An evaluation of some O & M analysis techniques as applied in the general store segment of United Nations Relief & Works Agency

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AN EVALUATION
OF
SOME O & M ANALYSIS TECHNIQUES
AS APPLIED IN THE
GENERAL STORE SEGMENT
OF
UNITED NATIONS RELIEF & WORKS AGENCY

BY

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PREFACE

With the advent of modern industrial and technological civilization both public and private organizations which are devoted to industrial, commercial or welfare purposes have increased enormously. With the increase of the size and number of the organizations, need for economy and efficiency was felt more than ever before.

The search for this economy and efficiency led to the increasing attention on Organization and Methods techniques which are used in different names like Management Analysis, Systems Analysis, Systems and Procedure, etc.. Today any standard organization in any advanced country has its O & M wing, branch or section attached in a staff relationship with the Chief Executive. In recent years a lot of search has been made how these units can analyze the organizational situations more effectively and economically.

O & M has become today a matter of interest both for the academicians and practitioners. While academicians searched for pure knowledge - knowledge for the sake of knowledge, practitioners searched into O & M techniques for reducing cost and efforts, and increasing efficiency. Several management consulting groups are found today in every advanced country. The need of O & M is thought to be still more with the introduction of computer -

the "electronic brain" or "ORACLE" (Operation research Analogue Computing and Logistic Equipment) by the modern large organizations.

The author became interested in the O & M techniques mostly as an academician although he had the chance to practice O & M in some organizations as well. His search into O & M analysis techniques by applying them to the General Stores segment of the United Nations Relief and Works Agency was full of interest and insights. The author had also the chance to attend a short course on the "Nature and Extent of Electronic Data Processing" organized by the Records and Statistics Division of United Nations Relief and Works Agency and it made him further interested on the subject. However the experience that he got in the Agency is only suggestive and can in no way be generalized for all situations.

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Md. Safuir Rahman

PART I

PRELIMINARIES

A. The Assignment

The assignment of the appraisal of the general stores segment of the United Nations Relief and Works Agency originated as a result of a discussion between Professor Ralph E. Crow and Professor Iskander Bashir on the one hand, and Head of Staff Management Office and the Chief of Supply Division of the United Nations Relief and Works Agency on the other hand. In a letter dated March 13, 1967 addressed to Mr. R.F. Owren, Chief Supply Division of UNRWA, Professor Ralph E. Crow wrote:

1. That Mr. Rahman would work under your direction in the Supply Division during part of the next fifteen months to undertake a study in accordance with a plan to be worked out and mutually agreed upon;

2. That this work would be for the purpose specified by you, the result of which would be submitted to you to be used as you think appropriate;

3. That the project would simultaneonsly provide Mr. Rahman with the data and experience for his M.A. thesis in the PSPA Department of A.U.B.;

4. That although Mr. Rahman will not be an employee of UNRWA, any travel expenses which you feel are necessary be met by the Agency.

Mr. R.F. Owren in reply to this letter wrote (letter No. O.18.4 dated March 17, 1967):

> Mr. Rahman would undertake a full appraisal of the organisation and procedures of our general stores segment of the Supply Division of UNRWA both in Headquarters and the Field Offices for adequacy of supply service provided to the UNRWA programs.
>
> He would be assigned to the Head of the General Stores Branch, Mr. J.N. Heale. He will be aquainted with our supply policies, organization and procedures and the co-related financial regulations and instructions issued by the Headquarters.
>
> He will then be given all facilities to review their impact on the effectiveness of the Agency's supply operations at all levels. He will be encouraged to study all facts of the operations, discuss and recommend any improvement related to the administration, organization and control of supplies that he may deem advioable. He should give special attention to any

problem that may arise in the execution of programs due to impractical or inflexible supply methods and offer remedial action taking into consideration the financial and administrative obligations of the Agency.

..... You will appreciate that an arrangement of this nature will afford Mr. Rahman access of official records of the Agency, and will, for all practical purposes, put him in the position of staff members who are bound, as part of their terms of employment, to certain important obligations.....
We will provide the necessary funds for his travels to the fields during this arrangement at the established rates of the Agency.....
I feel that this program not only could be a most useful opportunity for Mr. Rahman in furthering his studies in business administration, but also could be of considerable value of the Agency. .....

Thus the purpose of undertaking this project was two-fold. In the first place it was a management study for the use of UNRWA itself, which was a confidential one and secondly to write a thesis on the experience gained in connection of this study.

Although the study by itself was rather a technical one since it necessitated on the part of the researcher to aquaint himself

with the tecknicalities of the supply operations which is more a subject matter of business administration than of public administration and management. But since the barrier between the public and business administration is waning day by day, and Government and other public authorities are becoming increasingly concerned with the management of real property, it was assumed that the experience of UNRWA general stores segment would be useful for writing a thesis in public administration on organization and methods. It was thought that the author would utilize some of the organization and methods techniques in his appraisal of the general stores segment of UNRWA and thus would be able to evaluate them in the light of the experience that he would gain from the organization.

B. Purpose and Scope of Study

In his thesis the researcher will focus his attention on some important O & M techniques and as far as possible will try to draw examples of how he could make use of these techniques for analizing the bottle-necks of the general stores segment of the Supply Division of UNRWA.

Organization and Methods refers to continuous efforts for the improvement of work in any organization. Of course O & M is more a matter of common sense than that of any particular hard and fast rule. G.E. Milward writes:

> O & M is a practical subject and lends itself more readily to demonstration by experienced staff than to theoretical discussion.....[1]

H. O. Dovey writes:

> Study of organization and methods is but one of the ways - and perhaps not the most important- of improving efficiency in administration. It is complementary to, but no subsitute for, such other management functions as the selection, placing and management of staff, training, welfare and institution.[2]

What is known to be O & M in United Kingdom and other British Oriented countries is known as work simplification or systems and procedures or management analysis in the United States or the countries which are under its influence. Gerald Nadler describes work simplification as the systemetic analysis of any type of work in order to eliminate unnecessary work, to arrange remaining work in the best order possible and to make certain that the right method is used.[3]

The techniques for organization and methods or work simplification developed considerably in the recent years. Ahmed Fuad Shariff writes:

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[1]G.E. Milward(ed), Organizationaand Methods: A Service to Management. (London: Maimillan and Co. Ltd., 1960), P. XI.

[2]H.O. Dovey, Handbook of Organization and Methods Techniques. (Brussels: International Institute of Administrative Sciences, 1951), P.5.

[3]Gerald Nadler, Work Simplification. (New York: McGraw - Hill Book Company, Inc., 1957), P.2.

> Although the development of modern industry in advanced countries can be traced back over the last two hundred years, the techniques used by modern industrial management can be traced back only to the early twenties. Work study techniques and wage incentive systems were put into widespread practice in the early decades of this century. Production line techniques and continuous production systems were also in twentieth-century development. Marketing promotion and pesearch were largely adopted in the thirties. Morale measurement and human relations made their appearance in the inter-war period, while personnel testing and selections, job evaluation, and accelerated supervisory training were widely installed during World War II. The most significant development in industrial relations, production planning and controller ship techniques followed in the postwar years. Managerial planning, decision - making, quantative techniques and management development came into practice in the early fifties.[1]

In fact, the scientific management was inherent in the writings of Adam Smith when he wrote in 1776 his book - Wealth of Nations when he suggested division of work and specialization. Charles Babbage gave some further thought on the subject of specialization by writing his famous book On the Economy of Machinery and Manufacturers in 1832 A.D. while he suggested to split the work on the basis of skill.

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[1]Ahmed Fouad Sherif, "Management Techniques and Their Application in less Developed Areas, with special reference to the experience in the United Arab Republic", International Handbook of Management, ed. Karl E. Ettinger (New York: McGraw - Hill Book Company, 1965), P.132.

[2]See Dwight Waldo, Administrative State (New York: Ronald Press Co., 1948), PP. 47-65. Also see Bertram M. Gross, The Meaning of Organization: The Administrative Struggle Part I (London: The Free Press of Glenece, 1964), Ch.6.

Scientific management however has made its appearance in full form with the work of Fredrick Taylor and Henry Fayol who wrote in 1911 and 1916 respectively. Both Taylor and Fayol were concerned with the development of "one best way".[2] The former made experiments in work and motion studies and the latter emphasized on unity of command, staff, espirit de corps.Taylor's work and motion study was elaborated by Mr. & Mrs. Frank and Lillian Gilbreth who devoted much of their energy in finding out easy motions, best motions, etc.. The mathematical use of quality control, work sampling, etc. developed fully in the postwar period. The programming techniques like Gantt's schedeuling chart, liner programming, waiting-line model, simulation, etc. are also of postwar origin. Today with the invention of electronic computer and the development of photographic techniques used in Therblig chart, Simo chart, etc., the work study has become simpler.

The authors and discoverers of these techniques claim that these techniques can be used more or less universally, while the human relations school which made its appearance in 1930s with the Mayo-Roethlisberger experiment in Western Electrics challange the universal validity of these techniques and principles. The human relations schools emphasized more on informal processes than on job-task pyramid and discarded universal principles of management.

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[2]See Dwight Waldo, Administrative State (New York: Ronald Press Co., 1948), PP. 47-65. Also see Bertram M. Gross, The Meaning of Organization: The Administrative Struggle Part I (London: The Free Press of Glenece, 1964), Ch.6.

The purpose of this research undertaken with UNRWA was to test some of the major techniques of organization and methods in analyzing the procedure there and to find out bottle-necks and suggest the probable and alternate solutions to the problems. Discussion is to be made on the merits and demerits of the different analysis techniques. The study includes organizational analysis, work flow analysis, layont analysis, programming techniques, etc. as far as possible.

What will be found from UNRWA experience may not, however, be generalized for all situations. UNRWA is an International Agency with its special features and peculiar problems. Moreover it is mostly working under the emergency circumstances. The use of O & M techniques in analyzing the problems therein will be useful under particular context and the findings of this research will be suggestive rather than conclusive in nature.

The organization is a complete whole. Its different component parts are essentially linked with each other. In order to study the general store segment of the Supply Division, the researcher cannot overlook the other segments of the Supply Division like Basic commodities segment, flour store segment, statioeries segment, port operation segment, Insurance Branch, Transport Branch, etc.. Even more, Supply Division itself is connected with and dependent on the working of other divisions and the

researcher will have to have some general peep into the working of other divisions as well. The adequacy of supply operation is esssntially linked with the efficiency in procurement, financial transactions and personnel management which the researcher cannot but take note of. Moreover, the researcher had to observe both the procedures and organizational elements of Headquarters as well as field establishments. Of course so far as field operations are concerned attention will be devoted mainly on Lebanon, although references will be sometimes necessary to Syria, East Bank, West Bank and Gaza.

Methodology

The word methodology refers to the techniques used for studying a particular method. In its wider meaning it also means a certain discipline as well as its subject matter. Abraham Kaplan writes:

> I mean by methodology (Italies) the study - the description, the explanation, and the justification - of methods and not the methods themselves.[1]

A research always starts from a question or a problem of some sorts. The research questions are asked either for intellectual satisfaction of knowing or understanding, or for practical purposes for the sake of being able to do something better or more

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[1]Abraham Kaplan, The Conduct of Inquiry: Methodology for Behavioural Science. (San Fransisco: Chandler Publishing Co., 1964). P.18

effeciently,[2]

It is, of course, not always possible on the part of the researcher to select a topic at the very outset. Selltiz describes in his book how some researcher without the knowledge of housing spent a good deal of time with housing experts in study of setting of international housing.[3]

Even the query may not always start with the selection of a topic. Selltiz writes:

> The selection of a topic for research does not immediately put the investigator in a position to start considering what data he will collect, by what methods, and how he will analyze them. Before he takes these steps, he needs to formulate a specific problem which can be investigated by scientific procedures.[4]

The orderly and successful performance of any major human undertaking, however, need following successive steps:

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[2]Claire Selltiz and others(ed.), Research Methods in Social Relations (Revised edition; New York: Holt, Rinehart and Winston, Inc. 1967), PP. 2-4.

[3]Ibid., PP. 10-11

[4]Ibid., P. 30

1. Clearly defining the objectives and scope of the undertaking.

2. Developing policies necessary to achieve the objective.

3. Fixing responsibility, that is, building a logical, workable organization to do the job.

4. Working out a comprehensive approach and plan of action.

5. Applying skilled techniques to the work undertaken.

6. Maintaining control through some positive means for measuring results achieved.[1]

Neuschel warns that the great majority of system and procedures staffs cannot win confidence and producr lasting results owing to their pre-occupation with either fire fighting and trouble shooting approach, or accounting system approach, or the mechanization. Under the first approach the analyst is concerned with solving paper work problems as they arize usually while requested from operating personnel. This sort of approach is no doubt, service-oriented but it amounts usually to an expedient patching up of weak spots in the business routines. Similarly, studies which are made only for improving acounting system, or producing a handy manual or controlling forms, or introducing mechanization are but partial studies.[2]

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[1]Richard F. Neuschel, Management by System, (Second edition, New York: McGraw - Hill Book Company, Onc., 1960), P.40.

[2]Ibid., P. 35

The successful studies will have to consider all the different sides of the problem, analyze them and come to decision step by step.

In the collection of data a resparcher makes use of questionniares or interview-schedules or documents, or make observation. In the present research, observation was the major technique that was possible for the researcher.

> Observation is purposive behavior, directed toward ends, that lie beyond the act of observation itself: the aim is to secure materials that will play a part in other phases of enquiry, like the formation and validation of hypotheses.[1]

The observation itself may take four different forms. It may be a recall where the observer either recalls his own experiences in a group or asks others to do so. Secondly an observer may be a participant observer where he takes an active part in the life of the group while making his observation. Thirdly the observer may be a non-participant observer. Fourthly he may be an unseen observer and observe by hiding himself from the observed.[2]

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[1]Abraham Kaplan, OP.cit., P. 127

[2]A Paul Hare, Handbook of Small Group Research (New York: The Free Press of Glencoe, 1962), PP. 396-97.

In the present research, the researcher made use of all these four types of observations.

Next comes the problem of data quality control. Raoul Naroll writes:

> A key concept of data quality control is the concept of working control. This concept sees data quality controls tests as a systematic search for indicators of danger in the data collection process. Where this search reveals statistically significant evidence of danger, the investigator concludes that something is seriously wrong with that process and some steps need to be taken to deal with the danger. This is basically the concept of industrial statistical quality control. [1]

Points of query

This study was started with the following queries:

1. Are there certain O & M techniques which have universal application and are there certain other techniques which can be useful only under particular circumstances ?

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[1] Roul Naroll, Data Quality Control - A New Research Technique (New York : The Free Press of Glencoe, 1962), P.21.

2. Should O & M study be made throughout the organization or can it be made in some part only ? Will change in one part of the system necessitate change in some other parts as well ?

3. Is there always scope for improvement in any system ?

4. Are close supervision and more output inter-related ?

5. Does training increase the efficiency of the employees in any situation ?

6. Is there more paper work in UNRWA than necessary (in supply procedure) ?

7. Is work evenly distributed in General Store Segment ?

Organization of the Report

The study (thesis) is organized as follows:

Part I deals with the background of the assignment, purpose and scope of the study, methodology used, and points of query of this study.

Part II deals with the explanation of the meaning of organiza-

tion, and Organization and Methods, and then enumerates and explains the major O & M techniques.

Part III deals with the background and organizational structure of UNRWA, Supply Division, and General Stores Segment. Then it discusses the author's endeavor to use questionnaire, and interview schedule. Next it enumerates the major problems by citing the importance of problem finding inquiry.

Part IV deals with those techniques which could be utilized for analyzing the situation in UNRWA with a description of how these techniques could be used.

Part V deals with the concluding remarks. It descusses the importance of human relations, systems approach, training, etc. in any O.& M study.

Part VI consists of the explanation of some technical terms of UNRWA Supply Division; and a Bibliography.

Part VII contains the exibits. They consist of several charts and forms used in connection with the study.

PART II

INTRODUCTION

Meaning of Organization

Organization means the rational grouping of the activities of an enterprise and establishing authority relationaship. Pfiffner and Presthus write:

> Organization [Italics] is the structuring of individuals and functions into productive relationship.[1]

Pfiffner and Sherwood define Organization as:

> Organization is the pattern of ways in which large numbers of people, too many to have intimate face-to-face contact with all others, and engaged in a complexity of tasks, relate themselves to each other in the conscious, systematic establishment and accomplishment of mutually agreed purposes.[2]

An organization has several elements. First it must have broad objectives and goals. An organization is set up for specific purpose or purposes. It continues so long it fulfills or endeavours

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[1]John M. Pfiffner and Robert V. Presthus, Public Administrations (Fourth Edition, New York: The Ronald Press Company, 1960), P.5.

[2]John M. Pfiffner and Frank P. Sherwood, Administrative Organization (Englwood Cliffs, N.J.: Prentic Hall, Inc., 1965), P.30.

to fulfill these pruposes. Sometimes, however, an organization becomes parasite and continues to exit even if its broad objectives are forgotten or already achieved. Here the organization exists for its own sake or the objectives which were set up at the beginning are changed. Professor Parkinson discussed adequately how the establishments of British Navy having less capital ships became parasites and less the number of ships in a naval establishment, more was the number of civilian personnel.[1] This is an organizational setback resulting into the shifting of organizational goals.

A goal must be clearly distinguished from policy, procedure, rule, strategy and programmes. It should also be distinguished from the strategy of an organization and also from the methods utilised in a procedure. A goal must state the broad objectives of the enterprise. A policy provides for guide for thinking while a procedure is guide to action with time sequence. A method is the details of a particular step within the procedure. A rule is guide to action without time sequence and a strategy is that rule on the basis of which the policies of an organization are determined. A program is complex set of plan for an undertaking within the frame work of enterprise goal.[2]

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[1]C. Northcote Parkinson, Parkinson's Law (New York: Harper & Bros., 1957), P.33

[2]Theo Haimann, Professional Management: Theory and Practice (Boston: Houghton Mifflin Company, 1962), PP. 92-93.

An organization must have personnel. Personnel are of two kinds-Line Personnel and Staff Personnel. Line people are those who are to command and are directly responsible for achieving the objectives of an organization while the staff people are those who advise, plan or carry out special responsibilities. Staff are of three kinds: Advisory, Auxiliary, and Technical. The accountants, budget makers, administrative caretakers are auxiliary staff while the advisers and technical experts belong to the other two categories.

Sometimes line of command or chain of command is found within the staff elements. Organizationally speaking Line Organization and Staff Organization are very much relative. For example, Central Suretariat of the Government of Pakistan is a Staff Organization for the government as it advises the government and helps in the formulation of policy. Again the Establishment Division is a Staff Organization in the Central Secretariat itself because it deals with personnel matters which do not fall directly to the objective of the government i.e. the welfare of the people at large. Again the National Institutes of Public Administration which are responsible for training up the government officials of mid-seniority level, are in a staff position to the Establishment Division because NIPA's are carrying out some special responsibilities and also acting in advisory position to the Establishment Division.

Finally within NIPA itself there are some personnel responsible for instructing the trainees and others who carry on research and auxiliary work forming the staff for the Instruction Branch. Thus we find lime within staff organization.

An organization must have authority distribution. Authority is distinguished from power. The former implies the right of a person or persons to do certain things while the latter implies the capacity of a person or persons to do certain things or get them done. The authority distribution is the most crucial point in any organization. It postulates the principle of unity of command, unity of direction, span of control, span of attention, level , delegation, devolution, decentralization and deconcentration (or centralization, concentration).

It is a basic principle of organization that the personnel and levels of supervision must be kept within a minimum limit. Graicunas by a formula shows how the addition of one or two individuals or levels in an organization multiply the relationship within an organization. The formula is as follows:[1]

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[1]V.A. Graicunas, "Relationship in Organization", Papers on the Science of Administration. ed. Luther Gulick and L. Urwick (New York: Institute of Public Administration, 1937), see Ch. X.

$$\text{Relationship} = n\left(\frac{2^n}{2} + n - 1\right)$$

Where n = number of individuals

The levels and span of control have the relationship of inverse variation. If the span of control i.e. the number of persons a supervisor supervises is to be reduced, the number of levels need be increased; while if the number of levels are decreased, the span of control necessarily increases. Some authors have tried to fix the optimum span of control size because if the span is too large it means ineffective supervision. On the other hand if the span is too small it will mean underwork of the supervisor and perhaps the unnecessary duplication. The optimum size of span of control are usually considered to be within 3 to 7. But in fact this depends on the nature of work, distance between the supervisor and the supervised, time of supervision and similar other allied factors.

Principle of unity of command means that one employee must have one supervisor only to whom he will be responsible alone. Violation of this principle gives rise to organizational complexity. However, if functional supervision is made by the specialists, and several individuals give directions, these should be properly co-ordinated with each other so that one direction does not overlap or conflict with the other direction. This is known as unity of direction.

An organization, if it is large, must have departmentalization. Departmentalization is the vertical grouping of the functions of an enterprise. Luther Gulick prescribed four principles for departmentalization, - purpose, process, person or thing dealt with or served (clientele), and place.[1] To this list, time may be added. The division of work units as Education, Social Affairs etc. belongs to the first categories; Budgeting, Finance etc, to the second category; Veteran's Service, Youth Welfare Department etc. goes to the third; Region one, Region two etc. to the fourth, and Day shift, Night shift etc. is the example of the last mentioned one. A good deal of care for departmentalization is necessary and whatever principle is taken, it should be uniformly applied in opening departments otherwise this may lead to duplication, cross- function, and confusion.

All organizations have pattern of distribution of authority and delegation. An organization exists because of delegation otherwise there may be no organization at all. Authority and responsibility are close to each other and any responsibility must be commensurate with the authority.

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[1]Luther Gulick "Notes on the Tehory of Organization", Ibid, PP. 1-45.

In large scale organizations, alongwith delegation, decentralization of authority becomes necessary. It means the delegation of decision making power to field units, while if it is statutory, it is called devolution, and the distribution of decision making power to different departments are known as deconcentration.[1] Delegation, decentralization, deconcentration and devolution have got one basic principle that the decision - making should be nearest to the place of action and exercise of authority.

The formal organization thus set up, in no way, completes the understanding of an organization for an analyst. Above and beneath the formal organization lies the informal organization. Authority does not always emanate from top to bottom rather sometimes it goes from bottom to upward as it is found in the Hawthorne experiment. There are a number of overlays in an organization such as sociometric overlay, communication overlay, decision overlay, power overlay, funtional overlay, etc.[2] The understanding of an organization cannot be complete without a search into the informal organizations.

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[1] See United Nations, Department of Economic and Social Affairs, United Nations Technical Assistance Programme, A Handbook of Public Administration: Current Concept and Practice With Special Reference to Developing Countries (New York, 1961), PP. 63-69.

[2] Pfiffner and Sherwood, Op.cit., PP. 20-26.

What is O & M

It has been already pointed out that O & M is the continuous effort to bring about efficiency within an organization. O & M work means a review of work with the object of producing greater efficiency. The Management Services Division of British Treasury uses the term as follows:

> 'ORGANIZATION and METHODS', or 'O & M', is a term generally used to describe the activities of groups of people in government or other public bodies or in private firms, who are asked to advise administrators or managers on questions of organization and methods so as to increase the efficiency of the work for which the manager is responsible, either by providing a better service or a cheaper one, or both.[1]

The O & M study or organization survey is made for the different purposes such as:

1. To determine how efficiently an organizational component is carrying out its mission, preventing or dissolving problems, and discovering and strengthening weak spots within the organization.

2. To develop improvements in organizational programs, methods, practices, and policies.

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[1]Government of UK, Her Majesty's Treasury, Management Services Division, The Practice of O & M (London: Her Majesty's Stationary Office, 1965), P.9.

3. To ascertain the most feasible method of reducing or increasing the staff in the event of a change in program or budget.

4. To develop recommendations for constructive changes in the organization, such as adjustment of emphasis among functions.

5. To analyze specific problem areas and develop solutions.

6. To determine, from the components being surveyed, successful techniques that can be applied elsewhere.[1]

The O & M man is a staff person. He is to gather facts, analyze data, and recommend any improvements that he may find reasonable. He is not on the line of command and therefore he cannot impose his recommendations on the organization. His recommendations can only be accepted if they are fact - oriented, properly analyzed and rationally chosen. A good deal will also depend on the rapport that he can maintain with on-the-job people of the organization. W. Clements Zinc gives "ten commendments" of work simplification (work simplification is the other name of O & M as earlier stated):

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[1]Government of United States, Department of the Navy, Bureau of Naval Personnel, Personnel Research Division, Personnel System's Research Branch. Organization Planning For Naval Units (Reprinted, May 1963), P. 4-5).

1. ...Accept your responsibilities to make method improvements.....
.....

2. Be a working member of the methods improvement team.....
.....

3. Believe in the worth of the written record
.....

4. Realize and recognize the basic wastes in every work situation.....
.....

5. Pick a job to improve.....
.....

6. Make the on the spot observation.....
.....

7. Get help.....
.....

8. Use the improvement techniques.....
.....

9. Develop the new method.....
.....

10. Sell your method improvement record.[1]

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[1]W. Clements Zinc, Dynamic Work Simplification (New York: Reinhold Publishing Corporation, 1962), PP. 182-192.

O & M Analysis Techniques

It has been already mentioned that in recent years a number of O & M techniques have been developed. Some of them developed in the United States, some in Great Britain, and some in other countries. In developing these techniques industry and commerce perhaps made much more contribution than the governmental agencies. Of course no two companies usually follow O & M procedure exactly in the same way.[1] The different O & M techniques may be grouped under the following:

1. Organization Charting.
2. Work - Flow Analysis
3. Work - distribution Analysis
4. Form analysis and Records Management
5. Motion economcy
6. Layout and equipment analysis
7. Programming techniques
8. Works - sampling, Work - count, and Work - measurement.

