with its own in-house computer system in the future. When the Economic Unit's jobs become fully operational, the need for such a computer system would become immediate and urgent. It is suggested that the SCA take the need of a computer system into careful consideration.

Furthermore, as the Economic Unit's work progresses, the amount of data and research output will inevitably increase. It is strongly urged that the Unit become sufficiently supplied with office equipment such as filing system, photostatic copying machine, etc.

(3) Inter-Departmental Cooperation

It is strongly advised that the data collection and information processing systems which have already been developed in some organizational units of the SCA (e.g. collection of data on transit volume and utilization of the data in the Transit Department through the introduction of a computer system, the utilization of a computer system by the Financial Department, the publication of monthly reports and annual reports by the Statistical Section, the Planning & Research Department, and the micro-film system in the Printing Department) should be coordinated with each other for higher productivity through coordination and adjustments among the departments and sections concerned and further should be integrated into a total system for information management in the future. The information and data handled by the Economic Unit should be viewed in the context of the total flow of information for the planning and decision-making functions of the SCA.

However, even during the transition period in which the Unit continues its course of development, it is strongly urged that inter-departmental rules and procedures should be established to facilitate information flow within the SCA. The Economic Unit should have easy and ready access to the publications data sources, and other necessary information in other departments, and a system should be built in such a way that the Economic Unit's research output will be effectively distributed to other departments. On this score, inter-departmental cooperation and favorable working relationships must be considered to be

one of the essential conditions under which the Economic Unit will be able to become a viable organization within the SCA.

(4) Research Output

It is planned, as one of the major objectives of the cooperation program, that the Economic Unit will produce research output and that once its jobs become operational, the Unit will start producing output on a continuing basis. To support this activity, it is necessary for the SCA to make budgetary allocations for procurement of necessary research materials, publication, statistical data and other required materials.

In addition, in order that the Economic Unit's research activity and its output be fully recognized and appreciated within the SCA, organizational efforts must be made to promote the understanding and cooperation of other departments. It is also important that the Economic Unit perceives the interests, needs and requirements of other departments and to produce the type of research output which properly reflects such interests and needs. It must be recognized that, if there arises a growing tendency within the SCA to recognize the significance and importance of the Economic Unit, the staff members of the Unit will have correspondingly greater motivation and higher morale to do a better job.

III JOB ADMINISTRATION AND SUPERVISION

III-1 Administration and Supervision for Jobs of the Economic Unit

The administration and supervision of the jobs undertaken by the Economic Unit may be considered to be performed by means of the two systems mentioned in the following:

1. Regular meetings
2. Job procedures

1) Regular Meetings

Regular meetings are held at three different levels, i.e. the groups, the Managers, and, the Director.

The subject matters for the regular meetings and the participants in those meetings are as described in the following:

Regular Meetings

Kind	Regular PRD Meeting	Regular Manager Meeting	Regular Group Meeting	Other Meetings
Held	Once a month	Once a week	Once a week	Others
Chairman	Deputy Director	Unit Manager	Group Leader	Occasionally as required
Contents & Formats	1) The following items concerning the Unit for a given one-month period: a) Job plans b) Job status c) Job evaluation d) Requests for instructions	1) The following items concerning the Unit for a given one-week period: a) Job plans b) Job status c) Job evaluation d) Requests for instructions	1) The following items concerning the Group for a given one week period: a) Job plans b) Job status c) Job evaluation d) Requests for instructions	Specified items
	2) From Director a) Notification to subordinates b) Direction c) Instructions d) Liaison information, etc.	2) From Manager a) Notification to subordinates b) Direction c) Instructions d) Liaison information, etc.	2) From Group Leader a) Notification to subordinates b) Direction c) Instructions d) Liaison information, etc.	
Participants	Director Deputy Director Unit Manager Staffs Group Leader	Unit Manager Staffs Group Leader	Group Leader Members	

2) Job Procedures

It is necessary to define and assign authority and responsibility in organizational structure clearly and definitely by in the form of an authority and responsibility chart which is set forth separately, and thereby to establish the method of decision-making for job activities and the procedure for coordination, adjustment and liaison.