The techniques mentioned above will be dealt with in some details below.

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[1]G.E. Milward, Op.cit., P.1.

Organization - Charting

Organization - charting is the first point for O & M inquiry. An organization - chart shows the functional groupings and authority relationship within an organization. Properly drawn, it depicts the full picture of an organization at a glance while "... improperly used it can be the cause of much misunderstanding and ill-feeling.[1]

Organization - charts are of four kinds - structural, functional, positional, and manning. A structural chart focuses the different units and branches within the organization; a functional chart shows the different functions performed by each level and unit; a positional chart shows the personnel distribution within the organization by designation; while a manning chart includes the names of individuals that are posted at different hierarchies and units.

From the stand-point of drawing an organizational chart, it may be divided again into four other categories - vertical, horizontal, circular, and radial. A vertical organizational chart is one in which the line of command is shown on vertical lines; a horizontal organizational chart shows the chain of command by horizontal lines; a circular organizational chart shows the authority relationship and the hierarchies by circles while a radical chart is the combination of the above three categories. It is basically a conjunction of vertical and horizontal principles.[2]

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[1] Ibid., P.320

[2] Ibid., PP. 321-335

A chart should be as simple as possible. It should be neatly drawn and clearly understandable to one who draws it and to one who consults it. It should bear the title of the organization being charted, date of charting, the name of drawerer, the name of approver, and the explanation of legends used in charting.

A number of so called principles are followed in organization - charing - such as, the higher the authority the more will be the breadth of the box; line of command should be shown by the thick lines; the advisory or special relationship should be shown by broken lines; the advisory box should start from the authority box by the line drawn from the side; the geographical divisions should be placed farther than functional divisional boxes; the functional division boxes should be shown farther than service division boxes; the special relationship of a particular unit with some other unit apart from the formal supervisory authority should be shown by the dotted or broken lines starting from the top of the box and then bending; omission of some units should be shown by the open line; and so on and so forth.[1]

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[1]For illustration of charting techniques see, Government of United States, General Services Administration, National Archieves and Records Service, Office of the Federal Registrar, United States Government Organization Manual 1960-61, PP. 606-649.

It, however, appears to the present author that no uniform principles are followed by the people concerned with organization - charting. The basic principle is that the drawer must abide by some uniform rules in the whole of a chart and he should explain in the legend box the different symbols that he has used in course of drawing that particular chart. If he can make himself clear and others also, any organization chart whatever be the rules followed in it will serve some useful purposes.

If one endeavours in this way to draw an organization - chart, one may sometimes be confounded with some problems of accomodation and adjustment. The more such confusion, the wider is the latitude of mismanagement and lack of planning within the organization structure. If one finds difficulty in placing a unit in his chart which already exists in the organization one can very well understand that the line of authority with that unit in the organization is not spelled out properly, provided that the analyst is fully equiped with the techniques of charting and observation.

However, an O & M analyst will somehow show the present position of the organization by one chart and will simaltaneously draw a proposed organization - chart for the consideration of the authorities there by clearly drawing the line of command, the different levels and span of control of each, of course, sticking to the principle of optimum size.

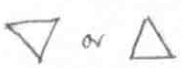
Work-Flow Analysis

The Work-Flow Analysis is one of the vital techniques for O & M analysis. This technique involves the recording of all the different steps in a particular procedure - be it operation, transportation, storage, inspection or delay. The Work-flow Analysis is made by a flow process chart which may be either single column process chart or a multi-column process chart. The objective of a single column process chart is to study the detailed steps in a relatively simple procedure such as one within a single organizational unit, while the objective of a multi - column process chart is to analyse the detailed steps in a flow of work that is quite complex or involves several organizational units.

In order to draw these charts use of some symbols are made. The following symbols are generally used by a process charting man:

Means operation

Means transportation



Means storage

Means inspection

Means delay or temprary storage when time is not ripe to work on some paper, file etc.

Means something is originated

Means something is added

The first four symbols are of general use; while the rest are used only under special circumstances. More over, different companies and agencies often use different symbols. They are perfectly all right as long as the meaning of the symbols are fully explained.

Single column process charts are often drawn on printed forms which already contain the symbols. Work-flow is shown by connecting the appropriate symbols. Multi - column process charts show steps in greater details, symbols are used to describe steps. Besides, a work - flow chart is used to study the sequence of major operating steps in an activity and the organizational units performing them. Work - flow chart gives a general description of the steps in one column. Other columns represent organization-units. The flow of work is shown by connecting lines.

The process chart shows the who, how, where and when of a whole procedure and permits one to ask "why" for every step. After recording of all steps is done, it gives a good opportunity to identify the bottle-necks provided that charting is done in a proper manner. For a good procedure-charting, one should first decide on what activity one would chart. He must then stick to it without allowing himself to be side - tracked. Secondly, he should pick a starting point and an ending point. He should cover the ground and go no more. He should follow one item or

one piece of paper all through. Thirdly, he should identify each step, number it and then apply the proper symbol and connect it with the preceding one. Fourthly, he should describe each and every step without leaving aside any step however insignificant it may be. Fifthly, he should enter if possible time for storage and distance preferably in feet for transportations. And finally, he should add up all steps and find out the total number of storages, transportations, inspections, and operations and the total distances in feet for each transportation as well as the total time for storages.

Then comes the crucial point for the O & M analyst. The following points for him seem to be pertinent:

1. What is done? What are the steps? Do I have them all? What does each step do? What are the surrounding facts?

2. Why is this step necessary? Can this step be omitted for better result or at least without obstructing the same result?

3. Where should this step be done? Can it be done easier with less time and transportation by changing the location of equipment or employees?

4. When should this step be done? Is it done in the right sequence? Can better result be obtained by changing sequence?

5. Who should do the job? Is the right person doing it or will it be more profitable to give it to another?

6. How is the job done? Can it be done better with a different equipment or layout?

The success of the management analyst will depend on the proper interrogation of all these six groups of questions.

Having done these, the analyst will chart out his proposed procedure in a different sheet and work out the difference between the existing number of operations, transportations, storages and inspections. And also by drawing the work-flow chart he will show graphically and vividly both the present and proposed flow using two different inks on the same paper.

These flow - process charts are undoubtedly of paramount importance and a basic step for analyzing a procedural set-back and without it no significant progress in the procedural development can be possible. It is therefore necessary for the analyst to take case of all the methods stated above inorder to get the fruitful result.

Work Distribution

Work distribution analysis is another significant device for spotting up the bottle-necks of an organization, particularly from the stand point of personnel distribution. It shows the work of each employee within an unit in a chart form.

There are two pre-requisites for the preparation of work distribution charts. First comes the task list where each employee will be asked to write down in specific time intervals, of say, 15 minutes or half an hour to record the tasks that they performed. Second comes the activity list where the supervisor of a particular section will state all the necessary activities that are performed by that section. On the basis of these two records, the work distribution chart will be prepared breaking up each major activity into its component parts and listing who does what and how much time is spent for each activity.

Work Distribution Charts help the management analyst to understand the following points:

1. What activities take the most time? Should they take the most time?

2. Is there any misdirected effort? Is too much time taken by unimportant things or unnecessary tasks?

3. Are skills used properly? Are the employees working just in accordance with their full capabilities and not work below their ability or above their ability?

4. Are the employees doing too many unrelated tasks. Are they having unnecessary fatigue, waste motion and is man-power lost which would have been otherwise fruitfully utilized?

5. Are tasks spread too thinly? Is there any needless interruption, inconsistency or change over time loss?

6. Is work distributed evenly, balancing importance and urgency?

The success of the management analyst will greatly depend on asking these questions to the present work distribution chart and in preparing a revised proposed one where only important activities are given most time, no misdirected effort is made, skills are used fully and properly, each employee does only related tasks and tasks are not too thinly spread and even distribution of work is made.

This tool of analysis is no doubt a very fruitful one provided it can be prepared, and employees co-operate with the analyst by preparing the task list for at least two weeks if not for one month. But difficulties may arise in getting task lists from the employees as employees may be skeptic about it and even if they prepare it, they may not give the correct picture of their real work.

Form Analysis and Records Management

Next comes the task of looking into the existing forms and records of the organization. The analyst will collect all the forms used by the organization and list all the different types of files and registers maintained by the organization concerned.

After collecting all the forms the analyst will make a search into the following points:

1. General purpose of form

2. Is this form absolutely necessary?

3. Can some other form be used?

4. Can this form be combined with another?

5. What other forms are used in conjunction with it?

6. Has this form been checked by actual users of it in all departments?

7. Does title clearly indicate purpose?

8. Are instruction and text clear?

9. Are all included items necessary?

10. Are all necessary items included?

11. Is arrangement in sequence with operation?

12. Is arrangement in sequence with related forms?

13. Are all recurring items printed with variables on to be filled in?

14. Are spaces ample for entries?

15. Are adequate margins provided?

16. Are lines properly spaced for typing?

17. Are lines properly spaced for other office machine use?

18. Is appearance pleasing and orderly?

19. Is appearance consistance with standard styles?

20. Can multiple copies of this form be printed from same type or plate without change?

21. Is grade right for the life of form and folding and handling?

22. Is weight right for handling number of copies and machines?

23. Is size right for cutting without waste, fitting standard office equipment, fitting standard envelope, proper information in appearance?

24. What quantity is used monthly, quarterly and annually?

25. Where is this form stocked? What quantity should be maintained?[1]

Thus survey will have to be made on the purpose, text, desgin, paper stocks and production of forms. A survey of this nature will help the analyst to eliminate unnecessary forms or columns in the form, to revise the size, spacing and color of the form and also make an inventory control of forms.

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[1] John J.W. Neuner and Benjamin R. Haynes, Office Management and Practices (Second edition; Cincinnati: South-Western Publishing Company, 1947), P.444

The same holds good with keeping of registers. The analyst will look into the different columns of all the registers as well as to the size and colour of registers themselves in order to find out whether any register or any column therein can be fruitfully eliminated or combined or changed.

Next and the most important of record management is the filing system. Proper upkeep of filing will facilitate good management while in its absence everything will be in a mess. The correspondences, contracts, vouchers etc. often need to be filed for the sake of record. While unnecessary record will make a problem of spacing, the loss of necessary record will create troubles.

Often files are maintained in one of the following ways:

1. Nemerical
2. Alphabetical
3. Geographical
4. Subject
5. Choronological

Sometimes a file is prepared as a cobination of two or more of the above five methods. For example a file may be maintained on the basis of year of origin and geography. However, each filing method has its pros and cons.

The organization of filing department itself is no less important than the method of filing. Whether records should be departmentalized or centerlized is a basic question to decide. The main argument for departmentalized filing are that the confidential nature of the material of file be kept away from the majority of the employees, to avoid unnecessary delay in getting papers from the centerlized department, that the papers or material filed will not be required by any other department. The advantages of a centerlized filing system are the elimination of duplication of equipment and records, uniform method of filing, lower cost and continuity.[1]

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[1] Ibid., PP. 152-53. See also Geoffrey Mills and Oliver Standingford, Office Organization and Method (London: Sir Isaac Pitman & Sons Ltd., 1955), PP. 40-43. Also See: C.L. Little Field and Franck Rachel, Office and Administrative Management: Systems Analysis, Data Processing and Office Services, (Second edition; Englewood Cliffs, N.J: Prentice Hall, Inc., 1965), PP. 318-328.

Motion Economy

One of the other important tools of O & M analysis is motion analysis and a number of motion control charts like operation chart, man-machine chart, multi-men mult-machine chart, simo-chart, therlling chart, etc. Motion economy was perhaps given importance for the first time by Frederick Taylor in his coal shovelling experiment in Midvale Steel Company. Taylor found that there had been a number of unnecessary motions required from the workers and the size of equipment was not at par with the size of the workers. On the basis of this, he suggested several improvements for easier movements of the limbs of body. His analysis of motion economy was further developed by Frank and Lillian Gilbreths who worked out a comprehensive list of the principles of motion economy.

The principles of motion economy can be broadly subdivided into three categories: first, in relation to the use of human body, secondly, in relation to the arrangement of work place and thirdly in relation to the design of tools and equipment. Frank and Lillian Gilbreth found out and stated many principles, such as; the two hands should begin as well as complete their motions at the same time; the two hands should not be idle at the same time except during rest periods; motions of the arms should be made in opposite and symmentrical directions and should be made simultaneously: there should be a definite and fixed place for all tools and materials; tools, materials and controls should be

located close in and directly in front of the operator; materials and tools should be located to permit the best sequence of motions: the height of the work place and the chair should preferably be so arranged that alternate sitting and standing at work are easily possible; the hands should be relieved of all work that can be done more advantageously by a jig fixture or a foot operated device: two or more tools should be combined wherever possible; tools and materials should be pre-positioned whenever possible.

In order to check up whether these principles are observed, the different charts are utilized as analytical tools. In operation chart, left-hand right-hand motions are recorded with symbols along with each step. Operation charts are appropriate when the task has a fairly short cycle and the production volume is from low to moderate. The right-hand left-hand motions are recorded into components of reach, grasp, transport, position, assemble, etc. and the chart places the activities for each hand in parallel columns so that it can readily be found out how the two hands work together. Micro-motion analysis breaks down an operation into elements called 'therbligs' which represent a finer breakdown than operation chart and the results are plotted against a time scale so that how two hands work together simultaneously can exactly be examined. The chart is often called Simo-chart because it shows this

simultaneous relationship. The chart is prepared after gathering data by means of motion pictures and by measuring time placing a clock in the camera field that reads to a thousandth of a minute or by using a synchronous motor drive on the camera so that each frame of the film can represent nearly one thousandth of a minute.

Preparation of micro-motion analysis charts is quite costly in addition to the requirement of expert handler of the machines. However, it is very much suited to repetitive short cycle tasks and high production volume; while for repetitive long cycle tasks, man flow process charts and activity charts can be used more fruitfully. Moreover for repetitive task involving a crew and/or a machine-activity charts; and for jobs involving tasks occuring at irregular internals, activity classification can be sufficient and more fruitfully utilized.[1]

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[1]Elwood S. Buffa, Modern Production Management (Second edition, New York: John Wiley and Sons, Inc., 1965), PP. 258-269.

Layout and Equipment

Layout and equipment analysis is another significant O & M tool. Layout of office building, stores and warehouses, work rooms, machine rooms, as well as the sitting positions need be examined. Even more, the colour of the walls or roof and even of tablecloth and screens should be analyzed properly. Also the lighting condition should be analyzed and management analyst should assertain that they do not put strain on the sight. Similarly the size of the equipments-chairs, tables, and other machines should be a subject of study.

Basic principle is - the people most related to one another by work should sit closer to each other and secondly the equipments most needed should be nearest at hand as far as possible. Again the lighting condition should be such as not to fall below the requirement of eyes and direct lighting should be avoided as far as possible. Research in critical levels of illumination shows that different foot-candle power of illumination is necessary for different tasks or situation. While the critical level for halls and stairways is estimated to five foot-candle and that of reading newsprint is estimated as fifteen to twenty foot-candles, very difficult seeing tasks like fine assembly, high speedwork, fine finishing has got the necessity of one hundred foot-candles. Similarly adequate measures need be taken for

noise control bearing in mind that hearing pain is felt at 130 decibel sound pressure.[1]

Colours are also extremely important. A corridor, for example, should have a bright color such as yellow. General offices may have white colour on ceilings, soft and cool colours on the wall infront of employees,warm sunny colours on other walls. Reception rooms may have a cheerful neutral colour. A file and store room may have a high reflective colour. Research showsthat colour results increased employee co-operation and loyalty, reduction in worker's nervous tension through remedying of eye fatigue, and above all improved office morale and output.

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[1] Ibid., PP. 298-99

Programming Techniques

The programming techniques have been developed considerably by the researchers in O & M and industrial management in the recent years. The important programming techniques may be enumerated as Linear Programming, Waiting line model, Gantts Scheduling chart, Critical Path Method (CPM), Project Evaluation and Review Techniques (PERT) etc. Each of these programming, techniques have their own field of application.

Linear Programming:

Linear Programming is a new mathematical technique developed about the time of World War II.

> Linear Programming is a mathematical method for selecting the most effective of many possible solutions.[1]

The term "Linear" originates from the fact that the objective and restrictions can be stated as linear function of the variables to be determined. For instance, the general linear programming problem may be stated mathematically as:

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[1] H.B. Maynard and others (ed.), Industrial Engineering Handbook (First edition, New York: McGraw-Hill Book Company, Inc., 1956), P. 8:287.

Maximization of

$$G(x) = a_1x_1+a_2x_2+a_3x_3+\ldots\ldots\ldots a_n x_n$$

Subject to the restriction

$$X_i \geq 0 \qquad i = 1,2,\ldots\ldots x$$

$$Fj(x) = bj_1x_1+bj_2x_2+bj_3x_3+bj_nX_n \qquad Cj$$

$$j = 1,2,\ldots\ldots\ldots m$$

Alternatively, the objective may be to maximize a function $g(x)$ subject to similar linear restriction.[1]

The linear programming is used for a wide variety of purposes. It is used for programming distribution of products from a set of origin points to a number of destination; distribution of products from factories to warehouses, multiple plant location studies, locational dynamics for multiple plants, redistribution of empty freight cars, a location of limited raw materials used in a variety of products, a location of production facilities when alternate routings are available; blending problems, maximizing material utilization; the development of a programme for production when demand is seasonal; product line problem; long range planning, etc.[2]

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[1]Gordon B. Carson (ed.), Production Handbook (Second edition, New York: The Ronald Press Company, 1959), PP. 18: 20-21

[2]Elwood S. Buffa, Op.cit.,PP. 61-63

In order to apply linear programming, three basic things are necessary-the objective desire, secondly the restriction and limiting conditions such as capacity, requirement, time, etc. and thirdly other pertient facts expressed numerically, such as cost.[1] Of course, it has three restrictions as well; first the assumption of linearity may be quite unrealistic in particular cases; secondly the use of various stratagems to modify the force of this assumption may lead to unweildy problems and thirdly modest problem may be solved by trial and error and for larger problems electronic computor will be necessary.[2]

Linear programming is done in several methods such as symplex method, distribution method, Modi method, graphic method, Vogel's Approximation Method (VAM). F.G. Moore writes:

> Just as linear programming is the main operation research technique, so the symplex method is the main linear programming method.[3]

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[1]H.B. Maynard and others(ed.), Op.cit., P 8:288

[2]Gordon B. Carson (ed.), Loc.cit.

[3]F.G. Moore, Production Control (International Student Edition, Second Edition, New York: McGrow Hill Book Company Inc., 1959,) P.603.

The symplex method always starts with one solution to a problem and then step by step proceeds towards better solution and finally arives at the best. It is not, however, really a practical tool for many problems. One air plane parts manufacturer counted that if it used the symplex method to load its machines for four months, it would take over ten billion multiplications which is very time consumming even for an electronic computor. However one Business machine firm claims that its computor can solve a symplex problem with 250 unknown and fifty restrictive equations in ten minutes.[1] Thus symplex method is basically an algebric method.

The most commonly used method is the distribution method which is again subdivided into North-West corner method and North-South method. By these methods squares are prepared placing the data both vertically and horizontally assigning each square a value. While in North-West corner solution, starting is made from the top left hand square and advance is made gradually therefrom; North-South method is basically an inspection method. In either case final solution will be reached after continually evaluating the squares. The Modi method selects particular open square (a square having no assignment) that will yield the most improvement by a set of index numbers calculated for the

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[1] Ibid., P. 619

rows and columns. Another method is graphic method but its usefulness will be restricted to two or at best three variables although it is easier to show by evaluating the x and y axis. The last method is Vogel's Approuimation Method (VAM) which involves a good deal of algebric and airthmetical manupulation.[1]

Waiting Line or Queuing Model:

The waiting line model originates with A.K. Earlang, a Danish Telephone engineer. Earlang started his work in 1905 in an attempt to determine the effect of fluctuating service demand on the utilization of automatic dial equipment. When there is a difference between arrival rates and servicing rates in a particular situation, a waiting line builds up. The theory takes into consideration the unit arriving, service or processing facility, service or process being performed, and finally by graphic and statistical representation shows whether the addition of one or more servicing personnel will be more economical than the loss of time by the persons in the waiting line needing service. How many man are needed to service a tool crib? How long should a conveyor be between two stations on an assembly line? How

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[1]For Vogel's Approximation Method, see Government of United Kingdom, Ministry of Technology, Industrial Operations Unit, Allocation of Labour to Product Groups: A Case Study in Linear Programming (London Abell House, December, 1966) see Appendix IX, X, XI

many automatic machines should one man operate? All these are the subject of study to Waiting Line Model. If, for example, the item is ship entering a port unit arriving is ship, service or processing facility is dock, service or process being performed is unloading and loading. If it is doctor's office, unit arriving is patient, service or processing facility is doctor, his staff and facilities, service or process being performed is medical care. Under these circumstances it will have to be calculated according to this theory whether addition of service or processing facility will be more, or less economical. Evidently this theory rests on the fruitful calculation of statistical probability.[1]

Gantt's Scheduling Chart

Another programming technique is Gantt's Chart which is widely used in U.S., U.K. and continent for programme scheduling. This chart uses some thin and thick horizontal lines and makes V point at the date and time when program is made and evaluated. This chart compares the original program with the work actually performed upto V point and makes both the work done and to be done by a unit individually and also the cumulative work performed and to be performed by the all units together.

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[1]Elwood S. Buffa, Op.cit., PP.63-70, 721-39.

Critical Path Method (CPM) and Program Evaluation and Review Technique (PERT):

During the past few years CPM and PERT have been used widely in planning, scheduling, and control of projects. CPM is much used in connection with maintainance and construction works and PERT is used for Polaris missile system and the similar projects.[1] The critical path applications contain the phases like the preparation of network diagram, the estimation of expected time to each activity, the computation of the proper interpretation of results. It focuses attention on the vital steps in a project which are critical in nature.

Critical path computations.

a. Encourage a logical discipline in the planning, scheduling, and control of projects,

b. Encourage more long range and detailed planning of projects

c. Provide a standard method of documenting and communicating project plans, schedules and time and cost performance.

d. Identify the most critical elements in the plan, focusing management attention on the ten to twenty percent of the project that is most constraining on the schedules; and

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[1]Joseph J. Moder and Cecil R. Philips, Project Management With CPM and PERT (New York: Reinhold Publishing Corporation, 1964) P.vii

e. Illustrate the efforts of technical and procedural changes on the overall schedule.[1]

CPM and PERT both are the network analysis. There are however some minor differences. Both CPM and PERT are based on logical network, time estimate, project time, slack and are used to monitar existing work but unlike CPM, PERT uses probability, scheduled event times, negative slack, and estimates times in optimistic, most likely, and pessimistic way. In CPM, emphasis is on activity while in PERT emphasis in both on event and activity. However, these two differences are often overlooked and often both are used interchangeably.[2]

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[1] Ibid., PP.5-6.

[2] James J.O'Brien, CPM in Construction Management (New York: McGraw Hill Book Company, 1965), PP. 97-107

Work Sampling, Work Count and Work Measurement

Work sampling is based on the theory of probability applied to random observations. The assumtion is that a small number of random observations tends to follow the distribution patterns produced by continuous observations. Work sampling rests heavily on Statistical probability theory and confidence level increases as the number of observations, i.e. sample size is increased.

Generally, first, nearly one hundred preliminary observations are made and then by using Rolf F. Burne's formula the total number of observation to be made is found out. The formula is given below:

$$N = \frac{4(1-P)}{S^2 P}$$

Where S = Standard error (P.C.) we are ready to incur.

P = Portion of time (Maximum) on an item

N = No. of observations to be made.

Work sampling method requires some definite steps. Bertrand L. Hansen counted eleven successive steps:

1. Definition of the objectives of the study
2. Setting the time period (Study Span)
3. Definition and breakdown of work and delay elements
4. Preliminary estimation of work and delay element percentages

5. Determination of the required number of observations forreliability
6. Establishment of observation intervals, and snap reading times
7. Design of observation record
8. Orientation of the persons undergoing study
9. Making the sampling study
10. Evaluation of results
11. Setting of standards and controls.[1]

Work sampling method is comparable to stop watch method where all activities with minute time details are recorded. Sometimes the two studies may show some differences in result. However, these two methods cannot be interchangeable. It depends upon the purpose for study to choose work sampling or stop watch method. But many operations or activities which are impractical or costly to measure by time study can readily be measured by work sampling. The analyst can also study several operators or machines simultaneously and observations may be spread over a period of days or weeks without much fatigue. Yet time study (stop watch) permits a finer breakdown of activities and delays which is not possible in work sampling.[2]

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[1]Bertrand L. Hansen, Work Sampling For Modern Management. (Englewood Cliffs, New Jersy: Prentice Hall Inc., 1960), P. 36.

[2]Elwood S. Buffa Op.cit., PP. 353-54

Work count and work measurment are nearly interchangeable, the former beingadevice of the latter. Counting can be made by breaking up the work into measurable units. If the work unit is uniform, visible, lends to statistical analysis and computation, having the same meaning every-where, we may call it a measurable work.[1]

Statistical Methods:

Statistical methods are often very useful O & M study. The Bar Chart, Profit and loss table, Statistical Decision Rule, Ogive etc. are some of the statistical techniques that can be used in O & M study. Whenever dependance is to be made on probability and probability counting is a crucial point, in that case statistical methods may prove to be fruitful. Decision rule for example shows the critical value and risk involved in alternate decisions by counting the different confidence levels and graphically shown in an OC curve.

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[1]Frank P. Sherwood, Management Approach to Budgeting (Brussels: Internation Institute of Administrative Sciences, 1954), P. 36

The techniques mentioned above can be useful only under the particular situations and on the ability of the analyst himself. The different techniques may have varied results under different circumstances. Moreover, some tools may not be at all necessary to use under certain situation. For example in analyzing simple office work it will be ridiculous to use Simo-chart or Therblig chart. Again for a small work, linear programming or Gantt chart may be useless. It is therefore a subject of query for the present author to see what techniques and tools he could fruitfully utilize in the analysis of General stores segment bottle necks in the United Nations Relief and Works Agency.

PART III

AN INQUIRY INTO THE PROBLEMS OF THE GENERAL STORES OF UNRWA SUPPLY DIVISION

A. Organizational Structure of General Stores

Origin of UNRWA

United Nations Relief and Works Agency originated as a result of the resolution 302(IV) of the General Assembly of the United Nations taken in December 1949. The Agency began its work in May, 1950. An official handbook says:

> UNRWA's TASK is two fold. It provides relief for refugees in need and a considerable range technical services for the health, welfare, education and training of the refugees.
>
> A REFUGEE is defined by UNRWA for relief purposes, as a person (and his children) whose normal residence was Palestine for a minimum period of two years immediately preceding the outbreak of the conflict in 1948, and who as a result of this conflict, has lost both his home and his means of livelihood. To be eligible for UNRWA assistance, the refugee must have taken refuge in 1948 in one of the four host countries in which UNRWA operates (Jordan, Lebanon, The Syrian Arab Republic and The Gaza Strip). He must also be in need of aid.[1]

On December 1965, the General Assembly of the United Nations took a resolution:

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[1] United Nations Relief and Works Agency, UNRWA 1966: facts and figures p.2.

> ..... The General Assembly ..... Directs the Commissioner-General of The United Nations Relief and Works Agency for Palestinian Refugees in the Near East to take such measures, including rectification of the relief rolls, a problem which has been and continues to be of major concern to the General Assembly, to assume in co-operation with the governments concerned, the most equitable distribution of relief based on need;[1]

But some radical change to the objectives and organizational structure of UNRWA was made as a result of the Israeli-Arab war in June 1967 as a result of which Gaza and West Bank of Jordan River were occupied by Israel and both the East Bank and Syria saw influx of refugees from the Israeli occupied territory. Some Arab refugees however continued their stay in Gaza and West Bank and now therefore UNRWA is to look after them as well. The total number of refugees today amounts to more than one and a half million and UNRWA is providing food and shelter to them and taking care of their health, education and welfare.

Organizational Structure of UNRWA:

UNRWA is headed by a Commissioner-General who has a Deputy Commissioner-General under him. He has a general counsel who deals with the general legal affairs. Commissioner-General has a press and publication branch and audio-visual division in his office. Press and publication branch is again divided into two sections namely, languages and contributions. The organization is geographically

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[1] Ibid., p.4.

divided into five fields. Gaza, Lebanon, Syria, East Bank and West Bank, each in charge of a Director of UNRWA Affairs who is responsible to the Commissioner-General. Moreover UNRWA has liaison office in New York, Geneva, Cairo and some related offices in Paris and Baghdad. The liaison officers work under the guidance of and are responsible to the Commissioner-General. The Deputy Commissioner-General takes the position of Commissioner-General during the latter's absence from the Headquarters and himself is directly now in charge of the Department of Administration and Relief, which was previously in charge of a Director. The organization is functionally divided into five departments: Department of Health, Department of Education, Department of Legal Affairs, Department of Finance, Department of Administration and Relief.

Department of Health and Department of Education are headed by directors, Department of Legal Affairs by General Counsel, Department of Finance by Comptroller who has also taken over responsibilities of Supply Division along with other divisions. Each department is divided into divisions. Department of Health is divided into Curative Medicine Division, Preventive Medicine Division, Nutrition and Supplementary Feeding Division, Nursing Division and Environmental Sanitation Division. Department of Education is divided into Higher Education Division, School Education Division, Vocational and Technical Education Division, UNRWA and UNESCO Institute of Education. Department of Administration and Relief is divided into Relief Operations Division,

Personnel and Administration Division. Department of Legal Affairs has no other division. Department of Finance is divided into Budget Division, Accounts Division, Audit Division, Records and Statistics Division, Data Processing Division, Technical Division and Supply Division. (See Annexure).

Each division is again divided into branches. Supply Division for example is divided into Basic Commodity Branch which looks after the basic need supply for refugees and offices such as: flour, pulse, burghol, soybean oil, corned beef, kerosene, and soap; Transport Branch which looks after the transport facilities of UNRWA; Insurance, Claims and Disposal Branch which is responsible for insurance of major supplies. (See Annexure).

Geographically each field is divided into areas. Each area is under the supervision of an area officer. Areas are again divided into camps in charge of a camp leader. A camp may consist of, apart from refugee dwellings, other installations like primary and secondary boys and girls' schools, feeding center, cooking center, sewing center, etc.

The functional supervision as an idea which was developed by Frederick Taylor in his description of functional foremanship, is found to be in operation in UNRWA. The Chief of Supply Division for example, is to direct the policies and programs (apart from the senior supply officers and supply officers of headquarters) to field supply

and transport officers who in their turn look after the work of supply clerk and petty-supply officers of areas and installations.

General Stores Branch:

General Stores Branch of Supply Division is primarily divided into procurement and supply. The supply side is divided into stock control, Progress and Price Kardex, Catalogue and Specification, (See Annexure) Procurement section is responsible for inviting tenders, scrutinizing them preparing purchase order and market research. Stock control section looks after and processes the indents. It also arranges supply of ex-stock goods from one field to another. Stock control section of headquarters retains with itself the kardex of printed forms and audio-visual materials as well as the kardex for all surplus item of all fields. The first two items are decentralized field wise. Progress and Price Kardex section maintains Price Cards with the suppliers name in as well as catalogue grouping and follows up the procurement as soon as the contract is made by the procurement section - whether the procurement is made by Purchase order, Local Procurement authority, or Supply Impressed Fund Purchase. The catalogue and Specification section is responsible for cataloging and specifying not only the general stores goods but also all other goods as well.

The Headquarters branch of General Stores is extended in each field. Each field warehouse has a General Store in charge of a head storekeeper and his assistance. The General Stores maintain nearly fifteen thousand

different types of goods like books, cleaning supplies, electrical supplies, tools, iron bars, etc. Storekeeper is supervised by fields supply and transport officer who is also in charge of other stores. Supply Control Office of each field controls and regulates the stores. The stores are also connected with port office and movement section of Basic Commodity branch.

The General Stores branch is headed by senior supply officer, who is a senior member of International civil service. A supply officer of Grade 16 assists him. The purchasing section of General Store has one senior purchasing officer who is responsible to senior supply officer. Senior purchasing officer has two purchasing officers under him. They are in turn helped by three senior clerks. Progress and Price Kardex section has a chief Clerk, a senior clerk, one clerk 'A' and two clerk 'B'. Catalogue and Specification section has two clerks. Stock Control section has one chief clerk and one clerk 'A'. Besides there is a typing pool consisting of five typists and a supervisor attached to General Store Branch. Senior supply officer and supply officer have also one secretary for each.

The General Stores in the Central Warehouse, Lebanon has one head storekeeper and storekeeper and two permanent porters. Other fields Warehouse General Store have also similar staff.

B. Use of Interview and Questionnaire Method:

The author intended in the beginning to use questionnaire and interview schedules for locating the bottle-necks and getting suggestions for alternate solutions. A questionnaire has several advantages for example as the respondent is unidentified, he feels free to express his opinion. But it has its major disadvantage of getting returns because often in any questionnaire survey, a small percentage is returned. On the other hand an interview schedule has the advantage of recording from each respondent but it has the major disadvantage that the respondent does not feel free to express his opinions in fear that his identities may be disclosed, in addition to the fact that he gets less time as well for thinking.

A questionnaire must be simple, short and having as far as possible close questions with alternate answers given in the questionnaire. Same holds goods with interview schedule as well, although there is some degree of freedom both for the interviewer and interviewing in the second method. In either case however a researcher must first of all set up his scale as well as the tables that he proposes to prepare as a result of the interview or the questionnaire.

The author had intended to use the questionnaire both for headquarters and field personnel belonging to supply division and other user divisions. The purpose was to make a full management audit[1]. Questions were framed

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[1] See in this connection, Stanford L. Optner, System Analysis for Business Management (Englewood Cliffs, N.J.: Prentice Hall, Inc., 1960) pp.82-86.

on decision process, unity of command, unity of direction, span of control, training needs, work load, reaction on quarterly review system, causes of shortage, reaction on physical transfer of materials from one account to another, reaction on less than unit distribution, forms, registers, files procedure, etc. For analysis both vertical and horizontal scale was proposed —— vertical by grades, grouping them into three and horizental by distinguishing Supply Division personnel from other division personnel; Headquarters personnel and field personnel; and categorizing supply division personnel into ordering, purchasing, transporting, port operation, storekeeping, claims, filing and recording personnel etc.

When consulted, the head of General Stores Branch, disagreed with a questionnaire venture, apparently on two grounds:

1. That the employees are too busy to attend to a questionnaire and hence questionnaires might not return from the respondents.

2. The questionnaire would not serve any useful purpose as everybody would say that he is over worked, under paid and low graded.

He, therefore, suggested to the author that the latter might meet personally as many persons as he liked.

An interview schedule was therefore prepared and meetings were arranged with some of the employees of the Supply Division as well as

a few from user divisions. The attention of the author was focused on those employees of lower grades of Supply Division who actually carry on the day to day operations.

It was interesting to discover that although these employees in course of their general discussion speak about overwork, too much of paper work and so on, they did not find it secure on their part to express their opinions freely as soon as they saw a mimeographed interview schedule in the hand of the interviewer. It was evident that fear was the basic reason for it because the employees were afraid that if their opinions were recorded and produced before their bosses they might lose their jobs. This element of fear partly comes because of the fact that most of the employees happen to be the Palestinian refugees and if they lose a job in UNRWA it might not be easy for them to find a job elsewhere.

Secondly, giving opinions and suggestions for the improvement of work by the employees of lower operating levels, did not get much reward and was not highly valued in the agency before. In the agency there are a number of committees at the top level and meetings are frequent. But no such meeting or committee wer observed which includes the lower level operating personnel like clerks, and storekeepers who are actually running the show and facing difficulties from time to ime without having a formal avenue to express their thoughts and ideas. One of the employees of these levels had written a poem in Arabic whose meaning runs like this:

If you want promotions and progress in the Agency of your own
Never raise your head, never argue and learn how 'to oil'.[1]

While the author overlooked the exaggeration involved in this piece of poetry, he could not but record a remarks like this from a man who had been working in the agency since its inception and also similar feelings from amongst a number of other employees.

Therefore, the idea of making structured interviews was given up and unstructured interviews were started. It was soon observed that interview only for the sake of interview making an artificial atmosphere does not make a real benefit. In the structured interviews employees were saying that they had no problems, all the forms and procedures were perfectly all right and there was no scope for improvement. But making the interviews unstructured the author could discover that the employees were finding a lot of difficulties in the present procedure.

An interviewer must be tactful and cautious.[2] He must have patience enough to listen to the irrelevant talks that the respondent makes and the unnecessary prelude that an interview adds. The author recollects that when he wanted to interview one long

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[1] 'to oil' proverbially means 'to flatter.'

[2] For interview techniques see, Leonard R. Sayles and George Strauss, Human Behavior in Organizations (Englewood Cliffs, N.J.: Prentice Hall Inc., 1966) pp.266-69.

experienced lower grade employee, he wanted to befriend the latter. The interviewee an old man asked the author:

"Is there tiger in your country?"

"Do you want a tiger!"

Another friend of his joked at him. The author had to add:

"Do you want to eat a tiger or be eaten by a tiger?"

The interviewee changed his topic and said:

"Please answer me three questions first."

His questions were:

1) Is man's destiny decided by his own work or by providence?

The author replied:

"Fifty-fifty".

2) Does man work on his own accord or is he directed by some hidden force?

The reply was:

"Both; Own accord 25% and directed in 75%".

3) Is soul immortal?

The answer was:

"Should be so".

The interviewee gave the author cent-percent marks as the answers were suited to his taste, and then he prepared himself to be questioned about UNRWA supply procedures. The second example is about the writer of the poem mentioned earlier. On seeing that the respondent is fond of writing poems, the author had to pretend that he was a lover of Arabic poems and had to patiently listen to the

long poems that the respondents wrote, inorder to make a congenial atmosphere at the beginning.

But in course of investigation it was realized that the original intention for opinion survey emphasizing on the number of persons that focused on a particular problem, although of interest, would not contribute much towards O & M analysis. There are some particular points where number does not count much, rather a single man's opinion supported by enough reasons particularly if it concerns to his speciality should get as much importance as the opinion of many others. For example one of the in-charges dealing with General Stores supply stated that less than unit distribution for an item poses difficulties both for the stock records as well as for supply. The author wanted to elicit opinions about this particular point from the personnel of other stores and segments but noted that a man dealing with indenting or ordering or port-operation or insurance or basic commodities, for example, does not have much idea about this particular point. It is a special problem for issuing goods from the stock and also a special problem for general stores. A basic commodity store, for example, will not have such fragmented unit distribution.

Unstructured interviews made by the author therefore gave him a good deal of insights about the basic problems and major bottle-necks in the general store segment. The result of the interviews were usually written by the author later on when the interviewee was no more before

him. But it had some drawbacks, first, all the points in details might not have been recollected, and secondly, it had the problem of tabulation. No mechanized tabulation was possible under such interviews and the quantity had to be sacrificed for the sake of quality.

For interview purposes, it is always profitable to find out some critical respondents. Selltiz writes that most useful respondents for social research purposes are: margnial individuals, individual in transition, deviants, isolates and so on.[1] For UNRWA situation the most useful respondents were the younger group with bright future for them as they percieve, whome UNRWA could not place them to the ladder of automatic ascendence.

It has been observed that the other types of employees often canceal their feelings and suggestions or sometimes they are not even aware of their real feelings. It was necessary on the part of the interviewer to project themselves and bring them upto a stage where their feelings and suggestion came out spontaneously. Kenn Rogers writes:

> People are inclined to deny the existence of attitudes, opinions, feelings or motives in themselves, only to see them too readily in others. They fail to express them for a number of reasons. They may waver in them, be

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[1]Clair Selltiz and others (ed.), Op.cit., P.61-62.

> undecided about them, or unaware of them. They may be unable or unwilling to express them. They may even intentionally or unintentionally indicate feelings they actually do not possess..... Psycho - analytially speaking, these attitudes in the individual are "repressed" or "suppressed" as the case may be, but reveal themselves when projected, ie., attributes to others.[1]

C. Problems of General Stores Segment

An event is the outcome of a system or a chain of causes. Two variables may go together without one being the cause of another. Abraham Kaplan writes:

> Instead of A causing B, it may be our obser-vations on A that cause B as it is illustrated by the famous Hawthorne experiment, where changes in the productivity of workers under varying conditions were understood to have resulted just from the fact that the workers knew they were subjects of observation.[2]

A cause is the some total of several comditions both positive and negative. An event may occur and may look simple, yet for its occurrence a system of events might have worked behind. We often confuse a problem or the cause of a problem with only the symptoms of the problem. We try to mitigate those symptoms but our efforts to mitigate them by changing some part of the systems proves to be a

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[1]Kenn Rogers, Managers - Personality & Performance (London: TaVistock Publication, 1963), p 169.

[2]Abraham Kaplan, Op.cit., P.129.

failure because we only diagnosize a symptoms and not the cause. To draw an analogy vomitting may be a symptom of high fever which might have caused by some extreme cold. If we think that vomitting is the cause of high fever and only try to suppress vomitting without going to basic cause this cannot lead to any fruitful result.

To understand what the problem is in a situation, is the first step for any useful systems analysis. The formulation of a problem is often more essential than its solution.[1] Joseph D. Cooper states that there are five steps in respect of recognizing and admitting the problem:

1. Is the problem clearly understood?
2. Is the stated problem the real one?
3. Does the problem "feel" right?
4. Are you the right one to consider the problem?
5. Do you have an open mind?[2]

He also suggests some preliminary actions on problems. An analyst, according to him must bear in mind and make a query into the following points:

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[1]Claire Selltiz and others (ed.), Op.cit., P.26.

[2]Joseph D. Cooper, The Art of Decision Making (Garden City, New York: Doubleday and Company, Inc., 1961), PP. 18-19.

1. What is the situation which triggered off the problem?

2. What is the background of this and similar problems?

3. How does the matter relate itself to currently existing goals, plans, policies and programs?

4. What are the probable consequences of even considering the matter?

5. Does attention to the problems seem warranted and reasonable within the feasibilities and capabilities of the enterprise.

6. Is this the best time for decision?

7. Is this a one time decision or a continuing one?

8. Should you handle the problem initially or should you merely identify some one else to whom to assign it?[1]

The author attended supply officers' meetings of UNRWA, read the proceedings of the past meetings, consulted audit reports of the Agency, interviewed stock checkers and other selected people in order to find out what the problems were. He also approached the higher level officials of the general stores branch for getting specific problems for his study but he was told that there was no special problem in general stores segment. It appeared to the author that the senior officials of general stores branch felt that they were in no way lagging behind to any other branch of the division and hence no special query be made in that branch alone. If a query or analysis was made that should involve all the different branches.

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[1] Ibid., PP. 19-20

One senior official also said that at the present moment it would be perilous to introduce any change in the supply procedure because already the Agency had to change its previous procedure and adopt Shell System. It took years for the employees to aquaint themselves with that system and the introduction of any new procedure would only mean confusion and inefficiency.

The head of supply operations of a field however pointed out that the biggest problem is demurrage at the port. He, of course, meant that problem for the whole division and on enquiry to the port of Beirut the author found that it was the basic commodity goods that had much demurrage at the port of Beirut and not so much the goods of the general stores segment. The nature of general stores goods is that they are nearly fifteen thousand items of different nature with fine specification - the volume is not so much a problem for it. However, by continuing observation and interviews the following problem areas were found out which deserved attention:

ORGANIZATIONAL

1. Co-ordination between Supply Division and other divisions of UNRWA.
2. Reporting of facts from the fields to Headquarters.
3. Flow of documents between supply control and stores.
4. Co-ordination between supply agent and factory.
5. Location of write-off authorities.
6. Co-ordination between quality control, shipping agent, clearing agent and insurance agent of port.

PROCEDURAL

7. Use of different codes and indicators.
8. Change in catalogue-groups and numbers.
9. Preparation of direct charge indents and their supply.
10. Catalogue numbers and specifications.
11. Follow up of supplier.

WAREHOUSING

12. Use of non-standard containers.
13. Physical transfer of supplies from other accounts to 136 accounts in the ware house.
14. Use of different kinds of forms and registers.
15. Order made in "Stores Demand Note" for supplying less than an unit.
16. Non-withdrawal by the user divisions of the full quantity ordered.
17. Demmurage at port shed.

18. Handling of materials at port.
19. Leakage in containers.
20. Space in ware houses.
21. Accumul-ation of unusable, obsolete and old fashioned materials.
22. Survey of unserviceable items.
23. Delivery of a materials to other than one who ordered originally.
24. Persuading of substitute items to users.
25. Items returned from users and items in excess of 131 account.
26. Handling by Beirut port of supplies of Syria and Jordan.
27. Shortages and over weights owing to weather condition.
28. Shortages and over weights owing to different scales.

ADMINISTRATIVE

29. Follow up of user by the supply control.
30. Customs clearance.
31. Out of print of text books.
32. Change of syallabus in schools and training institutes.
33. Availability of porters in holidays.
34. Correct shipping information.
35. Qualities of goods and present method of sampling by quality control.
36. Road condition during winter.
37. Settlement of claims with insurance agencies.
38. Disposal of empty containers.

39. Availability of materials with exact Specification made by the user.

40. Understanding of English languages by the employees at lower levels.

PROGRAMMING

41. Transport facilities for carrying goods of supply.

42. Special indents vis-a-vis the effectiveness of quarterly review.

43. Late submission of estimates by one or more fields.

44. Estimation of future need by the user.

45. Arrival of many ships at a time at port.

PART IV

Use of O & M Analysis Techniques to Identify the Problems of General Stores

The author tried to utilize the different O & M analysis tools to identify the bottle-necks of the supply Division in general and General Stores segment in particular. The tools which were tried are organization chart, single column, Flow Process Chart, Multi Column Flow Process Chart, Work Flow Chart, Work Distribution Chart, Gantt Chart, Work sampling, etc.

Organization Chart

The author prepared the organization charts of the General Store segment. He endeavoured to draw Structural Chart, Functional Chart and also Positional Chart (see Annex. 2, pp. 153-57). Since the reorganization of a branch will effect other branches and other units of the agency, intentionally much exercise in this respect was avoided in order to not to be utopian. However, suggestions were made that one VTC and one TTI stores, workshops, and kitchens be amalgamated because of their proximity, Supply Officer (General Stores) be given more delegated authority regarding indent processing; Supply Control section of Central Warehouse and Stock Control Section of Headquarters, or Store Office and Supply Control Section of Central Warehouse be amalgamated because of their functional overlapping and so on and so forth.

Flow Process Chart

The Flow Process Chart was a very useful tool of analysis for the author in analyzing the UNRWA supply procedure. In fact it had been found to be the basic tool for utilizing other tools as well. At first the author tried to learn the procedure out of the Procurement and Supply Manual but soon he discovered that mere learning of procedure in the manual is not enough to understand how the procedure is actually working. For example, Supply Manual says that a storekeeper should prepare three copies of Supplies Advice but he was always preparing an extra copy for himself. Similarly, the Accountant of UNRWA port office was found to have been preparing an extra copy of labour voucher in white paper for himself although he is, in accordance with the manual, not required to do so. Likewise, the kardex clerk of Supply Control of Central Warehouse was found to have been entering price in his kardex and putting it on the Receipt voucher which Manual does not tell him to do.

In fact, UNRWA supply manual is not an organized one as a whole. It is not printed in the booklet form except for a short guide printed booklet meant mainly for users. In the absence of such a compact manual it is often difficult to find from the records what the procedure is. But in case there is a printed manual, even then the actual operation may not follow in the rules of the manual. The author therefore followed specific procedures like indenting,

tender inquiry, progress of procurement, supply of materials to users, port operation, supply of one field to another, preparation of surplus account and so on. Unless these procedures are charted out and shown in details counting all the operations, inspections, storages, and movements, even the people operating them would not believe that a procedure takes such a long time. The author charted out Flow Process Chart by following a special Indenting Procedure from beginning to end (see Annex., pp.116-36) and observing actual operation by visiting the people concerned with operation. After the procedure is charted out, these were again verified by consulting with the representative people of the different sections whereafter necessary amendments were made. The chart by itself was a matter of interest to the employees to whom it was shown. Unlike the work sampling and work count chart, this was possible to show to many without feeling the necessity of its concealment. After drawing the single column Flow Process Chart, it was possible to prepare also a Work Flow Chart. (See Annexure, p.179)

But a single column flow process chart was inadequate to show simultaneously the flow of the different copies of the same document. The different pictures could be shown only by using a multi column flow process chart. For example a purchase order having been prepared takes as many as thirteen channels. It goes to progress senior clerk who follows up the progress, then to another progress clerk who converts all currencies into dollars,

divides them countrywise basing on the country of purchase, adds them and then sends to Records and Statistics division. Another copy goes to port office which is later on attached with Forwarding document issued from the Movement section of the Headquarters. Another copy of purchase order goes to the Central Warehouse and is kept by the warehouse man till he receives the goods after which he attaches it with the Supplies Advice and passes on to supply control through Supply Officer in charge of Central Warehouse. Another copy of it goes to Finance. Other copies are distributed according to their purposes. However, the procedure which is operated within the Supply Division and more particularly within the General Store segment was mainly pursued in the chart. Here the use of multi-column flow process chart was found to be quite in accordance with the need.

In the study of the bottle-necks of UNRWA some case studies had been the most fruitful. Search was made into the difficulties, involved in case of one special indent raised in 1966 which could not, till April 68 complete the procurement; the need of a Rotta print physically situated about twenty meters next to Headquarters General Stores Branch, but whose requirements come to that branch after the flow of Bill of Material through Lebanon Field Supply Office and being indented there; another case of procurement and supply for the West Bank where a good deal of

paperwork was involved as preparation of Local Purchasing Authority (LPA), amending LPAs and cancelling LPAs. In another case it was observed how for 'Nil-Requirements' indents, obsolete and excess materials list are prepared, initialed, scrutinized, screened, filed, sealed, and signed several times at the Headquarters and at the Field. The study of such cases gave the author an insight to identify the problems and suggest remedies.

But it was experienced that employees are generally not willing to leak out such cases. Whenever an effort was made to study a file, some amount of suspicion and fear amongst the employees and a consequent obstruction was observed.

Forms, Files, and Registers Analysis

In UNRWA, files are maintained both geographically and numerically as well as subject wise. Geographically HQ files are maintained Fieldwise - for Gaza, Syria, Lebanon, East Bank, and West Bank. Next, they are arranged catalogue group wise for indents and procurement purposes. Each subject like all store demand notes, all load notes or all forwarding documents are filed together often chronologically.

It was observed that some of the files could be combined or eliminated. For example, indent file and purchase order file for special indents could be combined which would lessen the duplicate effort for filing and copying. Sometimes Load Notes

and Store Demand Notes were filed twice, side by side, by two different clerks which the author suggested to discontinue.