In order to attain these objectives, various kinds of forms, including above all those for directives, applications, and permissions, must be used, side by side with the decisions,

adjustment, and liaison made at the regular meetings, for executive decisions on all cases of job affairs, so that fully satisfactory job administration and sound supervisory control may be ensured.

The job procedures to be followed for the purpose of job administration are as described in the following:

Job Procedure	Format	Purpose and Substance
Directive	Directive Form	Business Order given by superior to subordinate
Application	Letter of Application	A request made of superior by subordinate for the former's executive decision or instructions
Approval	Approval Form	Superior's approval given to subordinate in response to the latter's letter of application
Report	Report Form	Report submitted by subordinate to superior on all matters concerning job execution, liaison information, adjustment, and coordination
Decisions, notices, and adjustment made at a regular meeting	Records of Meeting (Minutes)	Decisions, liaison notices, and adjustments concerning business decided at a regular meeting
Records	Record Form	Records of those matters which should be kept in record for the purpose of business
Circular Notification	Circular Notification Form	Internal communication for the Economic Unit
Personnel Records	Personal Records	Personal history of the members
Appraisal	Appraisal of individual members	Appraisal of each members' job performance
Standard Time Cost	Your Standard Manhour Cost	Cost calculation for a job and compilation of budget
Settlement of Job	Settlement of Job Form	Identification and establishment of a job
Weekly Job Schedule	Weekly Job Schedule Form	Job plan for a week
Job Follow-up	Follow-up Form	Follow-up on a job
Weekly Job Report	Weekly Job Report Form	Report on the status of progress in the job and cost-control
Administration of Equipments and Fixtures	Inventory List of Equipments and Fixtures	Administration and maintenance of equipments and fixtures
Cost Calculation	Job Cost Calculation Form	Cost control

III-2 Norms for Job Administration

Priority of Jobs and Tasks

When a job or a task is encountered or to be executed, the priority of the particular job is determined on the basis of the criteria described in the following:

1) The priority of jobs and tasks based on positions is selected with reference to such functions as planning, administration, research, and others as shown in the following Table III-2-1:

Table III-2-1 Priority and Proportion of Jobs and Tasks

FUNCTIONS	MANAGER	GROUP LEADER	MEMBER
PLANNING	****	**	*
ADMINISTRATION	***	****	*
RESEARCH	*	**	*****
OTHER	**	**	**

2) As for the subject matters of tasks, those specified below are given the highest priority, and any subject matter other than these is to be regarded as being lower in priority:

1. Analysis of the environment concerning canal traffic
2. Evaluation and assessment incidental to the first-phase canal expansion project
3. Revision of the tariff or toll rates for canal transit
4. Feasibility study on the second-phase canal expansion project
5. Evaluation and assessment in connection with the completion of a part of the second-phase canal expansion project

3) Time Aspect

Also, the jobs related to the long-term, medium-term, and short-term plans will provide a criterion for priority.

4) Other Factors Determining Priority

In an organization, the following factors other than those given in 1) and 2) above are determinant factors for the priority of jobs:

1. Position of the person issuing a given directive or making a given request
2. Urgence
3. Scale of a given subject matter
4. Participation as viewed in relationship to a project or a task force

III-3 Delegation of Authority and Assignment of Responsibility

In order that the administration of jobs may be exercised properly, it is necessary to establish the authority and responsibility of each position clearly and definitely.

Authority should be delegated to the individual positions in an organization to the maximum

extent possible.

The organizational authority and responsibility of the Economic Unit should, of course, be established in conformity with the regulations of the Suez Canal Authority, and yet it is necessary to present the authority and responsibility in accordance with the regulations clearly and specifically to the members of the Unit.

For this purpose, specifications of authority should be compiled. An example of such specifications is given in the Table presented below.