Again in some registars and cards duplicate efforts were attached. Forexample, for progress of procurement, progress registar and progress cards were maintained, for stocks of some items both kardex and stock cards were used, Store Demand Notes were registered in two registars, one in the store and another in Supply Control. Two registars were maintained in Port Office for consignments, six different documents were kept in one Vocational Training Centre (VTC) kitchen, two milk registered were kept in one feeding centre. The author suggested that in each case one master registar might suffice.

Sometimes efforts to ensure better control caused increase of work. These were the preparation of several statements like statements for progress of procurement, statement for unprocessed indents, etc. It was suggested that these statements should be reduced to a minimum.

UNRWA General Stores Segment was found to be using large number of forms both printed and mimeographed. Sometimes two or more forms were found to be in use for the same purpose. For example, storekeeper was seen to be preparing both Supplies Advice and Receipt Voucher on receipt of goods. The user is

sent Receipt voucher and SL 700 (second form) for informing him about the arrival of goods. Store Demand Note, Load Note, Card Note, and Packing List contained overlapping columns of information.

It was observed that the more the number of forms, cards, registers and their columns, the more was the time and effort engaged in filling them up and putting out documents reference to another. Suggestions were therefore given for combining some forms like Store Demand Note, Load Note, and Packing List into one form to be known as Store Demand and Issue Voucher, and abolition of some forms like Supplies Advice at the face of Receipt Voucher, and if it was to be kept, only the minimum references of other documents in it was recommended. Moreover, horizontal columns were suggested in place of vertical columns for the purpose of ease in typing.

Work Distribution Chart

Another major tool of analysis is the work distribution chart about which mention has been made earlier that it helps to identify the activities that take the most time and to evaluate the activities taking into account both the quality and quantity of work. It has also been said earlier that in order to prepare it, analyst needs task lists from the employees concerned, who would mention in it for each unit of time the work performed by them.

But this tool was not so successful for analyzing the UNRWA situation. It was observed that employees were unwilling to show what activities they were doing timewise partly because it is irritating to fill up a column each fifteen or thirty minutes and partly because they were afraid their idle time could be detected.

The author specially asked one clerk of the supply control who worked on daily basis although he was not age barred and his volume of activities apparently showed that he was doing no less work than a regular salaried clerk. He represented that his volume of work was too much and that he was paid only 6 L.L. per day while his work demands that he should get at least double the amount. He therefore requested to present his case to the higher authorities. The author requested him to prepare for three weeks the task lists by showing what he was doing and also, if possible, the number of his each work and then to get the agreement on it by his supervisor. The man although agreed at the beginning but informed after a few days that he was afraid of approaching his supervisor. The author then agreed to accept whatever task list he himself prepared even though he did not have the agreement of the supervisor on the face of it. The form of the task list that had been suggested is as follows:

Date Name

Time	Work Performed	Number
08:00-08:15	Store demand notes filed	20
08:15-08:30	Distributed SDNS to Stores	30

The man agreed but after three or four days it was found that the man was not following the form rather he gave data as follows in one piece of paper.

Name: . . . . . .

Office: . . . . . .

Work:

07:30-08:00 - I collect the mail from all offices.

08:00-10:00 - Prepare SM 18s R. Vrs. with carbons 8 copies each; SM 17 C.A. note 8 copies; SM 24 D note 9 copies; Indent forms 5 copies or 6 each; SM 32 Rec. Sheet numerous sets of each kind; SM 10 SD Notes 9 copies each for BC.

At 09:45 - I take the mail for distribution. I assist in picking out D/orders for transit stores. Assist also in filing all sorts of supply documents, every document in its place. I prepare forms for use by the staff and typists.

At 11:45 - Collect mail and when the messenger is absent I do his work in distributing the mail.

12:15-13:55 - I assist in picking out F/documents and their relative Purchase orders required.

Volume

Receipt Voucher _____ 40

Advice Note _____ 40

Load Note _____ 12

Discrepancy _____ 4

Excess/Obsolete ___4

At this stage the author again made him understand the value of preparing task list in the form given to him earlier and again he agreed to prepare as such but when checked up after a week he represented that the author was 'intelligent' enough to understand his work by observation and that he felt further that if his immediate supervisor recommended his case, his purpose would be served. He very politely begged that he was not capable of filling up the task list as indicated earlier.

The author had to prove himself to be 'intelligent.' He applied the other tools namely, the work sampling method and partial stop watch method. For the supply control work sampling technique was utilized and it was discovered that the work sampling technique is a good alternative to a work distribution chart.

Work Sampling and Stop Watch Method

In the introduction mention has been made about the relative advantages and disadvantages of work sampling method and stop watch method. Stop watch method is necessary when the minute detailed timing of a particular work is to be found out. While for general purposes, work sampling would be more easier and reliable as well. The stop watch method needs also special type of watch and special nature of observers, while work sampling study does not need any such thing. Again stop watch method may hurt the observed ones, while work sampling

may be carried on without being fully seen by the observed employee. The author has made use of partial stop watch method in the general stores section of the Central warehouse, random work sampling method in the supply control of Central warehouse the stock control section, the progress and price kardex section and catalogue section of the Headquarters, and systematic work sampling in the procurement section of Headquarters. However, the sampling observation that the author made were only for the purpose of forming hypothesis about the nature of work performed by the different sections and the suggested percentage of idle time involved. The observations made by the author helped him to find out the total number of observation necessary for making any scientific conclusion at 95% or 99% confidence level. For example, the author found that in supply control of Central warehouse, maximum record is for absences (24.5%) for eight employees in his initial 126 observations (see Annexure, p.159). By using Rolf F. Burne's Formula, the total need of observations suggested for them was therefore (at 95% confidence level):

$$N = \frac{4(1 - p)}{s^2 p} = \frac{4(1 - .245)}{(.05)^2 \times .245} = 5033$$

It has been found in UNRWA experience that stop watch method is neither necessary nor very desirable. Instead work sampling method can be utilized in order to form the idea about the different types of work, and for preparing a tentative work

distribution chart provided the nature of work is in a greater details recorded in each observation. If this initial work distribution chart shows any serious drawbacks like overwork and underwalk, unrelated many work by the same employee or too much attention to minor work, in that case the analyst may recommend to the management to take an initiative to advise the employees to prepare task lists so that a proper work distribution chart can be prepared. This can be fruitfully done only if the management makes the employees understand that this venture is to help them and not to attack them from the back.

The observations were, however, made on the assumption that midday from nearly 10 o'clock in the morning to 1 p.m. in the afternoon would be the best time for observing. Secondly, in making observation, researcher's own convenience was also taken into account in addition to the fact that he avoided to make the employees understand that they were under such observation, so that they might not be hurt. Even the result of observation was recorded in a different language which was not understandable by the employees of UNRWA.

Programming Techniques

A search was made into the present method of programming for procurement and supply. Supply Division now follows a four monthly cyclic review system. The purpose is to see that the requirements of the different users are automatically

checked up from time to time groupwise and consolidated at the Headquarters for the purpose of planned procurement. The ordering formula used for this purpose is as follows:

$$\text{Quantity to be ordered} = \left(\frac{\text{Consumption of last 8 months}}{8} \times \text{Total Elapse Time}\right) + (\text{Estimated future} \times \text{Stock time}) - (\text{Stock on hand}) + \text{Stock on order})$$

Example

Average consumption of last 8 months	= 230
T E T	= 4 + 1 = 5
Stock on hand	= 149
Stock on order	= 750
Average estimated future	= 250
Review period	= 4

$(230 \times 5) + (250 \times 4) - (149 + 750) = 1000$ (to be ordered roughly).

But by checking the Indent register for the year 1967 it was found that the number of special indents far exceeded the number of review indents. About half of the catalogue groups had been taken into account (see Annexure, p.163). The author could not see all the groups partly because all were not necessary and partly because the clerk in charge and his immediate supervisor became suspicious about it.

The author found that some exercise of Gantt chart, linear programming, and CPM backed by proper data can definitely help the optimization of needs and there fulfilment. He drew a model Gantt chart for ordering (see Annexure, p. 164), and suggested linear programming for optimization of the use of transport facilities, waiting line model for increasing the number of drivers and CPM for projects like extension of VTC programs or school programs, so that there should be a network planning in order to avoid circumstances like the availability of science laboratory supply coupled with the non-availability of science teachers resulting into loss and confusion which actually happened in the past. Statistical loss table and decision rule was also considered profitable but exercise in this respect was dropped, partly because adequate cost data was not available, and partly owing to the fact that UNRWA is a welfare organization and does not run on profit and loss consideration. Exercise of statistical decision rule for ordering cyclic review items was incorporated in the draft Report. But it was later omitted from the Final Report at the suggestion of the Head of Staff Management Office of UNRWA who favoured less statistical jottings at the Report.

Motion Charts

The use of operation charts, simo charts and Therblig charts was found unnecessary by the author for general stores operation because this segment requires more brain work than physical work. However, in the port operations this chart

might have been needed had there been more number of general stores goods, stored up there. But by visiting the port office and the Beirut port the author got the impression that general stores goods were usually not getting much demurage.

However, it was noted that in stores several unnecessary motions were utilized by the store keeper and the porters; and even at headquarters the purchase order sorter did not have the required sorting facilities for which work went on in slow speed and resulted in some fatigues, which could have been remedied by a sorting table. In store, the physical transfer of materials from regular stock areas to 136 Account (surplus) area and back was found to be another use of unnecessary movements. Some area of warehouses were specifically kept for surplus stock. But it often happened that immediately after the heavy materials were transferred to 136 Account Area, some field demanded it and hence again it was carried back to the original place. It was recommended that for surplus stock no physical transfer was necessary rather only a red lebel or tag posted on the place indicating the surplus amount would be sufficient

PART V

Conclusion: Effectiveness of the Analytical Method in the UNRWA Experience

An organization is a compact whole. It is a system. Each branch of a system is acted and reacted by another. The study of one part by itself is incomplete. In a system, the change in one part often necessitates the change in some other parts. Here it is necessary to make the systems approach and not the part study alone. The systems approach attempts to consider the broad consequences upon the entire system of changing one part.[1] In UNRWA situation it has been found that no effective result can be achieved only by the study of General Stores Branch, because General Stores of Branch of Supply Division is essentially linked with other branches like Basic Commodities Branches, Insurance Branch, Transport Branch etc. and any organizational or procedural change in General Stores Branch is bound to effect other branches. Even more, Supply Division itself is a part of the whole system of UNRWA. It has been observed that hardly any procedural change can be made without reference to Finance Division, Records and Statistics Division or Personnel Division. Whenever the proposal for simplifying a form or a file was raised, the plea against it was usually that Finance Division or Records and Statistics Division needed it.

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[1] Robert N. Lehner, The Management of Improvement : Concepts, Organization, and Strategy (New York : Reinhold Publishing Corporation, 1965), p.6.

The researcher , therefore, suggested to the Chief Supply Division that the latter might propose to the higher authorities for an Agencywide management analysis.

An analytical study can be most effective provided effective simulation can be made. Simulation is both a lengthy and costly process. It is only through a good deal of trial and error that the best solution may be reached at. These trials are, however, not usually performed in actuality. This would involve extremely lengthy and costly study. Instead, the experimentation is made relatively inexpensively and quickly on paper, or on computer circuits utilizing proper data with reference to a 'real world' situation.[1]

Systems approach requires simulation and it also requires finance and budgeting on the basis of program. Program budgeting and the systems approach are not the same, but they have an affinity for each other.[2] The reacher made an effort to sumulate UNRWA Transport Operations in the line of linear programming, as miximization of transport facilities is perhaps the first pre-requisite of supply operation, but it was soon discovered that proper cost data was lacking in the Transport Branch. 'We do not maintain capacity of freight vehicle in our Kardex' - a Headquarters transport official apologized.

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[1] Norbert Lloyd Enrick, Management Operations Research (New York: Holt, Reinhart and Winston, Inc.,1965), p.194.

[2] Guy Black, "System Analysis in Government Operations", Management Science (Journal of the Institute of Management Sciences, Baltimore, Maryland) Vol. 14, No.2 (Oct.1967) p.B 56.

'Mileage from Aqaba to .... is not known' - the official added. Even the total number of freight vehicles in different fields could be given after much calculation. In the field Central Warehouse transport section, similar calculations were necessary to find out one day's freight vehicles movement. The suggestion that the author gave was to distinguish between the essential data from non-essential ones, and while caution was necessary against latter, the former could not be sacrificed.

In order to bring about change the responsibility of the executive is great. No O & M study can be fruitful unless and until the man on the job particularly the top executive and middle executive realise the need and are eager to install an improved system. The responsibility of an executive to an organization is enormous. An executive was once humorously defined as a worker who can take two hours for lunch without hindering production.[1] According to another definition any man is an executive if he can press a button and somebody comes.[2] This definition of executive, however, does not hold good in a modern organization particularly those service oriented organizations like UNRWA where leadership rather than mere bossing can be of much value. Both the top and middle executive are to take lead if a change is to take place. A top executive is one who decides what and why a thing shall be done and a middle executive is one who decides where and when to do it.

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[1]Frederick J. Close, "A look back from the year 2010," Advanced Management Journal (The official journal of Society for Advancement of Management, New York) Vol.32 No.1 (January,1967),p.7.

[2]Ibid.

Hence co-operation of both are necessary in order to achieve a successful organizational or procedural change. In UNRWA situation, it was found that although top executives were favouring change, middle and lower executives were disfavouring it, and hence systems or procedural change was really a difficult one.

The researcher could feel that unless leadership is fully exerted and management takes the lead in procedural change, mere formal study of the organization can be of no use. The different O & M charts can only indicate the problem areas and it is only the management who can alone make a proper scrutiny of the situation. Virgil K. Rowland writes:

> .... Organization chars are actually no more than devices to point out lines of responsibility, authority, and accountability. And organization chart, no matter how logical they seem do not produce good organization unless the lines of authority -- that is, direction -- and accountability are used, and unless bosses at each level fully discharge their responsibility for direction of their subordinates.[1]

The obstructions seen in the middle management for any procedural change might have been partly owing to lack of training. Managerial improvement needs recruitment of well educated personnel as well as their systematic pre-service and in-service training.[2] Both formal education

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[1] Virgil K.Rowland, Managerial Performance Standards (New York: American Management Association, 1960), p.22.

2 Education and training are inter-related although they have their own fields. "Training, according to the dictionary definition,is instruction and discipline in a particular art, profession or occupation .... Training is less ambitious in its scope than education, which includes the complete upbringing of the individual from childhood, the formation of character, of habits and manners and of mental and physical aptitudes." See F.J. Tickner, Modern Staff Training : A Survey of Training Needs and Methods of Today (London : University of London Press Ltd.,1952), p.9.

and organizational training are necessary for the personnel in order to see that the day to day improvement is made in the organization.

In UNRWA no organized training facilities could be seen for the executives. Only a very short course on 'Nature and Extent of Electronic Data Processing'was arranged during the period under observation, and that is also for installing Electronic Computor NCR 315. An organization having nearly eleven thousand employees and spread over a vast geographical area should have a training division or institute for its executives. Secondly, it needs decision what type of training is necessary for what categories of employees. Broadly speaking, in any kind of training, it is essential that the trainee should know what it is all about. He must fully appreciate what is the purpose of the undertaking for which he is to work, and the nature of its service. He must know something of the why and the wherefore of the organization. The management should not be just the nameless. Some of those'who control his destinies, must be known to him by sight, others at least by name'. [1] When training programmes are devised according to the need of the employees and the organization, after proper survey, then and then only it becomes a real useful asset for the both.[2]

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[1] Ibid., p.38.

[2] Wayne J. Foreman made a research regarding the practice of training techniques in forty-five big companies of United States. The most useful training techniques found in order of importance are -- on the job, conference and discussion, job rotation, special projects, case studies, problem solving, management, role playing, programmed instruction, sensivity training, and brain storming. See Wayne J. Foreman, Management Development Methods : What large companies are doing", Management Review (Journal of American Management Association) vol.56, No.11 (November,1967),p.48.

The training of work simplification can be fruitful to all levels of employees in any organization. But a great caution is necessary in this respect. Each level of employees is to be given training of work simplification suited to its position and function, and not so much about the work of their supervisors, otherwise this may create obstruction to supervisor's direction and create confusion. The author has observed that Flow-Process charts were made a subject of training for lower grade clerical trainees in some organizations. Flow-Process charting can perhaps be fruitfully utilized by the top and middle management. A lower grade clerk can be more benefited if he is rather given the work simplification training related to maintenance of agenda, weekly schedule, filing, drafting letters, motion economy etc. than Flow-Process chart. He can be given more useful lessons provided that his needs are taken into consideration. However, there is some benefit to teach the prospective trainee likely to be promoted to a higher echelon the training of a bit higher level. But that should be done with proper planning bearing in mind the specific purpose. For UNRWA, the researcher suggested a general O & M training for middle and lower level executives, But other lower level employees were suggested a training course in English composition and the like, as it was observed that many instructions were not carried out or carried out wrongly because the lower level employees did not understand fully English -- the official language of UNRWA. Sometimes, they were found to be using Arabic in documents making communication barrier for the members of the International Civil Service in UNRWA who belong to non-Arab countries and were usually in responsible positions.

In any O & M study, the place of human relations is relatively high. This is equally important for an executive as well as a management analyst. An old employee of a Port Office of UNRWA lamented:

> We work too much but we would not have grumbled for that, had there been any top man coming to see us what we are doing.

It was observed in UNRWA, that while the number of meetings and conferences at the top level was relatively high, there was no such system of meetings and conferences at the lower level. It was therefore suggested that some exploratory regular meetings should be arranged at the lower level to allow the employees to give out their opinions freely while the chairman should restrain himself in talking, and also he must not criticise directly an employee in the meeting. The last precaution was necessary becasue of some direct experience by the researcher while he attended some senior officials' conferences in UNRWA. The following is an extract:

Member : Actually we are .....

Chairman : No. That will not help.

Member : I mean, Sir, we are contacting .....

Chairman: Good. I thought something else that .....

.....

Chairman: Why did you not ..... ?

Member: I was not aware of this instruction, Sir !

Chairman: You should know.

Member: (losing temper) All right, I shall (murmured) 'You should know ! '

senior member of the International Civil Service visits a poor refugee tent, he is advised by the protocol not to refuse a cup of coffee from the refugee, otherwise this would have a very adverse effect. The present researcher learnt this lesson by making a mistake in this respect at the preliminary stage.

The use of best techniques of O & M does not necessarily indicate the best result. It depends on how objectively the Report is organized in logical sequence, with simple language and clear reasoning, and how the follow-up is made. The author had to use thirty-five different charts as Exhibits to the Report which he prepared. The Report was first shown to a few reputed academicians for examining its arrangement, and a Defense Session was arranged with a learned group. Simultaneously, some little portion of it (Flow Chart) was leaked out to some employees of the lower level in order to see their reaction on the proposed procedure. It generated a good deal of enthusiasm. A man who, at the beginning, was skeptic about the whole thing, suddenly recognized that the researcher was able to see the as-a-whole procedure of the organization which they were incapable of doing.

Next stage was the submission of the Report to the Head of the Staff Management Office of UNRWA. What interested him most was the chapter on personnel, although he disagreed with some of the views expressed in the Report, particularly the suggestion about the strict adherence to the principle of seniority in respect of staff promotion. But he approved it for submission to the Chief of Supply Division; and encouraged the researcher:

> Your Report is in a better form than most of ours.

After making necessary corrections the Report was typed and submitted to the Chief, Supply Division. The Chief, after giving thanks said:

> Allow us some time to study your Report and examine the suggestions that you have made.

The task of the O & M analyst does not end up with the submission of the Report, rather he should be available for any further consultation or study whenever it is so needed. N.S.Kiernan writes:

> The O & M practitioner naturally hopes that his advice will be accepted, but the view is sometimes taken that even if his recommendations are not agreed to, he can console himself with the thought that his efforts have nevertheless been worthwhile for they will have stimulated management to examine the problems for themselves, or perhaps changes of staff or working conditions may result in the O & M report being reconsidered and acted on at some future date. [1]

Although at the time of writing this study report (Thesis), the O & M Report submitted to the Chief, Supply Division, is still under consideration, the author cannot but note that supply methods have already improved considerably during the last one year in which he had also a little share of work and of on-the-spot suggestions. This is partly owing to the awakening amongst the supply people about the engagement of an observer. The researcher, however, commented on his own work in the preface of the Report submitted to the Chief, Supply Division:

> The study of the organization and procedure of the General Stores segment of the United Nations Relief and Works Agency is a gigantic task and I undertook

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[1] N.S.Kiernan, "Getting recommendations accepted", O & M bulletin (Journal of Management Services Group of H.M. Treasury, UK) vol.20,No.2 (May,1965), p.67.

this study more as a trainee than as a management expert .... In course of my inquiry into the General Stores segment, I found most work being carried on effectively and only a few areas in which suggestions for improvement might be made .... I do not pretend to be a supply expert; rather I am a student of Organization and Methods; although I feel,I have been instructed a good deal about the supply technicalities by my stay with UNRWA for over a year .... However, I would submit that my observations be regarded as the suggestion of problem areas and not as conclusive recommendations, and any change be effected only after due consideration by the experienced supply personnel of UNRWA.

PART VI

TECHNICAL TERMS

A. Common Commercial Terms

Bill of Lading – A carrier's contact and receipt for good which it agrees to transport from one place to another and to deliver to a designated person or assigns for compensation and upon such conditions as are stated therein.[1]

Bill of Material – A list specifying the quality and character of materials and parts required to produce or assemble a stated quantity of a particular product.[2]

Indent – An importer's purchase order to an exporter or middleman to be filled at the best prices possible or stocked prices for the specifications, and usually within certain time limits.[3]

Invoice – A formal statement of goods bought or sold, showing the price and quantity of each item, charged on them, the date of shipment, how shipped, and such other information as it demanded by the nature of business.[4]

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[1]George W. Aljian (ed.), Purchasing Handbook: Standard Reference Book on Purchasing, policies, practices, procedures, contacts, and forms. (New York: McGraw Hill Book Company, Inc., 1958) p.26(6)

[2]Ibid.

[3]Erwin Esser Nemmers and Cornelius C. Janzen(ed.) Dictionary of Economics and Business (Paterson, New Jersey: Littlefield Adams & Co., 1960), p. 148.

[4]Byrne J. Horton and Others (ed.), Dictionary of Modern Economics (Washington: Public Affair Press, 1948), p. 183.

Kardex	-	Special types of cards maintained in a cabinet for receipt and issue of goods.
Lead Time	-	A period of time from date of ordering to the date of delivery which the buyer must reasonably allow the vender to prepare goods for shipment.[1]
Letter of Intent	-	A preliminary contractual arrangement. It is used to enter into interim agreement, pending a definite contract....[2]
Packing List	-	A business form showing the contents of a shipment, item by item, to permit checking by customs officials and by the customer.[3]

Terms Relating to UNRWA use only

131 Account : The stock which is in the account of central warehouse and is used for general purposes.

133 Account : The stock which is kept in Warehouse specifically for any user.

136 Account : All surplus stock with no movement for the past twelve months.

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[1]Aljian (ed.), op.cit, p. 26 (27).

[2]Ibid, p. 26(28).

[3]Horton and Others (ed.), op.cit., p.211.

Area	:	The level of UNRWA organization geographically arranged below field and above camp.
Camp	:	The primary unit of UNRWA geographical level which usually consists of Refugee-dwellings, schools, feeding centers, etc.
Catalogue Group	:	The items of goods entered into UNRWA catalogue numerically.
Central Warehouse	:	The main Warehouse of UNRWA situated at Beirut.
Clearing Agent	:	The UNRWA agent who are responsible to complete custom formalities with government.
Cyclic Review	:	The regular four monthly check up of stock level and future need by the users and Supply Division.
Demmurage	:	The charge payable to port authorities for over stay of UNRWA goods in port-shed.
Despatch Order	:	Authority given by Headquarters to despatch goods from one field to another.
Direct Charge Indent	:	The Indent prepared for delivery of goods directly to the user without raising Receipt Voucher in Warehouse.
Dormant Stock	:	The goods for which no issue had been recorded during the eight months previous to the time of Cyclic Review, provided that they are not kept for special purpose.
Excess Material	:	Material of 136 account.
Ex-stock Goods	:	Goods supplied out of 136 account stock.

Field : The five operating geographical division of UNRWA.

Forwarding Document : The authority given by Headquarters to Port Officer of UNRWA to receive and despatch goods.

F S T O : Means Field Supply and Transport Officer who is the principal Supply Officer of a field.

Grade 16 : The fourth highest rank for the Area Staff of UNRWA.

Indent : Internal document of Supply Division of UNRWA as preparation for placing orders to supplier.

Indicators : The one digit numbers used in the catalogue to distinguish between standard, non-standard, second hand, donated, etc. items.

International Civil Service : The service of civilian personnel controlled by Secretary General of United Nations.

Labour Voucher : The preliminary document prepared for payment of daily labourers.

Load Note : The form used by the store-keepers for sending goods.

L P A : Means Local Purchasing Authority. This is the authority delegated by the Headquarters to Fields for buying locally certain items of goods.

Movement Section : The Section of UNRWA responsible for movement of goods from one place to another.

Obsolete Material : The materials which are out of fashion or unusable as declared by UNRWA.

Port Office : The Office of UNRWA responsible for port operation.

Purchase Order : The contract between UNRWA and Supplier for Supply of goods.

Receipt Voucher : The final receipt prepared by Warehouse or User.

Review Indent : The Indent prepared as a result of Cyclic Review.

Special Indent : The Indent prepared for special need which could not be foreseen in Cyclic Review.

Shipping Agent : The agent of UNRWA responsible for transporting goods.

S L 700 : Two forms for the use of Cyclic Review requirements.

Standard Item : The goods entered in the standard catalogue of UNRWA with indicator 0 or 1.

Stock Card : The card which shows the receipt and issue of goods and are kept in stores.

Stock Checker : The official responsible for physical check up of goods in stores.

Stock Reclassification Sheet : The form used for transfering goods from one account to another.

Store Demand Note : The form used by user for taking goods from stores.

Supplies Advice : The initial receipt form used by store-keeper on receipt of goods.

Supply Imprest Purchase : The purchases made for smaller amount and on urgent need.

T E T : Means Total Elapse Time. That is the time required for procurement of cyclic Review indent goods.

T T I : Means Teachers Training Institute of UNRWA.

User : All other divisions and offices of UNRWA except Supply Division.

Unit : Unless otherwise stated in the text, it means

the unit of goods in the catalogue such as piece, dozen, cartoon, hundred, etc.

V T C : Means Vocational Training Center of UNRWA.

Write-off Authority : The authority empowered to disregard or excuse loss or damage.

B. Bibliography

Books

Aljian, George W. (ed.), Purchasing Handbook: Standard Reference Book on purchasing, policies, practices, procedures, contracts, and forms. New York: McGraw Hill Book Company, Inc., 1958.

Buffa, Elwood S. Modern Production Management. Second edition, New York: John Willy and Sons, Inc., 1965.

Carson, Gordon B. (ed.). Production Handbook. Second Edition, New York: The Ronald Press Company, 1959.

Cooper, Josep D. The Art of Decision Making. Garden City, New York: Doubleday and Company, Inc., 1961.

Dovey, H.O. Handbook of Organization and Methods Techniques. Brussels: International Institute of Administrative Sciences, 1951.

Enrik Norbert Lloyd. Management Operations Research. New York: Holt, Reinhart and Winston, Inc., 1965.

Ettinger, Karl E. (ed.). International Handbook of Management. New York: McGraw Hill Book Company, 1965.

Gross, Bertram M. The Meaning of Organization: The Administration Struggle. Vol. I. London: The Free Press of Glencoe, 1964.

Gulick, Luther, and Urwick, L. Papers on the Science of Administration. New York: Institute of Public Administration 1937.

Haiman, Theo. Professional Management: Theory and Practice: Boston: Houghton Mifflin Company, 1962.

Hansen, Bertrand L. Work Sampling For Modern Management, Englewood Cliffs, New Jersey: Prentice Hall Inc., 1960.

Hare, A. Paul. Handbook of Small Group Research. New York: The Free Press of Glencoe, 1962.

Horton, Byrne J. and Others (ed.), Directory of Modern Economics. Washington: Public Affairs Press, 1948.

Kaplan, Abraham. The Conduct of Inquiry: Methodology for Behaviourial Science. San Francisco: Chandler Publishing Company, 1964.

Lehner, Robert N. The Management of Improvement: Concepts Organization and Strategy. New York: Reinholl Publishing Corporation, 1965.

Littlefield, C.L., and Rachel, Frank. Office and Administrative Management: Systems Analysis, Data Processing, and Office Series. Second edition, Englewood Cliffs, New Jersey: Prentice Hall, Inc., 1965.

Maynard, H.B. and Others (ed.). Industrial Engineering Handbook, First edition, New York: McGraw Hill Book Company, Inc., 1956.

Mills, Geoffrey, and Standingford, Oliver. Office Organization and Method. London: Sir Isaac Pitman & Sons Ltd., 1955.

Milward, G.E. (ed.) Organization and Methods. London: Macmillan and Co. Ltd., 1960.

Moder, Joseph J. and Cecil Philips. Project Management with CPM and PERT. New York: Rinehold Publishing Corporation, 1964.

Moore, F.G. Production Control. International Student Edition, second edition. New York: McGraw Hill Book Company, Inc., 1959.

Naroll, Roul. Data Quality Control - A New Research Technique. New York: The Free Press of Glencoe, 1962.

Nadler, Gerald. Work Simplification. New York: McGraw Hill Book Company, Inc., 1957.

Nemmers, Erwin Esser and Cornelius C. Janzen (ed.). Dictionary of Economics and Business. Paterson, New Jersey: Littlefield Adams & Co., 1960.

Neuschel, Richard F. Management by System. Second edition, New York: McGraw Hill Book Company, Inc., 1960.

Nevner, John J.W. and Benjamin R. Haynes. Office Management and Practices. Second edition, Cincinnati: South Western Publishing Company, 1947.

O'Brien, James J. CPM in Construction Management. New York: McGraw Hill Book Company, 1965.

Optner, Stanford L. System Analysis for Business Management. Englewood Cliffs, N.J.: Prentice Hall, Inc., 1960.

Parkinson, C. Northcote. Parkinson's Law. New York: Harper and Bros., 1957.

Pfiffner, John M. and Robert V. Presthur. Public Administration. Fourth Edition, New York: The Ronald Press Company, 1960.

Pfiffner, John M. and Frank P. Sherwood. Administrative Organization. Englewood Cliffs, N.J.: Prentice Hall, Inc., 1965.

Rawland, Virgil K. Managerial Performance Standards. New York: American Management Association, 1960.

Rogers, Kenn. Managers - Personality & Performance. London: Tavistock Publication, 1963.

Sayles, Leonard R. and Strauss, George. Human Behaviour in Organization. Englewood Cliffs, N.J.: Prentice Hall, Inc., 1966.

Sellitz, Claire, and others (ed.), Research Methods in Social Relations. Revised Edition, New York: Holt, Rinehart and Winston, Inc., 1967.

Sherwood, Frank P. Management Approach to Budgeting. Brussels: International Institute of Administrative Sciences, 1954.

Tickner, F.J. Modern Staff Training: A Survey of Training Needs and Methods of Today. London: University of London Press Ltd., 1952.

Waldo, Dwight. Administration State. New York: Ronald Press Co., 1948.

Zino, W. Clerments. Dynamic Work Simplification. New York: Rinehold Publishing Corporation, 1962.

Periodicals

Black, Guy. "Systems Analysis in Government Operation," Management Science. Journal of the Institute of Management Sciences, Baltimore, Maryland. Vol. 14, No.2 (Oct. 1967), B41-B58.

Close, Frederick J. "A Look Back from the Year 2010!" Advanced Management Journal. The Official Journal of Society for Advancement of Management. New York, Vol. 32, No. 1 (January 1967), 6-14.

Foreman, Wayne T. "Management Development Methods: What Large Companies are Doing," Management Review, Journal of American Management Association. Vol. 56, No.11. (November, 1967), 46-49.

Kiernan, N.S. "Getting Recommendations Accepted." O & M Bulletin. Journal of Management Services Group of H.M. Treasury, U.K. Vol. 20, No. 2 (May, 1965), 67-70.

Reports

United Kingdom, Government of Her Majesty's Treasury.
Management Series Division.
The Practice of O & M.
London: Her Majesty's Stationery Office, 1965.

United Kingdom, Government of Ministry of Technology.
Industrial Operation Unit.
Allocation of Labour to Product Groups:
A Case Study in Linear Programming.
London Abell House: December 1966.

United Nations, Department of Economic and Social Affairs.
United Nations Technical Assistance Programme.
A Handbook of Public Administration: Current Concept and Practice with Special Reference to Developing Countries. New York: 1961.

United States, Government of.Department of the Navy.
Bureau of Naval Personnel. Personnel Systems Research Branch. Organization Planning for Naval Units. May 1963. (Reprinted.)

United States, Government of. General Services Administration.
National Archives and Records Service.
Office of the Federal Registrar.
United States Government Organization Manual 1960-1961.

United Nations Relief Works Agency. UNRWA 1966:
Facts and Figures.

The paper-flow procedure for Supply that has been observed by the researcher is shown in the following single column Flow Process Chart. The Chart has however following assumptions and limitations.

a) That the procurement is made on special Indent.

b) That it is a General Store item.

c) That everything was normal in the transaction and no loss or damage was found.

d) That it is not 'Direct Charge'.

e) That the procurement is made from abroad and that amount is not small.

f) That actual user belongs to Lebanon Field.

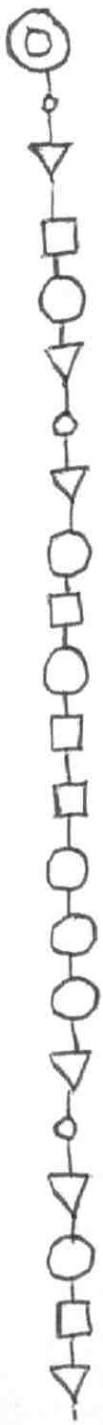
g) That only one particular flow-line is taken into consideration.

h) That it is a standard item, and also not a new item.

EXISTING PROCESS CHART

Date: April-May 1968 By: M.S. Rahman

Process Charted: Special Indent Unit: General Stores Branch



1. Senior Instructor, VTC, places request by Action Slip.
2. To Principal
3. On Principal's table
4. Principal reviews Action Slip
5. He approves request
6. In outbox
7. To Supply Clerk
8. On Supply Clerk's table
9. Supply Clerk prepares Bill of Material
10. He sees catalogue
11. He writes catalogue No., description etc.
12. He sees Budget Provision
13. He sees Price List
14. He writes Price
15. He initials
16. He enters into an exercise book
17. On Supply Clerk's table
18. To typist
19. On typist table
20. Typist types Bill of Material
21. He reviews for correctness
22. On typist's table

23. To Supply Clerk
24. On Supply Clerk's table
25. He reviews for correctness
26. He initials
27. On Supply Clerk's table
28. To Principal
29. On Principal's table
30. Principal reviews for correctness
31. He signs
32. In out-box
33. To Supply Clerk
34. On Supply Clerk's table
35. He writes envelope and puts into it
36. On his table
37. To Despatcher
38. On Despatcher's table
39. To Field Vocational Education Officer's Clerk
40. On Clerk's table
41. Clerk compares with records
42. On Clerk's table
43. To FVEO
44. On FVEO's table
45. FVEO reviews
46. On FVEO's table
47. To Field Finance Officer's Clerk
48. On Clerk's table

49. He reviews
50. He initials
51. On Clerk's table
52. To Field Finance Officer
53. On Field Finance Officer's table
54. He reviews
55. He signs
56. In out-box
57. To Field Supply Officer
58. On Administrative Assistant's table
59. He stamps (date)
60. On his table
61. To Field Supply Officer
62. On his table
63. He initials and tickes for Supply Assistant
64. On Field Supply Officer's table
65. To Administrative Assistant
66. On his table
67. To Supply Assistant
68. On his table
69. He initials
70. To Ordering Clerk
71. On Ordering Clerk's table
72. He checks with Ordering Cards
73. He checks with Kardex
74. He prepares Indent

75. He writes in Ordering Card
76. He puts indent number in Ordering Card
77. In out-box
78. To typist
79. On typists table
80. Typist types
81. On typist table
82. To Ordering Clerk
83. On Ordering Clerk's table
84. He reviews
85. He initials
86. To Supply Assistant
87. On Supply Assistant's table
88. He reviews
89. He initials
90. In out-box
91. To Field Supply & Transport Officer
92. On Field Supply & Transport Officer's table
93. He reviews
94. He signs
95. In out-box
96. To Supply Assistant
97. On Supply Assistant's table
98. He reviews
99. To Ordering Clerk
100. On his table

101. He files Yellow and Green copies of Indent
102. To out-box
103. In out-box
104. To HQ.
105. On Secretary to Chief Supply Division's table
106. She signs
107. She stamps
108. To Secretary to Senior Supply Officer (General Stores)
109. On her table
110. To Clerk Stock control
111. Stock Clerk enters into Indent Register
112. He enters into Fieldwise Register
113. He enters into Unprocessed Indent Form
114. To Surplus Kardex Clerk
115. On Surplus Kardex Clerk's table
116. He verifies with Surplus Kardex (136 a/c)
117. He initials
118. To stock clerk
119. He checks with dormant stock
120. He initials
121. To Supply Officer (General Stores)
122. On his in-box
123. He reviews
124. He signs
125. He records on his table calender
126. On his out-box

127. To Senior Supply Officer (General Stores)

128. On his in-box

129. He signs

130. On his out-box

131. To Supply Officer (General Stores)

132. On his table

133. He reviews

134. He cancels from table calender

135. To stock clerk

136. On his table

137. He files blue copy of Indent

138. To procurement Section Clerk

139. On his table

140. Procurement Clerk prepares tender

141. On his table

142. To catalogue Clerk

143. On catalogue Clerk's table

144. He verifies specifications

145. To Procurement Clerk

146. On his table

147. To typist

148. On typist's table

149. Typist types

150. He reviews

151. To Procurement Clerk

152. On his table

153. He reviews
154. To Purchasing Officer
155. On his table
156. He reviews
157. He signs
158. On his table
159. To Senior Purchasing Officer
160. On his table
161. He reviews
162. He signs
163. On his table
164. To Senior Supply Officer (General Stores)
165. On his table
166. He signs
167. On his out-box
168. To Procurement Clerk
169. On his table
170. He reviews
171. To Progress Chief Clerk
172. On his table
173. He prepares Mailing list
174. On his table
175. To typist
176. On typist's table
177. Typist types
178. She reviews

179. To progress Chief Clerk

180. He reviews

181. He enters into register

182. To Senior Supply Officer (General Stores)

183. On his table

184. He reviews

185. He signs

186. In his out-box

187. To Progress Chief Clerk

188. On his table

189. He reviews

190. To Procurement Clerk

191. On Procurement Clerk's table

192. To typist

193. On typist's table

194. She types addresses

195. She reviews

196. To Procurement Clerk

197. On his table

198. He reviews

199. On his table

200. To Chief Supply Division Despatch Clerk

.....

201. Tenders received

202. Initialed

203. Opened by Tender Committee

204. Tender Committee scrutinize

205. To Procurement Clerk

206. He prepares comparative data

207. He compares accepted tender with Indent

208. He compares with catalogue

209. He prepares letter of acceptance

210. On his table

211. To typist

212. On her table

213. Typist types

214. To Procurement Clerk

215. On his table

216. He prepares purchase order

217. On his table

218. To typist

219. Typist types Purchase Order, Control Card, and envelope

220. She reviews

221. To Procurement Clerk

222. He reviews

223. He initials

224. To Purchasing Officer

225. On his table

226. He reviews

227. He signs

228. To Senior Purchasing Officer

229. On his table

230. He reviews

231. He signs

232. On his table

233. To Senior Supply Officer

234. On his table

235. He reviews

236. He signs

237. On his table

238. To Secretary to Senior Supply Officer (General Stores)

239. On her table

240. She detaches supplier's copies and sends

To Movement Clerk

On his table

He keeps control card

He prepares note for Insurance

To Insurance section

Insurance section opens journal

241. To Procurement Clerk

242. On his table

243. He writes Progress sheet of Record

244. To Purchasing Officer

245. On his table

246. He reviews

247. He signs

248. On his table

249. To Senior Purchasing Officer

250. On his table

251. He reviews

252. He signs

253. On his table

254. To procurement Clerk

255. On his table

256. He stamps on file as "Completed"

257. He signs

258. To Progress Senior Clerk

259. On his table

260. He opens file

261. He enters into Progress Register

262. To Stock Clerk

263. He puts purchase order number into Indent

264. He seals P.O. file as Purchase order number entired into Indent

265. He signs on file

266. On his table

267. To progress Clerk

268. On progress Clerk's cabinet

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269. Progress Clerk receives Bill of lading and Invoice

270. On his table

271. He checks with Purchase Order

272. On his table

273. To Movement Clerk

274. On his table

275. He prepares Forwarding document

276. On his table

277. To typist

278. She types

279. She reviews

280. To Movement Clerk

281. On his table

282. He initials

283. On his table

284. To Senior Supply Officer (BC)

285. On his table

286. He signs

287. On his table

288. To Movement Clerk

289. He files and sorts

290. On his table

291. To Despatcher

292. On her table

293. To Port Officer

294. On his table

295. He initials

296. On his table

297. To Clerk

298. He enters into Consignment Register

299. He enters into index Register

300. He opens consignment card

301. He puts date seal to consignment register

302. Customs Clerk

303. Custom Clerk prepares custom formalities

304. He enters into D7 Register

305. To clearing Agent

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306. Tally Clerk prepares Cart Note

307. To Assistant Clerk

308. On his table

309. He types load note

310. He reviews

311. He enters into Daily Tonnage statement Register

312. He prepares daily statement

313. He signs

314. To port Officer

315. On his table

316. He signs

317. On his table

318. To Assistant Clerk

319. On his table

320. To Centeral Warehouse

321. Gateman checks

322. To Storekeeper

323. He receives (signs cart note)

324. He signs Cart Note

325. He checks with purchase order

326. He counts goods

327. He arranges goods with the help of porters

328. On his table (paper)

329. He prepares Supplies Advice

330. He signs

331. Enters into Stock Card

332. On his table

333. To Supply Officer

334. He signs

335. On his table

336. To clerk B, Supply Control

337. On his table

338. He fills in forwarding forms (SL/203)

339. To Supply Control (Mr. Farson)

340. On his table

328. (a) Storekeeper fills in Quality Control Analysis request form

329. (a) He signs

330. (a) On his table

331. (a) To Supply Officer's clerk

332. (a) On his table

333. (a) He reviews

334. (a) On his table

335. (a) To Supply Officer (Mr. Hawa)

336. (a) On Mr. Hawa's table

337. (a) He reviews

338. (a) He signs

339. (a) On his table

340. (a) To HQ. Quality Control

.....

341. (a) Quality Control man takes sample from Central Warehouse

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342. (a) Supply Officer (General Stores) receivs Report of Quality control

343. (a) On his table

344. (a) He reviews

345. (a) He initials

346. (a) To progress Chief clerk

347. (a) On his table

348. (a) He prepares letter of Acceptability

349. (a) On his table

350. (a) To typist

351. (a) On typist's table

352. (a) She types

353. (a) To Progress Chief Clerk

354. (a) On his table

355. (a) He reviews

356. (a) To Supply Officer (General Stores)

357. (a) He reviews

358. (a) He signs

359. (a) To his Secretary

360. (a) To Despatcher

373. He checks with purchase order, etc.

374. He gives serial number of Receipt Voucher to P.O. and Supplies Advice

375. He writes particulars in a sheet

376. To typist

377. On typist's table

378. She types Receipt Voucher

379. To Mr. Farson

380. He reviews

381. He initials

382. He takes off carbon

383. He seals

384. On his table

385. To Storekeeper

386. Storekeeper checks

387. He signs

388. On his table

389. To Mr. Hawa

390. On his table

391. He checks

392. He signs

393. On his table

394. To Supply Control (Mr. Farsoun)

395. On his table

396. He sorts

397. To Kardex Clerk

398. On his table

399. He posts into Kardex

400. He ticks all copies

401. To ordering clerk

402. On ordering clerk's table

403. He posts in ordering cards

404. He prepares SL 700 (2nd form) for user and send

405. To HQ Progress Clerk

406. On Progress Clerk's table

407. He enters into PO file

408. He enters into progress register

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409. VTC Supply Clerk prepares Store Demand Note

410. On his table

411. To typist

412. On his table

413. Typist types

414. To Supply Clerk

415. On his table

416. He reviews

417. On his table

418. To Principal

419. On his table

420. He reviews

421. He signs

422. On his table

423. To Supply Clerk

424. On his table

425. He reviews

426. On his table

427. To Despatcher

428. On his table

429. To FSO's Administrative Assistant

430. On his table

431. He reviews

432. To Supply Assistant

433. On his table

434. He reviews

435. To (Mr. Nurallah)

436. On his table

437. Kardex clerk

438. On his table

439. He checks with Kardex

440. He initials

441. On his table

442. To Mr. Nurallah

443. He checks with signatories' list

444. He numbers

445. He takes a copy to file

446. He enters in SDN Register

447. On his table

448. To Supply Movement Assistant

449. On his table
450. He arranges transport
451. To storekeeper
452. On his table
453. He arranges goods
454. He ticks indicating supplies issued
455. He signs store Demand Notes
456. He prepares Load Note
457. He posts on stockcand
458. He prepares tag
459. He places tag
460. He weighs (with the help of porters)
461. He writes on the packed good
462. Do " " " " "
463. " " " " " "
464. " " " " " "
465. " " " " " "
466. To driver
467. Driver signs
468. To kardex clerk
469. On his table
470. He reviews
471. He posts in kardex
472. To Mr. Nurallah
473. On his table
474. He files

475. To VTC Storekeeper

476. VTC storekeeper signs Load Note

477. To Supply Movement Assistant

478. On his table

479. He distributes to empty container clerk, Mr. Nurallah, and Storekeeper

480. To Supply Control empty container clerk

481. On his table

482. He posts in Kardex of empty container

483. He files

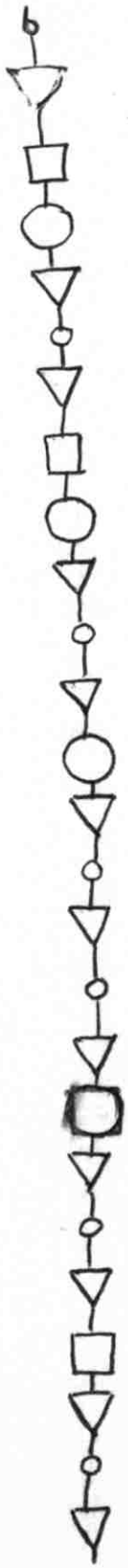
484. Filed

PROPOSED PROCESS CHART

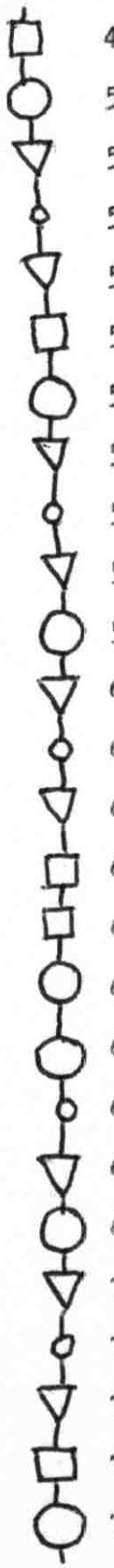
Date: May 1968 By: M.S. Rahman

Process Charted: Special Indent Unit: General Stores Branch

1. Senior Instructor places request by Action Slip
2. To Principal
3. On Principal's table
4. Principal reviews Action Slip
5. He approves request
6. In out box
7. To Supply Clerk
8. On Supply Clerk's table
9. Supply Clerk prepares Bill of Material
10. He sees catalogue
11. He writes catalogue No. description etc.
12. He sees Budget Provision
13. He sees Price - List
14. He writes price
15. He initials
16. He enters into a Register
17. On Supply Clerk's table
18. To typist
19. On typist's table
20. Typist types
21. He reviews for correctness
22. On typist's table



23. To Supply Clerk
24. On Supply Clerk's table
25. He reviews for correctness
26. He initials
27. On Supply Clerk's table
28. To Principal
29. On Principal's table
30. Principal reviews
31. He signs
32. In out-box
33. To Supply Clerk
34. On Supply Clerk's table
35. He writes envelope and puts into it
36. On his table
37. To Despatcher
38. On Despatcher's table
39. To Field Vocational Education Officer's Clerk
40. On Clerk's table
41. Clerk compares with record
42. On Clerk's table
43. To Field Vocational Education Officer
44. On Field Vocational Education Officer's table
45. Field Vocational Education Officer reviews
46. On Field Vocational Education Officer's table
47. To Field Finance Officer's Clerk
48. On Clerk's table



49. He reviews
50. He initials
51. On clerk's table
52. To Field Finance Officer
53. On Field Finance Officer's table
54. He reviews
55. He signs
56. In out-box
57. To Field Supply Office
58. On Administrative Assistants table
59. He stamps (date)
60. On his table
61. To Ordering Clerk
62. On Ordering Clerk's table
63. He checks with Ordering Cards
64. He checks with Kardex
65. He writes in Ordering Card
66. He seals Bill of Material as "Indent".
67. To Supply Assistant
68. On Supply Assistant's table
69. He reviews
70. On his table
71. To Field Supply & Transport Officer
72. On his table
73. He reviews
74. He signs

75. To Headquarters
76. On Secretary to Chief Supply Division's table
77. She signs
78. She stamps
79. To Clerk Stock Control
80. On his table
81. He enters into Fieldwise Register
82. To Surplus Kardex Clerk
83. On Surplus Kardex Clerk's table
84. He verifies with Surplus Kardex (136 a/c)
85. He initials
86. To Stock Clerk
87. He checks with dormant stock
88. He initials
89. To Supply Officer (General Stores)
90. On his inbox
91. He reviews
92. He signs
93. To Procurement Section Clerk
94. On his table
95. Procurement Clerk prepares tender
96. He prepares Mailing list
97. On his table
98. To catalogue Clerk
99. On catalogue clerk's table
100. He verifies specifications

101. To Procurement Clerk
102. On his table
103. To typist
104. On typists table
105. Typist types
106. He reviews
107. To Procurement Clerk
108. On his table
109. He reviews
110. He initials
111. To Senior Purchasing Officer
112. On his table
113. He reviews
114. He signs
115. On his table
116. To Senior Supply Officer (General Stores)
117. On his table
118. He signs
119. On his out-box
120. To Procurement Clerk
121. On his table
122. He reviews
123. To Chief Supply Division Despatch Clerk
124. Tender recieved
125. Initials
126. Opened by Tender Committee

127. Tender Committee scuitinize
128. To Procurement Clerk
129. On his table
130. He prepares comparative date
131. He compares accepted tender with Indent
132. He compares with catalogue
133. He prepares letter of acceptance
134. On his table
135. To typist
136. On her table
137. Typist types
138. To Procurement Clerk
139. On his table
140. He prepares purchase order
141. On his table
142. To typist
143. Typist types Purchase Order, Control Card and envelop
144. She reviews
145. To Procurement Clerk
146. He reviews
147. He initials
148. To Purchasing Officer
149. On his table
150. He reviews
151. He signs
152. On his table

153. To Senior Supply Officer
154. On his table
155. He reviews
156. He signs
157. To Secretary to Senior Supply Officer (General Stores)
158. On her table
159. She detaches Supplier's copies and sends
160. To Progress Senior Clerk
161. On his table
162. He enters into Progress Register
163. He keeps Control Card
[164. To Movement Clerk
165. On his table
166. He prepares note for insurance
167. To Insurance Section
168. Insurance Section opens journal]
169. Progress Clerk receives Bill of Lading and Invoice
170. On his table
171. He checks with Purchase Order
172. To Movement Clerk
173. On his table
174. He prepares Forwarding Document
175. On his table
176. To typist
177. She types

178. She reviews

179. To Movement Clerk

180. On his table

181. He initials

182. On his table

183. To Senior Supply Officer (Basic Commodities)

184. On his table

185. He signs

186. On his table

187. To Movement Clerk

188. He files and sorts

189. On his table

190. To Despatcher

191. On her table

192. To Port Officer

193. On his table

194. He initials

195. On his table

196. To Clerk

197. He enters into Consignment Card

198. He enters into Index Register

199. To customs clerk

200. Custom Clerk prepares customs formalities

201. He enters into D7 Register

202. To clearing Agent

.....