Specifications of Authority

For the purpose of facilitating the performance of jobs within the Economic Unit, the authority for making decisions on the jobs performed in the Department is hereby established as shown in the following:

	Director	Deputy Director	Manager	Group Leader
Long-term plan	○	○		
Medium-term plan	○	○		
Annual plan			○	
Quarter-term plan			○	○
Annual budget			○	
Personnel Affairs				
Wages	○	○	○	
Bonuses	○	○	○	○
Performance appraisal	○	○	○	○
Employment	○	○	○	
Transfer	○	○	○	
Job				
Job	○	○	○	○
Domestic travel			○	○
Overseas travel	○	○		
Attendance and early leave			○	○
Vacation			○	○
Purchasing				
Equipment	○	○		
Fixtures			○	○
Office supplies			○	○

○ Primary Authority ○ Secondary Authority

III-4 Job Administration

1) Directive

1. Organizational superiors:

A directive is issued to the members by superiors in the order of Director, Deputy Director, Manager, and Group Leader.

2. It goes without saying that a directive must not be received directly from any superior in any other organizational unit.

In such a case, a common-sense approach will be to direct a request to the Director through the Director of the Department concerned.

3. If the Director considers such a request appropriate, a directive is issued in accordance with (1) given above.

4. A directive is issued with the date of issue and the number DR — specified on the form.

DR

Directive number

Issuer's code number

5. For a directive, it is to be clearly stated from whom and to whom the directive is issued.

6. The contents of a directive should not be abstract, but must be described in the form of concrete and concise description.

7. The objective and scope of the directive should be clearly stated.

8. A deadline for fulfillment of the directive may be specified in terms of date and time if necessary.

9. The duty of reporting is a natural obligation. However, if necessary, this duty should be explicitly prescribed for certainty.

10. In the event that a directive requires its urgent transmittal, it can be communicated first at a meeting, and, then, a directive format may be delivered in some cases, if necessary, for the sake of its confirmation.

ECONOMIC UNIT

DIRECTIVE

DATE / /	DR No.
TO: ___ MANAGER GROUP LEADER ___ ERG ___ SAG ___ MEMBER	FROM: ___ DIRECTOR ___ DEPUTY DIRECTOR ___ MANAGER ___ GROUP LEADER

DIRECTIVE

2) Application

1. A subordinate in an organizational structure applies for a decision by a superior with respect to a matter which is related to a job and requires for its decision a higher level of authority than that of the particular applicant

2. This application is made according to the organizational ranks up to the superior who has the authority for making a decision on the particular subject of the application. Specifically, the order is as follows:

Member → Group Leader → Manager → Deputy Director → Director

3. In a case where an application meets a decision on its subject by someone having decision-making authority halfway in the line of ranks in the organization, the subject so decided is reported, if necessary to the superior(s) by the use of the report format.

4. In case a doubt about a decision is entertained by a superior ranking higher than the one who has made the decision, what a subordinate should do is simply to notify the numerical code of the Letter of Application and that of the approval format.

5. An application should specify the date, the issuer's code and his number.

LA

Issuer's number

Issuer's code

6. The subject matter on which a superior's decision is applied for and the applicant name should be specified.

7. The contents of an application should consist of a clear and concise description of a business reason for the subject matter and its effect together with a clear and definite presentation of the purpose and scope of the subject.

8. In case a given period of time is necessary for obtaining an approval of an application, the period should be described as such.

9. In the case of an application requiring an urgent decision on it, such an application can be decided upon, being taken round the deciding superiors together with an explanation of its subject.

ECONOMIC UNIT

LETTER OF APPLICATION

DATE: / /

LA No. .

APPROVED BY:

DIRECTOR

MANAGER

DEPUTY DIRECTOR

GL

SUBJECT OF APPLICATION:

APPLICANT:

CONTENT OF APPLICATION:

3) Approval

1. When an application is submitted by a subordinate, the superior makes a decision on it within the limit of his decision-making authority and gives an approval of the execution of the subject matter stated in the application.

2. In giving such an approval, the date when the approval is given and the code and number for the deciding person should be stated as shown below in the Approval form, and the reference number for the corresponding Letter of Application is to be stated.

APL —
Code Number

3. In giving an approval of the contents of an application, a note and a remark are added as necessary.

4. In the event any part of the approved particulars in a Letter of Application is to be restricted, it is necessary to state such a restriction clearly in a note to the Approval.