203. Tally Clerk prepares Cart Note

204. To Assiistant Clerk

205. On his table

206. He types Load Note

207. He reviews

208. He enters into Daily Tonnage Statement Register

209. He signs

210. To Central Warehouse

211. Gateman Checks

212. To Storekeeper

213. He receives (signs cart note)

214. He signs Load Note

215. He checks with Purchase Order

216. He counts goods

217. He arranges goods with the help of porters

218. He fills in Quality Control Analysis Request Form

219. He signs

220. On his table

221. To Supply Officer (Mr. Hawa)

222. On his table

223. He signs

224. On his table

225. To Headquarters Quality Control

.....

226. Quality Control man takes sample from Centeral Warehouse

.....

227. Supply Officer (Mr. Hawa) receives Report from Quality Control (in a Revised Form containing letter of acceptibility)

228. On his table

229. He reviews

230. He signs and detaches Acceptibility order portion

231. To Storekeeper

232. He prepares Receipt Voucher

233. On his table

234. To typist

235. On her table

236. She types

237. To Storekeeper

238. He reviews

239. He signs

240. On his table

241. To Supply Officer's Clerk

242. On his table

243. He reviews

244. He numbers

245. He signs

246. On his table

247. To Ordering Clerk

248. On his table

249. He enters Receipt Voucher No. into ordering card

250. To Kardex Clerk

251. On his table

252. He posts into Kardex
253. To Headquarters Progress Clerk
254. On his table
255. He enters into Progress Register
256. He seals the file as "Completed" (if delivery is complete)

.....

257. VTC Supply Clerk prepares "Store Demand and Issue Form" (revised)
258. He initials
259. To Principal
260. On principal table
261. He reviews
262. He signs
263. On his table
264. To Supply Clerk
265. On his table
266. To Despatcher
267. On his table
268. To Field Supply Officer's Administrative Assistant
269. On his table
270. To Supply Control (Mr. Nurallah)
271. On his table
272. He checks with signatories' list
273. He initials
274. To Kardex clerk
275. On his table
276. He checks with Kardex

277. He substracts from Kardex
278. He initials
279. To storekeeper
280. On his table
281. He arranges goods
282. He writes on issue side of SD & I Form, keeps one copy, and gives with goods another
283. He prepares tag
284. He weighs (with the help of porters)
285. He writes on the box
286. He writes on the box
287. He places tag
288. He staples
289. To Movement Assistant
290. He arranges transport
291. Driver signs SD & I Form
292. To VTC Store
293. VTC Storekeeper signs SD & I Form
294. To Storekeeper, Centeral Warehouse
295. He files
296. To Supply Control empty container clerk
297. On his table
298. He posts in Kardex of Empty Containers
299. He files
300. Filed

FLOW PROCESS CHART

SUMMARY

	Present	Proposed	Difference
○ = Operation	158	104	54
⇨ = Transportation	120	73	47
▽ = Storage	152	88	64
□ = Inspection	60	35	25
Total	490 (484+6)	300	190

Difference Between Existing and The Proposed Procedure in The Flow Process Chart

1) The proposed Flow-process chart envisages the movement of Bill of Material directly from Administrative Assistant to ordering clerk without going through Field Supply & Transport Officer and Supply Assistant of Centeral Warehouse. They will have the chance to see the Bill of Material after ordering clerk checks up with his ordering card and turns it into an indent. This is because Bill of Material has already got the approval of Finance and the need is only to check up with the stock.

2) The proposed procedure turns the Bill of Material istself into an indent without going to the task of preparing new papers. The proposed procedure omits the preparation of unprocessed indent form at HQ, consignment register at port office (as only index register and consignment card may do), stock cards in warehouse (as Kardex may suffice and if possible Kardex may be maintained in the respective stores separately).

3) The proposed procedure cuts down only initials of Senior Purchasing Officer for purchase order and of purchasing Officer for tender rather it distributes work of Senior Purchasing Officer and purchasing Officers for helping the Senior Supply Officer (General Stores).

4) The proposed procedure gives the Supply Officer (General Stores) to authorize indents without reaching the Senior Supply Officer. Supply Officer (General Stores) being an experienced supply expert can easily decide upon normal cases.

5) The proposed procedure combines the indent file and purchase order file in Headquarters for special indents. This will help looking at a glance all the records kept together and save the efforts of putting one file's number and data to another file and photo copying.

6) The proposed procedure envisages that quality control be requested to send their observations to Field Supply Officer. Their observation sheet may have a detachable letter of acceptability which will be detached, signed and passed on to storekeeper.

7) The proposed procedure suggests writing of descriptions on the packed goods only twice instead of five times, putting in ordering card only the record of reciept voucher number and not the purchase order number.

8) The proposed procedure envisages that Headquarters file should be marked as 'completed' only after goods are actually recieved and not only by the preparation of purchase order.

9) The proposed procedure envisages keeping of progress card in progress section and the preparation of mailing list by procurement clerk (procurement sections clerk may be assisted as a part-time by one of the two clerks of catalogue section where work is observed to be comparatively less except at special times).

10) The proposed procedure envisages a Store Demand and Issue Voucher which may take the place of store demand note and Load Note.

11) The proposed procedure suggests giving up of preparation of Supplies Advice form by the storekeeper rather he may write Reciept Voucher directly which is the real reciept acceptable to Finance. If quality control analysis is involved, filing up of this form itself indicates that he has received good. (If no such analysis is involved, there may be no objection to prepare Receipt Voucher directly).

12) The proposed procedure envisages some change of sequence for less movement of papers.

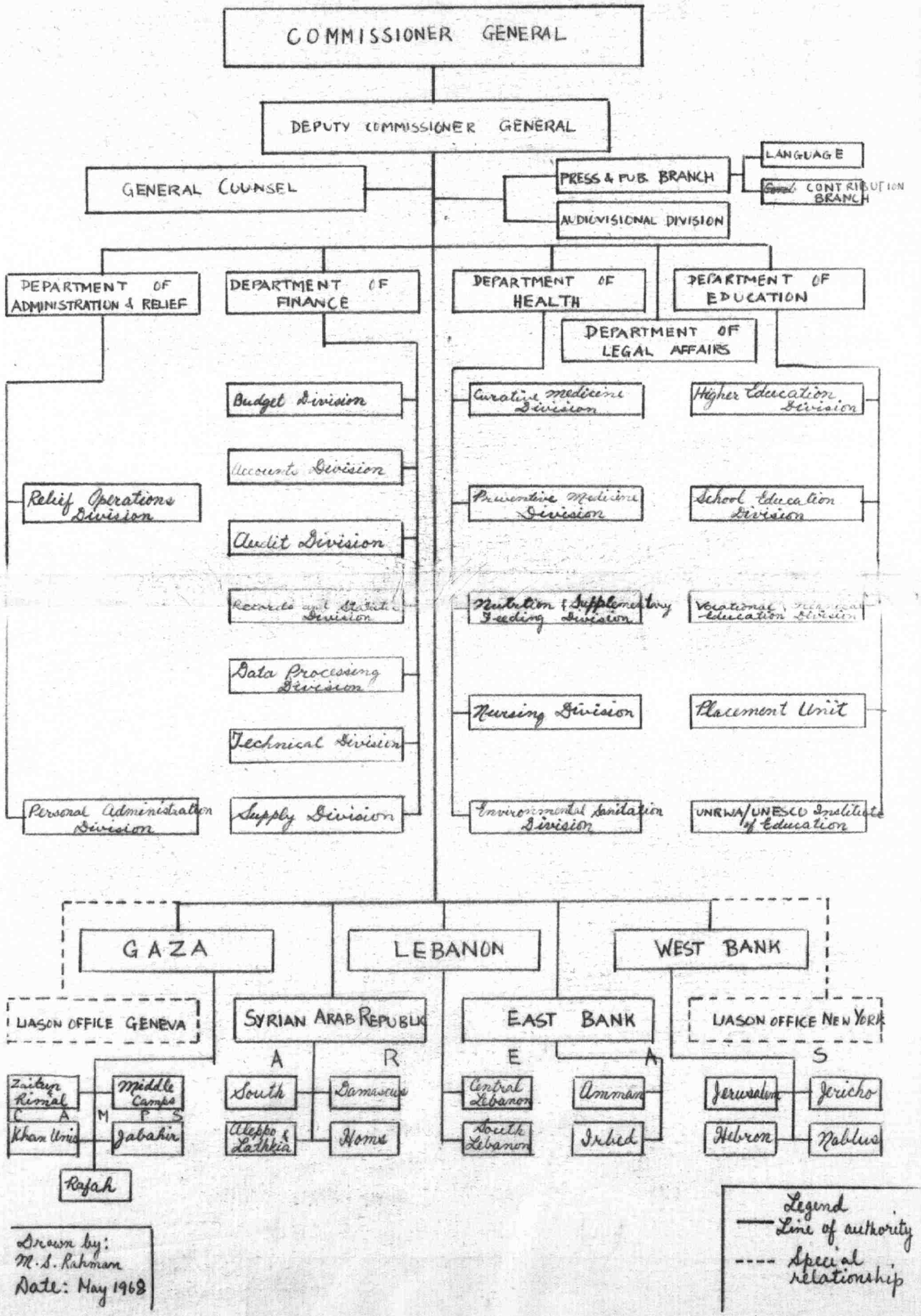
AN EVALUATION
OF
SOME O & M ANALYSIS TECHNIQUES
AS APPLIED IN THE
GENERAL STORE SEGMENT
OF
UNITED NATIONS RELIEF & WORKS AGENCY

Pt. 2

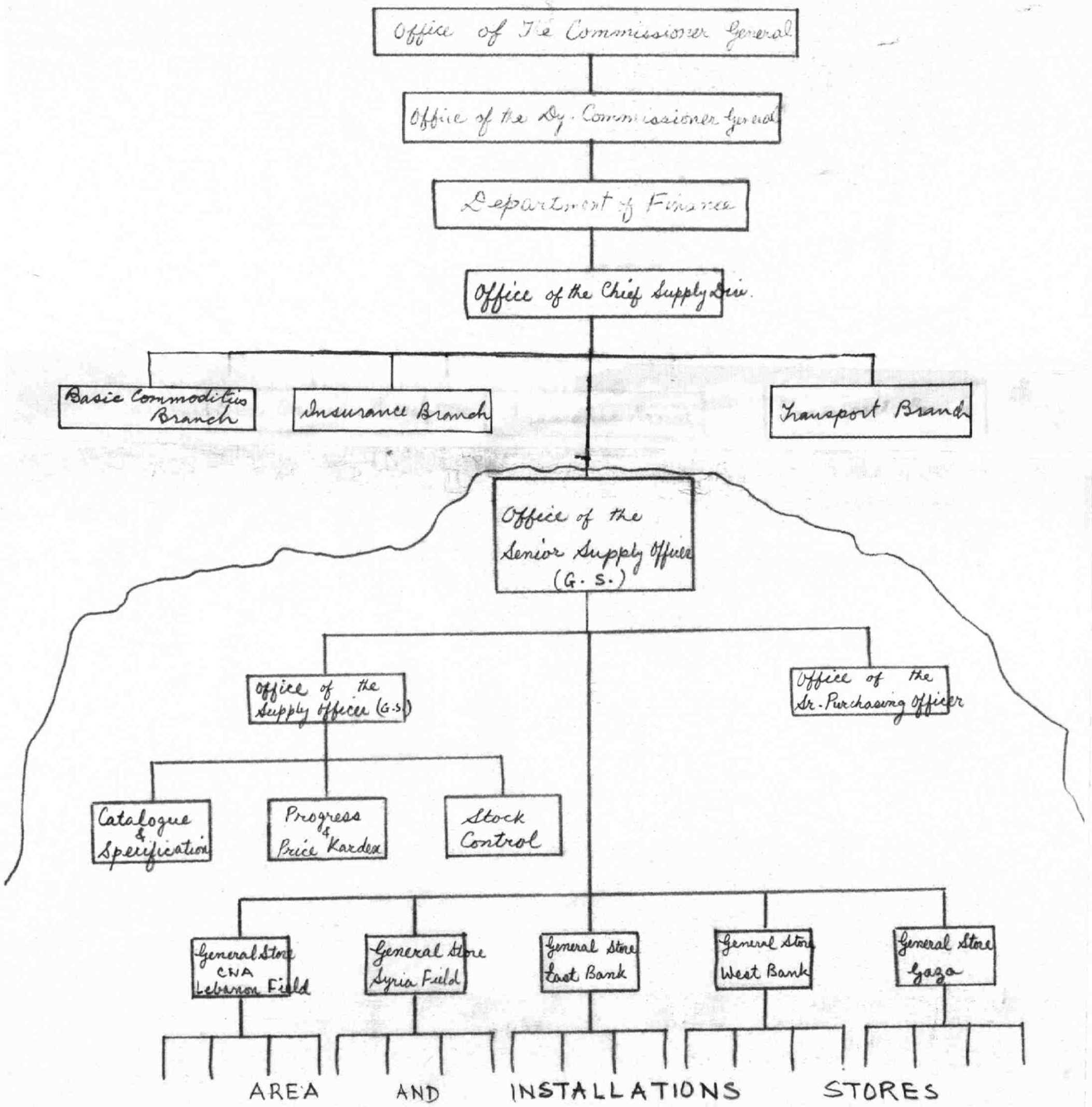
BY

MD. SAFIUR RAHMAN

ORGANIZATIONAL CHART OF UNRWA



ORGANIZATIONAL (STRUCTURAL) CHART OF GENERAL STORES BRANCH OF UNRWA



ORGANIZATIONAL (FUNCTIONAL) CHART OF UNRWA

GENERAL STORE BRANCH

OFFICE OF THE SENIOR SUPPLY OFFICER (G·S)

1. Authorizes Processing of Indents
2. Approves LPAS
3. Signs Purchase Order between the amount $5000 and $20000
4. Scrutinizes tenders
5. Signs Correspondence with suppliers
6. Signs Correspondence with other Divisions
7. Signs correspondence with FSTOS in major issue
8. Overall supervision of Branch

OFFICE OF THE SUPPLY OFFICER (G·S)

1. Recommends Indents for authorization
2. Inquiries into unusual requests
3. Replies to follow up cables and letters
4. Checks Surplus Stock & Dormant Stock
5. Arranges Stock re-classification
6. Signs Despatch Orders
7. Maintains Liaison with HQ Divisions
8. " " " FSTOS
9. Examines criticism of Materials
10. Supervises typing pool

OFFICE OF THE SENIOR PURCHASING OFFICER

1. Makes Market Research
2. Contacts supplies
3. Prepares Purchase Orders
4. Prepares LPA's
5. Authorizes purchases upto $5000
6. Invites tenders
7. Records tenders

CATALOGUE + SPECIFICATION

1. Prepares and amends UNRWA catalogue.
2. Checks up specification in Purchase Order and BOM
3. Maintains catalogue of important forms
4. Maintains Library of Books

PROGESS + PRICE KARDEX

1. Prepares Mailing list
2. Maintains Registar of Approved Suppliers
3. Inquiries into Bank position of Suppliers
4. Recieves Invoices Bill of Lading, etc.
5. Maintains Price history Kardex
6. Follows up Suppliers
7. Arranges Imprest Purchase
8. Maintains Petty cash
9. Collects local goods.

STOCK CONTROL

1. Maintains groups 06 and 49 Kardex
2. Prepares Indents for 05 and 49
3. Maintains 136 No Kardex
4. Screens Field Indents
5. Prepares Despatch Order
6. Maintains Dormant Stock List
7. Makes physical Check up of the HQ equipments

GENERAL STORE CWA (LEBANON)

1. R E C
2. PREPARE
3. ARR A
4. SUPPLY
5. MAINTAINS

GENERAL STORE SYRIA FIELD)

E I V

SUPPLIES ADVICE

NGE

GOODS

STOCK CARDS

GENERAL STORE EAST BANK

E G

RECEIPT VOUCHER

INV

TO

AND

GENERAL STORE WEST BANK

O O D

DISCREPANCY,

ENTOR I

ACTUAL

KARD

GENERAL STORE GAZA

S

NOTE, CLAIMREPORT

ES

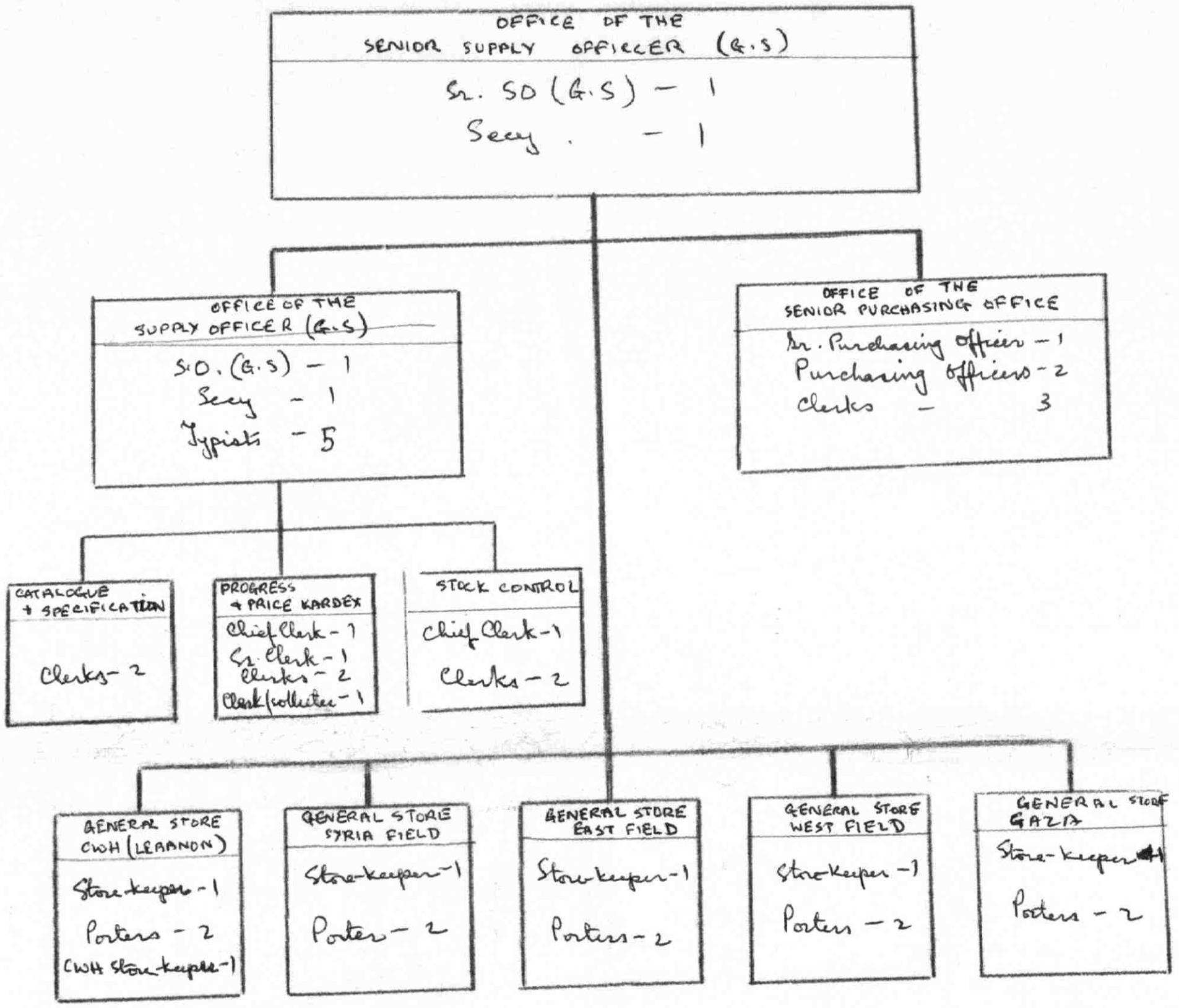
USERS

EX

Drawn by: M. S. Rahman
Date: May 1968

ORGANIZATIONAL (POSITIONAL) CHART OF UNRWA

GENERAL STORE BRANCH

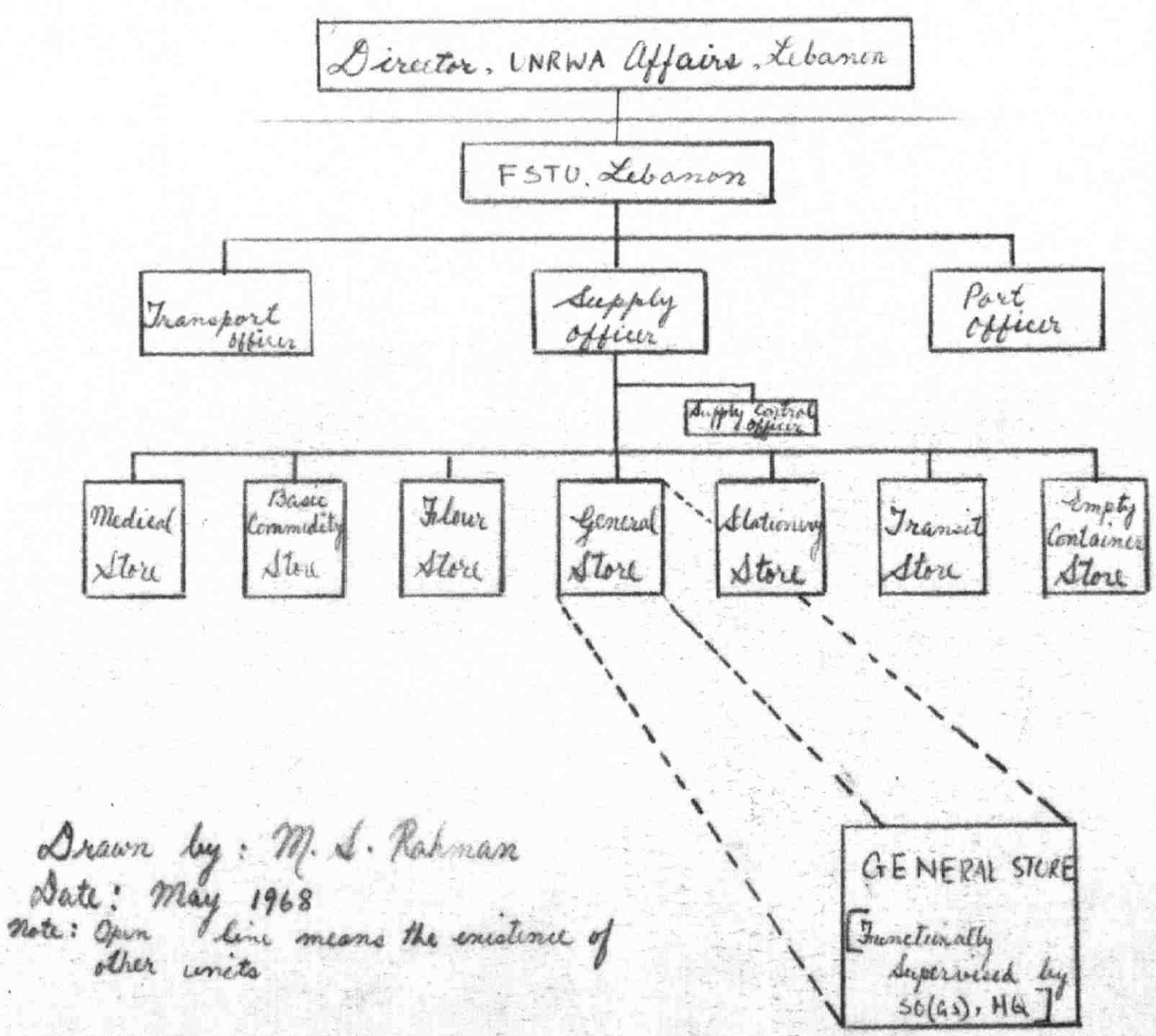


Note:

The list excludes Personnel of Supply Control and FSD's staff, port office employees, movement staff, Project Supply Clerks who also devote a part of their time for General Stores Collections and Supply.

Charted by: M. S. Rahman
Date: May, 1968

ORGANIZATIONAL CHART FOR FIELD SUPPLY AND TRANSPORT OFFICER, LEBANON



Drawn by: M. S. Rahman
Date: May 1968
Note: Open line means the existence of other units

Meaning of Letters Used

For HQ. and Supply Control (CWH)

W = Writing

R = Reading File, paper etc.

S = Sorting

T = Telephoning

L = Looking for file etc. or walking

P = Personal and idle time

A = Absence from room

O = Other work.

For General Store (CWH)

W = Paper work

T = Conferring or telephoning

S = Sorting or counting goods

C = Packing, opening or carrying goods

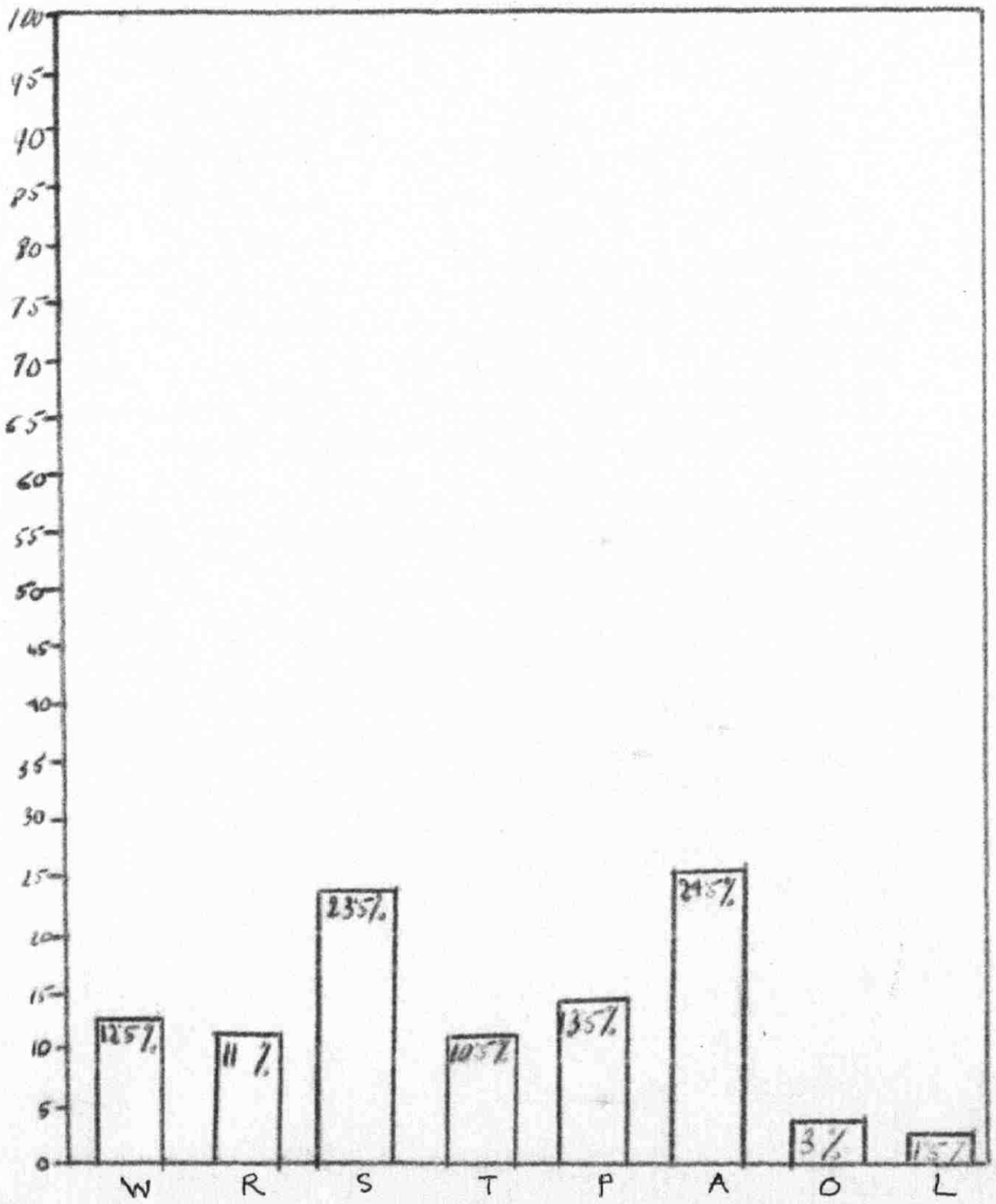
U = Supervising porter's work

L = Looking or walking for files or papers or material

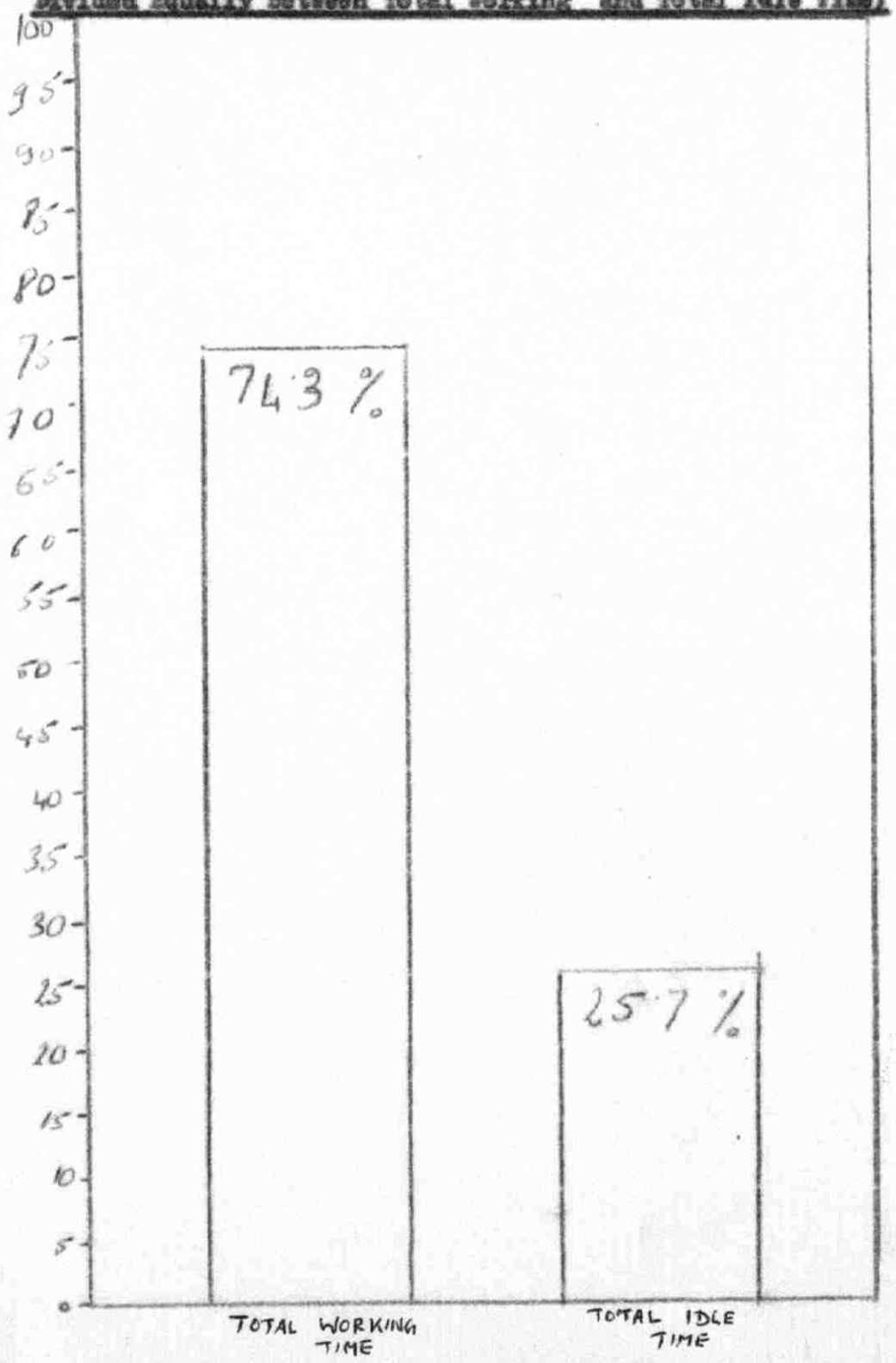
P = Personal or idle time

A = Absences.

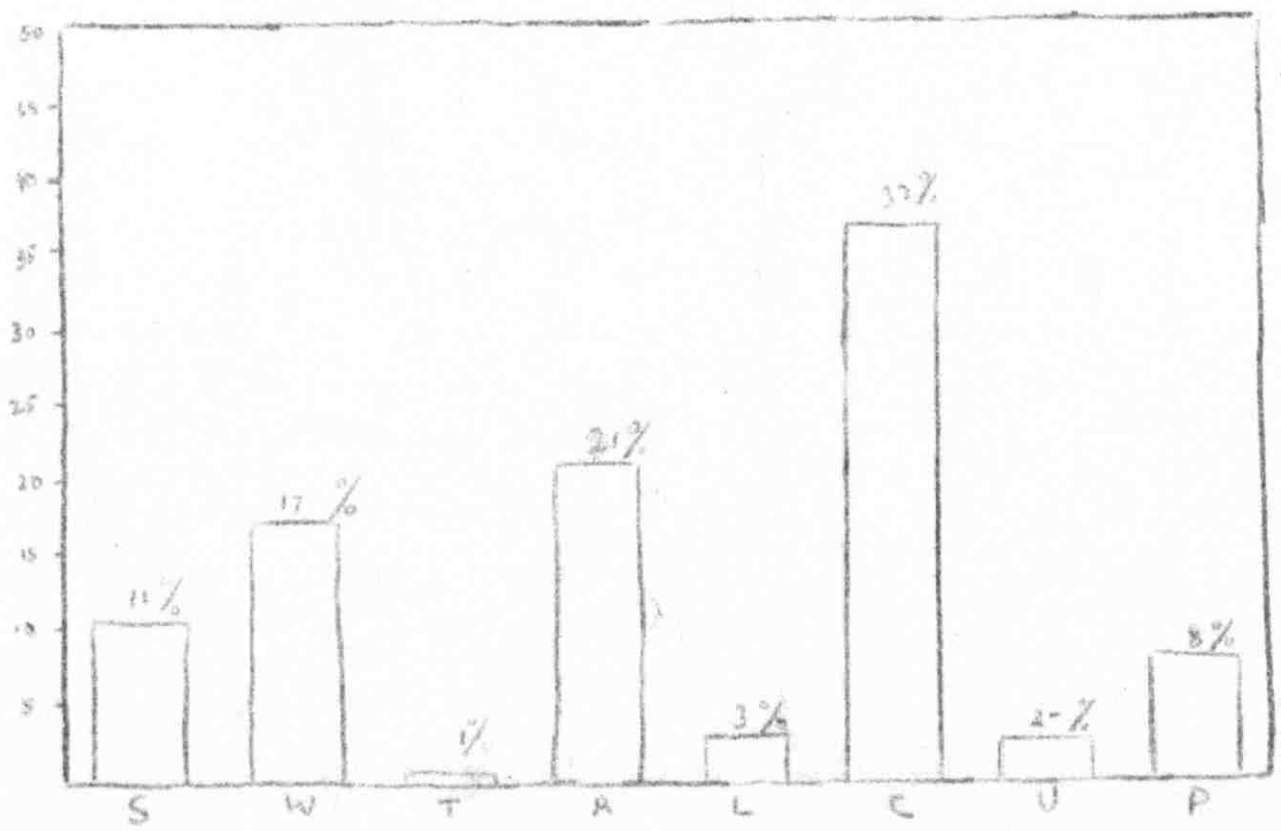
Types of Work as Observed in the Supply Control of Central Warehouse
(Occasional Clerk No.9 is not included)



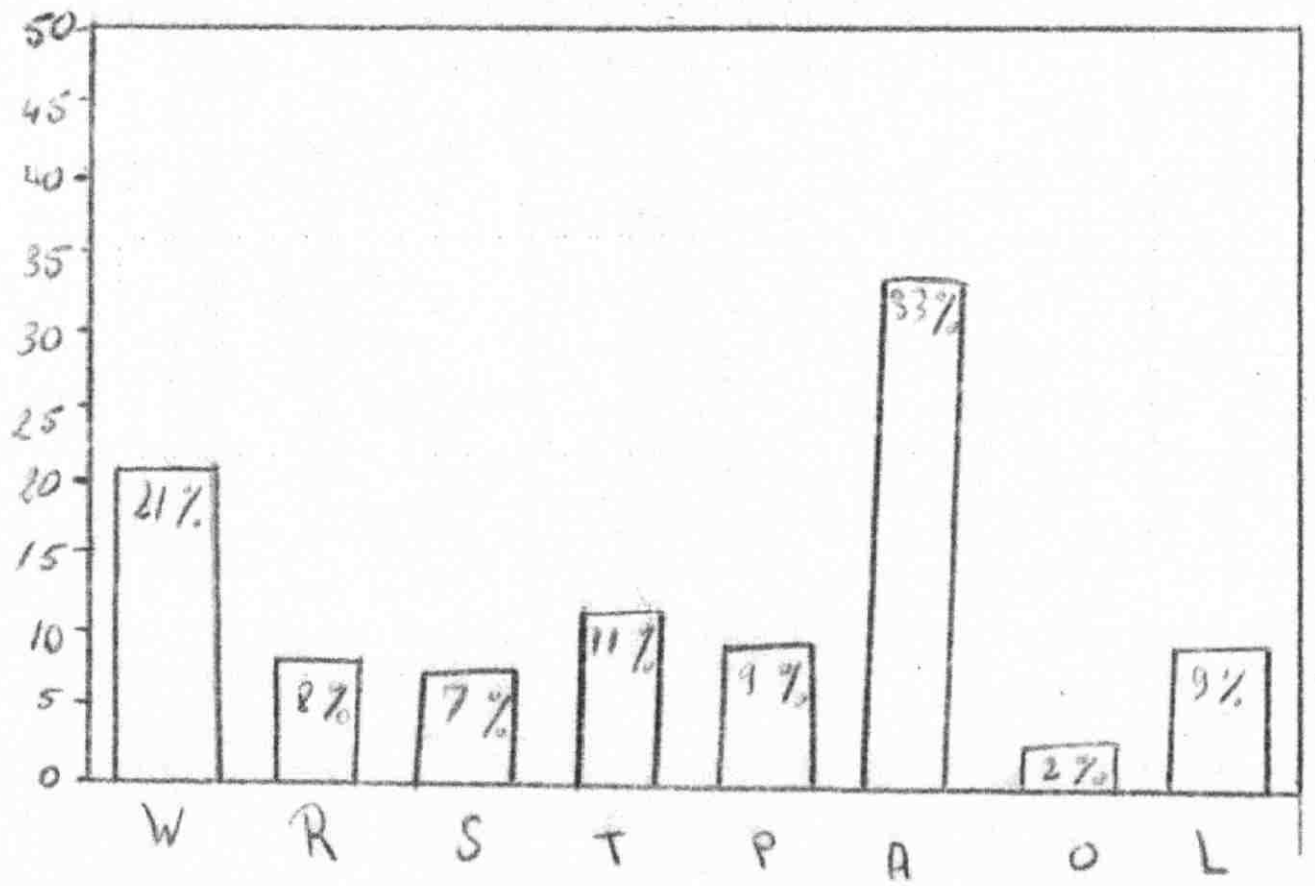
Total Working Time and Idle Time as Observed in Supply Control of Central Warehouse (Total absences (A) are Divided Equally between Total Working and Total Idle Time)



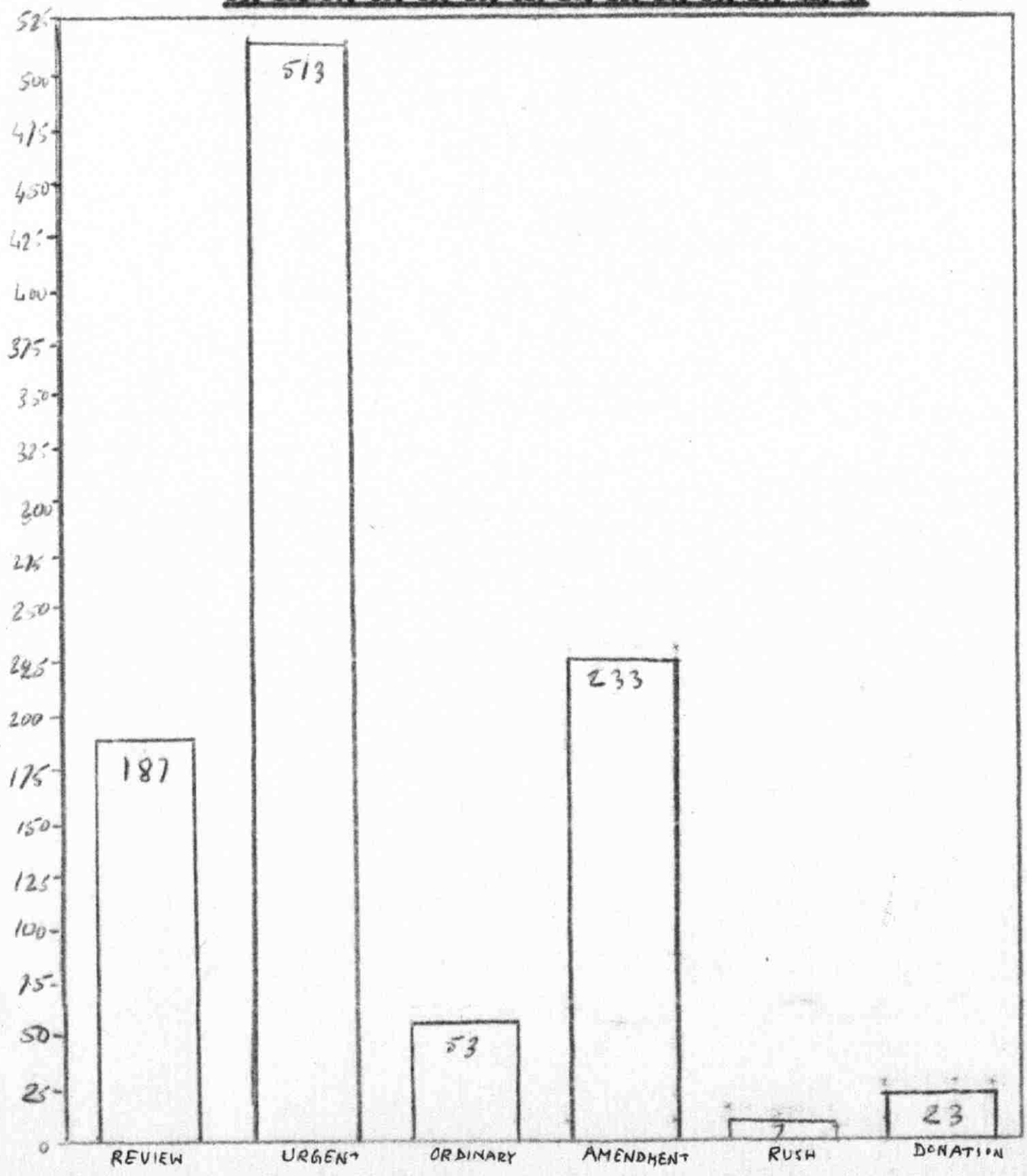
Types of Work as Observed in the General Store of Central Warehouse



Types of Work as Observed in HQ. General Store Branch

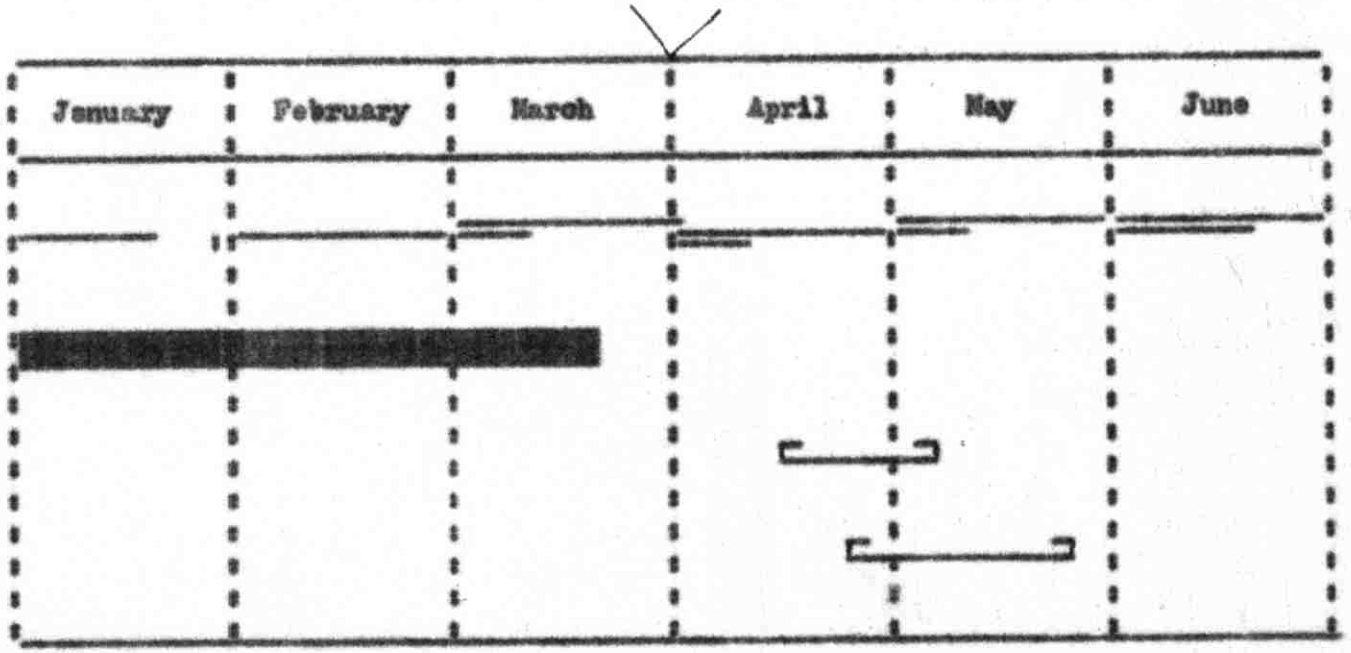


Types of Indents in 1967 for Catalogue Groups
05, 06, 07, 08, 09, 10, 11, 12, 13, 14, 15, 17, 41, 43



Grantt Chart for Ascertaining and Scheduling

(hypothetical case)



UNRWA

FORM NR.SM 22
06.6.030.1

BILL OF MATERIAL

Serial No. .....

H. Q. or Field .....

Code .....

Purpose .....

Date & Reference of Project Approval { .....

BAR. : Ref ..... Date .....

B.A.A. (or B. N.): Ref ..... Date .....

1. **White:** To Field Finance Officer for Certification & Forwarding to Field Supply Officer.
2. **Pink:** To Field Finance Officer for Retention.
3. **Blue:** To Chief Supply Division with indent
4. **Yellow:** For Retention by Expending Officer
5. **Green:** For Chief Budget Division – (Only when he personally certifies funds available).

ITEM No	DESCRIPTION OF MATERIALS	CATALOGUE No	UNIT	QUANTITY	UNIT PRICE $	TOTAL VALUE $	INDENT No. or EX STOCK

165

DELIVERY REQUESTED BY

DATE .....

SIGNED :

TITLE : ..... DATE : .....

APPROVED FUNDS AVAILABLE

..... DATE : .....

F. F. O. or Chief Budget Div...

UNRWA

Form No. SM. 21
06.6.161.1

INDENT

To :

From :

DATE :

ACCOUNT CODE :

CATEGORY

H.Q. USE ONLY

NUMBER

GROUP —— NUMBER

Amendment No.

REFERENCE

White : C.S.D. for Purchase
Blue : C.S.D. for Stock Control
Yellow : C.S.D. for Advanced Market Research
Green : Ordering Section
Orange : (Extra)

Item No.	DESCRIPTION OF MATERIALS	MT PREFIX / MT Index No.	Catalogue No or M.T. Part No	Unit	Quantity to Order	Stock on Hand	Stock on Order	Monthly Consumption: Average Last Six Months	Monthly Consumption: Estimated Future	Unit Price $

166

DELIVERY REQUESTED

Week :

Month :

Year :

Destination :

SIGNED

SUPPLY OFFICER

SCREENED BY

AUTHORIZED FOR PROCESSING

Date received C.S.D. .....

Date passed for purchase action .....

ENDORSEMENT BY EXPENDING DIVISION H. Q. (IF REQUIRED) :

R/4/64

UNRWA

Form No. SM. 21
06.6.161.1

INDENT

To :

From :

DATE :

ACCOUNT CODE :

CATEGORY

H.Q. USE ONLY

NUMBER

GROUP ____ **NUMBER**

Amendment No.

REFERENCE

White : **C.S.D.** for Purchase
Blue : **C.S.D.** for Stock Control
Yellow : **C.S.D.** for Advanced Market Research
Green : Ordering Section
Orange : (Extra)

Item No.	DESCRIPTION OF MATERIALS	MT PREFIX / MT Index No.	Catalogue No or M.T. Part No	Unit	Quantity to Order	Stock on Hand	Stock on Order	Monthly Consumption: Average Last Six Months	Monthly Consumption: Estimated Future	Unit Price $

DELIVERY REQUESTED

Week :

Month :

Year :

Destination :

SIGNED

SUPPLY OFFICER

SCREENED BY

AUTHORIZED FOR PROCESSING

Date received C.S.D. .....

Date passed for purchase action .....