5. In a case where a decision is made on an application by a person positioned halfway in the line of ranks in the organization, the deciding person report the decision to his superior if necessary.

6. An issued Approval is kept in file during the period in which the approved subject is being executed and also for a prescribed duration of time following its execution.

7. In a case where an approved subject has any relation to another organizational unit in respect of its execution, the deciding person should make sure to notify the substance of the approval to the person in charge of such a related unit and also to confirm that there is no obstacle to the execution of the approved subject.

8. In case a doubt is entertained by a superior to the deciding person, a step to be taken is simply to cite the approval number of the Approval.

ECONOMIC UNIT

APPROVAL

DATE: / / APL - -

THE FOLLOWING LETTER OF APPLICATION IS APPROVED BY:

TO: _____
DIRECTOR _____
DEPUTY DIRECTOR _____
MANAGER _____
GROUP LEADER _____

NUMBER : LETTER OF APPLICATION _____

NOTE:

REMARKS:

4) Time Allocation to Daily Routine Jobs

For the purpose of finding out whether the individual persons' jobs have been allocated in a manner adequate for their respective positions and to determine a proper scope of job, it is necessary to practice the scheduling of the daily routine jobs.

Above all, an abnormal allocation of time to planning, administration, researches, conferences and meetings, coordination and liaison work, and other activities will evidently give rise to a hindrance to the complete performance of job plans.

This format is intended for use on occasions, side by side with the Weekly Job Report, for the purpose of enabling self-initiated corrections of the allocation of time to various jobs.

WEEKLY JOB SCHEDULE

(hr)

DAY OF THE WEEK JOB	SATURDAY	SUN. TO WED.	THURSDAY
	MANAGER GROUP LEADER MEMBERS	MANAGER GROUP LEADER MEMBERS	MANAGER GROUP LEADER MEMBERS
PLANNING			
CONTROL			
RESEARCH			
1. BULLETIN (EXTRACT AND ABSTRACT)			
2. SHORT ANALYSIS			
3. INFORMATION SYSTEM			
MEETING			
COORDINATION AND COMMUNICATION			
OTHER JOBS			

5) Weekly Job Report

It is necessary to find in quantitative terms what jobs an individual member performed in a given week. Such information offers the advantage that the final addition of the hours spent on each of the jobs clearly indicates the scale of a job in terms of time and cost.

For the subject matters from one through five for the jobs, it is proper to state the subjects of the planning, administration, and research jobs performed in parallel in the particular week.

The number of hours spent on the jobs should be entered everyday in the two blanks provided in the form for research jobs and other jobs, respectively.

In this case, the job number and the hours spent for it are entered. The maximum number of working hours per day is six hours. The form has blanks for entry of three research jobs and blanks for three other jobs to a total of entry spaces for six jobs.

For entry of jobs in these blanks, it is necessary to judge whether a given job is important enough to deserve its record.

In addition, the problematic points experienced in the research jobs conducted in the week are entered as a comment.

The Group Leader and the Manager make comments, if necessary, on the particular Weekly Job Report.

ECONOMIC UNIT

WEEKLY JOB REPORT

DATE: / /

WJR No. -

NAME: _____

SIGNATURE: _____

ASSIGNED JOBS:
JOB GIVEN

- 1
- 2
- 3
- 4
- 5

HOURS WORKED	DAY	ASSIGNED RESEARCH JOB		OTHER JOBS	
		JOB No.	HOUR	JOB No.	HOUR
1	1				
	2				
	3				
2	1				
	2				
	3				
3	1				
	2				
	3				
4	1				
	2				
	3				
5	1				
	2				
	3				
6	1				
	2				
	3				

SELF-EVALUATION OF JOB:

CONTENTS OF OTHER JOBS:

COMMENT BY GROUP LEADER:

COMMENT BY MANAGER:

SIGNATURE: _____

6) Follow-up of Job

It is natural that there should be a delay or a faster progress in a job plan or a schedule on account of an unforeseen situation arising in the course of the progression of a job.

In addition, such a delay or a faster progress can not be unrelated to the other jobs. For this reason, it is necessary to follow up the status of progress in individual jobs in order that the total jobs may be kept in progress at a high level of efficiency. This represents an important area of work not only for Managers and Group Leaders, but also for Project Leaders and those persons who play key roles in tasks.