ENDORSEMENT BY EXPENDING DIVISION H. Q. (IF REQUIRED) :

R/4/64

167

06.4.715.1

R/6/64

UNITED NATIONS RELIEF & WORKS AGENCY FOR PALESTINE REFUGEES

To

DATE OF ISSUE

PURCHASE ORDER No. _____

THE PURCHASE ORDER / DELIVERY SCHEDULE NUMBER MUST BE QUOTED, TOGETHER WITH UNRWA CATALOGUE NUMBER (S) ON ALL INVOICES, PACKING LISTS, SHIPPING DOCUMENTS, AND ANY OTHER RELEVANT CORRESPONDENCE.

FOR UNRWA USE ONLY

ACCOUNT CODE	C / P	C / PAY	CON
	C / O	ITEMS / D	AMOUNT

PROCUREMENT AUTHORITY

The following goods will be delivered subject to the U N R W A General Conditions of Contract printed on the back of this Purchase Order and to the Special Conditions as stated herein. In cases where the Special Conditions are inconsistent with the General Conditions the former shall prevail.

This Purchase Order duly signed by the supplier must be received by UNRWA before .....

(1) ITEM	(2) UNRWA CATALOGUE NUMBER	(3) DESCRIPTION	(4) UNIT	(5) QUANTITY	(6) UNIT PRICE	(7) TOTAL PRICE

A. DELIVERY

DELIVERY REQUIRED BY

B. PACKING

CHARGES

C. PAYABLE BY SUPPLIER .....

D. PAYABLE BY UNRWA

E. INSPECTION & ACCEPTANCE

F. PAYMENT (BY UNRWA HQS / FIELD FINANCE OFFICER.....)
(1) WITHIN 30 DAYS OF RECEIPT AND ACCEPTANCE OF SUPPLIES AT :
(2) ON RECEIPT OF THE FOLLOWING DOCUMENTS. :

G. MARKINGS (TO BE AS STATED BELOW):-
ALL LETTERS 1 1/2" HIG H DIAMOND 4"HIGH
CASE NO. UNRWA
GROSS WEIGHT
CUBI C MEASUREMENT
DIAGONAL BANDS 2" WIDE ON TWO SIDES TO BE

PORT OF DESTINATION

P. O. No. .....

PREPARED	CHECKED	INITIALLED

H. ON BEHALF OF UNRWA

.....
FOR CHIEF SUPPLY DIVISION
UNRWA HQS. MUSEITBEH QUARTER, BEIRUT, LEBANON

CENTRAL WAREHOUSE (1)

INVOICES AND / OR SHIPPING DOCUMENTS SHOULD BE SUBMITTED IN ORIGINAL AND 2 COPIES TO CHIEF ACCOUNTS DIVISION, UNRWA, BEIRUT OR TO THE APPROPRIATE FIELD FINANCE OFFICER.

Form SP. 7
06.6.156.1

168

U. N. R. W. A.

FORWARDING DOCUMENT

No. .....

Date

To : .....
(Copy for each Consignee)

Origin or name of ship

Terms

Shipping marks if any

Charges payable by

Documents attached

Insurance Agent & Terms

CONTRACT NUMBER	COMMODITY	PKG	WEIGHT	CONSIGNEE

Other Copies .

Please despatch goods when available in accordance with above Allocation .

For Chief Supply Division

169

06.6.101.1

UNRWA

DESPATCH ORDER

No. .....

To : .....
(Copy for each Consignee)

Date

Origin or name of ship

Supplier or Donor

Terms

Contract or donation No.

Charges payable by

Insurance Agent & terms

Documents attached

Shipping marks if any

COMMODITY	QUANTITY	ALLOCATION

Other Copies.

Please despatch goods when available in accordance with above Allocation.

For Chief Supply Division

UNRWA

CAT No. 06.6.438.1

SUPPLIES ADVICE

RECEIPT No. R .....

PURCHASE ORDER No. .....

LOAD NOTE OR CART NOTE	DESPATCH ORDER FORWARDING DOCUMENT	SOURCE OF SUPPLIES	DETAILS OF SUPPLIES	DELIVERY		CONSIGNMENT DETAILS				REMARKS
				PARTIAL/ COMPLETE	ITEMS RECEIVED	NO. OF UNITS	UNIT PACK	GROSS WEIGHT	NET WEIGHT	
170										
DATE	INITIALS	APPROVING SIGNATURE, SUPERVISOR								WAREHOUSE

06.6.402.1 **UNRWA**

RECEIPT VOUCHER

FORM SM-18

LOAD NOTES Nos.	DATE	POSTED ON	
		STOCK CARDS	ORDERING CARDS

SERIAL No.	PURCHASE ORDER No.
18	INDENT No.

TO	FROM	SUPPLIER

CODE CREDITED	CODE DEBITED

* MATERIAL RECEIVED IN GOOD CONDITION AND IN ACCORDANCE WHITH P. O. SPECIFICATIONS

* MATERIAL RECEIVED--SEE COMMENTS BELOW

* Delete whichever is not applicable

DATE _____ 19 ___

SIGNED _____ WAREHOUSEMAN

CLAIM REPORT No.

DISCREPANCY NOTE No.

ITEM No	DESCRIPTION	MT PREFIX		MT INDEX No	CATALOGUE No OR MT PART No	UNIT	QUANTITY	UNIT PRICE	VALUE

SUPPLY OFFICER

SM. 10
06. 6. 434. 1.

U. N. R. W. A

Date required

STORES DEMAND NOTE

Purpose

Deliver to

CREDIT - ISSUING				FORM No.			
Loc.	Funct/Act.	S/Act.	Obj. Code	L	Month	Ident.	Ser. No.

STATION	DEBIT - RECEIVING				CONTROLS
	Loc.	Funct/Act.	S/Act.	Obj. Code	for R.S.D. use only

DESCRIPTION	MT Prefix / Index No.	CATALOGUE or PART No.	UNIT	Quantity	Dec	UNIT PRICE	TOTAL VALUE	STOCK BALANCE

DEMANDED BY ---------- Date ----

RECEIVED BY ---------- Date ----

ISSUED BY ----------

DATE ----------

POSTED BY

173

U.N.R.W.A.

LOAD NOTE

06.6.240.1

TO ..... Date ..... Nº. .....
(Carrier's Name)

FROM .....
(UNRWA Office)

TO BE COLLECTED FROM ..... AT .....
(Supplier's Name) (Place from which to collect goods)

TO BE DELIVERED TO .....
Consignee

Contract Purchase Order Nº. Or Donation Nº. Ref.	Despatch Order Nº.

Please receive for despatch the goods described below : -

Despatched by (Signature) ممثل الوكالة

Item	GOODS	UNIT	Nº. of Units	Gross Weight	Net Weight

ان الشاحنة ادناه محملة الى لاجئي فلسطين في لبنان – سوريا – المملكة الاردنية الهاشمية – لذلك نرجو السلطات المختصة تسهيل معاملاتها لتصل باقرب وقت ممكن

Wagon / Truck Nº. ..... Driver's name .....
رقم السيارة او الشاحنة ..... اسم السائق .....

Checked & Received
استلمت البضاعة
اعلاه بالتمام

Carrier's Signature .....
امضاء السائق

RECEIPT I have received the goods described above in good condition subject to following remarks (if any)

.....

.....

.....
Received by (Signature)

06.6.315.1

174

U. N. R. W. A.

PACKING LIST

Order No. ..... Date .....

Destination .....

Catalogue No.	C O M M O D I T I E S	Unit	Quantity	Weight	Country of Origi

PROPOSED

STORE DEMAND AND ISSUE VOUCHER			
DEMAND	Quantity Required	Quantity Issued	ISSUE

PROPOSED

UNFULFILLED DEMAND FORM

Serial No.	Description of items	Catalogue No.	Qty.	Ref. Demand No.	Remarks

PROPOSED

MONTHLY STOCK REPLENISHMENTS

Serial	Descriptions	Quantity in Stock	Coming Forward	Expected Time	Quantity Required	Indent
					(to be filled in by user)	(to be filled in by Supply)

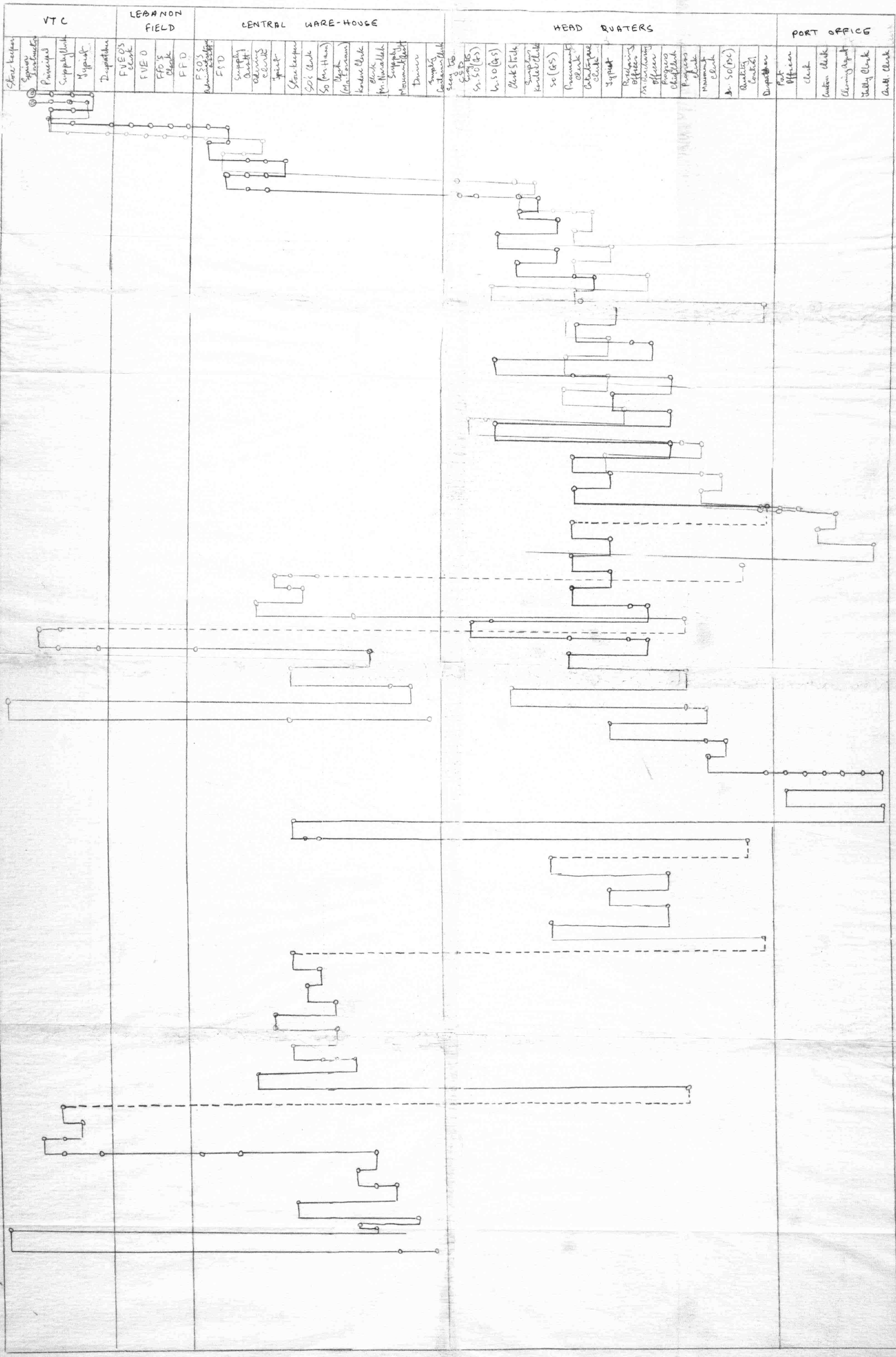
PROPOSED

SUPPLIES ADVICE	
Receipt No.	
Load Note or Cart Note	
Purchase Order No.	
Partial or Complete	
Items Received	
No. of Units	
Unit Pack	
Gross Weight	
Net Weight	
Remarks	
Signature _____ Storekeeper _____ Supervisor	

— Present procedure
— Proposed procedure

WORK FLOW CHART

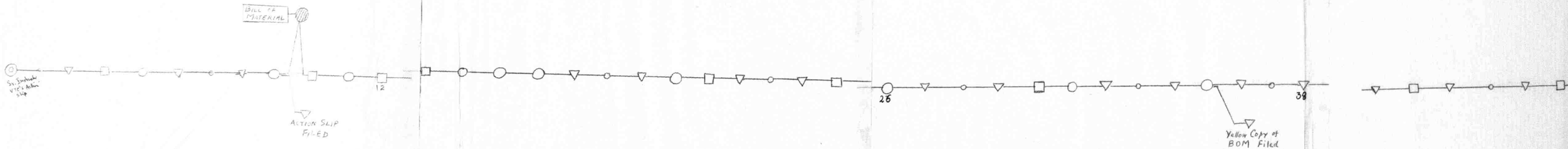
Process charted: Special Indent
Unit: General Stores Branch
Date: April-May 68
Charted by: M. S. Rahmana

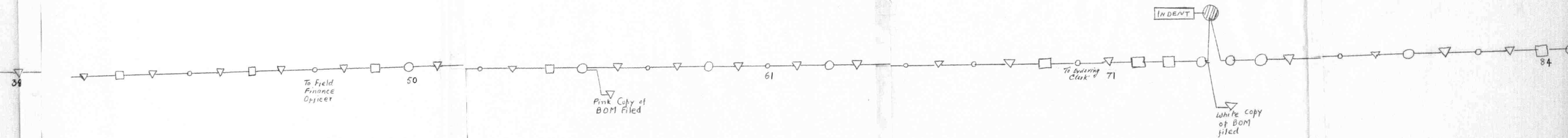


180

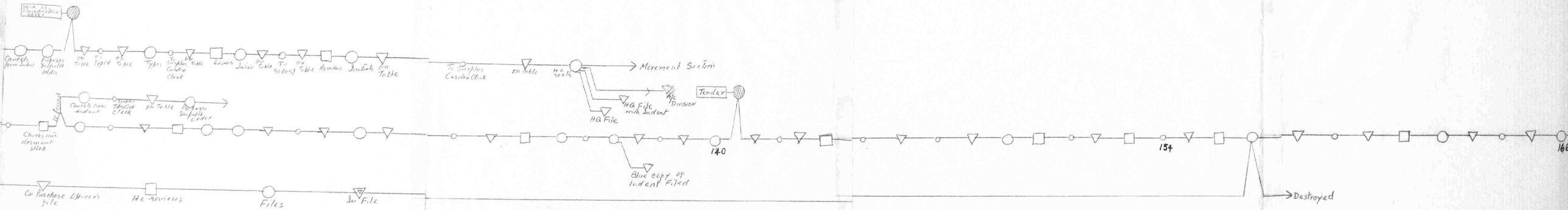
MULTI - COLUMN FLOW CHART (Existing)

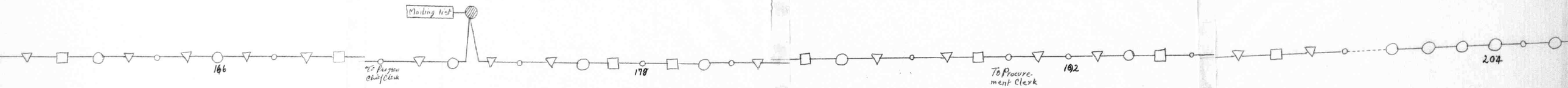
Process : Special Indent
Branch : General Store
Charted by : M.S. Rahman
Date : April - May, 68




39
To Field Finance Officer
50
Pink Copy of BOM Filed
61
To Ordering Clerk 'B'
71
INDENT
White copy of BOM filed
84


-7-
-8-
-9-
-10-
84
97
Yellow & Green copies filed (Indent)
To HQ
118
BOM Blue copy filed
Checks with 136 A/c
If available as surplus stock
ORANGE copy of Indent to Procurement Section for advanced market research.
Checks with dormant stock
If found
Cancels from Indent
On Table
To Typist
Types
Reviews
On Purchase Officer's file
He reviews
Files


Movement Section
HQ File with Indent
A/c Division
HQ File
Tender
Blue copy of Indent Filed
140
154
166
Destroyed
Cr Purchase Officer's file
HE Reviews
Files
Inv File

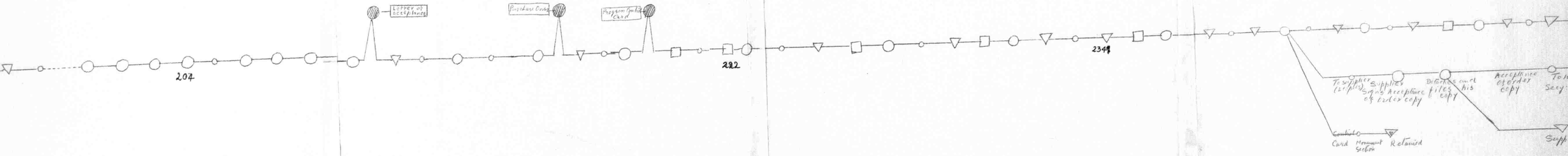

Mailing list
166
To Purchasing Chief Clerk
178
To Procurement Clerk
192
207

-16-

-17-

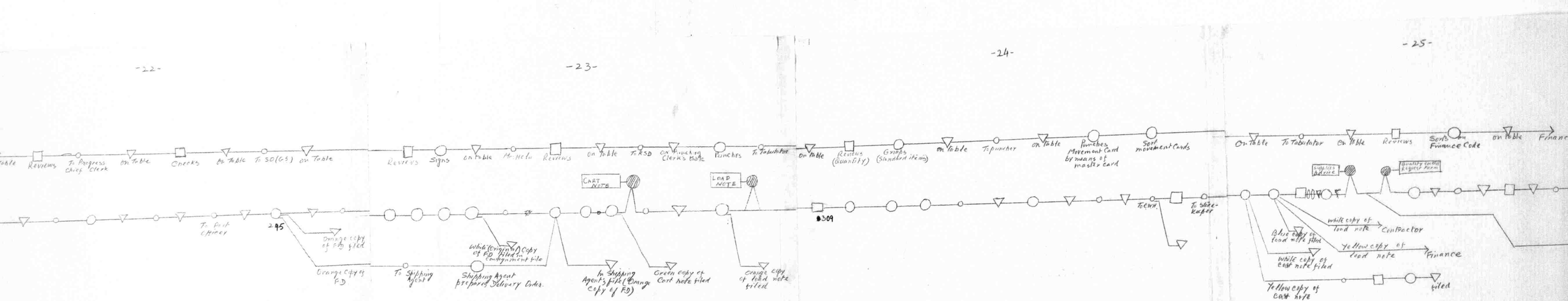
-18-

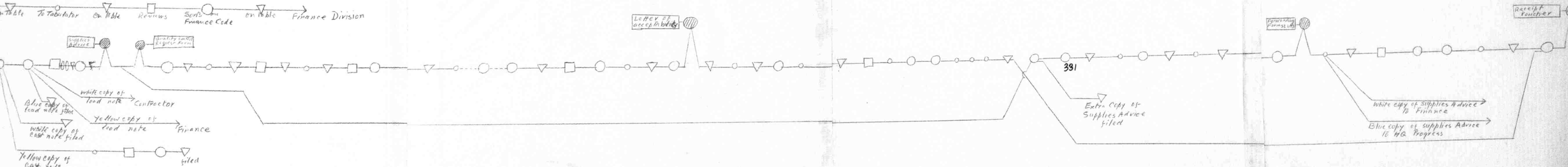
-19-

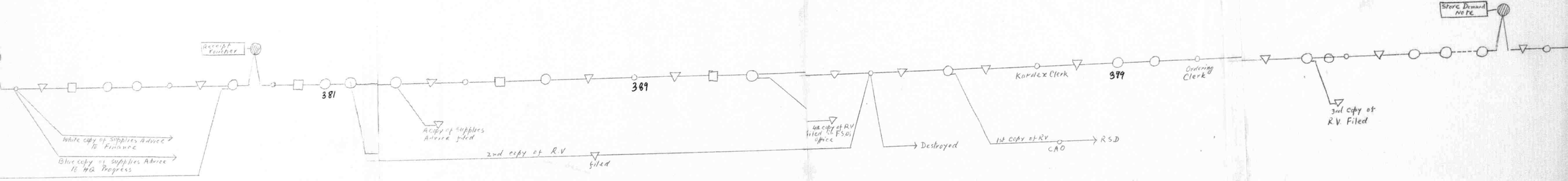

Letter of acceptance
Purchase Order
Program Symbol Card
207
222
234
To supplier (2 copies)
Supplier Signs Acceptance of Order copy
Returns one copy
Acceptance of order copy
Card
Management Section
Retained

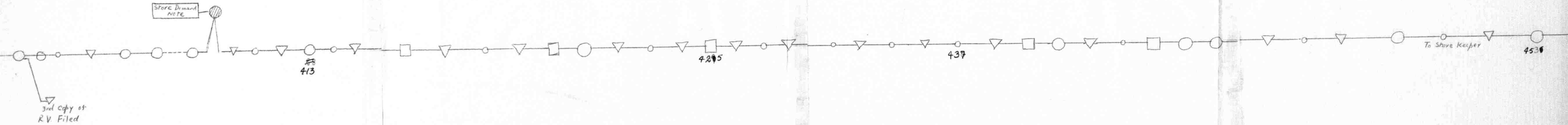
-19- -20- -21- -22-

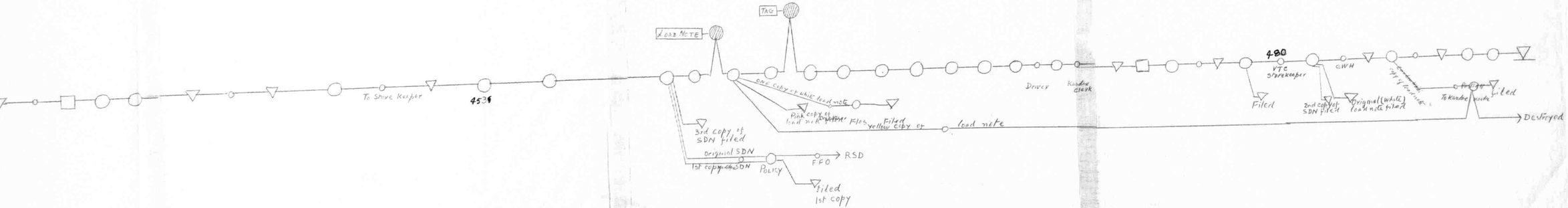
Post Office
Movement (2)
FSO
CWH
Store
Supply Control
Kardex
Finance
HSD Copy
To Sorter
On Table
HQ Sorts
To Progress Clerk (Mr. Helu)
On Table
Prepares costing slip
Posts in Price Kardex (Contractors name wise)
Position Price Kardex (cat group wise)
Prepares covering slip
Marks total of figures
On Table
To Typist
On Table
Types
Reviews
To Mr. Helu
On Table
Reviews
To Progress Chief Clerk
On Table
Checks
On Table
To SD(GS)
Forwarding document
266
HQ Movement clerk
279
To Post Officer
295
To Progress Sr. Clerk
White copy of indent filed
To supplier (2 copies)
Supplier signs acceptance of order copy
files copy
Acceptance of order copy
To HQ Secy & Sr. SO(GS)
On Table
filed
Supplier Copy
Card
Movement Section
Retained


Reviews
To Progress Chief Clerk
On Table
Checks
On Table
To SD(GS) on Table
Reviews
Signs
On Table
Mr. Heli
Reviews
On Table
To RSD
On Receiving Clerk's table
Punches
To Tabulator
On Table
Reviews (Quantity)
Groups (Standard items)
On Table
To puncher
On Table
Punches Movement Card by means of master card
Sort movement Cards
To Park Officer
295
Orange copy of FD filed
Orange Copy of FD
CART NOTE
LOAD NOTE
309
White (Consignee) copy of FD filed in consignment file
To Shipping Agent
Shipping Agent prepared Delivery Order.
In Shipping Agent's file (Orange copy of FD)
Green copy of Cart note filed
Orange copy of load note filed
To Store-keeper
On Table
To Tabulator
On Table
Reviews
Sorts on Finance Code
On Table
Supplies Advise
Quantity to be Issued from
White copy of load note
Contractor
Blue copy of load note filed
Yellow copy of load note
Finance
White copy of cost note filed
Yellow copy of cost note
filed


n Table
To Tabulator
on Table
Reviews
Sorts on Finance Code
on Table
Finance Division
Supplies Advice
Letter of acceptance
Receipt Voucher
white copy of load note
Contractor
Blue copy of load note sent
yellow copy of load note
Finance
white copy of cost note filed
yellow copy of cost note
filed
391
Extra copy of Supplies Advice filed
white copy of Supplies Advice to Finance
Blue copy of supplies Advice to HQ Progress


Receipt Voucher
381
White copy of Supplies Advice to Finance
Blue copy of Supplies Advice to HQ Progress
A copy of Supplies Advice filed
389
2nd copy of R.V
filed
4th copy of R.V filed in F.S.O.I office
Destroyed
Kardex Clerk
1st copy of RV
CAO
R.S.D
399
Ordering Clerk
3rd copy of R.V. Filed
Store Demand Note


Store Demand Note
413
4285
437
To Store Keeper
4536
3rd copy of R.V. Filed


LOAD NOTE
TAG
To Store Keeper
4530
One copy of white load note
Pink copy of load note
Files
Filed
Yellow copy of
load note
3rd copy of SDN filed
Original SDN
1st copy of SDN
POLICY
FFO
RSD
Filed
1st copy
Driver
Kardex clerk
480
VTC Storekeeper
Filed
2nd copy of SDN filed
C.W.H
Original (White) load note filed
Pink copy
To Kardex clerk
Filed
Destroyed