The Follow-up Sheet is effective for grasping the status of progress in the entirety or a part of a job either periodically or occasionally or for bringing the progress of the job to the attention of the person in its charge.

In making a follow-up, the subject matter, the reference number for identifying the subject, and other matters such as instructions should be clearly stated.

The person in charge who has received a follow-up should submit a report on the current status of the subject by the use of a separate report format and additionally should present a way to resolve the current situation, the prospects, and so on if necessary.

Follow-up is thus very important and essential for managing organizational activities in a harmonious and efficient way.

ECONOMIC UNIT

FOLLOW-UP OF JOB

DATE	/ /	FUNo.
------	-----	-------

TO:	Group Leader
	Member
FROM:	Manager
	Group Leader

The following subject matter is not yet reported.
Follow up immediately and report.

Subject matter:

Reference No.

Other Instructions:

7) Minutes of Conferences and Meetings

The administration of jobs by the Economic Unit is performed through deliberation, etc. at the regular meetings to be held every week and additionally by procedures by the use of formats.

Such formats are presented in writing, and the purports and conclusions in them are clear. Yet, the effective information to be obtained at conferences should be recorded if it is to serve as effective information, or as decisions, confirmed matters, coordinated arrangements, and items requiring attention, in respect of jobs.

In addition, all the information generated at conferences and meetings conducted with any party outside of the organization of the Suez Canal Authority or with any party external to the Economic Unit should be recorded in documentary form.

For the purpose of ensuring the performance of jobs in accordance with their plans, it is necessary to keep clear and definite records of the matters decided at each step in the process of the progress of a job and, above all, those matters which are coordinated or decided at conferences.

The decided matters form the premises for the next step. Many of the conferences held for the purpose of job performance represent the consensus of the group concerned, and, in many cases, the records of conferences serve as historical evidences of such consensuses.

In view of these objectives, it is important to record the date, the time and the participants (In some cases, it is more rational to record the absentees' names only).

Moreover, the Chairman of a conference should specify the subject matters for it in advance, and, additionally, attach remarks on the points important for the subjects.

Finally, the conclusions drawn at a conference should be confirmed by the participants in it and then kept in clear and definite form in the minutes.

8) Job Record

It is necessary to keep records of all the important matters concerning the jobs other than conferences and meetings. This job Record format is used for the purpose of recording job-related matters of significance, so that the records may be used effectively as factual data in the future or as evidences of facts. This Record should be issued with clear descriptions of the job subjects requiring their records, as well as the particulars of the jobs, to the other parties concerned, the superior and the subordinates.

ECONOMIC UNIT

JOB RECORD

DATE:	/	/		RCD
TO:	DIRECTOR	DEPUTY DIRECTOR	MANAGER	GROUP LEADER
FROM:	ERG	SAG		
MATTERS TO BE RECORDED				
DATE:	/	/	PLACE:	HOURS IF NECESSARY:
DESCRIPTION:				

9) Circulation and Communication

It is recommended that the information, data, and news which are acquired in the process of performance of jobs, as well as products of jobs such as newly discovered facts, analytical data, related formulae, and reports, are communicated as promptly as possible to the other members regardless of the distinction between superiors and subordinates in the organizational structure.

In other words, communications among the members are important. Communications not only ensure facilitated performance of jobs, tasks, and work, but also contribute to the improvement of the members' knowledge and their pursuit of studies through interactions and collaboration among them.

It should be borne in mind that the information and data acquired through the conduct of jobs are common assets of the members. It would produce no benefit at all for the organization that an individual member should keep such information or data to himself hiding them from others.

The regular group meeting is to be held once a week.

It is desirable that exchanges of the information necessary for administration of the group as an organization are made among the group members at the regular meetings.

In addition to the regular meetings, however, official communications of information can be issued from any level in the organization by the use of the Notification format.

ECONOMIC UNIT

NOTIFICATION

DATE: / /	NC No.
REFERENCE	No.
TO:	FROM:
SUBJECT:	